

Avanti

Operation Manual

Catalina 30

Operations Manual

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Pre-start Checks

Pre-start:

Check engine coolant. Coolant level should be about 1" below the filler neck. If necessary, add 50/50 diesel specific engine coolant (without silica). Do NOT remove coolant cap when engine is hot.

Make sure raw water engine cooling intake valve is open and is pointed in-line with tubing.

Engine oil level should be checked daily. Access is through the small hatch opposite the navigation station. Dipstick should be removed and wiped once prior to re-insertion of dipstick for actual check. Add oil if needed. If oil need determine if leak exists by monitoring bilge and engine for spurious oil.

Gear shift should be in neutral and throttle should be advanced about $\frac{1}{2}$ " – 1"

Check raw water intake filter screen and clear of debris as needed.

Starting Instructions

1. Assure that the freshwater intake is in the "OPEN" position.
2. Turn on batteries to the "ON" position at the navigation station.
3. Turn engine key clockwise. The overheat and low-pressure alarm may sound (light and buzzer) during glow plug activation.
4. Switch bilge blower on and activate the glow plug by turning key against slight spring-loaded resistance (clockwise) for approximately 10-12 seconds. Do not hold glow plug position for greater than :15 seconds.
5. Release the key pressure to the favored "ON" position and press the start button for 3-5 seconds.
6. Repeat the above procedure if needed.
7. Once the engine is running, check astern to make sure that water-cooling the exhaust is flowing out in spurts. Warm engine at idle for 3-5 minutes before moving the boat in gear.
8. If the warning buzzer does not stop after starting, shut down the engine and determine the reason.
9. Always slow engine to idle speed before shifting. A slight pause in neutral reduces clutch wear when going from forward to reverse or vice-versa.

Cruising Under Power

Never turn the batter selector to "OFF" while engine is running

Recommended cruising RPM is 2,200. Do not exceed 2,300 RPM as higher speeds cause extra wear and tear on the engine and mechanical system and creates excessive fuel use without giving appreciable benefit of increased speed.

The engine instrument gauges should be monitored (near the ignition key) because the warning buzzer may be difficult to hear with the engine running. The engine temperature should not exceed 190 degrees.

The engine ignition must remain on during operation in order to charge the batteries from the alternator.

Engine Shut Down

Idle engine for 5 minutes for cool down. Make sure transmission is in neutral.

Pull up on the black tee handle (be careful of the plexiglass on instrument panel) and hold the handle up until the engine stops (by starving it of diesel fuel).

Push lever back down after engine stops.

Charging Batteries

The Blue Sea charging system is set to charge and balance all batteries (two house batteries and one starting battery) when connected to shore power. The 110v AC selector on the panel at the navigation station must be turned "ON". It never needs to be turned to "OFF" as the system automatically defaults to the 12v system with shore power is disconnected and will revert to shore power once connected again.

Electrical System

12 Volt DC

The main battery switch controls all 12v DC systems, except the bilge pump. Rocker switches on the electrical panel control all systems. Two deep cycle batteries supply the DC system and are located below the navigation station. A third starting battery is kept isolated electrically and is located under the aft berth and starboard of the diesel holding tank.

All lights have been changed over to low amp LED and is by far more efficient than previous incandescent bulbs. The anchor powered windlass and refrigerator are the biggest users of stored battery power. The Wallas stove also uses a fair amount of amperage during start-up, but only uses miniscule amounts of electricity to run. The refrigerator has a DC switch but should not be used for long periods without the engine running or being connected to shore power. Rather, it is better to use block ice to keep refrigerator cooled. The refrigerator does not need to be unplugged from the AC outlet. A rocker switch volt meter is connected to the house battery bank and is located on the panel.

Again, never turn the battery selector to the "OFF" position while the engine is running.

120 Volt AC

When connecting to shore power, make sure the main breaker of the shore power is off until 30A 50-foot shore power cord is connected to both the boat and the shore power outlet. There is a 15

and 20 amp adapter as needed and are located in the red Husky electrical bag. Turn the 110v switch to "ON" and assure that the breaker switch is depressed or close the circuit.

Water System – hot water / shower

General:

The water system is a pressurized hot and cold system, and is controlled by a breaker switch on the main panel. Turn the water off when not in use. If water runs out of a tank, the pump will run continuously and will burn out the pump. Please make sure the water pressure is "OFF" while the engine is running as it is impossible to detect if the water pump is running or not.

