

ESCAPE

BAVARIA 36



Welcome Aboard!

The information summarized in these notes is intended to assist all skippers, crew and guests on board *ESCAPE* in feeling more comfortable with the basic "systems" and how they work. If something isn't familiar to you, please check these notes. If the information is unclear, incomplete, confusing, or otherwise less than helpful, please help us to add, change, or restate the information so that it conveys the desired results:

"Oh, now I know how to operate the"

Please feel free to add YOUR suggestions for other information or clarifications at the end of these notes on the blank pages. Your suggestions will be incorporated into future revisions and will help everyone sailing *ESCAPE*. There are several diagrams and figures appended to these notes to help you identify the location of equipment, valves, and related items.

You will also find additional reference manuals aboard *ESCAPE* that can assist you in feeling comfortable with the major systems. Two binders, "Mechanical Systems" and "Electrical and Electronics", contain original manufacturers manuals for most of the systems installed aboard *ESCAPE*. When in doubt, or questions arise that are not adequately covered in the "ESCAPE Plan", please refer to these notebooks for additional information.



You will see that *ESCAPE* is posted as a No-Smoking vessel. We ask that you restrict smoking to the cockpit or decks and/or dockside in order to maintain a pleasant sailing environment for all guests. Your cooperation is appreciated.

May you be blessed with fair winds and calm seas!

Owners

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DOCUMENTATION, REGISTRATION & INSURANCE

A copy of the Insurance record is kept in a pocket in the AYC Gray Manual. All necessary Ship's documentation papers, and license are in the AYC Gray Manual. The manual is located in the lower shelf on the right side of the Nav Station bench.

SHORE POWER

The cord is normally stored in the starboard lazarette (cockpit) locker. The Shore Power cord is a three-prong "twist lock" plug, with one "L" prong that must be matched with the receptacle, then "twisted" about one quarter turn. The onboard connection is found on the transom and is locked in by the same type of twist lock and sealed by the screw-on ring attached to the plug.

The yacht is equipped with a main 110V breaker switch. It is the grey electric panel located next to the chart table. The yachts shore power system is a normal 30 amp marine service. Adapter plug units are under the bench at the chart table.

Check to see if there is a switch or fuse box at the dock connection. To connect or disconnect the Shore Power cord, first make sure the "30 Amp Master Circuit Breaker" switch on the boat electrical panel **and** the power switch on the Dock plug box are both turned OFF. Connect the dock end of the cord first, then connect to the boat receptacle, and then activate the switch on the dock. If the shore power circuit breaker trips (the polarity is incorrect) then disconnect the cable immediately. Do not activate the yachts main circuit breaker until this problem is corrected. Contact the Harbor Master or marina staff and report the problem to them.

To activate shore power, turn the "30 Amp Master Circuit Breaker" on the electrical panel to "On" (upper left corner).



It is strongly recommended that the shore power cord be disconnected before leaving the dock. Power cord is only 50'!!

THE BIG "KILL" SWITCH

Tucked under the Nav Table, above the bookshelf containing this "Grey" book and other reference materials is a red switch. This will kill all 12V power to the entire yacht except the Webasto Diesel Heater. If you should have an issue on *ESCAPE* and feel the need to stop all power to everything, this is the switch! PLEASE use this switch only in case of emergency. Shutdown the engine before using the "KILL" switch to avoid damaging the alternator.

ELECTRICAL PANEL

As stated earlier, the grey electrical panel on the left contains the switches for the AC 110 volt accessories. The right side of panel (black) contains the switches for all 12-volt circuits such as instruments and accessories. When connected to shore power both the 110-volt/AC and 12-volt/DC are operable. When

not connected to shore power only the 12-volt systems are operable. We do not have a built in inverter aboard this vessel.

To the left of each 12V switch is a light that indicates if the switch is turned on and a push button circuit breaker. If the switch is in the “on” position but the device does not work, push the button to reset the breaker.

The Webasto Diesel Heater does not have its own switch on the electrical panel. The on/off switch is on the small square switch located on the bulkhead above the nav table under the stereo, please refer to the section for the Webasto later in this manual. There is also a push button circuit breaker for this heater located at the battery terminal under the aft settee bench.

Below the 12-volt switch panel there is a 12-volt ‘cigarette-lighter’ type plug that may be used for various 12-volt accessories or chargers for items such as laptop computers, etc. Its’ breaker is the last one on the left side and also is the breaker for the two aft cabins.

More information about specific switches is contained in the pages to follow.

The 12-volt Panel Switches



When a switch is toggled to the right the power is ON, look for the small green light. When toggled to the left, the power is OFF. A detail diagram of switch labels is located on the next page. The following is a list of the switches by number and the order they are on the panel.

Breaker	Description	Breaker	Description
1	ANCHOR LIGHT	9	BILGE PUMP
2	STEAMING LIGHT	10	DOMESTIC WATER PUMP
3	TRI-COLOR NAV LIGHTS	11	SHOWER SUMP PUMP
4	DECK LIGHT (ON MAST)	12	REFRIGERATOR
5	CABIN LIGHTS	13	BLOWER (ENGINE ROOM)
6	VACANT	14	WINDLASS
7	BINNACLE INSTRUMENTS	15	VACANT
8	12V OUTLETS	16	MACERATOR PUMP

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3A		Anchor Light		10A		Bilge Pump	
3A		Steaming Light		10A		Water Pump	
7A		Tri Color Nav. Light		10A		Shower Pump	
7A		Deck Light		10A		Refrigerator	
10A		Cabin Lights		4A		Blower	
3A		Vacant		4A		Windless	
7A		Binnacle Instruments		10A		Vacant	
7A		12-Volt Outlet		10A		Holding Tank	



CE Made in Germany

AM-FM Stereo Radio Compact Disc Player

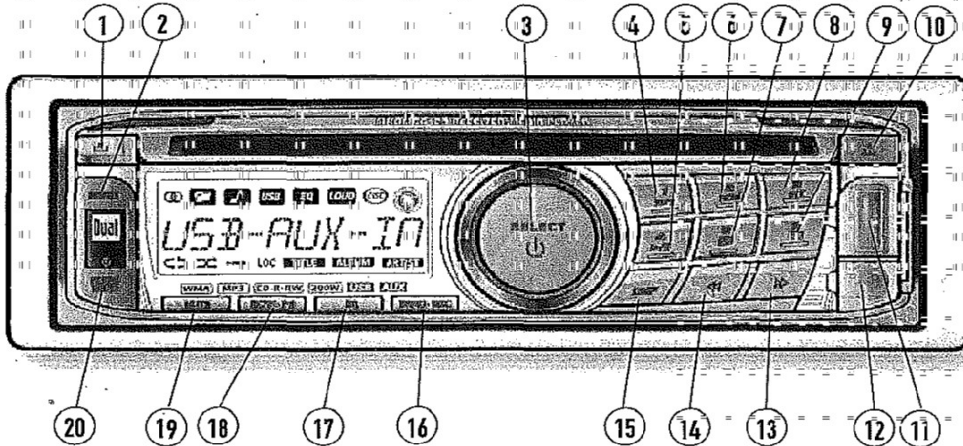


The Stereo system is wired directly to the batteries and is not controlled by any switches on the DC control panel. The Stereo System can be turned ON or OFF by the “Select” button located in the middle of the faceplate. A copy of the Operation Manual is in the “Electrical/Electronics” binder. An iPod/MP3 type device can be plugged in using one of the ports at the lower right hand corner (“11 or 12”). There is also a USB port at the same location.



MXDM66 OPERATION

Control Locations - Receiver



- | | |
|------------------------|---------------------------------------|
| ① Release | ⑪ USB Port with Silicone Cover |
| ② Mode | ⑫ Auxiliary Input with Silicone Cover |
| ③ Power (⏻)/Select | ⑬ Tune/Track Up |
| ④ Preset 1/Repeat | ⑭ Tune/Track Down |
| ⑤ Preset 4/Play/Pause | ⑮ Display |
| ⑥ Preset 2/Random | ⑯ Band/ESC |
| ⑦ Preset 5/Folder Down | ⑰ EQ |
| ⑧ Preset 3/Intro | ⑱ Scan/PS |
| ⑨ Preset 6/Folder Up | ⑲ Mute |
| ⑩ Eject | ⑳ Audio/Menu |

There are four speakers aboard *ESCAPE*, two in the main cabin and two in the cockpit. To select either set of speakers press the “AUDIO/MENU” button (left lower button) until “FADER” appears. Turn the center button (Select) outer ring, FAD F 12 for the cabin speakers or FAD R 12 for the cockpit speakers. Of course you may select something in between to have sound at both locations. Use this same

“AUDIO/MENU” button to adjust balance, bass & treble. Please see the manual for the full explanation for using your iPOD / MP3 devices.

BATTERIES

ESCAPE is equipped with two 12-Volt HOUSE batteries and one ENGINE battery. The Engine battery is a “cranking” battery and dedicated to starting the yacht’s engine. This battery and one House are located under the aft starboard dinette seat. The other House battery is located under the V-berth. Both House batteries are dedicated solely to the yacht’s house 12-volt electrical system. There is no battery “selector” switch.

All the batteries are AGM type maintenance free, sealed batteries.



At the top of the 12V Electrical Panel are two LED displays. Below each display is a push button for the display. Push the left button and the voltage of the starting battery will be displayed. Push the right button and the voltage of the house batteries will be displayed. Please check the house battery bank frequently to gauge your battery usage and necessity to re-charge, either by running the engine or plugging into shore power. You may also monitor battery condition using the “LINK 10” display as described below.

To the right of these displays is a low voltage LED indicator light. It will light up when the house batteries are below 11.2 volts. When you see this light immediately shut off ALL unnecessary 12V systems and begin charging the battery. When the house voltage drops below 10.5 volts an automatic shut down of the house 12 V systems will engage and you will have NO power for anything, including such critical instruments as the depth sounder or GPS. **PLEASE DO NOT LET THE HOUSE BATTERY DROP THIS LOW IN VOLTAGE.** (The fridge will probably be your culprit in running down the battery).

BATTERY CHARGER

The charger is located (hidden) on the starboard side BEHIND the settee in front of the Nav. Station. The charger is turned on at the AC Panel, appropriately labeled “charger”.

Link 10 Battery Monitor

The most important information the Link 10 monitor can provide to you is the charge level of the batteries and the approximate draw on the batteries from onboard devices. To determine the estimated amperage of a device, i.e. the fridge, push the “SEL” key until the small “A” directly under the display is lit. When the batteries are fully charged they will have approximately 380 amp-hours. Monitor the estimated amp load on the batteries as well as the “V” (voltage). The batteries can be charged by plugging into shore power or by running the yacht’s engine.

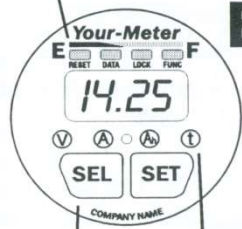
The green LED lights on the top of the meter, “the light bar” indicate the charge state of the batteries at a glance. The diagram below is a quick reference for operation of meter.

Quick Reference

The Light Bar

The light bar shows state-of-charge at a glance.

Here's what the lights mean:



EMPTY			FULL			
E					F	Full
GREEN	GREEN	GREEN	FLASH GREEN			80-99%+
GREEN	GREEN	GREEN	GREEN			60-79%+
GREEN	GREEN	GREEN				40-59%+
YELLOW	YELLOW					20-39%+
RED						0-19%+
FLASH RED						



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the light bar shows state-of-charge at a glance. When the light bar is lit, the V light indicates Volts are being displayed, the A light indicates Amps, the Ah light indicates Amp-hours, and the T light indicates Time. We'll explain these terms on the next page.

For shortest charging times, lead acid battery in marine or RV service is normally discharged 50% then recharged to 85-90% of full. Restoring the last 10-15% of a full charge requires a long time - typically 2 - 3 hours. This means only 35-40% of your battery capacity is actually available for normal use. Occasionally discharging a battery more deeply is perfectly acceptable.