If the water runs out, immediately turn off the pressure pump and the 110AC heater.

There are two water tanks. One is located under the V-berth and the other is under the starboard setae, and they are isolated and independent of each other in case one tank becomes contaminated or damaged. The switch to control which tank is being used is located at the base of the stairs to the starboard side. There is also a water filter that is in-line immediately after this three-way valve and it is located forward of the diesel tank in the aft berth compartment.

The shower in the head is used by simply following the instructions above and turning on the faucet in the head. Water is collected in the bilge through the drain in the floor and will be pumped out as it is considered grey water by the USCG.

Water is headed in two ways:

1. While under power, the engine heats the water tanks, which takes 30-40 min.
2. When hooked up to shore power, there is a 110v AC water heater (located in the port lazarette). The switch for the AC panel must be turned to the "ON" position and the breaker must be closed. The pressure pump must be turned "ON" and there should be ample water in the water tank.

Filling Tanks

The water tank fill fittings are on the forward starboard deck. The more forward fills the V-berth tank. You should assure that the deck is washed and clean prior to unscrewing the caps so that spurious debris is not allowed to enter the water tanks. Listen while filling and do not overfill/over pressurize the water tanks as this can cause damage to the tanks. There is no gauge for measuring water tank levels.

The Head (toilet)

In USA waters the holding tank must be used at all times. The USCG may board the ship at any time and the Y-valve handle has to be in the locked and closed position to assure no over-board discharge. Heavy fines are imposed for direct discharge of holding tanks and is taken very seriously. Pump-out stations are free and readily available.

Supervise children and those who have not shown competence in use to the head operations. Make sure that absolutely nothing but human waste and minimal amount of special biodegradable toilet paper provided is placed into the head. Paper towels, Kleenex, sanitary napkins, cigarettes, etc., will clog the lines and result in a messy and expensive disassembly of the system. Always keep the seat cover down to prevent anything from accidentally falling into the head.

Valves:

All thru-hull valves, like many other valves, turn clockwise to close and counter-clockwise to open. Valves are open when the handle lines up with the hose, and are closed with the handle is crosswise (perpendicular) to the hose. Thu-hull valves turn only 90 degrees to operate.

Righty-tighty (closed); Lefty-loosy (open)

Using the Head with Holding Tank:

In order to flush the toilet with seawater, the thru-hull must be open and is located in the lowest forward compartment of the head. The switch on the head must be towards to water indicator, this will pull seawater into the bowl with manual pumping. Fill the bowl with a small amount to water to wet the inside of the bowl. The manual pump simply turns 90 degrees counter-clockwise to unlock and a short throw in and out provides priming and water. Lock back in position once finished pumping by inserting pump handle to the base and turning clockwise. Then return the water lever to the dry position.

After use, fully flush contents into the holding tank, assuring there is enough water to clear the pipes. Leave a small amount water in the bowl.

Finally, CLOSE THE TRU-HULL. Failing to close the thru-hull will allow ambient pressure to enter the valve, especially when under way, and may flood the head.

Use of the Head with direct discharge:

In only approved waters or locations, clip wires or zip ties to free valve. Turn handle of direct discharge bypass valve to the "OPEN" position. Macerator switch can be used to empty the holding tank. As well, unlimited water may be flushed through the system in this configuration. Close thru-hull when finished. Wire or zip tie thru-hull valve when re-entering USA waters or unapproved direct discharge locations.

Holding Tank Pump-out Procedure

Emptying the holding tank at pump-out station:

1. The holding tank should be emptied via the deck discharge plate ONLY at approved shore-based pump-out stations.
2. Remove cap from the deck discharge plate. The threads of the plate-cap should be periodically coated with petroleum jelly to ensure a good seal when closed.
3. The pump-out station suction hose should form a seal at the deck plate.
4. After the tank is empty, open head inlet valve and pump some water through the toilet and into the tank to dilute residual sludge and rinse the tank lines.