The Link 10 control panel allows the owner to customize the charging operation to the size type and brand of batteries currently in use. **Please do not reset any of the system parameters currently set on the system.**

INSTRUMENTS

B&G Triton2, B&G Vulcan 9 Chartplotter, Ray Marine ST70 Repeater

All the Navigation instruments EXCEPT the Chartplotter and Radar are powered at the 12V black electrical panel using switch #7. Boat speed, water depth, wind speed/direction, GPS, Auto Pilot are then ready to go. The Vulcan 9 Chartplotter has a separate power supply not on the breaker panel and the Radar draws power from the Chartplotter. All of these instruments are linked together on a NMEA 2000 network to share information. There is also a Ray Marine ST70 Repeater at the Nav Station. It reads all the data collected from the other instruments and is convenient in the cozy confines of the cabin when anchored up or at the dock.

The Triton2 instrument at the Binnacle has several displays available for depth, boat speed thru water and over ground, true and apparent wind speed/direction as well as many other features.

One word of caution: water depth in some instances may be affected by thermal-climb (layers of water with dramatic temperature differences) and could confuse the instrument causing it to give improper readings but generally this will only occur in deep water. Remember the primary rule when using any electronic navigation instrument "Your Nautical charts should always be consulted

for final authority on location depth and hazards.

B&G Vulcan 9” Chartplotter and Radar

The Chartplotter is a wonderful tool for navigation and trip planning. An internal GPS will provide your location on the chartplotter to assist with navigation and route planning. Also accessed via the Vulcan 9 is the Radar screen. There is so much information available that a three binder is available in the Nav Station. Please feel free to consult this, but again, do remember the primary rule of navigation ... charts are the final authority!

A Feature called “Sail Steer” sets B&G apart from all other plotters. It will take wind and boat heading data to give sailors the best lay lines and speed made good toward your destinations. Explore this feature and have fun!

Ray Marine ST4000 Auto Pilot



A stand-alone belt driven pilot directed by its’ own compass can assist in course keeping. The belt drive is engaged using the clutch lever on the Ray Marine Pilot attached to the ships wheel, the clutch is located at the “6 o’clock” position. BE CAUTIOUS, USCG regs require that there always are eyes on deck scanning the waters.

VHF Radio

The VHF radio call sign for *ESCAPE* is WCZ2587 and is also printed on a label above the radio. PLEASE use the radio properly. Guidelines for proper use of the radio are included in the Grey AYC Manual. To the left of the VHF radio is a red rocker switch, it turns on a speaker located in the cockpit. If you cannot hear the radio in the cockpit turn the rocker switch on and adjust the volume of the cockpit speaker using the volume knob on the radio.



In normal cruising areas it is also possible to use most Cellular phone networks, reducing the need to utilize the VHF system for non boat-to-boat conversations.

WATER SYSTEM

There are two water tanks with a total 80 gallons of water. Tank #1 is located below the “V” berth. The blue filler port for Tank #1 is located on the deck forward of the anchor rode locker lid. Tank #2 is located below the port side aft berth. The blue filler port for Tank #2 is located on the transom, port side. The caps have pop-up handles to assist in unscrewing the cap. When replacing the cap please do not over tighten the cap, it should only be snug using your fingers. When filling the water tanks use the blue charcoal filter located in the stbd cockpit laz, it will screw onto the end of the water hose which is located in the same locker (do not leave the hose in the filler spout unattended).

The fresh water system operates utilizing a pressure water pump. The pressure water pump is located behind the right hand cabinet door in the head. The pressure water pump serves to produce pressure water for the entire hot and cold water potable water system and has a pressure shut-off switch to stop the pump.



The Water Pump switch, #10 on the electrical panel, must be in "On" position to obtain water pressure for both hot or cold water.

The valve to switch from one tank to the other is located in the same cabinet as the pump, it has a red handle. When the handle is pointing forward water is drawn from the forward tank. To begin drawing water from the aft tank, turn the handle pointing upward. After switching tanks the pump may struggle to self prime. When this happens simply open the water faucet in the head sink and listen for when the pump is primed.

Each sink drain is equipped with a thru hull valve. If a sink does not drain, check to ensure the valve is in the open position (handle parallel to drain hose rather than perpendicular). There is no need to close the valves but should you find yourselves in extreme sailing conditions it may be wise to close them to prevent back filling and avoid possible water overflow into the cabin when heeling severely in heavy weather.

The hot-cold wash-down/shower hose at the swim platform is located on the port side transom. The main water system (switch #10) must be turned on to use this.

WATER HEATER

The yacht's hot water system has three sources of heat on board: a 110V AC element within the hot water tank, the separate Webasto diesel cabin heating system and the residual heat from Volvo engine cooling system (in conjunction with the Webasto system). A piping loop within the hot water tank provides heat underway from both latter two sources. All these systems are integrated, providing hot potable water with a minimum of attention. The Hot Water Tank itself is about 6 gallons.



The Water Pump switch, #10 on the electrical panel, must be in "On" position to obtain hot water and obviously you must have some water in either of the two 40 gal water tanks.

110 volt AC Source of heat

The electric hot water heater can only be used when the yacht is hooked up to shore power. Turn on the Water heater breaker switch located on the yachts 110V electrical panel located at the Nav station and you will have hot water in approximately 30 minutes (if you are starting with cold water). PLEASE remember to turn off the 110V breaker if both water tanks are run dry, otherwise the heat element will burn out and no more hot water for you!

Webasto and Engine Sources of heat

The operation of the Webasto cabin heat system is outlined in the section below "Cabin Heating" so please read that section along with this one to get the full picture. The short story here is that residual heat from

either the Webasto Cabin Heat or the Engine freshwater cooling system will provide hot water for your next shower utilizing a piping loop within the Hot Water Tank. How? I'm glad you asked...



Take a look above the Nav station, you'll see this switch. On the top is "System Heat" and with the switch in the up position domestic water is warmed up as using the stand alone Webasto Heater system. It is quick and very hot, so flip the switch (this is time to read the Cabin Heating section) when you sit down to dinner and by the time you're done the galley wench will have hot water to clean dishes! Flop the switch to the "Engine Heat" position when you are motoring and you'll have hot

water for that relaxing shower at the end of the day just not quite as quick or hot. In this position you'll hear the Webasto water circulation pump only, not the combustion chamber firing and no hot exhaust. Obviously once you arrive at your anchorage, you'll want to put the system to "System Heat" or you'll run out of hot water (and cabin heat)!

GALLEY

Sink Drains

The drains on the galley sink connect to individual through-hull valves. The galley through-hull valves are located directly under the sinks.

As stated earlier the thru hull valves may normally remain open and you'll hear a gurgling sound when under sail. Should heavy weather conditions and severe heeling be encountered it would be wise to close all thru hulls when not in use.

Galley Stove

The stove operates on propane (LPG) fuel. The fuel tank is mounted in a self-draining case molded into the cockpit seating on the port side of the walk-through transom. Check the valve before using the stove.

BE CAREFUL

IF ANY FUMES ARE DETECTED at ANY TIME WITHIN THE BOAT, the electrical switches should be turned off and the boat adequately ventilated.

A solenoid actuated valve as well as a standard valve are located on top of the tank. On the bulkhead above the stove is a gas control panel. The control panel has an on/off switch to allow gas flow. When the switch is "ON", a green light on the panel will be lit and the solenoid valve will be opened. When the stove is not in use, the switch should remain off. If the yacht is going to be left for a long period of time the gas should be shut off at the tank.

Make sure the individual stove knobs are closed before the bottle valve is open.

If there is a leak turn off the gas valves and call for repairs.

Lighting Instructions

Open the valve on the tank and activate the switch above the galley. A butane lighter is in the bin above the stove.

To light the burner, choose the appropriate knob for the burner on the front of the stove. The knob will have a white dot at the 12 o'clock position. Turn the knob counter clockwise approximately 90 degrees. (there is a small flame picture). Push in the knob and light the burner. Hold in on the knob approximately 15-30 seconds, and then release. The burner should stay lit. If the burner does not light, repeat the above steps and hold down the knob for a longer time. The "thermocouple" next to the burner needs to have direct flame on it to keep the burner lit, check for this if the dang burner just won't stay lit. Once lit the burner is on high. Continue moving the knob counter clockwise to reduce the heat.

To light the oven, open the oven door. In the center of the bottom of the oven, you will see a small round tube. Place the butane lighter at the end of the tube, depress and turn the knob as described above for the burners to light the oven. Continue holding the knob until the burner has heated sufficiently heated to remain lit. To regulate the oven temperature, continue moving the knob counter clockwise for lower temperatures. For your convenience an oven temperature gauge is located in the lower right hand side of the glass oven door. Please note the temp reading is in Celsius not deg F, adjust your brain accordingly.

The stove on this yacht is gimbaled, allowing you to cook while under sail. A lever on the lower right hand side of the stove face can release the stove. The stovetop is equipped with arms to hold the pots in place and can be adjusted with the set screw knobs located at the front of the stove.

This completes "stove operation 101". To *ESCAPE* galley duties, claim total confusion about stove operation and reassign duties to your mate!

Refrigerator / Freezer

Power is supplied to the Refrigerator using the #12 switch on the electrical panel. Switch on the refrigerator by turning the thermostat knob clockwise, located within the reefer. By rotating the knob you can regulate the internal temperature. Start with setting #3 and make fine adjustments from there. It regulates temperature better with more items so if it's been awhile since your last grocery run put a few gallons of bottled water in the fridge, it will help hold the cold thereby reducing how often the compressor will run. The compressor is located in the cabinet under the refrigerator.

Within the fridge are dividers and the Freezer compartment is the smaller of the compartments in the box. This section will keep items frozen that are already frozen when placed in here but as with most small units it will have a tougher time freezing an item or two. Putting in more frozen items will help stabilize the temperature. Of course when in doubt, eat the ice cream first!

HEAD

Thru-Hull Drains

The drains in the head have individual thru-hull valves. There are four total: the sink, the salt water flushing water inlet, the waste outlet for the head and the shower sump outlet. All thru-hull valves are located directly under the sink.

There is no need to close the thru hulls in normal conditions.

Marine Toilet


Proper operation of the marine toilet contributes greatly to the comfort of the crew and guests! Improper usage requires disassembly of the pump and this is not fun. So please take time to FULLY understand the basics to properly use this system.

As you look into the head, immediately to the left, on the sink cabinet, is a black lever. The lever is secured in place with a plastic tie fastener. This yacht is designed for long distance cruising and therefore allows for direct discharge overboard into the water. However USA and increasingly Canadian regulations require that this lever be secured to the “Tank” position. There is a thru-hull under the sink that must also be opened if the head is to be directly discharged overboard. This thru-hull should be maintained in the closed position. If the Coast Guard boards the vessel and finds this valve in the “overboard” position, they will get extremely cranky and levy a large fine. Please do not change the position of the switch.

The head pumps into the holding tank located under the starboard settee seat. This tank may be emptied at a pump station or by utilizing the Macerator Pump as described under “Macerator Pump” section. The pump out deck fitting is located on the port deck midships and will require the use of the deck key (located in the nav station table). This is always one of the highlights of a sailing vacation!

Head Operation: Please also refer to the laminated card attached to the hose.

The small black lever located at the pump handle allows a “wet” pump or a “dry” pump. Moving the black lever to the left, “W” position, will allow salt water to be pumped into the bowl. Moving the black lever to the right, “D” position, will pump dry the contents of the bowl. PLEASE DO NOT PUMP SALT WATER INTO THE BOWL UNLESS THE YACHT IS LOW ON POTABLE WATER. The preference is to use the sink faucet to partially fill the bowl with fresh water. The bowl half full is only about 1 quart of fresh water. “Dead” seawater left stagnant in the discharge hose begins to smell in a fairly short period of time, but fresh water will not smell. So when your sailing mates leave the head, they cannot blame the odor on the salt water!

 Pump the handle up and down until the pump is primed. Operate the pump with long smooth strokes for efficient and easy operation. Use good quality biodegradable toilet paper meant for RV/Boat use, but do not use more than is necessary.