5. Check that all valves are closed after the tank is emptied and recap the deck plate.

Emptying holding tank at the macerator pump:

1. IMPORTANT – First Open thru-hull valve as outlined above. Pump out should only take a few minutes. It may take a few seconds for the pump to prime.
2. Assign someone to monitor pumping. When pumping is finished air bubbles will be coming up along the post side.
3. After the tank is empty, open head inlet valve and pump some water through the head into the tank. Then repeat the procedure for emptying the tank This will flush clear water through the system to rinse the tank, the hose lines and the macerator pump
4. After turning off the macerator switch on the main panel, remember to CLOSE the thru-hull discharge valve.
5. Finally, add about 8 oz of deodorizing chemical with about one gallon of water and pump into tank.

DO NOT operate pumps with the thru-hull valve in the “CLOSED” position.

Stove/Heater

The CNG stove and over were replaced with a Wallace stove/heater. The Wallace is powered by both the house battery bank and the main diesel tank.

First, turn on the toggle switch located on the panel at the navigation station.

Next, push and hold the button on the righthand side of the Wallas control panel for approx. :05 seconds, located under the counter top and just aft of the stove. This is also the panel that houses the heat level controller dial (1-6, where 6 is maximum output); usually good cooking starts on 2-3 and goes up slightly from there. The stove will go through a series of self-checks and it takes about :10 minutes for the stove to get up and running.

Lift the stove cover top and the burners will get hot.

The left burner is the hottest, the burners are not independent of each other. The right burner is used for simmering.

Heat:

Use the same procedure as outlined above and keep the lid down. Hot dry air will come out of the stove and across the companionway.

The exhaust is located behind the metal octopus and exits the hull on mid port side. DO NOT place anything near the exhaust pipe or exhaust exit as there is a risk of fire.

Turning Wallas off:

Simply close the Wallas lid on top of the stove to protect the stove.

Then, push and hold the button on the righthand side of the Wallas control panel for approx. :05 seconds, located under the counter top and just aft of the stove. The light will blink and the

Wallas will go through a shutdown procedure and will turn off when it's finished (approx. :10 minutes).

There is no propane aboard Avanti.

Refrigerator

The refrigerator can run from the 12v DC house batteries or, preferentially, from the 120v AC shore power. It is suggested to use ice as a primary refrigerant. Do not adjust the temperature controls for the refrigerator/freezer as there is limited value in doing so. The dial should be set at 2 ¼ to maintain 40F degrees. It is not suggested that the refrigerator is run for extended periods when not either connected to shore power or unless the engine is running. Leaving the refrigerator on all night without supplemental power will certainly drain the house battery bank.

Please leave no items in the refrigerator. You may either unplug the refrigerator and leave the door open, OR keep the door closed and the refrigerator plugged in.

VHF Radio

The VHF radio carries all authorized transmit and receive channels with the appropriate wattage as directed by the FCC.

To operate the radio, push the power button once and it will turn on. The 12v DC battery switch need not be turned on. The speaker mic at the helm has it's own independent volume settings.

All working channels are pre-programmed in at their appropriate wattage output. The VHF antenna is located at the top of the mast.

Be sure to turn VHF radio off when finished using.

Navigation Instruments

Avanti is equipped with a Garmin navigation system using the NEMA 2000 backbone. Chart plotters are up to date as of this publication. See online manual for 742x for complete information and proper operation.

DV battery must be in the "ON" position and the instrument switch must be turned on at the navigation electrical panel. If the screen is not on, depress the power button on the 742x.

The depth sounding gauge is located aft of the v-berth water tank and is an in-hull depth sounder. An older depth sounder is not active and is a thru-hull transducer located port of the engine and under the sink in the galley.

The G-Wind anemometer is located at the top of the mast and is connected to the GND 10 A/D converter where it joins the NEMA 2000 above the aft cabin and under the pedestal compartment.

All data is displayed on the Garmin 742x screen at the helm. Bluetooth and Active Captain are functional and available.

The auto pilot runs independently of the Garmin system and works off of GPS heading. The main controller is mounted inside the cabinet under the navigation station and needs to remain mounted in an upright position or it will not function properly.

Radar

There is no radar currently on Avanti, but a radar platform has been installed on the mast and is pre-drilled to accommodate a Garmin 18 HD radar. The radar can be connected to the current NEMA 2000 backbone in conjunction with a power supply cord.

Anchors

Anchoring Equipment

The primary anchor is a 15kg Vulcan with 150' of ¼" anchor chain and 150' of ½" 3 strand braided rode that was added in 2020.