During use, pump as necessary to keep the content of the bowl low enough for comfort. After pumping the bowl dry keep the black flush control lever to the right and pump one more time. Always leave the

bowl empty to minimize odor and spillage. The black valve should remain in the “Dry” position when boat is sailing. This will prevent back filling of the toilet and/or the head sink and avoid possible water overflow into head compartment when heeling strongly in heavy sailing.

Do not put in the bowl: sanitary napkins, paper towels, cloth, cotton, cigarettes, matches, chewing gum or any other solid objects, petroleum products, solvents or water that is more than warm to the touch (no I don’t want to tell you how to know this). Remember: Do not put anything in the toilet unless you have eaten it first! Except of course toilet paper.

Shower

The water from the shower is collected in the molded bathroom floor and drained to the outside by means of an electric sump pump. Switch #11 on the 12V Electrical Panel will need to be turned on before the sump pump can be used. The switch to activate the shower drain pump is located on the left side of the sink cabinet.



The fixture on the sink pulls out an extended hose. After completing your shower, flush the drain with water. Continue to run the shower sump pump in order to remove excess water accumulation, which will reduce the potential for odor buildup!

MACERATOR PUMP

Where legal (i.e. some areas in Canada outside closed bays, marinas, etc) and if treatment chemicals have been added to the holding tank the macerator pump may be used to pump the tank overboard. Make sure the macerator thru-hull is open. It is located in the storage area adjacent to the holding tank, under the cushion and hatch of the starboard settee bench. The sewage tank is a 15 gal tank. If the tank is overfilled



it will be difficult to pump the toilet and it may come out the vent on the starboard quarter. The tank should be emptied immediately.

A Gobius tank monitor is located above the Nav table, on the wall lower right hand corner. It has four lights: the bottom light is blue and indicates less than 25% tank level; the green light is 25% level; yellow is 50% level and red is 75% level or higher!

When you see red pump out! Gobius checks the level every 2-10 minutes (not continuously) so if using the macerator pump you must still listen to the pump to determine when the tank is empty since there will be a lag in the level indication update (there is a definite change in the sound of macerator pump when the tank is empty). A full tank will only require about 3-4 minutes to pump dry.

Caution

The macerator through-hull must be opened, (handle parallel to through hull fitting or vertical) before turning on the “Holding Tank” Switch # 16 on the 12V Electrical Panel. Failure to do so will result in damage to the pump. REMEMBER, close the valve again!

CABIN HEATING

Webasto Diesel Hydronic Cabin Heater

A diesel hydronic heater system provides heat to each of the yacht's cabins. Hydronic just means it has its' own closed loop water system, circulating this water in hoses to radiator type units throughout the yacht: one in the main cabin under the forward bench of the settee and in each sleeping cabin. The diesel fired "boiler" is located under the transom behind the aft starboard cabin. This combustion chamber heats the water and circulates it to the cabin radiators as well as thru the domestic Hot Water Tank. Once the water is up to temp, turn on the fans in the cabin you want to heat up. This is just like in your car, the air warms over the radiator and bam, you have a toasty warm cabin. It is thermostatically controlled but we'll get to that in a bit. The heater is completely separate unit from the yacht's diesel engine (although they both draw from the diesel fuel tank) and can run anytime you desire.



Caution The exhaust from the Heater is very hot! **DO NOT** tie the dinghy to the starboard side of the yacht as it will melt the line (painter), which may result in the loss of the dingy. Also make sure the dock lines do not rest against the exhaust.



To start the heater, find the black square switch on the wall above Nav table. When you flip the switch up, in "System Heat" mode, you will hear the combustion of the heater and the sound of water circulating from the starboard aft cabin. It normally takes about 20 minutes to get heat up to temperature and the cabin warming up. This system draws 4-8 amps of battery power so if you are not charging the batteries often, please keep an eye on your battery charge level.

You'll notice the down position of the switch is "Engine Heat". In this mode the Webasto Heater itself does not fire the combustion chamber but it will turn on the circulation pump and still monitor the temp. The water loop will be heated not by its' own combustion heater but by the Volvo engine freshwater system. Through the marvel of a modern heat exchanger, the engine freshwater system never mingles with the Webasto closed water loop but heats the Webasto loop as it circulates thru the cabin radiators. If you are motoring along and get cold or want hot water turn the system to "Engine Heat", once you stop switch to "System Heat" and stay warm my friend!



There are fan controls located in each of the three cabins and one at the Nav station for the Main Salon. The switches have a high and a low position but only the high position turns on the fan. The fan control in the aft port berth also heats the head. Each cabin is equipped with a round black vent duct that must be manually opened and closed.



I told you we'll get to the temperature control and here we are. Locate the thermostat at the Nav station just below the stereo. You'll notice the digital display; this is the current room temp. To adjust the temp simply tap the up or down arrows and you'll see the new temp displayed. After a sec or two the room temp will come back, and the heater will begin to adjust by firing harder or shutting off. This is what

the squiggly little lines tell you, each squiggle is 20% capacity of the heater. Don't forget to flip the System/Engine Heat switch on first!

The "sunshine" icon is a preset temp of 68F (20C), press that and it'll adjust itself. The "half moon" icon is a present temp of 64F (18C). Press the two of them at the same time and a little suitcase appears with a preset temp of 50F (10C). Whichever is pressed last will be the temp it strives to achieve. This thermostat will adjust no matter which mode you are in, "System Heat" or "Engine Heat".

ENGINE OPERATION

ESCAPE is equipped with a Volvo Penta Model D2-40F, 40 HP diesel marine engine attached to a sail drive unit (a drive unit similar to an outdrive in an I/O, which eliminates a propeller shaft). The cooling water for the engine is brought in through the foot of the sail drive.

Instrumentation



The instrument panel with ignition switch is located on the aft side of the binnacle console below the wheel, above the Tachometer / Digital hour meter. There are also oil pressure and water temperature gauges.

The fuel gauge is like most yachts meaning it doesn't read precisely because the tank is odd size to fit the hull. The gauge is fairly close all things considered but allow yourself some error and fuel up when it is at ¼ tank. She burns a bit less than 1 gal/hour when running below 2800 rpm, right at 1 gal/hr at 3000 rpm and up to 1.25 gal/hr at max, 3400 rpm. It's a diesel so running at any speed is fine with her and it's your wallet. I'm a sailor so of course I'm cheap, as they say "the wind is free so as everything should be"!! Ok back to business, the most reliable way to track fuel is recording the engine hours. With a 40 gal tank, at 35 hours you should be finding a place to fuel up. Also in a heavy sea a low level will result in air in the fuel line and poor engine operation.

Starting the Engine

ESCAPE does not have an ignition key starting system. Located on the binnacle behind the wheel on the panel is a small square black panel with four buttons. The top left button is the On/Off switch supplying power to the start button. The top right button is the start button for the engine. The bottom right button is the stop for the engine. The bottom left button is to acknowledge an alarm for low alternator charging, low oil pressure or high cooling water temperature.



Make a habit of visually checking the engine and engine compartment before starting the machinery:

1. Check that the Raw water cooling valve is open on the port side of the engine compartment and the raw water strainer on the starboard side is clear.
2. Check that the Fuel / water coalescer is dry.
3. Check the oil dipstick level and generally for fuel or oil leaks.
4. Check the shift lever is in "Neutral" position.

To start the engine, turn the panel on (top left button) and wait for the “beep-beep”. This will notify you when the glow plugs (actually no glow plugs anymore, we’re in the 21st century) have warmed and the engine may be started. Push the top right button to start the engine. ENSURE THERE IS COOLING WATER COMING OUT THE EXHAUST (on the port quarter).

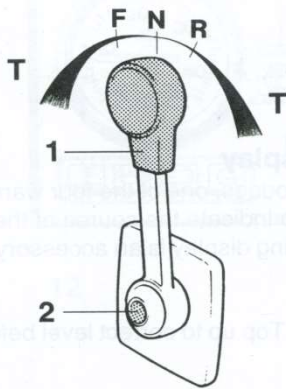
Never use starting spray or similar agents to start the engine.



Check whether there are any lines, chains, or other ropes in the water, which could easily get caught in the propeller.

Check to ensure the shore power cable has been removed and stowed!

When sailing the transmission control lever must be in the neutral position



For side-mounted controls

Disengaging the shift function

- Move lever (1) to the neutral position (N).
- Press in button (2), move the lever slightly forward and release the button.

The shift function is now disengaged and the lever affects only engine speed. When the lever is moved back to the neutral position it will automatically re-engage.



IMPORTANT! Take care not to engage the drive/reverse gear by mistake.

The oil pressure should be 40-60 psig (depending upon the RPM’s) and once the engine has been running for 5 - 10 minutes the water temp will be 185-210 F.

The engine spins a LH prop but there is minimal prop walk (to port in forward, to stbd in reverse).

Cooling System

The Cooling system is divided into a freshwater and a saltwater system. The seawater pump sucks water from the sail drive unit. Seawater is pumped through a water strainer then a heat exchanger where it cools off the freshwater coolant and finally into the exhaust elbow pipe where it is mixed with the exhaust gases.

The freshwater system is the internal engine coolant system. It is a closed system also driven by a circulation pump. The freshwater engine coolant is cooled in the heat exchanger by the seawater and the aforementioned heat exchanger with the Webasto system.



A valve for the cooling water system is located on the port side of the sail drive and operates the same as thru hulls. A raw water filter (clear canister) is located on the aft starboard side of the engine compartment. **The filter screen should be checked at least once a day prior to engine starting** or if the boat is operated in waters with a large amount of debris. It is not necessary to close the raw water valve to clean the filter **BUT THE ENGINE MUST BE OFF**. A simple visual examination of the filter is sufficient but should debris be noticed unscrew the wing nuts on the top, slide the lid to the side, remove and clean the filter then replace the lid and tighten down the wing nuts good and snug.

The fresh water system fluid level should be checked daily prior to starting the engine, by viewing the reserve tank on the forward end of the engine. Do NOT fill above the line.

Check the exhaust outlet on the port quarter of *ESCAPE* after the engine starts. Cooling water should be exiting from the exhaust valve, indicating that the water pump for the cooling system is operating properly. It is normal to see some mist with the exhaust water. If at first the water flow is small increase the engine RPMs by pushing the black button on the throttle level and move the throttle forward (remember pushing the black button disengages the clutch and will keep the engine out of gear). After a few minutes it can be returned to idle.

Operating the engine at wide-open throttle normally shouldn't be required and *ESCAPE* runs most economically between 2,600-3,000 rpm while motoring.

Push the stop button (bottom right button) located on the engine instrument panel to stop the engine.

Fueling

The diesel fuel tank capacity is approximately 40 gal. The filler pipe is located on the starboard transom of the yacht. The deck plate is colored red. To remove the deck plate push up the tab and twist the cap off. You may need to use the deck plate key if the cap was tightened too tight. Please take care not to break the tab off the plate cover.

When fueling, shut off the engine and watch carefully to avoid overfilling. Use an OilSorb to catch or clean up any spilt fuel. The OilSorbs are located in the locker cabinet under the Nav Table.

The tank vent is located next to the filler pipe. Please place an OilSorb over the vent to catch diesel spills. Keep the OilSorb in place until after the engine is started as the tank has a tendency to burp as it is filling or when the engine is started and rocks the level in the tank. There is also a "catch" bottle with suction cups, located in the stbd laz to place over the vent to catch burps!

BE CAREFUL

The engine is serviced regularly and under normal conditions should require no special attention. The oil dipstick should be checked daily before starting the engine. Spare oil is kept on board and may be added **ONLY IF NECESSARY. DO NOT OVERFILL!** The dipstick is located on the starboard side of the engine inside the small engine access hatch in the starboard aft cabin area.

The Sail Drive unit (Reverse Gear "S" Drive Unit) oil level is serviced regularly. The oil level is checked with the dipstick unscrewed from the housing. **PLEASE DO NOT ADD OIL AS THE UNIT IS EXTREMELY SENSITIVE TO LEVEL FOR PROPER OPERATION.**

ANCHOR & CHAIN

A CQR Anchor is located on the bow connected to 150 feet of chain, with an additional 210-foot anchor line. The anchor chain is marked every 30' (5 fathom) using small yellow zip ties to the links (1 for 30', 2 for 60' etc) and the anchor line is marked with plastic "flags". The anchor should be carefully released over the bow roller and then lowered slowly until contact is made with the bottom. Do not simply let the anchor line 'run free.'