An anchor roller was also added to accommodate the larger anchor than the previous Dansforth Fortress, which is kept in the aft lazarette as a backup or secondary anchor. There is also a third anchor with ample black-tie material for more complex anchoring scenarios.

The anchor is operated by a Lewmar v700 windlass (installed 2020). The v700 works on BOTH the chain as well as the rode. The raise and lower buttons are located on the deck at the anchor locker. In order to operate the windlass, the circuit breaker must be closed. It is located near the house battery bank as per AYBC standards. It is recommended to leave the breaker open when not in service.

Anchoring Procedure

Refer to Chapter 6 in "Chapman's Piloting" for some instruction on proper anchoring techniques.

DO NOT use the windlass to pull the boat toward the anchor.

DO NOT leave the boat anchored directly off the windlass; use the metal snubber plate and attach the anchor plate snubbing lines to the cleats on the outside of the deck as so not to put strain on any stanchion or anchor roller. Then, slightly slack the anchor with the windlass to leave a short section of untensioned chain or rode.

Sailing

Make sure the transmission is in neutral when sailing! If it is left in forward it can destroy the transmission.

Mainsail

Lazy jacks are located on both sides of the mast for operation. Normally, the Lazy Jacks are slacked when under sail and tightened when ready to drop the main.

Reefing: The main has one set of reefing points for jiffy reefing and can be pre-set and operated from the cockpit. Reef soon, reef often, and before you think you need it. Practice your procedure and refer to Chapman's Piloting for further instruction or information.

Roller Furling Genoa

To unfurl the genoa, come to a heading of about 30 degrees if windward. Uncleat furling line on port side of cockpit. Pull on, but keep some tension on, furling line so it will spool properly on the Harken rolling furler drum. Genoa can be reefed by pulling on the furling line. Note that the sail shape will be compromised to a certain degree but will remain functional).

To furl the sail, head upwind and ease the sheet. To furl the drum, pull the part of the furling line that rolls the sail in the correct direction so that the sail cover is on the outside. Keep minimal sheet tension to create a properly furlled sail with 3-4 circumferential wraps on the sheet lines. Cleat off the furling line to the cleat on the portside of the cockpit. Tie the running ends of the sheets around the winches on their respective sides.

Bilge Pumps

An automatic bilge pump is located in the bilge itself. A manual override switch is located on the navigation panel. The switch should always be placed in the "auto" position (to the left).

A backup automatic bilge pump is located in the starboard storage compartment behind the back-seat cushions should the automatic bilge need to be replaced.

An emergency manual pump is located in the port lazarette and can be manually pumped by hand using the bar in the portside storage cubby. This manual pump should be tested 4-6 times per year to assure it is in working condition.

Emergency Steering

Waste Management

The trash can is located after of the galley through an access portal. This portal is used to isolate the trash in the portside lazarette and the trash may also be accessed via the portside hinged lazarette. All trash will be gathered and emptied in the appropriate receptacles at the end of the day. If on an overnight, then trash may be gathered in bags and retained until a marina may be reached to dispose of trash appropriately.

Dinghy

Bimini

The bimini is fixed to the deck and should not be removed unless necessary. There is currently no further connection to a dodger as there is no dodger.

Diagram #1 Location of:

Emergency Equipment, Tanks, Diesel Fill and Pump Out

Diagram #2 Location of Thu-Hull Valves

Diagram #3 Compartment Locations

Compartment Contents

General Description and Specifications:

Documentation Number

Registration Number: WN3105NX

Catalina 30 Hull Number: CTYN4656G687

FCC VHF Radio Call Sign:

Year of Production: 1987

Overall Length: 29' 11"

Water Line Length: 25' 0"

Beam: 10' 10"

Draft: 5' 3"

Ballast – lead: 10,200 lb

Sail Area in sq ft:

 Main: 201

 Genoa (furling): 375

Mast height above water: 45' 6"

Total Height including VHF antenna: 48' 0"

Water Capacity (gallons):

 Forward Tank: 25

 Starboard Tank: 17

Fuel Type: Diesel

Fuel Capacity (gallons): 18

Engine - Inboard: Universal 25

Horsepower: 23

Holding Tank Capacity (gallons): 17