A minimum scope of 4:1 should be used and depending on depth and weather conditions as much as 7:1 would be advised. Play out the chain/rode as the boat is slowly backed down to firmly set the anchor. Once the anchor "catches", set it firmly by securing it and placing the engine in reverse to confirm that the anchor is not dragging (better to take 5 minutes now than a chaotic hour at 2 am!). Use the hook & bridle assembly to secure the chain to the bow cleats if still on chain or tie off the anchor line to the same bow cleat if on rode. NEVER USE THE WINDLASS TO SECURE THE CHAIN AT ANCHOR FOR THE NIGHT (windlasses are not made to take the load of a boat at anchor)! Make SURE that the anchor line is securely cleated!!

The secondary anchor is kept in the port aft cockpit locker and has 15 feet of chain and 150 feet of rode. The secondary anchor is not connected to the anchor rode. This will allow you to use the line to be used as a shore-tie line in close anchorage (as commonly practiced in Canadian waters).

A low amp LED Anchor Light is located on the masthead. If anchored in a crowded area or in "open" water, turn on anchor light at dusk and leave on until daybreak. If in doubt, use the anchor light!

In close anchorage conditions, watch adjacent boats as *ESCAPE* swings with the wind or current. Assure adequate clearance so that you are not "surprised" later when you change position. Assure adequate depth for the duration of your anchorage - not just when you "drop the hook". Consult "Ports and Passes" to determine the full tide range occurring during your intended stay!



Windlass Operation

The power windlass is located in the foredeck anchor locker. The anchor windlass switch is located on the electrical panel and is switch #14. This must be turned on to operate the windlass.

When the electric windlass is operated, the diesel engine should always be running! Trust me, by experience, it will run the battery down in nothing flat! The anchor windless remote is stored in the anchor locker.

Help the winch by motoring up slowly in the direction of the pull of the anchor rode. This will ease the strain put on the bow roller and windless and provide maneuverability for the yacht when the anchor lifts from the sea floor. Take care in raising the anchor to ensure it does not hit the yacht's bow damaging the gel coat.

BE
CAREFUL

KEEP hands, fingers, and feet clear at all times when operating the windlass

Check for swimmers. Keep clear of moving anchor rode.

Use UP or DOWN button to operate windlass.

After setting the anchor, it is recommended that the UP switch be operated briefly. This engaged the internal clutch mechanism, locking the windlass; failure to do this could result in the rope/chain creeping out.

Do not over load the windlass. Avoid stalling the windlass.

When anchor is raised secure anchor to bow fitting to prevent accidental release. The anchor line/chain should be tied to a cleat securely when the anchor is “set”.



When not in use turn off the Anchor power switch on the electrical panel, switch #14.

Sails and Running Rigging



When sailing, the transmission control lever **MUST** be in the neutral position or reverse.

ESCAPE is equipped with a full battened mainsail with Lazy jack system and a 135% Genoa, with Harken roller furler. When setting the sails use the engine to move *ESCAPE* slowly into the wind. Fall off the wind slowly, let the yacht gather speed and switch engine off and shift transmission control lever to neutral.

Mainsail

Prior to raising the mainsail, ease the lines to the boom vang, mainsheets and reefing system. When the main is lowered there will be an excess of line from the reefing system. Do not pull the slack from the sail but just tuck the line into the sail cover. Raise the mainsail just enough to remove the creases in the vicinity of the mast. Too much tension in the halyard can be detected by the fact that creases form roughly parallel to the mast. Once the sail is properly raised and tensioned, tighten the boom vang and adjust the main sheet to sailing conditions.

Reefing the Mainsail

The mainsail is equipped with a single line reefing system, which allows the sail to be reefed from the cockpit. Position the yacht into the wind approximately 10° off bow. Ease the main sheets and boom vang. Release the main halyard and pull in the single reefing line. Once the sail is reefed cleat the reefing line and main halyard.

When you have finished sailing please release the reefing system prior to dropping the sail. Assure that all halyards, sheets and other lines are secure and tight BEFORE the boat is docked or anchored. You will minimize confusion and crew anxiety while maneuvering and you will also sleep better - as will the neighbors across the dock! "Funny noises" in the dark mean that something is loose somewhere inside or outside the boat! Check it out. Once you have docked or anchored replace all covers on sails, and binnacle.

Roller Furling

The control line for furling the genoa runs from the roller furling aft to the port side deck near the cockpit. When releasing the furler pull on the jib sheet but keep gentle tension on the furling line to avoid it getting a "rats nest" on the drum. If possible position the yacht approximately 10° off bow. To furl the sail pull on the furling line while keeping the sail under control with the appropriate jib sheet. In light winds the sail may furl with ease but in heavy winds the furling line may be tough.

If the line does not pull smoothly, check the drum to insure the line is not coiled over each other. Look at the mast to insure the sail is not tangled or that a free halyard was not furled up with the sail.

The sail has a blue UV leech panel for preventing sun damage to the furled sail. Continue pulling the control line until the sheets make 2-3 wraps of the genoa which will keep the sail under control and tight.

Lines and Fenders

There are 35' black dock lines stored in the aft port lazarette (cockpit) locker and in the forward anchor deck locker. There are also fenders stored in each location.

SAFETY & EMERGENCY EQUIPMENT

In General all Safety Equipment is located under the Nav Station bench (except for Life Jackets)

Life Vests

Safety should be a continuous aspect of enjoying your time aboard *ESCAPE*, and is a legal responsibility of the Skipper. All required safety equipment is on board. Life jackets are located in the locker under the forward berth. Eight Adult and two child Type II life jackets are stored there.

NOTE: life jackets for all persons on board are REQUIRED. All required life jackets must be in open areas, which can be easily reached in an emergency. Children under 13 years of age are required to wear a life jacket at all times. Also, life jackets are REQUIRED for each person in the dinghy - while the cushions are "soft" for seating, they are not sufficient to meet new Coast Guard safety requirements.



Fire Extinguishers

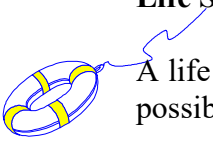
Five fire extinguishers are kept on the yacht. All the fire extinguishers are the dry powder type and checked every year. They are stored in the following locations:

Forward Cabin, Main Cabin, Port Aft Cabin, Starboard Aft Cabin and the Starboard Cockpit locker.

Flares

Required Safety Flares are stowed in plastic containers in the Nav Station Seat. Please note the location and read the instructions for use of these devices if you are not already familiar with these items.

Life Slings

 A life sling is mounted on the stern rail. Read the LIFE SLING instructions AHEAD of TIME to avoid possible confusion in an emergency situation.

A mini-practice session in deploying and recovering the system so all the crew know how the system works ahead of time is advised! The Skipper is often the first person to go overboard.



First Aid Kit

A First Aid Kit is stored in the cabinet of the Head.


Man Over Board (MOB) Key on Vulcan Chartplotter

A special MOB key on the Chartplotter can be used to immediately set a ‘man-overboard’ waypoint and return bearing in case of an overboard emergency. See the operating manual in the bookrack for instructions on using this procedure. Throw a floating cushion overboard at a calm relaxed time for practice “emergencies” will allow you to try this out! The use of the “Man Overboard” capability to immediately record the boat position should be explained to all crew on board. Better to practice and be prepared than panicked in the moment!

Emergency Tiller

An emergency tiller is located in the port cockpit locker. The emergency tiller shaft head is located immediately aft of the wheel under the helmsman’s seat.

Bilge Pump

 The bilge pump is located in the bilge under the bench in the salon. By unlatching the bench and raising the floor panel you will have access to the pump. The pump is turned on using switch #9 “Bilge Pump” located on the 12V Electrical panel

Manual Pumps

The shipboard manual bilge pump is located on the aft starboard side of the cockpit under the helmsman’s seat opposite the propane tank. The handle is located inside the port cockpit locker. There is also a Thirsty-Mate hand pump stored in the starboard locker. This hand pump is also used clear the dinghy of water.

Wood Through-Hull Plugs

Tapered Wood plugs for all through-hull valves for use in an emergency are stored under the aft settee cushion in the main salon. There is a “map” of all thru hull’s and sizes in the “Grey” book.

VHF Emergency Channel

Use Channel 16 on the VHF for true life-threatening emergency situations only. The U. S. Coast Guard monitors this channel and will respond to a “MAYDAY” call on channel 16. BE prepared to give the boat name clearly, and provide an accurate position - preferably giving the longitude and latitude from the GPS "Position" screen. If necessary, push the “MOB” button to obtain the current position. Follow Coast Guard instructions once contact is made. .

If you do NOT have a life/yacht threatening situation but are in dire need of help, call the Coast ‘Guard using the call signal “PAN, PAN, PAN”.

Flashlights

There are two waterproof flashlights in the bookshelf in the Nav Station. A small penlight flashlight with a red lens for nighttime use is under the Nav Table. A very bright Spot Light is located under the Nav Station seat, as well as extra flashlight batteries.

CHARTS

A Map Tech Chart book, Evergreen Pacific San Juan Cruising Atlas, Water Proof Chart # 43 and Canadian Gulf Island charts are located in the Nav. Station. "Chart 1" is kept at the Nav table. This book identifies all chart symbols. *Please* allow for at least eight feet of water at all times! WATCH the depth sounder whenever in doubt. The shallow water warning can be set on the depth sounder. Keep a chart handy in unfamiliar waters. A current copy of “Ports and Passes” tides, currents and chart are kept in the book cabinet as well as Waggoners. When anchoring, be sure you know the depth range for at least the next 12 hours!

OVERHEAD OBSTRUCTIONS

BRIDGES, WIRES and OTHER

In general, you will encounter very few overhead objects. Check ahead of time whether any obstructions are on your intended daily route. The total mast height is **approximately 56 feet** from waterline, including antenna. Remember to factor in the tidal height, water rises but bridges and wires don’t!

TOOLS AND SPARES

There are toolboxes and small spare parts (screws, etc) stored under the main cabin aft settee bench. Replacement pumps and repair kits for the head pump and the macerator pump, as well as spare diesel

fuel and oil filters and other engine parts are located under the forward V-berth. Please record any spares consumed and report this information to the AYC check in skipper upon return.

CLEANING SUPPLIES

Cleaning supplies are in the bucket in the starboard Lazeratte locker. A hose is also in the starboard locker. Some cleaning supplies are also under the Sink in the Galley including a small dustpan and broom. A 110-volt vacuum cleaner and attachments are stored in the forward starboard settee seat back. PLEASE do not use any cleaners or sprays on the Plexiglas windows or dodger windows that contain AMMONIA! This can seriously damage the surfaces.

PROPANE BBQ

A propane BBQ is attached to the stern rail, covered by a black canvas cover. An LPG tank is mounted on the deck under the BBQ and one complimentary propane bottle is provided in the Starboard cockpit locker as back up. PLEASE CLOSE THE TANK VALVE AFTER EACH USE. Make sure the control valve is set to "Closed" position. Please ensure the BBQ has cooled down completely before replacing the canvas cover. Enjoy!

COCKPIT TABLE

A cockpit table is permanently attached to the steering pedestal, and is held by small folding table leg. Table should be lowered when not in use.

DINGHY

An inflatable dinghy is available with *ESCAPE* and is sometimes known as the "*Escapee*". A hand pump and inflation hose are also kept in the starboard cockpit lazarette. The dinghy will normally stay firmly inflated, but the pump should be taken on any extended dinghy adventures just in case for safety. The Dinghy is equipped with oars for fun and/or exercise (also emergencies), after use lock them back into position on the port and starboard sides. Remove and store the oars in rough water. A repair kit is stored with the spare parts.

COMMENTS & ADDITIONS

Please add YOUR suggestions, questions, or comments for additional items to be included in these NOTES, or where you feel that some topic should be better "explained" or simply clarified. Just write us a note below or in the margins/back of page at the appropriate point. Thanks!

Feedback

These NOTES would be more helpful.

IF: