



SCOUT BOATS

260 LXF Owner's Manual



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NOTES

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Safety Information

Your Scout manual has been written to include a number of safety instructions to assure the safe operation and maintenance of your boat. These instructions are in the form of **CAUTION**, **WARNING**, **DANGER** and **NOTICE** statements. The following definitions apply:

	CAUTION	
HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN MINOR PERSONAL INJURY OR PRODUCT AND PROPERTY DAMAGE.		
	WARNING	
HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.		
	DANGER	
IMMEDIATE HAZARDS WHICH WILL RESULT IN SEVERE PERSONAL INJURY OR DEATH.		



All instructions given in this book are seen from the stern looking toward the bow, with starboard being to your right, and port to your left. A glossary of boating terms is included.

IMPORTANT NOTE: Your boat uses internal combustion engines and flammable fuel.

Every precaution has been taken by Scout to reduce the risks associated with possible injury and damage from fire or explosion, but your own precaution and good maintenance procedures are necessary in order to enjoy safe operation of your boat.

S.O.S. SAVE OUR SEAS

Scout Boats has made a commitment to quality since the very beginning. More importantly, we've also made a commitment to saving our natural resources. Our boating and fishing waters are beautiful but often abused and neglected. With care, we can turn the tide in favor of preserving our shining seas for generations to come. At Scout, we're doing our part by using earth-friendly manufacturing techniques and materials, and by choosing suppliers who observe strict environmental controls in making their products. It means more expense and time on our part, but we think it's worth it. You can do your part by being sensitive to our environment. Our marshes are the filter systems of the world. As responsible boaters we must manage our natural resources so our children can enjoy them.

	WARNING	
A WIDE VARIETY OF COMPONENTS USED ON THIS VESSEL CONTAIN OR EMIT CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS AND OTHER REPRODUCTIVE HARM.		
EXAMPLES INCLUDE:		
<ul style="list-style-type: none"> • ENGINE AND GENERATOR EXHAUST. • ENGINE AND GENERATOR FUEL, AND OTHER LIQUIDS SUCH AS COOLANTS AND OIL, ESPECIALLY USED MOTOR OIL. • COOKING FUELS. • CLEANERS, PAINTS, AND SUBSTANCES USED FOR VESSEL REPAIR. • WASTE MATERIALS THAT RESULT FROM WEAR OF VESSEL COMPONENTS. • LEAD FROM BATTERY TERMINALS AND FROM OTHER SOURCES SUCH AS BALLAST OR FISHING SINKERS. 		
TO AVOID HARM:		
<ul style="list-style-type: none"> • KEEP AWAY FROM ENGINE, GENERATOR, AND COOKING FUEL EXHAUST FUMES. • WASH AREAS THOROUGHLY WITH SOAP AND WATER AFTER HANDLING THE SUBSTANCES ABOVE. 		



Boat Information

Please fill out the following information section and leave it in your Scout Owner's Manual. This information will be important for you and Scout service personnel to know if and when you may need to call Scout for technical assistance or service.

BOAT

Model: 260 LXF

Purchase Date:

Delivery Date:

HIN:

Reg. #:

Door Key #:

Other Keys #:

GENERATOR

Make:

Model:

Serial #:

Kilowatts:

AIR CONDITIONERS

Make:

Model:

Cabin Serial#:

Helm Serial#:

ENGINE MANUFACTURER:

Engine HP (each):

Gear Ratio:

Serial Number:

Ignition Key #:

Propeller Spec:

Out Port

Serial Number:

Ignition Key #:

Propeller Spec:

In Port

Serial Number:

Ignition Key #:

Propeller Spec:

Out STBD

Serial Number:

Ignition Key #:

Propeller Spec:

In STBD

Scout reserves the right to make changes and improvements in equipment, design and vendored equipment items, at any time without notification.

Dealer

Name: _____

Phone: _____

Salesperson: _____

Service Manager:

Address: _____

Email: _____

Scout

Representative: _____

Phone: _____

Address: _____

Email: _____

ADDITIONAL NOTES/EQUIPMENT

[illegible]



Specifications

Hull Length Overall	26.0' / 7.92m
Beam	8'11" / 2.72m
Dry Weight W/O Engines (approx.)	5,300lbs. / 2404 kg
Engine Fuel Tank Capacity	146 gal / 553l
Fresh Water Capacity	20 gal / 38l
Holding Tank	5 gal / 19l
Cockpit Baitwell	12 gal / 45.4l
Deadrise	21.5°
Maximum Horsepower	400 HP / 298.4 kW
Draft W/ Engines Up (approx.)	20" / 0.51m
OUTBOARD SHAFT	25" / 0.6m
BRIDGE CLEARANCE WITH STANDARD OPTIONS	8' 3" / 2.5m

Note: Dry weight is the average weight of the base boat without options, fuel, water, waste, batteries or gear.

Certifications

To be in compliance with European directives for recreational boats as published by the International Organization for Standardization (ISO) in effect at the time this boat was manufactured, we are providing the following information.

Manufacturer:

Name: Scout Boats

Address: 2531 Hwy 78 West, Summerville, South Carolina 29483

Identification Numbers:

Hull Identification Number:

Certifications:

ABYC, NMMA, CE

Owner/Operator Information

Warranty and Warranty Registration Cards

The Scout Limited Warranty Statement is included with your boat. It has been written to be clearly stated and easily understood. If you have any questions after reading the warranty, please contact Scout Customer Service. Scout, engine manufacturers, and the suppliers of major components maintain their own manufacturer's warranty and service facilities. It is important that you properly complete the warranty registration cards included with your boat and engines and mail them back to the manufacturers to register your ownership. This should be done within 15 days of the date of purchase and before the boat is put into service. A form for recording this information is provided at the beginning of this manual. This information will be important for you and service personnel to know if and when you may need service or technical information.

The boat warranty registration requires the Hull Identification Number "HIN" which is located on the starboard side of the transom, just below the rubrail. The engine warranty registration requires the engine serial numbers. Please refer to the engine owner's manual for the location of the serial numbers.

IMPORTANT: All boat manufacturers are required by the Federal Boat Safety Act of 1971 to notify first time owners in the event any defect is discovered "which creates a substantial risk of personal injury to the public." It is essential that we have your warranty registration card complete with your name and mailing address in our files so that we can comply with the law if it should become necessary.

Product Changes:

Scout is committed to the continuous improvement of our boats. As a result, some of the equipment described in this manual or pictured in the catalog may change or no longer be available. Scout

reserves the right to change standard equipment, optional equipment and specifications without notice or obligation. If you have questions about the equipment on your Scout, please contact Scout Customer Service.

Service:

All warranty repairs must be performed by an authorized Scout Dealer. Should a problem develop that is related to faulty workmanship or materials, as stated in the Limited Warranty, you should contact your Scout dealer to arrange for the necessary repair. If you are not near your dealer or another authorized Scout dealer or the dealer fails to remedy the cause of the problem, then contact the Scout Customer Service Department within 15 days. It is the boat owner's responsibility to deliver the boat to the dealer for warranty service.



Typical Hull ID Location on Starboard Transom

Transferring the Warranty:

For an administration fee of \$100, Scout will extend warranty coverage to subsequent owners of Scout models for the duration of the original warranty period. The Limited Warranty may be transferred to any subsequent purchaser of the vessel within seven years from the date of delivery to the original purchaser. Please refer to the Limited Warranty Statement regarding the procedure for transferring the warranty.



To take advantage of this program, notification of the change of ownership, including the new owner's name, address and telephone number together with the appropriate fee, must be sent to Scout within 10 days of the date of resale. Scout will confirm, in writing, that the transfer of the warranty has taken place. After which, the transferee will be treated as the original purchaser as outlined in the Scout Boats Limited Warranty Statement.

Mercury Engine Warranty:

Mercury is ready to stand behind your purchase with strong warranty coverage. To be sure you receive all the benefits of a warranty for your engines, please take the following steps:

- Be sure your new Mercury is registered for a warranty. Your boat dealer should do this at the time of the sale. Make sure your dealer gives you a copy of the completed Mercury registration card for your records.
- Read the Mercury Limited Warranty statement. This warranty applies to Mercury outboard motors sold in the United States, whether purchased separately or when supplied as original equipment by a boat builder.
- If you need warranty repairs, you must take your Mercury outboard to an authorized Mercury outboard dealer.
- If you are away from home, or your selling dealer is not an authorized Mercury dealer, use the following number to find the nearest Mercury dealer. United States Dealer Locations: 920-929-5040
- Your warranty applies specifically to repairs made in the country of purchase.
- If you need any additional information about your Mercury or warranty coverage which your dealer cannot provide, please contact Mercury

directly. Refer to your engine owner's manual for the address and phone number to contact Mercury directly.

Yamaha Engine Warranty

Yamaha is ready to stand behind your purchase with strong warranty coverage. To be sure you receive all the benefits of a warranty for your engines, please take the following steps:

- Be sure your new Yamaha is registered for a warranty. Your boat dealer should do this at the time of the sale. Make sure your dealer gives you a copy of the completed Yamaha registration card for your records.
- Read the Yamaha Limited Warranty statement. This warranty applies to Yamaha outboard motors sold in the United States, whether purchased separately or when supplied as original equipment by a boat builder
- If you need warranty repairs, you must take your Yamaha outboard to an authorized Yamaha outboard dealer.
- If you are away from home, or your selling dealer is not an authorized Yamaha dealer, use the following toll-free numbers to find the nearest Yamaha dealer. United States Dealer Locations: 800-692-6242 Canada Dealer Locations: 800-267-8577
- Your warranty applies specifically to repairs made in the country of purchase.
- If you need any additional information about your Yamaha or warranty coverage which your dealer cannot provide, please contact Yamaha Directly. Refer to your engine owner's manual for the address and phone number to contact Yamaha directly.



Scout Limited Warranty



3 YEAR STEM TO STERN (LIMITED) WARRANTY + 10 YEAR TRANSFERRABLE STRUCTURAL HULL WARRANTY

Scout Boats Inc. has a limited transferable warranty that insures to the purchaser that each hull is free from structural defects in materials and workmanship, (under normal care and use), for a period of ten (10) years from the original date of purchase. Scout Boats, Inc. agrees to repair or replace, (at our discretion, based on review and/or observation of the hull in question), to the purchaser, any boats(s) that is found to be defective during the applied warranty period. Scout Boats, Inc. also warrants for a period of three (3) years to the original purchaser that each new hull is free from non-structural defects, (i.e. defective materials and/or workmanship). During this three-year period Scout Boats, Inc. will cover the cost of all parts and accessories manufactured or installed by Scout Boats Inc. during the original manufacturing process. Labor associated with these repairs will be covered for a period of twelve months from the original date of purchase. This warranty excludes engines, trolling motors, batteries, generators, air conditioning systems, electronics, appliances, underwater illumination, SeaKeeper system, and any other vendor that carries it's own manufacturer's warranty aside from Scout's. Any part or component not manufactured directly by Scout Boats, Inc., will only have that manufacturer's warranty available.

In order to receive warranty service, the selling dealer must register the boat on www.dealerscircle.com, and the purchaser must take his/her boat to an authorized Scout Boats, Inc. dealer. Depending on the nature of the claim, Scout Boats, Inc. may require the boat to be returned to our factory at 2531 Highway 78 West, Summerville, SC 29483, in which case all transportation, haul-out, and/or loading charges shall be prepaid and the sole responsibility of the original purchaser, or current owner, whichever is applicable. The customer or dealer will be responsible for the transportation charges associated with returning the boat to Scout. Upon confirmation of a valid warranty claim, Scout will repair the boat at no charge and will return the boat to the dealer or customer. The owner must remove and reinstall, at his/her own expense, any and all personal effects and electronics equipment not permanently affixed to the boat. The decision to repair, replace or make reimbursement for a particular boat or part shall be at the discretion of Scout Boats, Inc. Any items not removed prior to transport that are lost or damaged, either in transit or while at Scout Boats, will be the sole responsibility of the current owner.

Online registration, a bill of sale, or proof-of-purchase demonstrating individual in question as the purchaser, along with proof of customer's identity, is required before warranty service can be rendered.

Scout Boats, Inc. does not warrant: (1) any Scout Boat which has been powered or loaded in excess of the manufacturer's maximum horsepower or capacity recommendations. The maximum horsepower and capacity recommendations are shown on the certification plate affixed to every boat. (2) Any Scout Boat used in or for racing (of any type, organized or not), commercial fishing, rental, chartering or other commercial use. (3) Any Scout Boat which has been subject to misuse, neglect, or structural alterations. (4) Gelcoat cracking, crazing, bubbling, or blistering. (5) Excessive wear due to unprotected and/or over exposure to the elements (6) Any fuses, bulbs, switches or the failure of any electrical component due to corrosion (7) Any Scout Boat sold to a customer by anyone other than an authorized Scout Boats, Inc.



dealer, for example boat clubs, rental fleet, or salvage (8) Any Scout Boat that has been used on a trailer or boat lift that does not adequately support the hull, or any trailer or boat lift that may be considered undersized, including any and all roller type trailers. (10) Any Scout Boat with a jack plate installed by anyone other than Scout boats, Inc. on any hull other than the 231, 251, or 281.

Scout Boats, Inc. reserves the right to improve its product through changes in design or material without obligation to incorporate such changes on boats built prior to the implementation of respective change(s).

This warranty is in lieu of any other warranty implied or expressed. Scout Boats, Inc. accepts no responsibility for any representations, acts, or omissions of its dealer relating to the preparation and/or sale of Scout Boats, Inc. products to original consumer. This warranty is transferable, and to do so the purchaser must follow the instructions found at www.scoutboats.com/warranty within 10 days of sale of his/her boat to the new owner. A notarized Bill of Sale and a \$100 administration fee payable to Scout Boats, Inc. must also be included with the notification of the customer's intent to re-sell his/her boat.



Please mail to 2531 Hwy. 78 West, Summerville, SC 29483

Customer:

- By signing below, I do hereby agree that I have read this Warranty Policy and do fully understand the terms and procedures listed within. I also attest and agree that my dealer, (listed below), has gone over this policy in full detail and has answered all of my questions regarding this policy and how it applies and has registered my boat online at www.dealerscircle.com.

Customer

Date

- By signing below the dealership representative hereby agrees that the status of this boat has been changed to “delivered” on Dealer’s Circle, in order for the warranty to go into effect.

Dealership Representative

Date

You must mail the original signed copy of this agreement to Scout Boats Inc. at 2531 Highway 78 West; Summerville, SC 29483 and log on to www.dealerscircle.com to complete the warranty registration process.

WARRANTY WILL BE NULL AND VOID UNLESS THE BOAT IS REGISTERED ONLINE AT WWW.DEALERSCIRCLE.COM AND THE ORIGINAL SIGNED COPY OF THIS WARRANTY AGREEMENT IS RECEIVED BY SCOUT BOATS INC. WITHIN 30 DAYS OF THE POINT OF SALE!!!

Hull Identification Number: **SLP** _____

(located on the top right side of transom, under the rub rail)

Owner’s Name: _____ Date: _____

Address: _____

City: _____ State: _____ Zip: _____

Email: _____ Phone: _____

Date of Purchase: _____

Dealership: _____

Salesman’s Name: _____

Dealership Address: _____

Brand of Engine: _____ Horsepower: _____

Scout (white) Customer (yellow) Dealer (pink)



Warranty Registration Transfer



SCOUT BOATS

WARRANTY REGISTRATION TRANSFER

DATE _____
HULL IDENTIFICATION NO. SLP _____
DATE OF PURCHASE _____
NEW OWNER'S NAME _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____
EMAIL _____ PHONE _____
BRAND OF ENGINE _____ HORSEPOWER _____

☐ I agree to the warranty terms and conditions pursuant to my particular model year boat.

SIGNATURE _____

PREVIOUS OWNER'S NAME _____
ADDRESS _____
CITY _____ STATE _____ ZIP _____
EMAIL _____ PHONE _____
ORIGINAL DATE OF PURCHASE _____
DEALER WHERE BOAT WAS ORIGINALLY PURCHASED _____

There is a \$100.00 fee payable to Scout Boats. Fee covers official transfer and documentation of the warranty. Send CHECK or MONEY ORDER with a completed copy of this form along with a copy of the notarized BILL OF SALE. All information must be provided in order to transfer the warranty.

SEND PAYMENT & FORM TO:
Scout Boats, Inc.
Warranty Transfer Dept.
2531 Highway 78 West
Summerville, SC 29483

PHONE: 843.821.0068

www.scoutboats.com

Chapter 1: Safety Equipment

1.1 General

Your boat and outboard engines have been equipped with safety equipment designed to enhance the safe operation of the boat and to meet U.S. Coast Guard safety standards. The Coast Guard or state, county and municipal law enforcement agencies require certain additional accessory safety equipment on each boat as well as both ABYC (American Boat and Yacht Council) and NMMA (National Marine Manufacturers Association) guidelines. This equipment varies according to length and type of boat and type of propulsion. The accessory equipment typically required by the Coast Guard is described in this chapter. Some local laws require additional equipment. It is important to obtain “Federal Requirements and Safety Tips for Recreational Boats,” published by the Coast Guard and copies of state and local laws, to make sure you have the required equipment for your boating area. This chapter also describes safety-related equipment that could be installed on your boat. This equipment will vary depending on the type of engine and other options installed by you or your dealer.

1.2 Engine Alarms

Your boat is equipped with an audible alarm system mounted in the helm area that monitors selected critical engine systems. The alarm will sound if one of these systems begins to fail.

The alarm systems are designed to increase your boating safety by alerting you to potentially serious problems in the primary power system. Alarm systems are not intended to lessen or replace good maintenance and pre-cruise procedures. Refer to the engine owner’s manual for information on the alarms installed with your engines.

If the alarm sounds:

- Immediately throttle the engines back to idle.
- Shift the transmissions to neutral.

- Monitor the engine gauges to determine the cause of the problem.
- If necessary, shut off the engine and investigate until the cause of the problem is found.

1.3 Neutral Safety Switch

Every control system has a neutral safety switch incorporated into it. This device prohibits the engines from starting while the shift levers are in any position other than the neutral position. If an engine will not start, slight movement of the shift lever may be necessary to locate the neutral position and disengage the safety cutout switch. Control adjustments may be required to correct this condition should it persist. See your Scout dealer for necessary control adjustments.

Please refer to the Helm Control Systems chapter for more information on the neutral safety switch.

1.4 Engine Start Stop Switch

Your boat is equipped with an engine stop switch and lanyard. When the lanyard is pulled it will engage the

switch and shut off the engines. We strongly recommend that the lanyard be attached to the driver and the stop switch whenever the engines are running. If the engines will not start, it could be because the lanyard is not properly inserted into the engine stop switch. Always make sure the lanyard is properly attached to the engine stop switch before attempting to start the engine.

Notice:

In some states, the law requires a lanyard attached to the driver at all times.

Notice:

It is recommended that you carry an extra stop switch lanyard and instruct at least one other crew member on the operation of the stop switch and location of the extra lanyard.

1.5 Required Safety Equipment

Besides the equipment installed on your boat by Scout, certain other equipment is required by the U.S. Coast Guard to help ensure passenger safety. Items like a sea anchor, working anchor, extra dock lines, flare pistol, life vests, a line permanently secured to your ring buoy, etc., could at some time save your passengers' lives or save your boat from damage.

Refer to the "Federal Requirements And Safety Tips For Recreational Boats" pamphlet for a more detailed description of required equipment. You also can contact the U.S. Coast Guard Boating Safety Hotline, 800- 368-5647, for information on boat safety courses and brochures listing the Federal equipment requirements. Also, check your local and state regulations. The Coast Guard Auxiliary offers a "Courtesy Examination." This inspection will help ensure that your boat is equipped with all of the necessary safety equipment. The following is a list of the accessory equipment required on your boat by the U.S. Coast Guard:

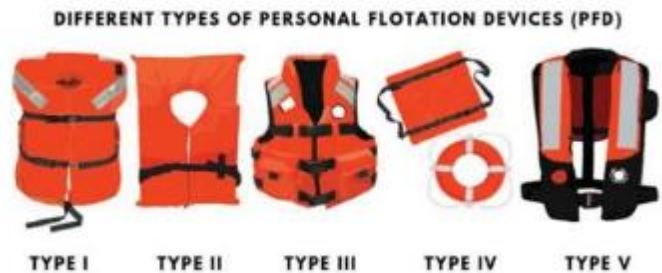
Personal Floatation Devices (PFDs):

PFDs must be Coast Guard approved, in good and serviceable condition and of appropriate size for the intended user. Wearable PFDs must be readily accessible, meaning you must be able to put them on in a reasonable amount of time in an emergency. Though not required, the Coast Guard emphasizes that PFDs should be worn at all times when the vessel is underway. Throwable devices must be immediately available for use. All Scout boats must be equipped with at least one Type I, II or III PFD for each person on board, plus one throwable device (Type IV).

Notice:

Many state laws now require that children 13 years old and under must wear a PFD at all times. Anyone being towed on skis, wakeboards and other water sports equipment is considered

a passenger on the boat and must wear a Coast Guard approved life jacket at all times.



Visual Distress Signals:

All boats used on coastal waters, the Great Lakes, territorial seas and those waters connected directly to them, must be equipped with Coast Guard approved visual distress signals. These signals are either Pyrotechnic or Non-Pyrotechnic devices.

Pyrotechnic Visual Distress Signals: Pyrotechnic visual distress signals must be Coast Guard approved, in serviceable condition and readily accessible. They are marked with a date showing the service life, which must not have expired. A minimum of three are required. Some pyrotechnic signals meet both day and night use requirements. They should be stored in a cool, dry location. They include:

- Pyrotechnic red flares, handheld or aerial.
- Pyrotechnic orange smoke, hand-held or floating.
- Launchers for aerial red meteors or parachute flares.



WARNING



PYROTECHNICS ARE UNIVERSALLY RECOGNIZED AS EXCELLENT DISTRESS SIGNALS. HOWEVER, THERE IS POTENTIAL FOR INJURY AND PROPERTY DAMAGE IF NOT PROPERLY HANDLED. THESE DEVICES PRODUCE A VERY HOT FLAME AND THE RESIDUE CAN CAUSE BURNS AND IGNITE FLAMMABLE MATERIAL. PISTOL LAUNCHED AND HAND-HELD PARACHUTE FLARES AND METEORS HAVE MANY CHARACTERISTICS OF A FIREARM AND MUST BE HANDLED WITH CAUTION. IN SOME STATES THEY ARE CONSIDERED A FIREARM AND PROHIBITED FROM USE. ALWAYS BE EXTREMELY CAREFUL AND FOLLOW THE MANUFACTURER'S INSTRUCTIONS EXACTLY WHEN USING PYROTECHNIC DISTRESS SIGNALS.

Non-Pyrotechnic Devices:

Non-Pyrotechnic visual distress signals must be in serviceable condition, readily accessible and certified by the manufacturer as complying with U.S. Coast Guard requirements. They include:

- Orange Distress Flag (Day use only) The distress flag is a day signal only. It must be at least 3 x 3 feet with a black square and ball on an orange background. It is most distinctive when attached and waved from a paddle or boat hook.
- Electric Distress Light (Night use only) The electric distress light is accepted for night use only and must automatically flash the international SOS distress signal. Under "Inland Navigation Rules", a high intensity white light flashing at regular intervals from 50-70 times per minute is considered a distress signal.

Sound Signaling Devices:

The navigation rules require sound signals to be made under certain circumstances. Recreational vessels also are required to sound fog signals during periods of reduced visibility. Therefore, you must have some means of making an efficient sound signal.

Navigation Lights:

Recreational boats are required to display navigation lights between sunset and sunrise and other periods of reduced visibility (fog, rain, haze, etc.) Navigation lights are intended to keep other vessels informed of your presence and course. Your boat is equipped with navigation lights required by the U.S. Coast Guard at the time of manufacture. It is up to you to make sure they are operational and turned on when required.

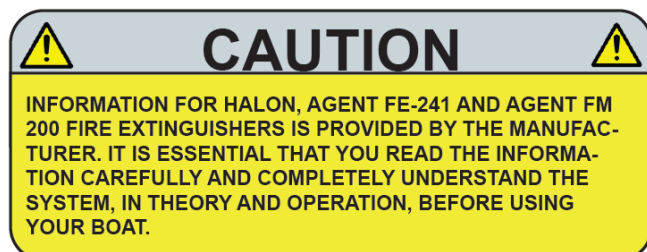
Fire Extinguishers:

Your boat is required to have two Marine Type USCG approved fire extinguishers. Coast Guard approved fire extinguishers are hand-portable, either B-I or B-II classification and have a specific marine type mounting bracket. It is recommended that the extinguishers be mounted in a readily accessible position. Fire extinguishers require regular inspections to ensure that the seals aren't broken or tampered with, the pressure gauge is in the operable range, and that there is no obvious physical damage.



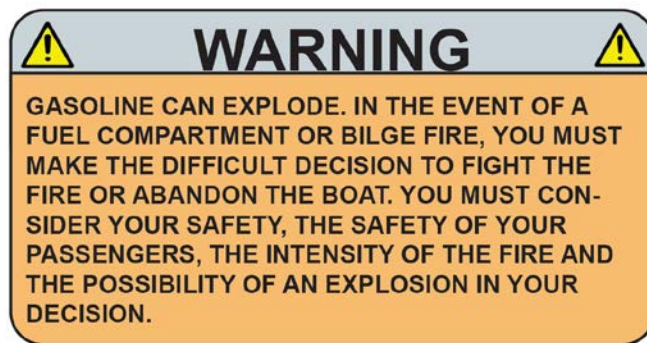
Refer to the "Federal Requirements and Safety Tips for Recreational Boats" pamphlet or contact the U.S. Coast Guard Boating Safety Hotline, 1-800-

368-5647, for information on the type and size fire extinguisher required for your boat. Please refer to the information provided by the fire extinguisher manufacturer for instructions on the proper maintenance and use of your fire extinguisher.



1.6 Bilge & Fuel Fires

Fuel compartment and bilge fires are very dangerous because of the presence of gasoline in the various components of the fuel system and the possibility for explosion. You must make the decision to fight the fire or abandon the boat. If the fire cannot be extinguished quickly or it is too intense to fight, abandoning the boat may be your only option. If you find yourself in this situation, make sure all passengers have a life preserver on and go over the side and swim well upwind of the boat. This will keep you and your passengers well clear of any burning fuel that could be released and spread on the water as the boat burns or in the event of an explosion. When clear of the danger, check about and account for all those who were aboard with you. Give whatever assistance you can to anyone in need or in the water without a buoyant device. Keep everyone together in a group for morale and to aid rescue operations.



1.7 Carbon Monoxide Monitoring System

The carbon monoxide (CO) detector is installed in the cabin as standard equipment and warns the occupants of dangerous accumulations of carbon monoxide gas. If excess carbon monoxide fumes are detected, the detector will sound an alarm indicating the presence of the toxic gas. Should a very high level of carbon monoxide exist, the alarm will sound in a few minutes. However, if small quantities of CO are present or high levels are short-lived, the alarm will accumulate the information and determine when an alarm level has been reached. The carbon monoxide detector is automatically activated whenever the House battery is connected. The power light on the carbon monoxide detector should be lit to indicate that the carbon monoxide detector is activated.

Always make sure the power light on the carbon monoxide detector is lit whenever the cabin is occupied.

A by-product of combustion, carbon monoxide (CO) is invisible, tasteless, odorless and is produced by all engines, heating and cooking appliances. The most common sources of CO on boats are engines, auxiliary generators and propane or butane stoves. These produce large amounts of CO and should never be operated while sleeping. A slight buildup of carbon monoxide over several hours causes headache, nausea and other symptoms that are similar to food poisoning, motion sickness or flu. High concentrations can be fatal within minutes. Many cases of carbon monoxide poisoning indicate that while victims are aware they are not well, they become so disoriented they are unable to save themselves by either exiting the area or calling for help.

Also, young children, elderly persons, and pets may be the first affected. Drug or alcohol use increases the effect of CO exposure. Individuals with cardiac or respiratory conditions are very susceptible to the dangers of carbon monoxide. CO poisoning is especially dangerous during sleep when victims are unaware of any side effects. The following are symptoms which may signal exposure to CO:

- Persons who have been exposed to carbon monoxide should be moved into fresh air immediately. Have the victim breathe deeply and seek immediate medical attention. To learn more about CO poisoning, contact your local health authorities. Low levels of carbon monoxide over an extended period can be just as lethal as high doses over a short period. Therefore, low levels of carbon monoxide can cause the alarm to sound before the occupants of the boat notice any symptoms of carbon monoxide poisoning. CO detectors are very reliable and rarely sound false alarms. If the alarm sounds, always assume the hazard is real and move

You should read the owner's manual supplied by the CO detector manufacturer and included with this manual for operation instructions and additional information regarding the hazards of carbon monoxide gas. Refer to the Ventilation System chapter for information on ventilating your boat properly while underway and other precautions while at anchor or in a slip. This is especially essential if your boat is equipped with a generator. Many manufacturers of carbon monoxide detectors offer a testing and recertification program. We recommend that you contact the manufacturer of your carbon monoxide detector and have it tested and recertified periodically.

[illegible]

It is the operator's responsibility to be familiar with the proper first-aid procedures and be able to care for minor injuries or illnesses of your passengers. In

an emergency, you could be far from professional medical assistance. We strongly recommend that you be prepared by receiving training in basic first aid and CPR. This can be done through classes given by the Red Cross or your local hospital.

Your boat should also be equipped with at least a simple marine first-aid kit and a first-aid manual. The marine first-aid kit should be designed for the marine environment and be well supplied. It should be accessible and each person on board should be aware of its location. As supplies are used, replace them promptly. Some common drugs and antiseptics may lose their strength or become unstable as they age. Ask a medical professional about the supplies you should carry and the safe shelf life of prescription drugs or other medical supplies that may be in your first-aid kit. Replace questionably old supplies whether they have been used or not. In many emergency situations, the Coast Guard can provide assistance in obtaining medical advice for the treatment of serious injuries or illness. If you are within VHF range of a Coast Guard Station, make the initial contact on channel 16 and follow their instructions.

1.9 Additional Safety Equipment

Besides meeting the legal requirements, prudent boaters carry additional safety equipment. This is particularly important if you operate your boat offshore. You should consider the following items, depending on how you use your boat.

Satellite EPIRBS

EPIRBS (Emergency Position Indicating Radio Beacon) operate as part of a worldwide distress system. When activated, EPIRBS will send distress

code homing beacons that allow Coast Guard aircraft to identify and find them quickly. The satellites that receive and relay EPIRB signals are operated by the National Oceanic and Atmospheric Administration (NOAA) in the United States. The EPIRB should be mounted and registered according to the instructions provided with the beacon, so that the beacon's unique distress code can be used to quickly identify the boat and owner.

Marine Radio

A marine radio is the most effective method of receiving information and requesting assistance. VHF marine radios are used near shore and single sideband radios are used for long range communication. There are specific frequencies to use in an emergency. The VHF emergency channel is 16 in the United States. You should read the owner's manual for your radio and know how to use it in an emergency or for normal operation. If you hear a distress call, you should assist or monitor the situation until help is provided.

Additional equipment to consider:

- | | |
|--------------------|----------------------------|
| • Cell Phone | • Spare Anchor |
| • Fenders | • Heaving Line |
| • Mirror | • First Aid Kit |
| • Tool Kit | • Flashlight |
| • Anchor | • Batteries |
| • Boat Hook | • Search Light |
| • Mooring Lines | • Sunburn Lotion |
| • Binoculars | • Ring Buoy |
| • Extra Clothes | • Whistle or Horn |
| • Chart | • Portable Radio |
| • Compass | • Marine Hardware |
| • Food and Water | • Spare Keys |
| • Sunglasses | • Spare Parts |
| • Spare Propellers | • Spare Propeller Hub Kits |

1.10 Caution & Warning Labels

The caution and warning labels shown are examples of the labels that could be on your boat. The actual labels and their location could vary on your boat.



[illegible]

Chapter 2: Operation

2.1 General

Before you start the engines on your Scout, you should have become familiar with the various component systems and their operation and have performed a “Pre-Cruise System Check.” A thorough understanding of the component systems and their operation is essential to the proper operation of the boat. This manual and the associated manufacturers’ information is provided to enhance your knowledge of your boat. Please read them carefully.

Your boat must have the necessary safety equipment on board and be in compliance with the U.S. Coast Guard, local and state safety regulations. There should be one Personal Flotation Device (PFD) for each person. Non-swimmers and small children should wear PFDs at all times. You should know and understand the “Rules of the Road” and have had an experienced operator brief you on the general operation of your new boat. At least one other person should be instructed on the proper operation of the boat in case the operator is suddenly incapacitated.

The operator is responsible for his safety and the safety of his passengers. When boarding or loading the boat, always step onto the boat, never jump. All passengers should be properly seated whenever the boat is operated above idle speed. Your passengers should not be allowed to sit on the seat backs, gunnels, bows or transoms whenever the boat is underway. The passengers should also be seated to properly balance the load and must not obstruct the operator’s view, particularly to the front.

Overloading and improper distribution of weight can cause the boat to become unstable and are significant causes of accidents. Know the weight capacity and horsepower rating of your boat. Do not overload or overpower your boat.

You should be aware of your limitations and the limitations of your boat in different situations or sea conditions. No boat is indestructible, no matter how well it is constructed.

Any boat can be severely damaged if it is operated in a manner that exceeds its design limitations. If the ride is hard on you and your passengers, it is hard on the boat as well. Always modify the boat speed in accordance with the sea conditions, boat traffic and weather conditions.

Remember, it is the operator’s responsibility to use good common sense and sound judgement in loading and operating the boat.

2.2 Rules of the Road

As in driving an automobile, there are a few rules you must know for safe boating operation. The following information describes the basic navigation rules and actions to be taken by vessels in crossing, meeting, or overtaking situations while operating in inland waters. These are basic examples and not intended to teach all the rules of navigation. For further information consult the “Navigation Rules” or contact the Coast Guard, Coast Guard Auxiliary, Department of Natural Resources or your local boat club. These organizations sponsor courses in boat handling, including rules of the road. We strongly recommend such courses. Books or videos on this subject also are available from your local library.

Notice:

Sailboats not under power, paddle boats, vessels unable to maneuver, vessels engaged in commercial fishing and other vessels without power have the right-of-way over motor powered boats. You must stay clear or pass to the stern of these vessels. Sail-boats under power are considered motorboats.

Crossing Situations

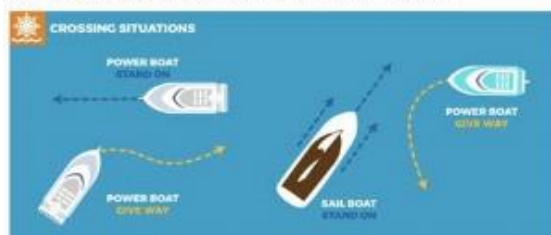
When two motorboats are crossing, the boat on the right has the right-of-way. The boat with the right-of-way should maintain its course and speed. The other vessel should slow down and permit it to pass. The boats should sound the appropriate signals.

Meeting Head-on or Nearly-So Situations

When two motorboats are approaching each other head-on or nearly head-on, neither boat has the right-of-way. Both boats should reduce their speed

and turn to the right to pass from port side to port side, providing enough clearance for safe passage. The boats should sound the appropriate signals.

Crossing Situation - boat to the starboard side is the stand-on boat



Meeting Head-on Situation - head on, port-to-port passing is preferred



Meeting Head-on Situation - specifically for sailboats



Overtaking Situation - both port-side or starboard-side passing are acceptable



Overtaking Situations

When one motorboat is overtaking another motorboat, the boat that is being passed has the right-of-way. The overtaking boat must make the adjustments necessary to provide clearance for a safe passage of the other vessel. The boats should sound the appropriate signals.

The General Prudential Rule

In obeying the Rules of the Road, due regard must be given to all dangers of navigation and collision and to any special circumstances, including the limitations of the vessels, which may justify departure from the rules that are necessary to avoid immediate danger or a collision.

Night Operation

Recreational boats are required to display navigation lights between sunset and sunrise and other periods of reduced visibility such as fog, rain, haze, etc. When operating your boat at night you should:

- Make sure your navigation lights are on and working properly. Navigation lights warn others of your position and course and the position and course of other vessels.
- All navigation rules apply. If the bow light of another vessel shows red, you should give way to that vessel, if it shows green, you have the right-of-way.
- Slow down and never operate at high speeds when operating at night, stay clear of all boats and use good common sense. Always be ready to slow down or steer clear of other vessels, even if you have the right-of-way.
- Avoid bright lights that can destroy night vision, making it difficult to see navigation lights and the lights of other boats. You and your passengers should keep a sharp lookout for hazards, other boats and navigational aids.

Navigation Aids

Aids to navigation are placed along coasts and navigable waters as guides to mark safe water and to assist mariners in determining their position in relation to land and hidden dangers. Each aid to navigation is used to provide specific information. You should be familiar with these, and any other markers used in your boating area.

Notice:

Storms and wave action can cause buoys to move. You should not rely on buoys alone to determine your position.

Scan this barcode to watch a video on the operation of a boat.





U.S. AIDS TO NAVIGATION SYSTEM on navigable waters except Western Rivers

LATERAL SYSTEM AS SEEN ENTERING FROM SEAWARD

PORT SIDE ODD NUMBERED AIDS	PREFERRED CHANNEL NO NUMBERS - MAY BE LETTERED	PREFERRED CHANNEL NO NUMBERS - MAY BE LETTERED	STARBOARD SIDE EVEN NUMBERED AIDS
<p>GREEN LIGHT ONLY</p> <p>FLASHING (2) </p> <p>FLASHING </p> <p>OCCLUDING </p> <p>QUICK FLASHING </p> <p>ISO </p>	<p>PREFERRED CHANNEL TO STARBOARD TOPMOST BAND (GREEN)</p> <p>GREEN LIGHT ONLY</p> <p>COMPOSITE GROUP FLASHING (2+1) </p>	<p>PREFERRED CHANNEL TO PORT TOPMOST BAND (RED)</p> <p>RED LIGHT ONLY</p> <p>COMPOSITE GROUP FLASHING (2+1) </p>	<p>RED LIGHT ONLY</p> <p>FLASHING (2) </p> <p>FLASHING </p> <p>OCCLUDING </p> <p>QUICK FLASHING </p> <p>ISO </p>
<p>1</p> <p>LIGHT</p> <p>9</p> <p>LIGHTED BUOY</p> <p>5</p> <p>CAN</p> <p>5</p> <p>DAYBOARD</p>	<p>A</p> <p>LIGHT</p> <p>S</p> <p>LIGHTED BUOY</p> <p>T</p> <p>CAN</p> <p>S</p> <p>DAYBOARD</p>	<p>B</p> <p>LIGHT</p> <p>C</p> <p>LIGHTED BUOY</p> <p>G</p> <p>CAN</p> <p>G</p> <p>DAYBOARD</p>	<p>2</p> <p>LIGHT</p> <p>8</p> <p>LIGHTED BUOY</p> <p>6</p> <p>CAN</p> <p>2</p> <p>DAYBOARD</p>

AIDS TO NAVIGATION HAVING NO LATERAL SIGNIFICANCE

ISOLATED DANGER NO NUMBERS - MAY BE LETTERED	SAFE WATER NO NUMBERS - MAY BE LETTERED
<p>WHITE LIGHT ONLY</p> <p>A</p> <p>LIGHTED</p> <p>C</p> <p>UNLIGHTED</p>	<p>WHITE LIGHT ONLY</p> <p>W</p> <p>LIGHTED AND/OR SOUND</p> <p>A</p> <p>MR</p> <p>B</p> <p>SPHERICAL</p> <p>N</p> <p>UNLIGHTED AND/OR SOUND</p>
<p>DAYBOARDS - MAY BE LETTERED</p> <p>NE</p> <p>NG</p> <p>NB</p>	<p>RANGE DAYBOARDS - MAY BE LETTERED</p> <p>KDW KWG KWB KBW KWR KRW KRB KBR KGB KGB KGR KRG</p>
<p>SPECIAL MARKS - MAY BE LETTERED</p> <p>A</p> <p>UNLIGHTED</p> <p>B</p> <p>LIGHTED</p>	<p>YELLOW LIGHT ONLY</p> <p>FIXED FLASHING</p> <p>A</p> <p>UNLIGHTED</p> <p>B</p> <p>LIGHTED</p>

Aids to Navigation marking the Intracoastal Waterway (ICW) display unique yellow symbols to distinguish them from aids marking other waters. Yellow triangles indicate aids should be passed by keeping them on the starboard (right) hand of the vessel. Yellow squares indicate aids should be passed by keeping them on the port (left) hand of the vessel. A yellow horizontal band provides no lateral information, but simply identifies aids as marking the ICW.

TYPICAL INFORMATION AND REGULATORY MARKS			
<p>NOORING BUOY</p> <p>WHITE WITH BLUE BAND</p> <p>MAY SHOW WHITE REFLECTOR OR LIGHT</p>	<p>SWM AREA</p> <p>EXPLANATION MAY BE PLACED OUTSIDE THE CHESSED DIAMOND SHAPE, SUCH AS DANGER, ROCK, SEAL, DIAL, ETC.</p>	<p>ROCK</p> <p>THE NATURE OF DANGER MAY BE INDICATED INSIDE THE DIAMOND SHAPE, SUCH AS ROCK, BRICK, SEAL, DIAL, ETC.</p>	<p>SLOW</p> <p>TYPE OF CONTROL IS INDICATED IN THE CIRCLE, SUCH AS SLOW, NO RARE, ANCHORAGE, ETC.</p>
<p>WHEEL LAKE</p> <p>FOR DISPLAYING INFORMATION, SUCH AS DIRECTIONS, DISTANCES, LOCATIONS, ETC.</p>	<p>BUOY USED TO DISPLAY REGULATORY MARKS</p>	<p>5</p> <p>MAY SHOW WHITE LIGHT MAY BE LETTERED</p>	<p>DANGER</p>

PLATE 1

2.3 Pre-Cruise Check

Before Starting the Engines:

- Check the weather forecast and sea conditions before leaving the dock. Decide if the planned cruise can be made safely.
- Be sure all required documents are on board.
- Be sure all necessary safety equipment is on board and operative. This should include items like running lights, spotlight, life saving devices, etc. Please refer to the Safety Equipment chapter for additional information on safety equipment.
- Make sure you have signal kits and flare guns aboard and they are current and in good operating condition.
- Be sure you have sufficient water and other provisions for the planned cruise.
- Leave a written message listing detail of your planned cruise with a close friend ashore (Float Plan). The float plan should include a description of your boat, where you intend to cruise and a schedule of when you expect to arrive in the cruising area and when you expect to return. Keep the person informed of any changes in your plan to prevent false alarms. This information will tell the authorities where to look and the type of boat to look for in the event you fail to arrive.
- Check the amount of fuel on board. Observe the "Rule of Thirds": one third of the fuel for the trip out, one third to return and one third in reserve. An additional 15% may be consumed in rough seas.
- Check the water separating fuel filters for leaks or corrosion.
- Check the crankcase oil level in each engine.
- Turn the battery switches on.
- Check the bilge water level. Look for other signs of potential problems. Monitor for the scent of fuel fumes.
- Test the automatic and manual bilge pump switches to make sure the systems are working properly. This is particularly important before running offshore.

Have a tool kit aboard. The kit should include the following basic tools:

- | | |
|---------------------------|----------------------------|
| • Hammer | • Electrician's tape |
| • Screwdriver | • Offset screwdriver |
| • Lubricating oil | • Pliers |
| • Jackknife | • Adjustable wrench |
| • Basic 3/8" ratchet set | • Vise grip pliers |
| • Hex key set | • Needle nose pliers |
| • Wire crimping tool | • Wire connector set |
| • End wrench set | • Medium slip-joint pliers |
| • Diagonal cutting pliers | • DC electrical test light |



WARNING

THERE MUST BE AT LEAST ONE PERSONAL FLOTATION DEVICE ON BOARD FOR EVERY PERSON ON BOARD AND ONE THROW-OUT FLOTATION DEVICE. CHECK THE U.S. COAST GUARD STANDARDS FOR THE CORRECT TYPE OF DEVICE FOR YOUR BOAT



Have the following spare parts on board:

- | | |
|------------------------------|----------------------------|
| • Extra light bulbs | • Clamps |
| • Fuses and circuit breakers | • Spare bilge pump |
| • Assorted stainless screws | • Spark plugs |
| • Flashlight | • Main 12 volt fuses |
| • Batteries | • Assorted stainless bolts |
| • Engine oil | • Drain plugs |
| • Fuel filters | • Propellers |
| • Fuel hose | • Propeller hub kits |
| • Assorted hose clamps | • Wire ties |
| | • Rags |
- Make sure all fire extinguishers are in position and in good operating condition.
 - Check the engine and steering controls for smooth and proper operation. Be sure the shift controls are in the neutral position.
 - Be sure the emergency stop lanyard is attached to the operator and the stop switch.
 - Refer to the engine owner's manual for preoperational checks specific to your engines.

2.4 Operating Your Boat

After Starting your Engines:

- Visibly check the engines to be sure there aren't apparent water, fuel or oil leaks.

- Check the operation of the engine cooling systems by monitoring the water flowing from the bypass ports.
- Check the controls and steering for smooth and proper operation.
- Have a safe cruise and enjoy yourself.

Remember:

- When you operate a boat, you accept responsibility for the boat, for the safety of passengers and for others out enjoying the water.
- Alcohol and any drugs can severely reduce your reaction time and affect your better judgement.
- Alcohol severely reduces the ability to react to several different signals at once.
- Alcohol makes it difficult to correctly judge speed and distance or track moving objects.
- Alcohol reduces night vision and the ability to distinguish red from green.



- Make sure one other person on the boat is instructed in the operation of the boat.
- Make sure the boat is operated in compliance with all state and local laws governing the use of a boat.
- Always operate the blower whenever the generator is running to remove fumes and help cool the equipment compartment.



- Avoid sea conditions that are beyond the skill and experience of you and your crew. Learn to understand weather patterns and indications for change. You should monitor NOAA weather broadcasts before leaving port and periodically while boating. If the weather deteriorates or a storm approaches, seek shelter in a safe harbor.
- Use caution during periods of reduced visibility due to weather or operation conditions. Reduce speed and designate a passenger to be a lookout for other boats, obstacles and navigational markers until you reach port or conditions improve.
- Your Scout is a heavy boat that will produce a large wake at certain speeds. You are responsible for damage and injury caused by your boat's wake. Always observe no wake zones and be aware that your wake can endanger small vessels and their passengers. Always be courteous and slow down to reduce your wake when passing smaller boats.
- Before operating the boat for the first time, read the engine break-in procedures. The break-in procedures are found in the owner's manual for the engines. The manual is in the literature packet.
- As different types of engines are used to power the boat, have the dealer describe the operating procedures for your boat. For more instructions on "How to Operate the Boat", make sure you read the instructions given to you in the owner's manual for the engines you have selected.

Notice:

For more instructions on safety, equipment and boat handling, enroll in one of the several free boating courses offered. For information on the courses offered in your area, call the "Boating Course Hotline," 1-800-368-5647 or on the WEB at www.uscgboating.org.

Notice:

If the running gear hits an underwater object, stop the engines. Inspect the propulsion system for damage. If the system is damaged, contact

your dealer for a complete inspection and repair of the unit.

To stop the boat, follow this procedure:

- Allow the engines to drop to idle speed.
- Make sure the shifting levers are in the neutral position.

Notice:

If the engines have been running at high speed for a long period of time, allow the engines to cool down by running the engines in the idle position for 3 to 5 minutes.

- Turn the ignitions to the “OFF” position.
- Raise the trim tabs to the full up position.

After Operation:

- If operating in saltwater, wash the boat and all equipment with soap and water. Flush the engines using freshwater. Refer to the engine owner’s manual for instructions on flushing your outboard engines.
- Check the bilge area for debris and excess water.
- Fill the fuel tank to near full to reduce condensation. Allow enough room in the tank for the fuel to expand without being forced out through the vent.
- Turn off all electrical equipment except the automatic bilge pumps.
- If you are going to leave the boat for a long period of time, put the battery main switches in the “OFF” position and close all seacocks.
- Make sure the boat is securely moored.



2.5 Docking, Anchoring & Mooring

Docking and Dock Lines

Maneuvering the boat near the dock and securing the boat requires skill and techniques that are unique to the water and wind conditions and the layout of the dock. If possible, position a crew

member at the bow and stern to man the lines and assist in docking operations. While maneuvering close to the dock consideration must be given to the wind and current. You should anticipate the effect these forces will have on the boat and use them to help put the boat where you want it. It is important to practice in open water using an imaginary dock enough to develop a sense for the way your boat handles in a variety of docking scenarios. You must be able to foresee the possibilities and have solutions in mind before problems occur.

Approaching a dock or backing into a slip in high winds or strong currents requires a considerable amount of skill. If you are new to boat handling, you should take lessons from an experienced pilot to learn how to maneuver your boat in tight quarters in less-than-ideal conditions. You should also practice away from the dock during windy conditions.

Dock lines are generally twisted or braided nylon. Nylon is strong and stretches to absorb shock. It also has a long life and is soft and easy on the hands. The line’s size will vary with the size of the boat. Typically, a 32-to-46-foot boat will use 1/2-inch line, a 37 to 45 foot boat will use 5/8-inch line, and a 46 to 54 foot boat will use 3/4-inch line. The number of lines and their configuration will vary depending on the dock, the range of the tide and many other factors. Usually a combination of bow, stern and spring lines is used to secure the boat.

Scan this QR code to watch a video for some tips on docking and anchoring.



Maneuvering to a Dock

Approach the dock slowly at a 30-to-40-degree angle. Whenever possible, approach against the wind or current. Turn the engines straight & shift to neutral when you feel you have enough momentum to reach the dock. Use reverse on the outboard engine while turning the steering wheel towards the dock to slow the boat and pull the stern toward the dock as the boat approaches. Straighten the engines and use both engines to stop the boat if it is still moving forward against the pilings. If you executed your approach properly, the boat will lightly touch the pilings at the same time the forward momentum is stopped. Have the dock lines ready and secure the boat as soon as it stops. Use fenders to protect the boat while it is docked. Keep the engines running until the lines are secured.

Notice:

Your boat is equipped with twin, triple, or quad engines and electronic control systems. Depending on the control system options selected, the following conditions could apply that will affect the handling of your boat as you maneuver to the dock:

If you are using the engine shift and throttle controls to maneuver the boat, we recommend turning the center engine or engines off and using the port and starboard engines to maneuver the boat to the dock or back it into a slip.

If your boat is equipped with a joystick integrated into the engine control system and you are using the joystick to maneuver the boat, you should leave all engines running while using the joystick control to maneuver the boat to the dock or back into the slip.

Note: that most joystick controls will be deactivated if either throttle/shift control lever is moved while maneuvering the boat.

Electronic control system and joystick operation is unique to the engines installed on your boat. Operation manuals for the engines and control systems are included with this manual. You should read these manuals thoroughly and understand the control system in theory and operation before operating your boat. Additionally, your dealer should demonstrate the operation of the control system and instruct you in operating the controls properly.

Backing into a Slip

Approach the slip with the stern against the wind or current and the engines straight ahead. Use the engines and turn the steering wheel to maneuver the boat into alignment with the slip. Reverse the engines and slowly back into the slip. Shift from reverse to neutral frequently to prevent the boat from gaining too much speed. Move the stern right and left by shifting the engines in and out of gear or turning the wheel. When nearly in the slip all the way, straighten the engines and shift to forward to stop. Keep the engines running until the lines are secured.

Securing Dock Lines

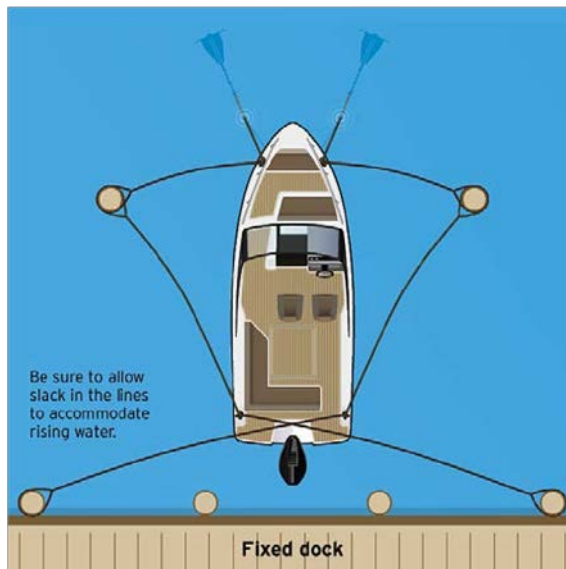
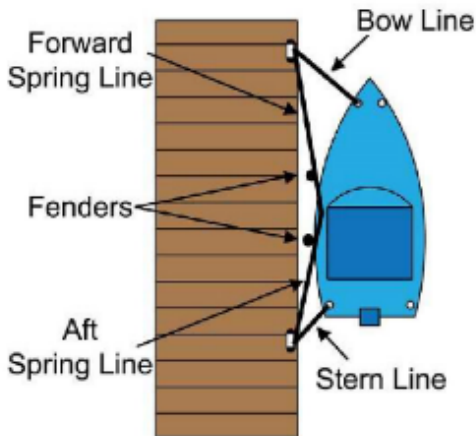
Securing a boat that is tied alongside the dock typically requires a bow and stern line and two spring lines. The bow and stern lines are usually secured to the dock at a 40° angle aft of the stern cleat and forward of the bow cleat. The after bow spring line is secured to the dock at a 40° angle aft of the after bow spring cleat. The forward quarter spring is secured to the dock at a 40° angle forward of the stern cleat. The spring lines keep the boat square to the dock and reduce fore and aft movement while allowing the boat to move up and down with the tide.

Securing a boat in a slip is somewhat different. It typically requires two bow lines secured to pilings on each side of the bow, two stern lines secured to the dock and two spring lines that prevent the boat from hitting the dock. The bow lines are typically secured with enough slack to allow the boat to ride the tide. The stern lines are crossed. One line runs from the port aft boat cleat to the starboard dock cleat and the other line runs from the starboard aft boat cleat to the port cleat on the dock. The stern lines center the boat, control the forward motion and allow the boat to ride the tide. Two forward quarter spring lines typically are secured to the stern cleats and to midship pilings or cleats. The spring lines keep the boat from backing into the dock while allowing it to ride the tide.

Leaving the Dock

Always start the engines and let them warm up for several minutes before releasing the lines.

Boats steer from the stern and it is important that you achieve enough clearance at the stern to maneuver the boat as quickly as possible. Push the stern off and maneuver such that you get stern clearance quickly. Proceed slowly until well clear of the dock and other boats.



Mooring

Approach the mooring heading into the wind or current. Shift to neutral when you have just enough headway to reach the buoy. Position a crew member on the bow to retrieve the mooring line with a boat hook and secure the line. Keep the engines running until the line is secured.

Leaving a Mooring

Start the engines and let them warm up for several minutes before releasing the mooring line. The boat will already be headed into the wind, so move it forward enough to loosen the line and untie it. Back the boat away from the mooring until you can see the buoy. Move the boat slowly away from the mooring.

Anchoring

Make sure the bitter end of the anchor line is attached to the boat before dropping the anchor. Bring the bow into the wind or current and put the engine in neutral. When the vessel comes to a stop, lower the anchor over the bow. Pay out anchor line so that it is at least 5 to 7 times the depth of the water and secure the line to a cleat. Use caution to avoid getting your feet or hands tangled in the line. An additional scope of 10 times the depth may be required for storm conditions. Check landmarks on shore or your GPS position to make sure the anchor is not dragging. If it is dragging, you will have to start all over. It is prudent to use two anchors at the bow if you are anchoring overnight or in rough weather.

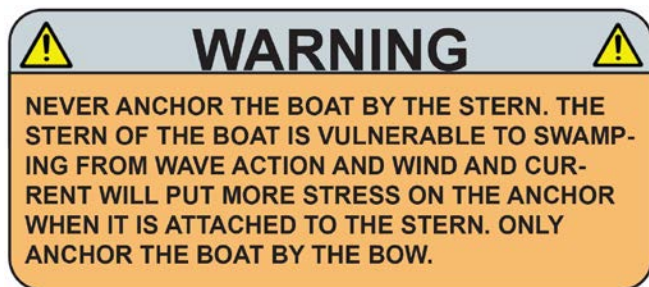
After the anchor is set, the windlass must not be left to take the entire force from the anchor line. Boats lying to their anchor in a high swell or heavy weather conditions will snub on the line. This can cause slippage or apply excessive loads to the windlass. The line should always be made fast to a bow cleat to relieve the load on the windlass.

Do not set a bow and stern anchor when mooring, only anchor from the bow. The stern anchor will not allow the boat to swing with the current and wind. If you are anchored in a mooring with other boats, your boat will not swing with the other boats in the mooring, creating potential for contact with another boat when the tide or wind changes. Additionally, having the stern to the wind or tide creates a potentially hazardous situation for the boat and crew.

Releasing the Anchor

Release the anchor by driving the boat slowly to the point where the anchor line becomes vertical. It

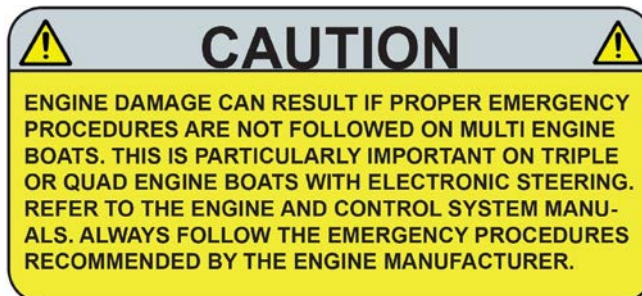
should be released when you pass that point. If the anchor doesn't release right away, stop the boat directly above the anchor and tie the line to the cleat as tight as possible. The up and down movement of the boat will usually loosen the anchor within a minute. Make sure you secure the anchor and properly stow the line before operating the boat.



2.6 Controls, Steering, or Propulsion System Failure

If the propulsion, control or steering system fails while you are operating the boat, bring the throttles to idle and shift to neutral. Decide whether you need to put out the anchor to prevent the boat from drifting or to hold the bow into the sea. Investigate and correct the problem if you can. Turn the engine off before opening the engine cowling to make repairs. If you are unable to correct the problem, call for help.

If only one engine has failed, you can usually run home on the other engines. Be careful not to apply too much power to the engines that are running. When one or more engines are not operating on a multi engine boat, the remaining engine or engines are over propped and can be overloaded if too much throttle is applied. You should contact your dealer or the engine manufacturer for the maximum power settings when running without one engine.



2.7 Collision



If your boat is involved in a collision with another boat, dock, piling or a sandbar, your priority is to check your passengers for injuries and administer first aid if necessary. Once your passengers' situations are stabilized, thoroughly inspect the boat for damage. Check below decks for leaks and the control systems for proper operation. Plug all leaks or make the necessary repairs to the control systems before proceeding slowly and carefully to port. Request assistance if necessary. Haul the boat and make a thorough inspection of the hull and running gear for damage.

2.8 Grounding, Towing & Rendering Assistance



The law requires the owner or operator of a vessel to render assistance to any individual or vessel in distress, if his vessel is not endangered in the process. If the boat should become disabled or if another craft that is disabled requires assistance, great care must be taken. The stress applied to a boat during towing may become excessive. Excessive stress can damage the structure of the boat and create a safety hazard for those aboard.

Freeing a grounded vessel or towing a boat that is disabled, requires specialized equipment and knowledge. Line failure and structural damage caused by improper towing have resulted in fatal injuries.



Because of this, we strongly suggest that these activities be left to those who have the equipment and knowledge, e.g., the U.S. Coast Guard or a commercial towing company, to safely accomplish the towing task.


DANGER


THE MOORING CLEATS ON SCOUT BOATS ARE NOT DESIGNED OR INTENDED TO BE USED FOR TOWING PURPOSES. THESE CLEATS ARE SPECIFICALLY DESIGNED AS MOORING CLEATS FOR SECURING THE BOAT TO A DOCK, PIER, ETC. DO NOT USE THESE FITTINGS FOR TOWING OR ATTEMPTING TO FREE A GROUNDING VESSEL.


WARNING


WHEN TOWING OPERATIONS ARE UNDERWAY, HAVE EVERYONE ABOARD BOTH VESSELS STAY CLEAR OF THE TOW LINE AND SURROUNDING AREA. A TOW LINE THAT SHOULD BREAK WHILE UNDER STRESS CAN BE VERY DANGEROUS AND COULD CAUSE SERIOUS INJURY OR DEATH.


WARNING


RUNNING AGROUND CAN CAUSE SERIOUS INJURY TO PASSENGERS AND DAMAGE TO A BOAT AND ITS UNDERWATER GEAR. IF YOUR BOAT SHOULD BECOME GROUNDING, DISTRIBUTE PERSONAL FLOTATION DEVICES AND INSPECT THE BOAT FOR POSSIBLE DAMAGE. THOROUGHLY INSPECT THE BILGE AREA FOR SIGNS OF LEAKAGE. AN EXPERIENCED SERVICE FACILITY SHOULD CHECK YOUR UNDERWATER GEAR AT THE FIRST OPPORTUNITY. DO NOT CONTINUE TO USE YOUR BOAT IF THE CONDITION OF THE UNDERWATER EQUIPMENT IS QUESTIONABLE.

2.9 Flooding or Capsizing

Boats can become unstable if they become flooded or completely swamped. You must always be aware of the position of the boat to the seas and the amount of water in the bilge. Water entering the boat through the transom door or over the stern gunnels can usually be corrected by closing the door and turning the boat into

the waves. If the bilge is flooding because of a hole in the hull or a defective hose, you may be able to plug it with rags, close the thru-hull valve or assist the pumps by bailing with buckets. Put a Mayday call in to the Coast Guard or nearby boats and

distribute life jackets as soon as you discover your boat is in trouble. If the boat becomes swamped and capsizes, you and your passengers should stay with the boat as long as you can. It is much easier for the Coast Guard, aircraft or other boats to spot, than people in the water. If your boat is equipped with an EPIRB, make sure it is activated. When activated, EPIRBs will send distress code homing beacons that allow Coast Guard aircraft to identify your boat and find you quickly.

2.10 Fishing

Fishing can be very exciting and distracting for the operator when the action gets intense. You must always be conscious of the fact that your primary responsibility is the safe operation of your boat and the safety of your passengers and other boats in the area. You must always make sure the helm is properly manned and is never left unattended while trolling. If your boat is equipped with a tower, caution and good common sense must be exercised whenever someone is in the tower. Remember, weight in the tower raises the boat's center of gravity and the boat's motion is greatly exaggerated for the person in a tower. If you are fishing in an area that is crowded with other fishing boats, it may be difficult to follow the rules of the road. This situation can become especially difficult when most boats are trolling. Being courteous and exercising good common sense is essential. Avoid trying to assert your right-of-way and concentrate on staying clear and preventing tangled or cut lines and other unpleasant encounters with other boats. Also keep in mind that fishing lines wrapped around a propeller shaft can damage seals in the engine lower unit.

2.11 Water Skiing and Wakeboarding

Your boat could be equipped for water skiing and wakeboarding. If you have never driven skiers before, you should spend some hours as an observer and learning from an experienced driver. If you are an experienced driver, you should take some time to become familiar with the boat and the way it handles before pulling a skier. The driver

should also know the skier's ability and drive accordingly. Always use high quality tow ropes with attachment loops when pulling wakeboarders or skiers and only attach the tow rope to the ski tow fittings on the optional ski tow bar. Never use mooring cleats or grab rails to pull skiers. They are not designed for towing skiers and injury to skiers or passengers and/or damage to the boat could result. The tow rope should always be attached using the attachment loops and never tied to the ski tow or to any type of metal hook attached to the tow fitting. Tied ski ropes are very difficult to remove and metal hooks will damage the ski tow fitting and the engine cowling. Metal hooks also can cause injury to your skiers if the metal hook breaks under the strain of the tow.

When attaching a tow rope using the attachment loops, hold the attachment loop in one hand and pull a length of rope on the handle side of the loop through the loop, creating another 6" loop. Slide the loop just created over the ski tow fitting and pull the handle side of the rope to tighten the loop around the tow fitting. This procedure will attach the rope securely to the ski tow, be easy to remove and will not come off if the skier or wakeboarder falls.

Notice

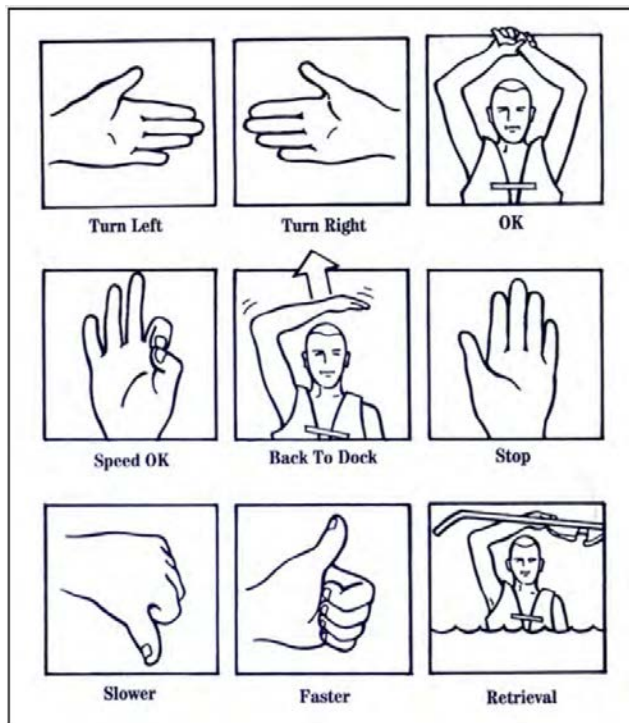
The optional ski tow bar is designed for towing water sports devices only. Do not tow more than one person at a time from the tow bar improper use or overloading the ski tow bar can cause damage to the tow bar and/or boat. Failure to adhere to these guidelines may result in personal injury to passengers.

The following safety precautions should be observed while towing water skiers.

- Water ski only in safe areas, away from other boats and swimmers, out of channels, and in water free of underwater obstructions. The area should be at least 5 feet deep, 3000 feet long and have at least 100' between each side of the boat and any obstructions.
- Make sure that anyone who skis can swim. Do not allow people who cannot swim to water ski.
- Be sure that the skier is wearing a proper life jacket. A water skier is considered on board the boat and a Coast Guard approved life jacket is required. It is advisable and recommended for a skier to wear a flotation device designed to withstand the impact of hitting the water at high speed.
- Make sure to inspect the ski equipment and tow rope before each ski session. Never use equipment that is damaged or with loose screws, torn boots, severe corrosion or tears in the fabric. You should also inspect the ski tow rope and replace if it is frayed, has unnecessary knots or damage. Never use a ski tow line that is questionable.
- Always carry a second person on board to observe the skier or wakeboarder so that your full attention can be given to the safe operation of the boat. The operator should pay attention to driving the boat and have the observer keep him updated on the skier. Never ski after dark. It is hazardous and illegal. Neither the boat operator or skier can see well enough to navigate at skiing or wakeboarding speeds safely at night.
- Never spray swimmers, boats, rafts or other skiers. The risk for a collision makes this dangerous for the skier and people being sprayed.
- Some lakes have an approved tow pattern for skiing. Always make sure to follow the pattern on these lakes.
- Never follow directly behind another boat while pulling skiers. Always stay a safe distance behind or off the side of other boat traffic. If the boat you are following stops unexpectedly, you may not be able to respond quickly enough, endangering your skier and occupants of both boats.

**WARNING**

MOVING PROPELLERS ARE DANGEROUS. THEY CAN CAUSE DEATH, LOSS OF LIMBS, OR OTHER SEVERE INJURY. DO NOT USE THE SWIM PLATFORM OR SWIM LADDER WHILE THE ENGINE IS RUNNING. STOP THE ENGINE IF DIVERS, SWIMMERS OR SKIERS ARE ATTEMPTING TO BOARD. ALWAYS PROPERLY STORE THE LADDER BEFORE STARTING THE ENGINE.



Common Water Sports Hand Signals

2.12 Tower Operation

Your boat could be equipped with an optional fabricated aluminum tower or upper helm station. Towers are normally equipped with full engine controls, trim tab controls, compass, engine alarms, stop and start buttons, emergency stop switch and tachometers. This allows for complete operation of the boat from the tower.

Operation of Upper Station Controls

The engines should be started at the lower helm. Monitor the gauges to make sure all systems are normal, and the engines have been allowed to warm up slightly before proceeding to the tower helm. The ignition or restart switches on the tower are only used to restart an engine in the event it

should stall. The shift controls must be in neutral for the start switches to be functional.

Electronic engine controls are equipped with a station transfer button that allows the operator to transfer control from one station to another with the push of a button. Always make sure that you activate the controls as soon as you reach the upper helm station.

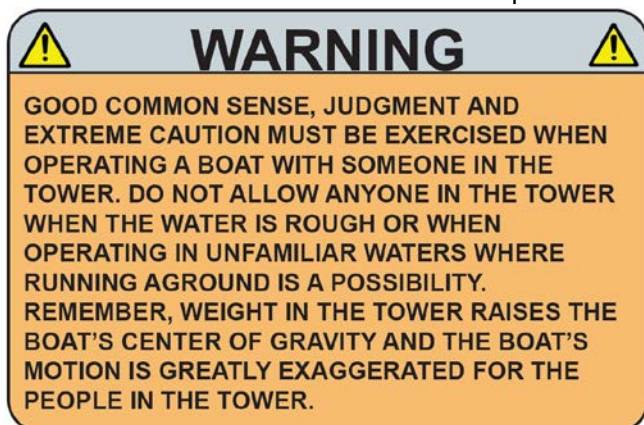
Refer to the Control Systems chapter and the electronic engine control owner's manual for more information on the control system operation and selecting the controls on boats with dual stations.

The following is a list of safety precautions for tower operation:

- Do not operate the boat from the tower in rough sea conditions. The boat's motions are exaggerated in the tower and this motion may become excessive in rough seas.
- Be careful when using the trim tabs from the tower. The reaction of the trim tabs will be exaggerated in the tower. Use small tab corrections and wait ten (10) seconds for the tabs to react. Keep making small corrections until the hull is at the desired attitude.
- Do not overload the tower. Most towers are designed to hold the weight of only two average-sized people. Weight in the tower raises the boat's center of gravity. Too much weight in the tower could make the boat unstable.
- Do not operate the boat in tight quarters, such as marinas, from the tower. The operator is isolated from the boat while in the tower and will not be able to assist in docking procedures.
- Always pay close attention to your grip and footing on tower ladders. Your ability to achieve a good grip and proper footing is reduced in wet or rough weather. Therefore, the tower should be avoided in these conditions.
- Only operate the boat from the tower in familiar waters or where running aground is not a possibility. Running aground while operating the boat from the tower could result in severe injury.
- Always be alert for waves and boat wakes when operating the boat from the tower. Remember

that the boat's motions are exaggerated in the tower.

- Good common sense and judgment must be exercised at all times when operating a boat from the tower.
- If an engine alarm sounds, immediately put the boat in NEUTRAL and shut OFF the engine(s), if safe to do so, until the problem is found and corrected
- Always put the boat in NEUTRAL before moving to and from the tower helm and cockpit

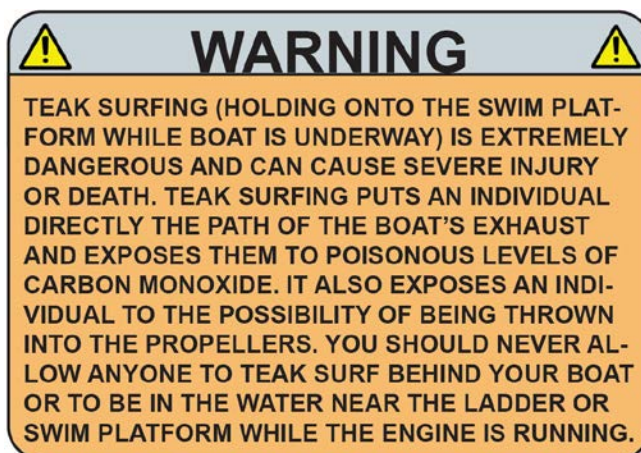


2.13 Teak Surfing

Teak Surfing is a new and dangerous boating fad that involves an individual holding on to the swim platform of a vessel while a wake builds up then lets go to body surf the wave created by the boat; hence the term "Teak Surfing." This activity puts that individual directly in the path of the boat's exhaust and poisonous carbon monoxide. Because of the multiple dangers associated with teak surfing and the carbon monoxide problem in particular, the Coast Guard has issued a safety alert that strongly advises the public not to engage in teak surfing and warns that teak surfing may cause carbon monoxide poisoning and even fatalities.

Teak surfing not only exposes an individual to potentially fatal concentrations of carbon monoxide from the engine exhaust, it exposes them unnecessarily and dangerously to the boat's propellers. The danger is compounded by the fact that individuals do not usually wear a life jacket when teak surfing.

Teak surfing is an extremely dangerous activity, and you should never allow anyone to "Teak Surf" behind your boat or be in the water near the ladder or swim platform while the engine is operating.



2.14 Trash Disposal

The discharge of plastic trash or trash mixed with plastic is illegal anywhere in the marine environment. U.S. Coast Guard regulations also restrict the dumping of other forms of garbage. Regional, State, and local restrictions on garbage discharges also may apply. Responsible boaters store refuse in bags and dispose of it properly on shore. You should make sure your passengers are aware of the local waste laws and the trash management procedure on your boat. Refer to the placard mounted on your boat for more specific information regarding solid waste disposal. Federal law requires that vessels of 26 feet or longer must be displayed in a prominent location, a durable placard at least 4 by 9 inches notifying the crew and passengers of the discharge restrictions (Marpol Treaty). It is the boat owner's responsibility to make sure this placard remains mounted and legible in accordance with the law.



2.15 Yacht Certification Plate

Coast Guard rules require boats less than 20 feet (6 meters) to display a gross weight and person capacity plate provided by the manufacturer. The person/load capacity is determined by the US Coast Guard.

Boat manufacturers in the National Marine Manufacturers Association (NMMA) program will display a gross weight and person-capacity plate on boats up to 26 feet (7.9 meters). Larger boats will display a Yacht Certification plate indicating compliance with the NMMA and U.S. Coast Guard requirements instead of a capacity plate. The yacht certification plate is usually located near the helm in clear view of the operator



2.16 Transporting Your Boat

Your Scout is a large boat and should only be trailered by professionals that have the knowledge and equipment to move large boats without causing damage. You should contact your dealer or the Scout Boats Customer Service Department if you are planning to transport your boat and have any questions regarding the proper equipment and support for the hull.



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Chapter 3: Propulsion System

3.1 General

Your Scout is designed to be powered with 4-cycle outboard motors. Each engine is equipped with an oil sump in the crankcase that must be kept full of the type of oil recommended by the engine manufacturer. The oil must be checked before each use and changed regularly. Each manufacturer of the various outboard motors provides an owner's information manual with its product. It is important that you read the manual(s) very carefully and become familiar with the proper care and operation of the engines and drive systems. A warranty registration card has been furnished with each new engine and can be located in the engine owner's manual. All information requested on this card should be filled out completely by the dealer and purchaser and then returned to the respective engine manufacturer as soon as possible.

⚠
WARNING
⚠

DO NOT ATTEMPT TO SERVICE ANY ENGINE OR DRIVE COMPONENT WITHOUT BEING TOTALLY FAMILIAR WITH THE SAFE AND PROPER SERVICE PROCEDURES. CERTAIN MOVING PARTS ARE EXPOSED AND CAN BE DANGEROUS TO SOMEONE UNFAMILIAR WITH THE OPERATION AND FUNCTION OF THE EQUIPMENT.

⚠
WARNING
⚠

DO NOT INHALE EXHAUST FUMES! EXHAUST CONTAINS CARBON MONOXIDE THAT IS COLORLESS AND ODORLESS. CARBON MONOXIDE IS A DANGEROUS GAS THAT IS POTENTIALLY LETHAL.

3.2 Dive System Corrosion

Each outboard motor is a complete drive system with the gear case being just forward of the propeller and connected to the power head with a vertical drive shaft. All engines require some maintenance. Routine maintenance recommended for your engine is outlined in the engine owner's manual. Routine maintenance is normally the primary concern unless the boat is to be kept in

saltwater for extended periods of time. If your boat is kept in saltwater for extended periods of time, the main concerns are marine growth and galvanic corrosion.



Outboard Engines

Marine growth occurs when components are left in the water for extended periods and can cause poor performance or permanent damage to the exposed components. The type of growth and how quickly it occurs is relative to the water conditions in your boating area. Water temperature, pollution, current, etc. can have an effect on marine growth.

Galvanic corrosion is the corrosion process occurring when different metals are submerged in an electrolyte. Seawater is an electrolyte and submerged engine components must be properly protected. Outboard motors are equipped with sacrificial anodes to prevent galvanic corrosion problems. The anodes must be monitored and replaced as necessary. For locations and maintenance, please refer to the engine owner's manual. When leaving the boat in the water, tilt the motors as high as possible. This will decrease the risk of marine growth around the cooling inlets,

propeller and exhaust ports and damage from galvanic corrosion.



3.3 Engine Lubrication

4-cycle outboard engines incorporate a pressure type lubrication system with an oil sump in the crankcase that must be kept full of the type and grade of oil recommended by the engine manufacturer. It is normal for 4-cycle engines to consume a small amount of oil. Therefore, the oil must be checked before each use and changed at regular intervals as instructed by the engine owner's manual.

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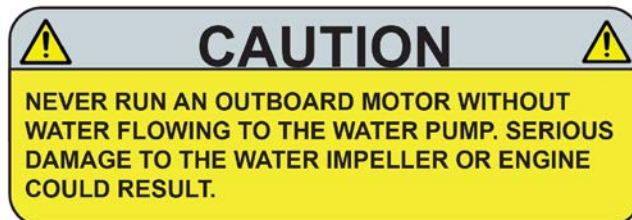
Always monitor the oil level in the crankcase and only use the type of oil specified by the engine manufacturer.

3.4 Engine Cooling System

Outboard engines are cooled with raw water (seawater). Water is pumped through the water inlets, circulated through the engine block and relinquished with exhaust gases through the propeller hub. The water pump uses a small impeller made of synthetic rubber. The impeller and water pump cannot run dry for more than a few seconds. In most outboard motors, some cooling water is diverted through ports below the engine cowling. This allows the operator to visually check the operation of the cooling system. When the engine is started, always check for a steady stream of water coming out of those ports.

Notice:

If the boat is used in salt or badly polluted water, the engines should be flushed after each use. Refer to the engine owner's manual for the proper engine flushing procedure.



3.5 Propellers

The propellers convert the engine's power into thrust. They come in a variety of styles, diameters and pitches.

The propellers that will best suit the needs of your boat will depend somewhat on your application and expected average load. Propeller sizes are identified by two numbers stamped on the propeller in sequence. The 1st number in the sequence (example 14" x 21") is the diameter of the propeller and the 2nd number is the pitch. Pitch is the theoretical distance traveled by the propeller in each revolution.

Always repair or replace a propeller immediately if it has been damaged. A damaged and therefore out of balance propeller can cause vibration that can be felt in the boat and could damage the engine gear assembly. Refer to the engine owner's manual for information on propeller removal and installation.

3.6 Performance Issues & Propellers

It is extremely important that the boat is propped to run at or very near the recommended top RPM with an average load. If the top RPM is above or below the recommended range, the propellers must be changed to prevent loss of performance and possible engine damage. Your boat is equipped from the factory with counter rotating engines that are mounted to achieve quicker planning and optimum performance. Therefore, the left rotation engine is mounted on the port side of the transom

and the right rotation engine is mounted on the starboard side.

Notice:

Before changing propellers to correct boat performance problems, be sure other factors such as engine tuning, bottom and running gear growth, etc. are not the source of performance changes. Always be sure the load conditions are those normally experienced, before changing propellers.

Your boat was shipped with propellers that typically provide optimum performance for your boat. However, there are factors that can affect performance and propeller requirements.

Some are as follows:

- You should be sure the load conditions are those normally experienced. If the boat ran in the required RPM range when it was new and you have not added any additional gear or heavy equipment and have not damaged the propellers, there is a good chance the propellers are not the problem.
- The addition of heavy equipment like a tower, life rafts, additional coolers, etc., will cause additional load on the engines. Consequently, different propellers may be required.
- Boats operated at high altitudes (above 2000 feet). Engines operated at high altitudes will not be able to develop as much horsepower as they do at or near sea level. Consequently, different propellers may be required.



Mercury Propeller

Notice:

Outboard engines can be damaged, and the warranty voided if the boat is not propped correctly. Always consult your Scout dealer or authorized engine service dealer when making changes to the propellers or if the boat does not run near the top recommended RPM.



Mercury Engine Display

3.7 Engine Instrumentation

The helm station is equipped with a set of engine instruments and/or alarms. These instruments allow the operator to monitor the operational condition of the engines. Close observation of these instruments allows the operator to operate the engines at the most efficient level and could save them from serious costly damage.

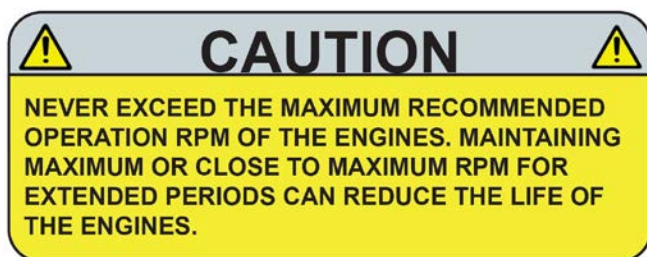
All engine packages have one display that monitors. This system can be integrated with the optional electronic navigation equipment installed on your boat and/or the engine manufacturers' display system. A brief description of the system integrated gauges and their basic functions are listed in this section. Other functions that are dependent on the electronics and control system installed on your boat may be available.

Please refer to the engine owner's manuals and the manuals for the electronics installed on your boat for detailed information on the operation of the instruments and additional functions available. The instrumentation is unique to the type of outboard motors installed on your Scout.

Some or all of the following gauges may be present.

Tachometers:

The tachometers display the speed of the engines in revolutions per minute (RPM). This speed is not the boat speed or necessarily the speed of the propeller. The tachometer display also contains the engine trim meters, oil pressure indicator, water pressure, water temperature, volt meters and the overheat warning indicator.



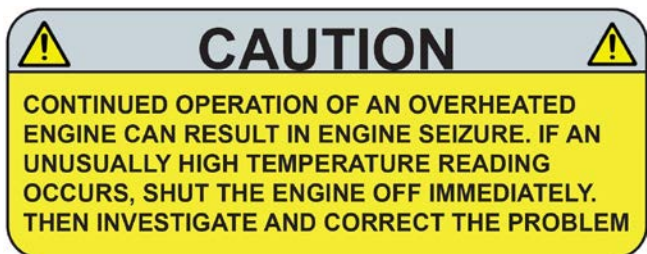
Speedometer:

Speedometers can indicate boat speed via the engine pickup, or an optional GPS or depth sounder transducer, if these options are installed in your boat.

Refer to the engine gauge and electronics operating manuals for more information on the speedometer options available for your boat.

Overheat Warning Indicator:

The temperature warning indicates that the temperature of the engine is too high. A sudden increase in temperature could indicate an obstructed water inlet or an impeller failure. On Mercury engines the overheat warning indicator is built into the display. It will start to blink and sound an alarm if the engine temperature is too high.



Fuel Gauge:

The fuel gauge indicates the amount of fuel in the fuel tanks. The fuel gauge is built into the display or can be found on the Garmin Screens. The fuel indicator on the display will begin to blink if the fuel in the tank drops too low.

Voltmeters:

The voltmeters display the voltage for the battery and the charging system for each engine. The normal voltage is 12 volts with the engines off and 13 to 14.5 volts with the engines running. The engine voltmeter is built into the display. It will begin to blink if the voltage in the battery drops too low.

Hour Meters:

The hour meters keep a record of the operating time for each engine.

Engine Tilt/Trim Gauges:

The tilt/trim gauges monitor the position of each outboard engine. The upper range of the gauge indicates the tilt, which is used for trailering and shallow water operation. The lower range indicates the trim position. This is the range used to adjust the hull angle while operating your boat on plane. The engine trim indicator is built into the display. As well as the auto-trim feature to trim the engine to optimal angles while under way. Please refer to the engine owner's manuals for more information on the operation of the tilt and trim.



Tachometers

Engine Alarms:

All outboards are equipped with an audible alarm system mounted in the helm area that monitors selected critical engine systems. The alarm will sound if one of these systems begins to fail. Refer to the engine owner's manual for information on the alarms installed with your engines.



Fuel Management:

Fuel management systems are standard equipment with some outboard engines. The fuel management gauge is built into the display as well can be found on the Garmin screens and can monitor miles per gallon, gallons per hour, and total gallons remaining. If you have a fuel management system installed on your boat, please refer to the engine or fuel management manual for detailed information on that system.

Compass:

All boats are equipped with a compass on the top of the instrument panel. The compass cannot be adjusted accurately at the factory as it must be compensated for the influence of the electrical equipment and electronics unique to your boat.

Therefore, the compass should be adjusted by a professional after the electronics and additional electrical accessories are installed and before operating the boat. To adjust the compass for your area, read the instructions on "Compass Compensation" given to you in the literature packet.



Compass

Instrument Maintenance:

Electrical protection for instruments and ignition circuitry is provided by a set of fuses or circuit breakers located on each engine. The ignition switches should be sprayed periodically with a contact cleaner/lubricant. The ignition switches and all instruments, controls, etc. should be protected from the weather when not in use. Excessive exposure can lead to gauge and ignition switch difficulties.

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Chapter 4: Helm Control Systems

4.1 General

The helm controls consist of three systems: the engine throttle and shift controls, the steering system and the trim tab control switches. These systems provide the operator with the ability to control the direction and attitude of the boat from the helm station. In addition to the primary helm controls, your boat could be equipped with an optional bow thruster or joystick that provides the operator additional control of the bow while docking or anchoring the boat in tight quarters or high winds and strong currents.

Each manufacturer of the control components provides an owner's manual with its product. It is important that you read the manuals and become familiar with the proper care and operation of the control systems.

4.2 Engine Throttle & Shift Controls

The shift and throttle controls on your boat may vary depending on the engines used. Refer to the engine or control manuals for specific information on the controls installed on your boat.

Electronic engine controls are standard on large outboard engines. The following control description is typical of most electronic control systems.

Engine Controls

The helm is designed for a binnacle style control with a single lever for the port engines and another single lever for the starboard engines. The center engine is engaged when both levers are pushed in the same direction. The electronic control system consists of four major components: the electronic control head, display screens and keypad, joystick, and control processors and applicable harnesses. The controls are completely electronic and there are no manual cables.

Each single lever operates as a gearshift and a throttle. General control lever operation will

include a position for neutral (straight up and down or slightly aft of vertical), a forward position (the 1st detent forward of neutral) and a reverse position (the 1st detent aft of neutral). Advancing the control lever beyond the shift range advances the throttle in forward or reverse.



Helm Control Systems

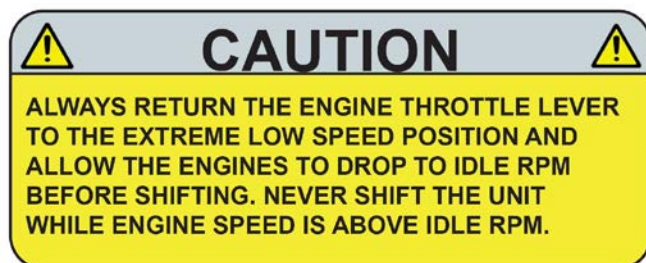
Each control is equipped with a means of permitting the engines to be operated at a higher-than-normal idle RPM while in neutral for cold starting and warm-up purposes. The control levers are equipped with adjustable control head detent and friction settings. On quad or quint engine boats, an engine selector switch on the binnacle control panel allows the operator to select which engines provide the forward and reverse thrust, for optimum control and handling. LED lights on the control indicate which engines are selected. Typically, the center engine is disengaged during docking and while maneuvering in tight quarters to improve handling. It can also be disengaged while operating at slow or trolling speeds to save fuel.

The most common features activated or monitored by the keypad are:

- Starter lockout, which prevents the engine from starting in gear.
- Gear lockout, which allows engine RPM to be advanced in neutral safely.
- Battery voltage warning indicator that warns the operator of high or low voltage supplied to the system (audible alarm).

- An engine synchronization feature that automatically keeps all engines at the same RPM while cruising. Refer to Engine Synchronizing in this section and the control systems owner's manual for more information regarding engine synchronization.
- Station selection (a separate button on some controls) that allows the operator to transfer control from one station to another with the push of a button on boats with two helm stations. Each station must be selected by the operator before the controls will operate from that station.

These features and others not mentioned require specific procedures to activate and operate them properly. Some of the procedures and features are unique to the engines and other options installed on your boat. It is essential that you read the owner's manual for the controls and be completely familiar with their operation before using your boat.



Throttle

4.3 Neutral Safety Switch

Every control system has a neutral safety switch incorporated into it. This device prohibits an engine from starting while the shift lever is in any position other than the neutral position. If the engine will not start, slight movement of the shift lever may be necessary to locate the neutral position and disengage the safety cutout switch. Control adjustments may be required to correct this condition should it persist. See your Scout dealer for necessary control adjustments.

The neutral safety switches should be tested periodically to ensure that they are operating properly. To test the neutral safety switches, make sure the engines are tilted down and move the shift levers to the forward position.

Make sure the throttle control levers are not advanced past the idle position.

Press the Start Button or turn the key just long enough to briefly engage the starter for the engine.

Notice:

Some outboard control systems are equipped with a computer-controlled start feature that will keep the starter engaged until the engine starts if the neutral safety switch fails and allows the starter to engage.

The starter should not engage for any engine. Repeat this test with the shift levers in reverse and the engine throttles at idle. Again, the starter should not engage for any engine. If the starter for any engine engages with the shift controls in any position other than the neutral position, then the neutral safety switch is not functioning properly and you should contact your dealer to have the neutral safety switch repaired by a qualified marine mechanic before using the boat. If an engine starts in gear during this test, immediately move the control lever to the neutral position and turn the engine off.

4.4 Engine Power Tilt & Trim

All outboard engines are equipped with a tilt and trim feature. On most outboard boats, tilt/trim switches are built into the engine shift and throttle controls that allow the operator to control the position of the outboards from the helm. Typically, a switch or switches on the port control lever grip activates the tilt/trim for all engines simultaneously or individually. The maximum tilt angle is preset at the factory. If necessary, the maximum tilt angle can be adjusted by your Scout or engine dealer by reprogramming the settings using a computer controlled diagnostic system.

Moving the outboards closer to the boat transom is called trimming “in” or “down.” Moving the outboards further away from the boat transom is called trimming “out” or “up.” In most cases, the boat will run best with the outboards adjusted so the hull will run at a 3-to-5-degree angle to the water. The term “trim” generally refers to the adjustment of the outboards within the first range of travel.

This is the range used while operating your boat on plane. The term “tilt” is generally used when referring to adjusting the outboards further up for shallow water operation or trailering.

Some control systems provide a means to set the engine trim angle to automatically adjust according to the engine speed. For information on the proper use and maintenance of the power tilt and trim, please refer to the engine owner’s manual.



WARNING



IN SOME SITUATIONS, IT MAY BE POSSIBLE TO ACCIDENTALLY START THE ENGINES IN GEAR WITH THE THROTTLES ABOVE IDLE IF THE NEUTRAL SAFETY SWITCH IS NOT OPERATING PROPERLY. THIS WOULD CAUSE THE BOAT TO ACCELERATE UNEXPECTEDLY IN FORWARD OR REVERSE AND COULD RESULT IN LOSS OF CONTROL, DAMAGE TO THE BOAT OR INJURY TO PASSENGERS. ALWAYS TEST THE NEUTRAL SAFETY SWITCH PERIODICALLY AND CORRECT ANY PROBLEMS BEFORE USING THE BOAT.



CAUTION



THE ENGINE HOSES AND CABLES OR THE TRANSOM GEL COAT CAN BE DAMAGED BY TILTING THE ENGINES TO THE FULL UP POSITION WITH THE ENGINES TURNED TO THE WRONG POSITION. MOST BOATS REQUIRE THE STEERING WHEEL TO BE TURNED COMPLETELY TO PORT OR STARBOARD BEFORE TILTING THE ENGINES TO THE FULL UP POSITION. YOU SHOULD MONITOR EACH ENGINE AS IT TILTS TO DETERMINE BEST FULL TILT ENGINE POSITION FOR YOUR BOAT



CAUTION



SOME AUTOPILOTS HAVE ENGINE POSITION SENSORS THAT ARE MOUNTED TO THE HYDRAULIC STEERING CYLINDER. WITH THESE AUTOPILOTS, THE ENGINE POSITION SENSOR BRACKET COULD HIT THE TRANSOM WHEN THE ENGINES ARE TILTED TO THE FULL UP POSITION AND CAUSE DAMAGE TO THE ENGINE RIGGING, THE AUTOPILOT OR THE TRANSOM. IF YOU HAVE AN AUTOPILOT INSTALLED ON YOUR BOAT, YOU SHOULD MONITOR THE LOCATION OF THE ENGINE CABLES AND AUTOPILOT BRACKETS AS THE ENGINES ARE TILTED TO DETERMINE THE BEST ENGINE POSITION AND MAXIMUM ENGINE TILT FOR YOUR APPLICATION.

4.5 Engine Stop Switch

Your boat is equipped with an engine stop switch and lanyard at each helm. When the lanyard is pulled it will engage the switch and shut off the engines. Most jurisdictions require that the lanyard be attached to the driver whenever the engines are running. If an engine will not start, it could be

because the lanyard is not properly inserted into the engine stop switch. Always make sure the lanyard is properly attached to the engine stop switch before attempting to start the engines.

Refer to the engine owner's manual for more information on the engine stop switch.



Main Control Trim Switch



Emergency Kill Switch

4.6 Steering System

Hydraulic Steering

Power assisted steering systems on triple engine boats without the joystick option are hydraulic and comprised of two hydraulic circuits: a manual system, which is the control element and a hydraulic power assist pump, which is the working element. The manual system is hydraulic and

made of three main components: the helm assembly, hydraulic hoses and the steering cylinders. The fluid reservoir for the system is built into the power assist pump assembly and the helm acts as a pump. Turning the steering wheel pumps fluid through the hydraulic hoses and activates the hydraulic steering cylinders, causing the motors to turn. A slight clicking sound may be heard as the wheel is turned. This sound is the opening and closing of valves in the helm pump unit and is normal. The power system is an electronically controlled, 12-volt hydraulic pump that boosts the fluid pressure being sent from the helm pump to the steering cylinders to provide "Power" for the steering system which results in much easier effort at the steering wheel, even under heavy loads. In the event of a power loss or failure of the hydraulic steering pump, the steering system will automatically revert to a manual hydraulic system. The manual system operates as described previously in this section and will require more effort on the steering wheel to turn the motors.

Steering Cylinders and Tie Bar

Outboards with hydraulic steering are coupled near the tiller arms by tie bars that connect the center engine to the port and starboard engines. The engines must be aligned to provide maximum stability on straight ahead runs and proper tracking through corners. The port and starboard engines are aligned so the engines are towed in slightly (0.25" to 0.5") at the propellers. Engine or steering system damage may require the engines to be realigned.

Electronic Engine Steering

Boats that are equipped with the joystick control option have an electronic steering system that provides precise and responsive steering. The joystick control and electronic steering is optional equipment on boats. The system is 100% electronic and there are no mechanical connections between the steering wheel and the drives. Each drive unit is turned independently allowing improved tight quarter maneuvering and

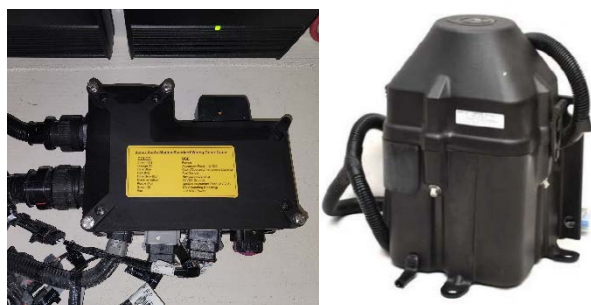
the convenience of an optional Joystick control at the helm.

For safety and improved tight quarter maneuvering, the controlling software on most systems senses engine speed and adjusts maximum steering angle and steering wheel resistance to preset limits as the engine speed increases or decreases. The steering angles and steering wheel resistance at specific engine speeds are programmed into the system at the factory and are not adjustable.

The steering on each motor is totally independent with full redundancy built into the system. If the steering fails on one engine, the other units will continue to operate. Should a failure in one steering system occur, the controlling software will sense the failure, limit the engine RPM as a safety precaution and alert the operator.

Each steering control system has emergency procedures that are specific to the steering system and type of failure. It is very important to follow the correct procedure to avoid damage to the engine cowlings if a steering system failure occurs.

Refer to the engine manufacturer owner's manuals for specific information on the operation, maintenance and emergency procedures for the steering system installed on your boat.



Mercury Rigging Center & Steering Pump

Tilt Steering Wheel

The steering wheel can be tilted to five different positions by activating the tilt lock lever located on the bottom of the helm station. When the lever is released, it automatically locks the steering wheel at or close to the angle. Refer to the steering

manufacturer owner's manual for specific information on the steering system.

4.7 Joystick Controls

A joystick control system is standard equipment. The joystick can only be used at slow speeds. It is engaged by moving the shift and throttle controls to the neutral position and pressing the ON/OFF button on the base of the joystick control or the keypad on the main engine controls. Once activated, the boat moves in the direction where the joystick is pushed with the engine speed increasing the further the stick is pushed, up to preset limits. Turning the knob on the top of the joystick rotates the boat in the direction the knob is turned. Another button on the joystick or engine control keypad raises the preset engine speed for maneuvering in high winds and/or strong tides.

When the joystick is released, it automatically returns to center, the engines shift to neutral, rotate to the straight-ahead position, and engine speed is reduced to idle. It is deactivated by pressing the ON/OFF button at the base of the joystick or control keypad or by moving the shift and throttle control levers. All engines must be running for the joystick control to maneuver the boat.

Always refer to the engine manufacturer owner's manuals for specific information on the operation and maintenance for the joystick and steering control systems



Mercury Joystick



Mercury Joystick at Helm

4.8 Trim Tabs

The recessed trim tabs are mounted to the hull below the swims and integrated transom engine and down movements. Bow up and bow down will control the hull planing attitude, while port and starboard up and down provides control for the hull listing.

The trim tabs are programmed to automatically retract when the engines are shutdown to keep the actuators clean and set the tabs in the full “UP” position when leaving the dock. Refer to the trim mounting system. A control panel at the helm is used to control the trim tabs. The panel controls bow up and down movements. It also controls starboard and port up tab operating manual for more information on the operation and programming of the trim tabs. Before leaving the dock, make sure that the tabs are in the full “UP” position.

Always establish the intended heading and cruise speed before attempting to adjust the hull attitude with the trim tabs. After stabilizing speed and direction, move the trim tabs to achieve a level side to side running attitude being careful not to over trim.

After changing the position of the trim tab, always wait a few seconds for the change in the trim plane to take effect. Avoid changing the position while

awaiting the trim plane reaction. By the time the effect is noticeable the trim tab plane will have moved too far and thus the boat will be in an overcompensated position.

When running at a speed that will result in the boat falling off plane, lowering the tabs slightly, bow down, will improve the running angle and operating efficiency. Too much bow down tabs can reduce operating efficiency and cause substantial steering and handling difficulties.

Be extremely careful when operating in a following sea. The effect of trim tabs is amplified under such conditions. Steering and handling difficulties can result from improper trim tab usage, particularly in a following sea. Always raise the tabs to the full bow up position in these conditions.

When running at high speeds be sure that the tabs are in the full “UP” position. Only enough trim plane action should be used to compensate for any listing. Trim tabs are extremely sensitive at high speeds. Adjust for this and be prepared to slow down if difficulties arise.

When running into a chop, a slight bow down attitude will improve the ride. Be careful not to over trim. Handling difficulties may result.



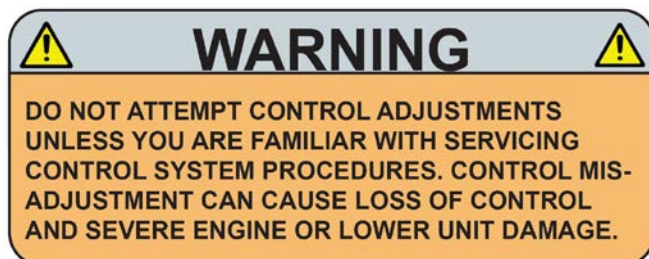
SeaKeeper Ride Display

4.9 Control Systems Maintenance

Control Maintenance

Periodic inspection of the control systems and all connections should be made. Signs of rust, corrosion, wear or other deterioration should

immediately be serviced. Generally, periodic lubrication of all moving parts and connections with light waterproof grease is in order. Lubrication should be performed as often as necessary to keep the system operating smoothly. Control system adjustments may become necessary. If adjustments become necessary, see your Scout dealer.



Hydraulic Steering System Maintenance

A periodic inspection of all steering hoses, linkage and helm assemblies should be made. Signs of corrosion, cracking, loosening of fastenings, excessive wear or deterioration should be corrected immediately.

The fluid level for the hydraulic steering should be checked frequently and maintained at the proper level.

Only use power steering fluid recommended by the steering system manufacturer when adding fluid. Refer to the steering system manual for instructions on checking and filling the steering system on your boat.

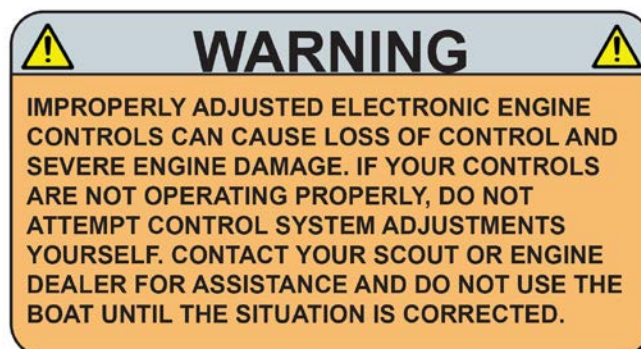
Generally, periodic lubrication of all moving parts and connections with light waterproof grease is in order.

Check the hydraulic hoses and fittings for chaffing, rub marks and leaks. Replace it if necessary. Failure to do so could lead to steering system failure that would result in loss of control. When new or after repairs, hydraulic steering systems may need to have all air purged from the system. Only use hydraulic steering fluid recommended by the steering system manufacturer. Difficult steering and premature seal failure can result if the

wrong fluid is used in the steering system. Review the information provided by the steering system manufacturer for proper specifications and details on system service and maintenance.

Electronic Steering and Control Systems Maintenance

Electronic steering and control systems are supplied by the engine manufacturer. The systems have maintenance requirements that are specific to the engines and control options installed on your boat. You should refer to the engine and controls systems owner's manuals for information and maintenance on the control and steering system installed in your boat. Their recommendations should be followed exactly. The engine controls and steering systems are fully electronic and activated by micro-processors and controlling software in each drive unit. If adjustments become necessary, do not attempt to address the problem yourself. You should contact your Scout or outboard engine dealer for assistance.



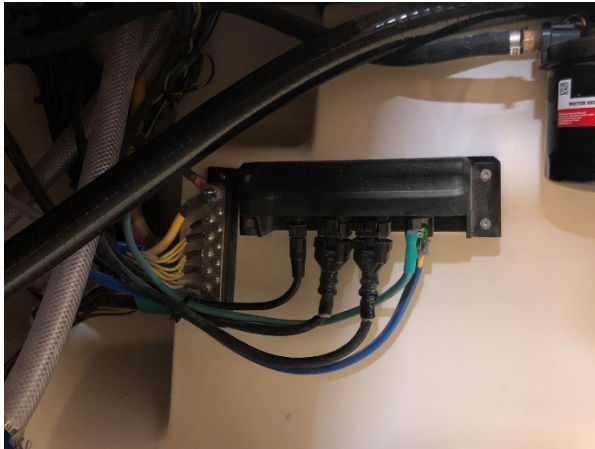
Engine Lubrication

Refer to the engine owner's manual for maintenance and lubrication instructions for the outboard engines.

Trim Tab Maintenance

Marine growth can interfere with the proper operation of the trim tab planes and actuators. To reduce problems due to marine growth, always return the trim tabs to the full "UP" position after operating the boat and periodically inspect and clean marine growth from the actuators and

planes. There is a single trim tab hub in the aft starboard section of the bilge.



SeaKeeper Ride Distribution Module

Each trim tab has its own control wire that runs to its respective location on the control hub shown in the attached picture. From the hub you have a single wire that runs to the control at the helm.

To discourage any marine growth on the tabs or actuators, contact your dealer or the trim tab manufacturer for information regarding the correct bottom paint for the trim tabs if applicable.

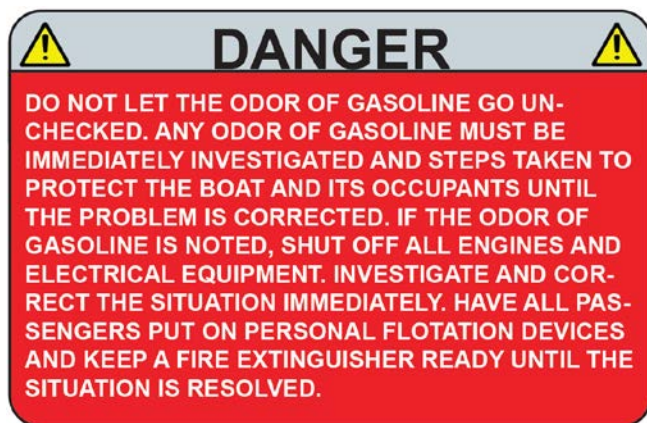
Refer to the trim tab owner's manual for additional maintenance information, specifications, troubleshooting and operating instructions.

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Chapter 5: Fuel System

5.1 General

The Gasoline fuel system used in Scout boats is designed to meet or exceed the emission control standards of the Environmental Protection Agency (EPA) and the requirements of the U.S. Coast Guard, the Boating Industry Association and the American Boat and Yacht Council in effect at the time of manufacture. All gasoline fuel systems have been factory inspected, and pressure tested in accordance with regulations in effect at the time of manufacture. This inspection assures that the system is airtight, leak proof and safe. It is the responsibility of the purchaser to maintain it in that condition. Make frequent inspections to ensure that no deterioration or loosening of connections is resulting from vibration.



Fuel Withdrawal Tubes

The fuel withdrawal tubes are positioned in the fuel tanks to achieve optimum fuel usage, fuel line routing, etc. At certain speeds and hull trim angles, the fuel supply at the withdrawal tank location can increase or decrease accordingly. Be extremely careful when attempting to operate the boat when low on fuel. Though some fuel may be in the tank, the relative trim angle of the boat may cause the fuel to flow away from the withdrawals.

Fuel Gauges

The fuel gauges indicate the amount of fuel in the tank. Due to the mechanical nature of the fuel

senders, variations in readings during various speeds of operation may occur. This system is merely a relative indication of the available fuel supply and not a calibrated instrument

Fuel Fills

The fuel tanks are vented through the fill fitting and cap. The system is equipped with one “key-less” fuel cap located on the port side gunnel that is marked “GAS”. The fuel fill cap is designed to seal out water and allow the fuel tank to vent to the atmosphere when the cap is closed.

To comply with EPA emission requirements, your boat could be equipped with spring loaded, hinged fuel fill caps with a push button release system or threaded, ratcheting twist off caps that click when they are tightened to indicate the cap is properly closed.



Fuel Fill "Gas" Cap

Hinged Fuel Fill Caps

Hinged fuel fills are opened by pressing the release button on the side of the cap and flipping the cap open. After fueling, make sure to close and press down firmly on the cap until it latches.

Threaded Ratcheting Fuel Fill Caps

Threaded fuel fill caps are opened by turning the cap counterclockwise until it can be removed. After refueling, replace the fill cap and tighten until it clicks, indicating that the cap has been properly closed and the fill system is sealed.

Be sure to use the proper type and grade of fuel. Refer to the engine owner's manual for additional information.

Fuel Tank Vent

The fuel tank is equipped with a fuel tank vent system incorporated into the fuel fill. The fuel fill cap is designed to seal out water and allow the fuel tank to vent to the atmosphere when the cap is closed. While the tank is being filled, air displaced by the fuel escapes through the vent and fuel fill. When the tank is full, special valves incorporated in the vent and fill hoses close and activate the automatic shutoff valve on the marina fuel pump nozzle to prevent the tank from being overfilled and/or fuel from being ejected from the fuel fill/vent fitting. You should never attempt to "top off" the tank after the pump shutoff has activated. The shutoff valves will not allow additional fuel to be added after they close and could be damaged by attempts to force additional fuel into the tank. The tank is also equipped with a car-bon filter like the ones found in a car tank.

After fueling, close the fill cap. Then clean spilled fuel from the areas around the fuel fill if necessary. Residual fuel left on the deck and hull sides can be dangerous and will yellow the fiberglass or damage the striping.

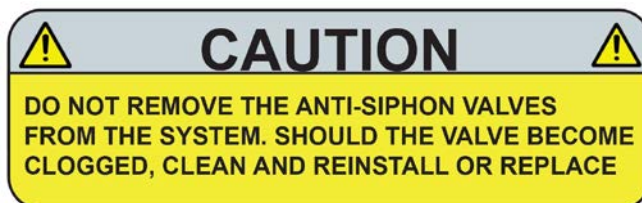
5.2 Outboard Fuel System

The fuel system on your boat has one fuel tank located under the leaning post. The fuel tank is equipped with one fuel pickup. Each fuel withdrawal line is equipped with an antisiphon valve where the line attaches to the fuel tank. This valve prevents gasoline from siphoning out of the fuel tank should a line rupture.

The fuel supply to each engine is controlled by labeled ON/OFF valves located on fuel manifolds for each engine in the aft bilge, located below the center hatch in the rear of the cockpit. The valves are ON when the lever is parallel with the fuel flow

and OFF when the lever is perpendicular to the flow.



All valves can be turned to the OFF position to shut off the fuel supply when servicing the fuel system. A fuel filter for each engine is located on each side of the systems room. The filters are the water separator type and should be serviced frequently to ensure an adequate supply of clean, dry fuel to the engines. It is recommended that the filters be inspected periodically and the elements changed as needed or recommended by the engine manufacturer. There is a primer bulb in each fuel line located above the sea chest at the rear of the aft systems room that are used to prime the fuel system after service or as required (Yamaha only). See Fuel System Maintenance in this chapter and the engine owner's manual for additional information on the fuel filters and the outboard engine fuel system





Yamaha & Mercury Fuel Filters

5.3 Fueling Instructions




CAUTION


TO PREVENT DAMAGE TO THE FUEL SYSTEM, USE ONLY A GOOD GRADE OF GASOLINE FOR GASOLINE ENGINES OR DIESEL FUEL FOR DIESEL ENGINES. DO NOT USE FUEL THAT CONTAINS HARSH ADDITIVES OR IS AN ALCOHOL BLEND. ANY DAMAGE DONE TO THE FUEL SYSTEM THAT IS THE RESULT OF USE OF AN ALCOHOL BLEND IS NOT COVERED BY THE SCOUT WARRANTY. REFER TO THE ENGINE MANUFACTURER OWNER'S MANUAL REGARDING FUEL REQUIREMENTS FOR YOUR ENGINES.




WARNING


DO NOT CONFUSE THE FUEL FILL DECK PLATES WITH THE WATER OR WASTE PUMP OUT DECK PLATE. THESE PLATES ARE LABELED ACCORDINGLY. THE DIESEL FUEL FILL DECK PLATE IS LOCATED ON THE SAME SIDE OF THE BOAT AS THE WASTE PUMP OUT DECK PLATE AND YOU SHOULD BE CAREFUL NOT TO ACCIDENTLY PUMP DIESEL FUEL INTO THE WASTE HOLDING TANK. IF GASOLINE OR DIESEL FUEL IS ACCIDENTALLY PUMPED INTO THE WATER OR WASTE TANK, DO NOT ATTEMPT TO PUMP IT OUT YOURSELF.

Preparing The Boat for Fueling

Use the following procedure to prepare the boat for fueling at a marina fuel pump:

- Make sure the boat is securely moored and all engines are off.
- Make sure all switches are in the OFF position.
- Make sure all passengers leave the boat.
- Close all doors and hatches.
- Estimate how much fuel is needed and avoid overfilling the fuel tank


WARNING


GASOLINE FUEL VAPORS THAT ACCUMULATE IN THE BILGE, AFT SYSTEMS ROOM, ELECTRICAL SYSTEMS ROOM OR CABIN WHILE FUELING CAN EXPLODE! FUEL VAPORS ARE HEAVIER THAN AIR AND CAN ACCUMULATE IF THEY ARE CARRIED BY THE WIND INTO THE BILGE OR CABIN THROUGH OPEN DOORS, HATCHES OR VENTS. ALWAYS CLOSE DOORS AND HATCHES BEFORE FUELING.

Fueling The Boat

To comply with U.S. EPA emission regulations, boats sold in the United States are equipped with special fuel systems that reduce the flow of fuel vapors from the fuel system to the atmosphere when fuel operations are complete.

These fuel systems meet U.S. EPA emission standards and are designed to maintain a specific air space at the top of the fuel tank that provides proper tank ventilation and protection for emission control components. Special valves in the fuel tank vent and fill systems and a shutoff valve in marina fuel pump nozzles are designed to automatically stop the fuel flow when the tank is full and maintain this air space.

Notice:

When the fuel tank is full, the shutoff valve in the marina fuel pump nozzle will activate and automatically shut off the flow, indicating that the tank is filled to the maximum level. You should stop filling the tank at this point and never attempt to "top off" the tank. Attempting to "top off" the tank could damage fuel level control valves as well as damage the carbon filter needed to vet out fumes.


WARNING


STATIC ELECTRICITY GENERATED BY FLOWING FUEL CAN CAUSE A FIRE OR EXPLOSION. TO PREVENT STATIC SPARKS WHEN FILLING THE TANK, MAKE SURE THE NOZZLE IS ALWAYS IN CONTACT WITH THE FUEL FILL OPENING

To fill the fuel tank, follow this procedure:



- The fuel caps are threaded or hinged and do not require a key. Press the release button on the side of hinged caps and swing it open or twist the threaded caps counterclockwise until it can be removed.
- Make sure the nozzle is equipped with an automatic shutoff valve. Then put the nozzle in the fuel fill opening and make sure it stays in

contact with the fuel fill fitting during the entire fueling operation.

- Fill the tank until the shutoff valve in the pump nozzle clicks and automatically stops the fuel flow.
- Remove the nozzle and close the cap. Make sure to press down firmly on the hinged caps or tighten threaded caps until the cap clicks, indicating that it is tight, and the system is sealed.


WARNING


FUEL TANK CONTENTS CAN BE UNDER PRESSURE. TO AVOID SERIOUS INJURY OR DEATH FROM FIRE OR EXPLOSION, OPEN FUEL CAP SLOWLY IN A WELL VENTILATED AREA. NO SMOKING OR OPEN FLAMES.


WARNING


SPILLED FUEL CAN CAUSE A FIRE OR AN EXPLOSION. MAKE SURE YOU DO NOT SPILL ANY FUEL. IF A SMALL AMOUNT OF FUEL IS SPILLED ON THE FIBERGLASS, USE A CLOTH TO REMOVE THE FUEL AND PROPERLY DISPOSE OF THE CONTAMINATED CLOTH. IF FUEL IS SPILLED ON THE WATER, EXERCISE EXTREME CAUTION. FUEL FLOATS ON THE SURFACE OF THE WATER AND CAN IGNITE. IF FUEL IS SPILLED INTO THE WATER, IMMEDIATELY EVACUATE THE AREA AND NOTIFY THE MARINA AND THE PROPER OFFICIALS.

Preparing The Boat for Operation

Use the following procedure to prepare the boat for operation when fueling operations are complete:

- Open all hatches, windows and doors.
- Check the fuel compartment and below the deck for fuel odors. If you smell fuel, do not start the engines

5.4 Fuel System Maintenance

Outboard Gasoline Fuel System

Periodically inspect all primer bulbs if equipped, connections, clamps and hoses for leakage, damage or deterioration. Replace as necessary. Spray the valves, tank fuel gauge senders and ground connections with a metal protector.

Frequently inspect and lubricate the fuel fill cap seal with Teflon or silicone grease. The seal prevents water from entering the fuel system through the fuel fill cap and it should be immediately replaced if there is any sign of damage or deterioration.



Contaminated fuel may cause serious damage to your engines. Fuel filters must be checked for corrosion and deterioration frequently. Fuel filters must be changed at least once a season or more frequently depending on the type of engine and the quality of the fuel. Your carbon filter requires no maintenance as long as you never “top off” you gas tank.

Refer to the engine or fuel filter manufacturer’s instructions for information on servicing and replacing the fuel filter.

The age of gasoline can affect engine performance. Chemical changes occur as the gasoline ages that can cause deposits and varnish in the fuel system as well as reduce the octane rating of the fuel. Severely degraded fuel can damage the engines and boat fuel tanks and lines. Therefore, if your boat is not being run enough to require at least one full tank of fresh fuel a month, a fuel stabilizer should be added to the gasoline to protect the fuel from degradation. Your dealer or the engine manufacturer can provide additional information on fuel degradation and fuel stabilizers recommended for your engine.

In many states, most gasoline is blended with ethanol alcohol. Ethanol is a strong solvent and can absorb water during periods of storage. You should



refer to the engine operating manual for information regarding alcohol blended fuels and how it affects the operation of your marine engine.

**WARNING**



DO NOT DRAIN ANY FUEL INTO THE BILGE WHEN SERVICING THE FUEL SYSTEM. THIS COULD LEAD TO A FIRE OR EXPLOSION.

AFTER THE FILTER ELEMENTS HAVE BEEN CHANGED, PRIME THE FUEL SYSTEM AND CHECK ALL FITTINGS FOR LEAKS BEFORE AND AFTER STARTING THE ENGINES.

BEFORE STARTING THE ENGINES, ALWAYS OPEN ALL HATCHES, WINDOWS AND DOORS TO COMPLETELY VENTILATE THE BOAT AFTER SERVICING THE FUEL SYSTEM.

**WARNING**

TO REDUCE THE POSSIBILITY OF A FIRE OR EXPLOSION, MAKE SURE ALL ELECTRICAL SWITCHES ARE IN THE "OFF" POSITION BEFORE SERVICING THE FUEL SYSTEM.

**DANGER**

STATIC ELECTRICITY GENERATED BY FLOWING FUEL CAN CAUSE A FIRE OR EXPLOSION. TO PREVENT STATIC SPARKS WHEN FILLING THE TANK, MAKE SURE THE NOZZLE IS ALWAYS IN CONTACT WITH THE FUEL FILL OPENING

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Chapter 6: Electrical System

6.1 General

Your Scout is equipped with 12-volt DC electrical systems. The DC system draws current from onboard batteries.

Boats equipped with the optional trolling motor will also have a separate DC electrical system dedicated to the trolling motor. The trolling motor electrical system draws current from onboard batteries that are completely isolated from the 12-volt system.

Your boat and engine charging systems are designed for 12-volt, absorbed glass mat (AGM) or Lead-Acid marine batteries. They will require similar maintenance to those found in automobiles.

All wires in the electrical systems are color coded to make identifying circuits easier. Wiring schematics have been included with this manual to aid in following an individual circuit. (See *attachment section*)

Scout Boats Marine Standard Wiring Code

Color	USE
Brown (Br)	Pumps
Orange (O)	Accessory Feed + 12 VDC
Dark Blue	Cabin/Courtesy/Instrument Lighting
Pink (Pk)	Fuel Sender
Dark Grey (Gy)	Navigation Lighting
Black or Yellow	12 VDC Ground
Purple (Pu)	Ignition Instrument Feed +12VDC
Green (G)	DC Grounding (Bonding)+ 12
Red	VDC Power

6.2 12-Volt DC System Overview

The 12-volt system is a standard marine system. There are several batteries, one for the engine, one for the house and electronics, and three optional batteries for the trolling motor. The house battery is connected to the engine auxiliary charging circuits.

The engine and house batteries are located forward in the console, behind the bulkhead. There will also be either two or three emergency parallel switches. The engine and house batteries are charged by the engines or the battery charger. There is a main ANL fuse located on the port side of the bulkhead with the batteries.

Most 12-volt power is distributed to the 12-volt accessories through individual circuit breakers located in the DC panel or by breakers in the Maretron control output modules in the cabin. All circuit breakers and fuses are labeled with the name of the circuit they protect.

Main circuit breakers in the battery switch panel protect the primary circuits for the Maretron control modules, continuous (24 hour) power, windlass, SeaKeeper, electronics, stereo amplifiers, and the main 12-volt power supply. Other main breakers in the panel protect the battery charger circuits for the batteries and additional accessories.

The “push to reset” circuit breakers in the DC Panel protect the circuits for the trim tab pumps and other “low draw” circuits. Most 12-volt accessories are operated directly by switches in the hardtop switch panel or switches in the cabin. Other accessories are controlled directly with the Maretron control modules.

Main breakers or fuses located on each engine protect the ignition systems. Yamaha and Mercury engine electrical circuits are protected by fuses located in a fuse panel on the side of the engine. The fuse panel is equipped with a spare fuse for each circuit. Always replace fuses used with the fuse specified by the engine manufacturer. Refer to the engine owner’s manual for more information on

the fuses, fuse panels or circuit breakers on your engines.

6.3 Batteries and Battery Switches

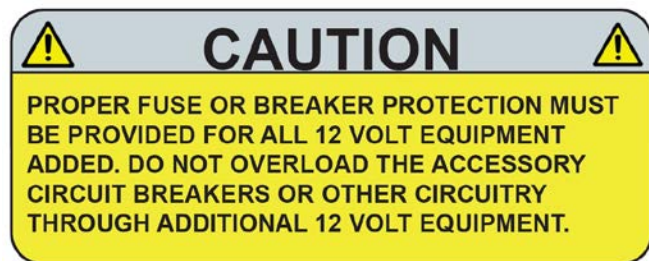
The DC electrical system on your boat is designed for Lead-Acid or absorb glass mat (AGM) marine batteries. Do not attempt to use gel cell or batteries not recommended by the engine manufacturers.

The engine charging system and/or the battery chargers may not be able to recharge these batteries properly which could cause unusually short battery life, engine starting problems, and damage to the DC charging systems. You also should not mix the size or brand of the wet cell or AGM batteries. Always consult your Scout dealer before changing the type of batteries in your boat.

There are motorized battery switches and parallel switches in the battery select panel. The battery and parallel switches can be activated by labeled switches on the DC panel or the wireless key fob. They can also be activated manually by pushing in and rotating the knob on each switch. Battery switches are identified by red knobs and the parallel switch knobs are yellow. The engine batteries are dedicated to starting and operating the engines. The house battery bank is dedicated to powering DC accessories, the SeaKeeper, the bow thruster, and the electronics. The engine and house batteries can be temporarily connected in parallel by the PARALLEL switch to provide additional starting current for each engine.

The batteries are automatically charged by the engines whenever they are running. The batteries are also charged by the battery chargers when the boat is connected to shore power.

and battery switch panel or manually, by turning the knob on the battery switches. There are LED lights on both the remote switches and the battery switches that indicate battery switch mode and status. These lights will blink when the switch has been activated and the motor is turning the battery switch ON or OFF. The Parallel switches operate in the same manner as the battery switches. Press the push button switch once to engage the battery switch. A blue light in the switch will illuminate to indicate that the battery switch is ON. To turn the battery switch OFF, simply press and hold the switch for 3 seconds. The LED light may not turn off immediately or will slowly fade out if there are no loads present on the system. This is normal as the capacitors in the system drain. To operate the battery switches remotely via the push button switches in Auto Mode, the manual knob on each battery switch must be set to “AUTO OFF.” In this position, each battery switch will move from “AUTO OFF” to “AUTO ON” when the push button switch is turned on and from “AUTO ON” to “AUTO OFF” when the push button switch is turned off. LED lights at the remote switches and on each battery switch will be lit when the battery switches are in the ON position. The LED lights at the push button switches and battery switches will be off, and the battery switches will indicate “AUTO OFF” when the battery switches are turned off. Remote operation of the battery switches is not possible when they are set to Manual Mode. If auto operation is attempted, the LED lights will flash for 3 seconds, then stop. The knob on the battery switches must be set to “AUTO OFF” before they can be activated remotely.



The motorized battery switches can be controlled remotely, in Auto Mode, by switches in the DC panel



Battery Select Panel and DC Panel

The remote operation of the battery switches can be overridden at any time by depressing the control knob on the battery switch and turning it to the “MAN ON” or “MAN OFF” position. The “MAN ON” LED light on the battery switch will be lit whenever the battery switch is activated in Manual Mode. The knob on the battery switch must be returned to the “AUTO OFF” position before the battery switch can be activated remotely. For more information on the motorized battery switches, refer to the switch manufacturer’s operation manual.

When in port or at anchor, the engine battery switches should be off. Only the battery switch that activates the house battery should be on. This will keep the engine starting batteries in reserve for starting the engines. If the house battery becomes discharged to the point that DC accessories will not operate, the engines can be started to recharge the house batteries.

Notice:

Current is continuously supplied to the high-water alarm and automatic switches for the bilge pumps when the batteries are connected, and the battery switches are OFF.

The battery chargers are equipped with a switch to select the type of batteries to be charged. The batteries will be damaged if the charger is not set properly. You should refer to the battery charger owner’s manual to make sure the charger is set to the type of batteries in your boat and do not mix the size, type or brand of marine batteries. Always consult your dealer before changing the type of batteries.

Parallel Start Switches and Dead Batteries

In the event of a dead starting battery for any engine, the engine and house batteries can be placed in a temporary parallel configuration. This allows you to start any engine from the engine batteries and the house battery combined. Make sure the House and all Engine battery switches are on. Press the Parallel remote switch once to activate the Parallel switches, then start the engine

with the dead battery normally. Press and hold the Parallel remote switch for eight seconds to disengage the Parallel switches.

In the event of a dead house battery, there are several options:

- If at the dock, simply plug in the shore power and operate the battery chargers to recharge the house battery.
- If at sea, start the engines. Once any engine is running, the alternator circuit will charge the house battery. The house battery will continue to be charged until the engines are shutdown, isolating the house battery from the engine batteries.

Notice:

If a battery is fully discharged/dead for an extended period, it may become permanently damaged and will not be able to hold a charge.

Always consult your dealer before changing the type of batteries in your boat or if you have questions regarding the batteries or charging system.

6.4 Battery Switch Panel Circuit Breakers & Other DC Circuit Protection

Heavy Duty Rocker Style Circuit Breakers

High amperage, heavy duty, normally ON circuit breakers. These breakers are turned ON, OFF, or reset by rocker switches on the face of each breaker. If a main circuit breaker trips, always make sure the problem that caused the breaker to trip is found and corrected before resetting the breaker.

Engine Charger

Battery chargers have their own in-line fuses on the leads for current protection.

House Main

Provides protection and electrical current to the primary circuits for helm, cockpit and cabin DC accessories that are not controlled by the Maretron system. Other circuit breakers or fuses protect the

individual circuits. This breaker is supplied current when the House battery switch is activated.

Windlass

Provides protection and power for the circuit that powers the windlass relay. This breaker is supplied current when the House battery switch is activated.

Stereo Amp 1/2

Circuit breakers that provide protection and power for the amplifiers for the boat stereo speaker system. These breakers are supplied current when the House battery switch is activated.

Accy/Elec Fuse Block

Provides protection and electrical current to the main electronics circuit for the helm. Other fuses in the electronics fuse block behind the helm and/or in-line fuses protect the individual circuits for the electronic equipment. This breaker is supplied current when the House battery switch is activated. If a fuse blows, it must be replaced with a fuse of the same amperage as the original. The fuses are labeled and color coded. Never try to correct a problem by installing a larger fuse. This could damage sensitive electronic equipment or cause the circuit to overheat, which could result in an electrical fire.

Maretron Main

Protects the circuit that supplies primary DC power to the non-24-hour output control modules. Other fuses in the control modules protect the individual circuits. This breaker is supplied current when the House battery switch is activated.

House 24 Hour

Protects the circuit that supplies constant DC power to the continuous power, “push to reset” circuit breakers in the cabin panel and continuous power fuses in the control modules. This breaker is always supplied current when the house battery is connected.

“Push To Reset” Circuit Breaker

Normally ON circuit breakers with a flexible translucent boot on the face. When a breaker trips, the reset button pops out and is visible in the boot. Press the button to reset the breaker.

6.5 Ignition Switch Panels

Ignition switch panels are unique to each engine manufacturer and the engine control options selected. The information in this section provides a general overview of the most common twin and triple ignition systems for Mercury outboard engines but it's very similar for Yamaha outboard engines.

Your dealer will provide you with the proper starting procedure for your boat at the time of delivery. Additional information for the ignition switch system installed in your boat is located in the engine and control system operating manuals included in your information packet. The START/STOP panel is used in conjunction with the lights which indicate when the engines are running and a START/STOP button for each engine. For protection, engines cannot be restarted while running.

Starting and Stopping Procedure – Key Switch

Make sure the engines are shutdown with the shift levers in the neutral position with your hand is on the control levers. Turn the ignition keys to the ON position to activate the ignition and START/STOP buttons for the engines. Press and release the START/STOP button for the port engine. It is not necessary to hold the button, just press it once and release it. The computer will automatically check all engine systems and start the engine. Once the engine stabilizes, repeat the starting procedure for the other engines. Stop the engines by pressing the START/STOP buttons again. Then turn the key switch to OFF and remove the key to deactivate the START/STOP panel and secure the engines.

Starting and Stopping Procedure – Key Fob

Make sure the engines are shut down with the shift levers in the neutral position and your hand is on the control levers. Touch the panel with the electronic key fob to unlock and activate the panel. The panel will beep twice to indicate it is unlocked and the buttons are active. Once the panel is activated, press the IGNITION button, then the START/STOP button for the port engine. It is not

necessary to hold the button, just press it once and release it. The computer will automatically check all engine systems and start the engine. Once the engine stabilizes, repeat the starting procedure for the other engines. Stop the engines by pressing the START/ STOP buttons again. Touch the panel with the electronic key to deactivate and lock the panel. The panel will beep once to indicate that it is locked, and the engines and START/STOP buttons are deactivated.

6.6 12 Volt Accessory Switch Panels

Digital Switch System

Your boat is equipped with a Maretron digital switching system that provides reduced complexity and increased switching options for the lights and accessories the switches control. The system consists of control output modules, push button digital switch panels and touch screen switches in the helm electronics display panels.

Each circuit is protected by individual spade type fuses located in a fuse panel built into each control output module. The control output modules are where the switching of input and output current load to the selected accessories takes place. The controllers in each module recognize low voltage, digital signals from the switches, and activate the correct programmed combination of circuits for each switch function (i.e. the navigation lights switch actually forces the forward navigation lights and the anchor light to be turned on at the same time).

All switches in the push button switch panels are a “press to activate” and “press to deactivate” design. LED lights in each switch indicate the circuit is activated.

This section provides a list of the accessories typically activated by the Maretron switch panels. Maretron switch programming is unique to each boat, depending on

optional equipment installed at the factory or by your dealer and display preferences chosen at the

time of delivery. Consequently, switch programming on your boat may be different.

Refer to the Scout Maretron operation manual for additional information on the digital switching system. Your dealer and or Scout representative will also provide you with hands-on instructions at the time of delivery.



Accessory Switch Panel in Garmin Display

Lights:

- Aft Spreader Light
- Anchor Light
- Baitwell Light
- Deck Accent Lights
- Forward Spreader Light
- Hardtop Lights
- Logo Light
- Navigation Lights
- Storage Lights
- Cockpit Courtesy Lights

Accessories:

- Windshield Wiper
- Wiper Wash

Pumps:

- Aft Bilge Pump
- Baitwell Pump
- Fishbox Pumps
- Fresh Water Pump
- Forward Bilge Pump
- Raw Water Pump



Hardtop Switch Panel

Hardtop Switch Panel

The main accessory digital switch panel is located in the hardtop liner above the helm. The following is a description of the loads controlled by the main accessory switch panel:

Nav/Anchor Lights

Pressing the switch in once will activate the navigation lights in the rubrail at the forward cleats. Press the switch again to activate the anchor light. Press the switch again to turn the anchor light off

Forward Spreader

Activates the overhead light at the front of the hardtop that illuminates the forward cockpit.

Aft Spreader

Activates the overhead light at the rear of the hardtop that illuminates the aft cockpit.

Courtesy Lights

Activates the overhead lights above the helm. Turn the lights on and off quickly to change colors.

Accent lights

Activates the blue lights located around the deck and transom. Hold the switch to change the brightness of the lights.

Map light

Activates the red overhead map lights above the helm. Press the mode switch with the lights ON to change the color.

Forward Bilge

Manually activates the forward bilge pump located in the bilge below the cabin sole. The pump moves water out through a thru-hull fitting in the hull. The pump is also activated by an automatic switch

whenever the batteries are connected, and the water level reaches the pump's threshold.

Aft Bilge

Manually activates the aft bilge pump located in the aft systems room bilge near the transom. The pump moves water out through a thru-hull fitting in the hull. The pump is also activated by an automatic switch whenever the batteries are connected, and the water level reaches the pump's threshold.

Wiper

Activates the windshield wiper.

Wiper Wash

Activates the solenoid that sprays water on the windshield washer from the freshwater system.

High Water Alarm

A red LED light illuminates and an alarm sounds if the bilge water level rises above a threshold of the bilge pump automatic switches. The alarm automatic switch is connected to the batteries and protected by a breaker on the DC Panel, staying active at all times.

House Battery Voltmeter

Monitors the voltage in the house battery circuit.

Horn

Activates the boat horn located on the hardtop.

House Battery Voltmeter

Monitors the voltage in the house battery circuit

Additional DC Switches and Accessories:

Engine Trim and Tilt Switches

Located at the helm. These switches are typically installed in the engine throttle and shift control. They control the trimming and tilting of the engines. Please refer to the Helm Control Systems chapter and the engine owner's manual for information regarding the proper use of the tilt and trim switches.

Discharge Pump

Accessed by the power control feature in the Garmin display. Activates the waste discharge pump that empties the waste tank. Refer to the Marine Head System in the Interior Equipment chapter for additional information on the operation of the overboard discharge system.

Raw Water Pump

Accessed by the power control feature in the Garmin display activates the raw water washdown pump that supplies the washdown hose in the cockpit. The pump is the pressure demand type. A pressure switch automatically controls the water pump when the system is activated and properly primed.

Fresh Water Pump

Accessed by the power control feature in the Garmin display. Activates the freshwater pump that supplies the freshwater system and washdown hoses in the cockpit and anchor locker. The pump is the pressure demand type. A pressure switch automatically controls the water pump when the system is activated and properly primed.

Baitwell Pump

Accessed by the power control feature in the Garmin display activates the pump for the baitwell.

Windlass Up/Windlass Down

Two momentary switches that control the windlass, which are mounted to the deck at the aft sides of the anchor box. Press and hold the WINDLASS OUT switch to pay the anchor line out. Press and hold the WINDLASS IN switch to pull the anchor line in



Windlass IN & OUT Switches

USB Outlets

Located in storage compartments at the helm, in the cabin and in the cockpit at the bow. Provide an input for MP3 players and USB drives to connect to the boat stereo system. The USB connections will charge cell phones and other portable electronics that are charged by a USB cord.

Wireless Phone Chargers

Located at the helm to the port and starboard of the Garmin screen, these chargers will charge any phone with wireless charging capabilities.



Stereo Remote-Control Pad

6.8 DC Breaker Panel

DC Power is distributed to the Maretron networks and other 12-volt circuits through individual “push to reset” circuit breakers in the battery switch panel, located in the console, protect the Maretron output modules from an overload. Some 12-volt accessories are operated directly by the circuit breaker in the DC panel. Switches fed by the panel breakers or digital switches in the Maretron switch panels activate other accessories.

Digital volt meters in the panel continuously monitor DC voltage level in the engine and house batteries. Battery voltage can also be monitored using the monitoring function in the MPower system. Proper fuse or breaker protection must be provided for all 12-volt equipment added. Do not overload the accessory circuit breakers or other circuitry through additional 12-volt equipment.

Notice:

The continuous power circuit breakers are always supplied current when the batteries are connected. These circuits are not deactivated when the battery switches are OFF.



Panel

6.9 DC Power Management

Modern outboard powered boats are typically equipped with a full array of electronics and fuel accessories that consume a significant amount of DC electrical power. All outboard engine charging systems are designed to provide maximum electrical output at or above cruising RPM. The electrical output from the charging system is considerably less at idle or trolling injected engines, spreader lights, stereo amplifiers, or other speeds.

Depending on the optional equipment and electronics installed on your boat, there may be times when the charging systems on your engines will not be able to meet the DC electrical power demand if too many accessories are activated while the boat is operating at idle or trolling speeds. Consequently, POWER MANAGEMENT PRACTICES may need to be observed at slow speeds.

The house battery system in your Scout is designed to provide several hours of reserve capacity, which is adequate for most situations.

However, you should be aware of the load each of your DC accessories draw and make sure you don't overload the capacity of the charging system for extended periods while operating the boat below cruising speed. Always monitor the volt meters while operating at slow speeds and turn off unnecessary equipment that draw high amperage loads if the volt meters indicate that battery voltage is below 12 volts. If necessary, reduce the electrical load by turning off or alternating the use of high draw DC accessories such as the radar units, refrigeration, stereo, spreader lights, etc.

If the house battery system that powers the electronics and accessories on your boat becomes critically discharged while underway at low speeds or trolling, make sure that you turn off all unnecessary DC equipment and run the engines at an RPM that will provide a reading of at least 13 volts on the volt meters to recharge the house battery. Proper DC power management will prevent low voltage that can cause critical navigation equipment to become erratic or shutdown unexpectedly. Additionally, sound power management practices increase the life of your batteries and engine charging systems. You should contact your dealer if you have any questions regarding DC power management or the DC electrical system on your boat cause critical navigation equipment to become erratic or shut down unexpectedly. Additionally, sound power management practices increase the life of your batteries and engine charging systems. You should contact your dealer if you have any questions regarding DC power management or the DC electrical system on your boat.

6.11 Bonding System

Your boat is equipped with a bonding system that interconnects all underwater hardware and thru-hull fittings to ensure that they are of the same electrical potential.

When the boat is connected to power at a marina or city dock, all boats connected to shore power are connected to a common shore safety earth ground connection. This circuit provides essential protection against electrical shock from faults or short circuits in DC equipment and, unfortunately, provides a path for low voltage galvanic current to flow between the bonding systems of other boats in the circuit. If one or more of the boats in the circuit has a stray current electrical problem or is not equipped with proper galvanic protection, it will seek protection from your boat's bonding system through the safety ground circuit. This could cause accelerated deterioration and/or severe damage to the underwater hardware.

CAUTION

WHEN REPLACING LIGHT BULBS IN MARINE LIGHT FIXTURES, ALWAYS USE A BULB WITH THE SAME RATING AS THE ORIGINAL. USING A DIFFERENT BULB COULD CAUSE THE FIXTURE TO OVERHEAT AND MELT OR SHORT CIRCUIT.



Thru-Hull Valve Bonding Wires & Connection

6.12 Electrical System Maintenance

12 Volt Electrical System Maintenance

At least once a year, spray all exposed electrical components behind the helm, in the transom area and in the plugs with a protector. Removable light fixture lenses should be removed and wiped clean with a damp cloth and reinstalled. Some LED light fixtures are sealed and not serviceable.

Inspect all wiring for proper support, sound insulation and tight terminals, paying particular attention to portable equipment power cords and plugs. Check all below-deck wiring to be sure it is properly supported, that the insulation is sound, and that there are no loose or corroded terminals. Corroded terminals should be thoroughly cleaned with sandpaper or replaced, tightened securely and

sprayed with a metal and electrical protector. Inspect all engine wiring.

Notice:

AGM batteries are sealed and do not require or allow the inspection of the electrolyte.

Keep the battery tops clean and dry. Dirt and water can conduct electricity from one post to the other causing the battery to discharge. The battery posts should be kept free of corrosion. Remove the cables and clean the posts and cable clamps with a battery post cleaner or sandpaper as required. Coating the battery posts and cable clamps with petroleum jelly or dielectric silicone grease will protect them and reduce corrosion. Battery cables, both hot and ground, must be replaced when they show signs of corrosion or fraying. Deteriorated cables cause a considerable voltage loss when high currents are drawn, as for starting the engines.

DANGER

NEVER USE AN OPEN FLAME IN THE BATTERY STORAGE AREA. AVOID STRIKING SPARKS NEAR THE BATTERY. A BATTERY CAN EXPLODE IF A FLAME OR SPARK IGNITES THE HYDROGEN GAS THE BATTERY COULD EMIT WHILE BEING CHARGED.

WARNING

CORROSION ALLOWED TO BUILD ON THE ELECTRICAL CONNECTORS CAN CAUSE A POOR CONNECTION RESULTING IN SHORTS, GROUND FAULTS OR POOR GROUND CONNECTIONS. ELECTRICAL CONNECTORS SHOULD BE CHECKED AT LEAST ANNUALLY AND CLEANED AS REQUIRED. DO NOT ALLOW CORROSION TO BUILD ON CONNECTIONS. ELECTRIC SHOCK CAN CAUSE SEVERE INJURY OR EVEN DEATH. THE AC AND DC ELECTRICAL SYSTEMS ALWAYS SHOULD BE DISCONNECTED FROM THE POWER SOURCE BEFORE INSPECTING OR SERVICING THE SYSTEM. NEVER SERVICE ANY COMPONENT OF AN ELECTRICAL SYSTEM WHILE IT IS ENERGIZED.

[illegible]

Chapter 7: Fresh Water System

7.1 General

The freshwater system consists of a potable water tank, distribution lines and one distribution pump. The pump is equipped with an automatic pressure switch and is located in the compartment beneath the sunlounge storage. The tank is located below the forward deck. Shutoff valves are located on the cold water manifolds in the head forward access and water tank enable the operator to turn off individual water lines if necessary.

CAUTION

DO NOT FILL SYSTEM WITH ANYTHING OTHER THAN WATER. SHOULD THE SYSTEM BECOME CONTAMINATED WITH FUEL OR OTHER TOXIC FLUIDS, COMPONENT REPLACEMENT MAY BE NECESSARY.

WARNING

DO NOT CONFUSE FUEL FILL DECK PLATES WITH THE WATER OR WASTE FILL DECK PLATES. THESE PLATES ARE LABELED ACCORDINGLY. IF GASOLINE OR DIESEL FUEL IS ACCIDENTALLY PUMPED INTO THE WATER OR WASTE TANK, DO NOT ATTEMPT TO PUMP IT OUT YOURSELF. WATER AND WASTE PUMPS ARE NOT DESIGNED TO PUMP FUEL AND A FIRE OR EXPLOSION COULD RESULT. CONTACT YOUR DEALER OR THE SCOUT CUSTOMER SERVICE DEPARTMENT FOR ASSISTANCE IN HAVING THE FUEL PROFESSIONALLY REMOVED AND COMPONENTS OF THE FRESH WATER SYSTEM REPLACED AS NECESSARY.

7.2 Fresh Water System Operation

Fill the water supply tank slowly through the labeled deck fill located in the sunlounge storage box. After filling the water tank, partially open all faucets. The freshwater pump will activate with the Garmin control feature. Allow the pump to run until all the air is purged from the system and a steady stream of water flows from each outlet.

Next, Turn off the faucets one by one. As the pressure Builds, the pumps will automatically shut off.

When properly primed and activated, the water system will operate much like the water system in a home. Automatic pressure sensors keep the system pressurized. If the system has been recently filled or has not been used for an extended period, air bubbles may accumulate at the pump and the system may have to be reprimed.



Fresh Water Fill

Whenever the boat is left unattended, the freshwater pumps should be turned OFF using the Garmin control feature.

CAUTION

DO NOT ALLOW THE FRESH WATER PUMP TO RUN DRY. THE FRESH WATER PUMP WORKS ON DEMAND AND WILL NOT SHUT OFF AUTOMATICALLY WHEN THE TANK IS EMPTY. THIS CAN RESULT IN DAMAGE TO THE PUMP. ALWAYS TURN THE FRESH WATER SWITCH OFF WHEN THE FRESH WATER SYSTEM IS NOT IN USE.



Fresh Water Manifold & Pump Access



Fresh Water Manifold

Fresh Water Washdown

Fresh water washdown connections are located on the aft starboard side of the leaning post, port side of the transom, and on the starboard side of the anchor box. All locations utilize a quick disconnect.

7.3 Fresh Water System Maintenance

Sanitizing the Fresh Water Tank

The freshwater system should be sanitized if it has not been used for a long period or you are unsure of the quality of the water in the system. The following steps can be used to sanitize the system:

- Activate the system, open all faucets and pump out as much water as you can.
- Make a chlorine solution by mixing two ounces of household chlorine bleach in a gallon of water. This mixture will treat approximately fifteen gallons. If the water tank on your boat is larger or smaller than 15 gallons, then adjust the mixture accordingly. Always mix the chlorine with water

in a separate container first and never add straight chlorine to the freshwater tank.

- Fill the water tank half full of fresh water and pour the mixture into the water tank. Top off the tank.
- Drain the system by pumping it dry and flush with several tank fills of fresh water.
- Activate the system and allow the water to run for about one minute at each faucet. Let the treated water stand for 4-6 hours. The system should now be sanitized and can be filled with fresh water. If the chlorine smell is still strong, it should be flushed several more times with fresh water.

Notice:

The water quality in marine freshwater systems can be questionable. We recommend that you avoid using water from the freshwater system for drinking and cooking. You should only use bottled water for these purposes

Chapter 8: Raw Water System

8.1 General

The raw water washdown and baitwell pump share an intake, but all other raw water components have a dedicated thru-hull. A sea strainer in each intake supply hose filters debris as seawater flows to the connected pump. The strainers should be checked frequently and cleaned as necessary.

Always make sure all ball valves are open before attempting to operate any component of the raw water system.

Priming the System

Raw water components self-prime. Activate the raw water pump systems with the Garmin display control feature or individual controls for the applicable system.

Run the pressure pump by turning on the raw water washdown hose nozzle on the port side of the transom until all air is purged from the system. Then turn the hose off. Activate the baitwell pump with the Garmin display control feature and run the pump until all of the air is purged from the system.

Then turn the pump off. Follow the baitwell pump priming procedure for all other pumps.

The raw water intake fittings are equipped with scoops that will supply pressurized water to the pumps and help prime the system while the boat is underway during normal operation. If a pump runs but will not prime, make sure the pump supply valve is open. If the pump still won't prime, it may be air locked. Make sure the valve for the pump intake hose is open and run the boat at or above 15 MPH. Water pressure from the intake will usually force the trapped air through the pump and allow it to prime. If this procedure doesn't work, contact your Scout dealer. Closing the intake thru-hull valves before the boat is hauled from the water will help to eliminate air locks in raw water systems. The valves should also be closed whenever you leave the boat in the water unattended.



Shared Baitwell/Transom Washdown



Raw Water Washdown Pump

8.2 Raw Water System Operation

The high-pressure pump that supplies the raw water washdown hose is located on the port side of the aft systems compartment. It is controlled by a pressure sensitive switch and activated with the Garmin control feature. When activated, the pressure switch will automatically control the pump.

As the pressure builds in the system, the pump will shut off. When the system is in use and the pressure drops, the pump will turn on. Whenever the boat is left unattended, the pressure pump should be turned off.

Washdown Hose Connector

The raw water washdown is equipped with a quick disconnect and is located on the starboard wall of the console.

8.3 Baitwell

Seawater is provided to the baitwell by a 12-volt centrifugal pump. The pump is not controlled by a pressure sensitive switch and designed to supply a constant flow of water to the well. It is activated with the Garmin control feature. There is also an LED light in the baitwell that is activated by the Garmin panel. An overflow built into the drain system automatically controls the water level in the well and adjustable inlet valves control water flow. Always turn the pump off when the well is not in use.

To fill the baitwell, insert the plug into the drain fitting at the bottom of the well. Make sure the ball valve for the pump is open. Then activate the pump. When the water level reaches the overflow, it will begin to circulate. The water intake fitting is equipped with a scoop that will supply pressurized water to the baitwell if the pump should fail. The scoop also helps prime the system while the boat is underway during normal operation. To supply water to the baitwell if the pump fails, make sure the baitwell pump intake valve is open and run the

boat at a speed above 15 miles per hour. Seawater will circulate through the baitwell and out the overflow



Baitwell

⚠
CAUTION
⚠

DO NOT ALLOW THE WATER PUMP TO RUN DRY. THE PUMP WORKS ON DEMAND AND WILL NOT SHUT OFF AUTOMATICALLY IF NO WATER IS AVAILABLE. THIS CAN RESULT IN DAMAGE TO THE PUMP. ALWAYS TURN THE RAW WATER PUMP OFF WITH THE CZone CONTROL FEATURE WHEN THE SYSTEM IS NOT IN USE.

The baitwell pump supply valve at the intake should be closed whenever the baitwell is not in use. This will prevent water from entering the baitwell while the boat is cruising.

Notice:

Do not use a baitwell as a dry storage area when it is not in use. Seawater could accidentally be delivered to the baitwell from the thru-hull fitting and damage equipment.

⚠
CAUTION
⚠

A RUPTURED RAW WATER INTAKE OR PRESSURE LINE COULD CAUSE THE BOAT TO TAKE ON WATER. ALWAYS TURN THE RAW WATER SYSTEMS OFF AND CLOSE THE THRU-HULL SEAWATER SUPPLY VALVES WHEN LEAVING THE BOAT UNATTENDED.

8.4 Raw Water System Maintenance

The following items should be done routinely to help maintain your raw water system:

Routine Maintenance

- Check hoses, particularly the seawater supply lines, for signs of deterioration. Tighten fittings and clamps or replace deteriorated hoses and components as necessary.
- Periodically remove and clean the water strainers located in the intake lines for the sea chest. To clean the strainers, make sure all seawater pump systems are OFF. Then close the sea chest intake valves. Rotate the strainer cap counterclockwise to release it. Remove the cap and pull the screen out. Thoroughly flush the screen and the inside of the strainer to remove foreign matter.
- Lubricate the seal with silicon or Teflon grease and reassemble the strainer, making sure that the strainer cap is tightened hand tight. Open the intake valves, activate the pumps and check for leaks.
- Spray pumps and thru-hull valves with a protective oil periodically.
- The fishboxes and baitwell should be drained and cleaned after each use.
- Operate all valves at least once a month to keep them operating properly.

⚠
CAUTION
⚠

SHOULD A HOSE RUPTURE, TURN THE PUMP OFF IMMEDIATELY. ALWAYS CLOSE THE SEA CHEST THRU-HULL VALVES WHEN PERFORMING MAINTENANCE ON A SEAWATER PUMP. THE BATTERIES MUST BE PROPERLY CHARGED. OPERATING ANY PUMPS FROM A BATTERY WITH A LOW CHARGE MAY LEAD TO A PUMP FAILURE. THE RAW WATER SYSTEM MUST BE PROPERLY WINTERIZED PRIOR TO WINTER LAY-UP. SEE SECTION ON WINTERIZING.

[illegible]

Chapter 9: Drainage Systems

9.1 General

Most water is drained by gravity to overboard thru-hull fittings located in the hull above the water line. It is important to check the drain system frequently to ensure it is free flowing and that the hoses on thru-hull fittings are secure and not leaking.

9.2 Cockpit & Deck Drainage

Cockpit Scupper Drain

Your Scout has two scupper drains located in the rear of the cockpit that drain the cockpit through fittings in the hull sides above the waterline. Water is channeled away from all hatches by a gutter or drain rail system. The water then drains overboard through Scupper Drain Thru-Hulls the scupper drain system.



Cockpit Draining System

Fishbox Drains

The aft fish boxes below the cockpit sole are drained overboard by a diaphragm pump out system. There is a diaphragm pump and overboard discharge thru-hull valve for each fishbox located in

the aft bilge. The pumps are activated with the Garmin control feature.

To pump out the fishboxes, make sure the pump out thru-hull valves are open. Activate the pump and monitor the water level as the pump drains the fishbox and turns it off immediately when draining is complete. The pumps could be damaged if they are allowed to run dry for extended periods.

Baitwell Drain

The baitwell and baitwell overflow drains by gravity directly out of the port side thru hull.

Cockpit Storage Compartments

The storage compartment below the console lounge seat is drained by gravity to the cockpit through a fitting at the bottom and drained by gravity to the port side thru-hull.

The port forward seating storage compartment drain ties into the sunlounge drain to the port thru-hull. The starboard seating storage compartment drains by gravity to the starboard thru hull.

Rope Locker Drainage

The rope locker drains overboard through a drain fitting located in the hull side at the bottom of the rope locker. It is important to inspect the drain frequently to remove any accumulated debris.

Cup Holder and Storage Compartment Drains

All cup holders in the helm and cockpit areas drain by gravity to the cockpit sole.

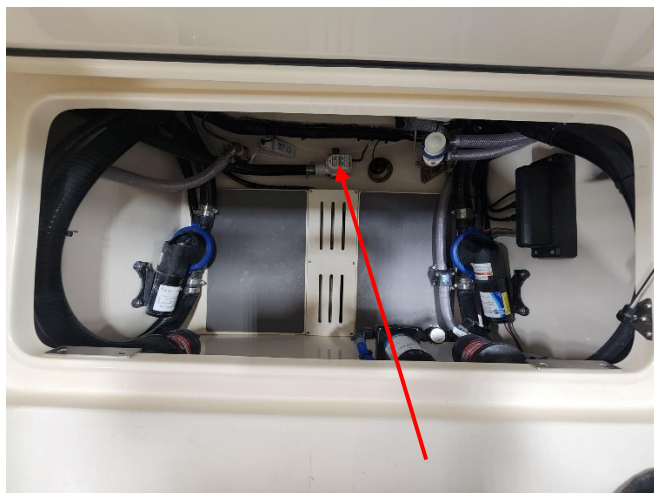
9.3 Bilge Drainage & Alarm

There are two bilge pumps, one aft, one forward. The aft and forward bilge pumps are activated both manually, by switches in the hardtop switch panel or Garmin display. All bilge pumps pump water out of thru hull fittings located above the waterline of the hull. The manual bilge pump switches should be activated briefly each time the boat is used. This will ensure that the pumps are operating properly and increase the service life of the pumps.

The forward pump is located under the cabin floor and the aft pump is located in the aft bilge.

Notice:

See Electrical Systems for additional information on bilge pump operation.



AFT Bilge Pumps



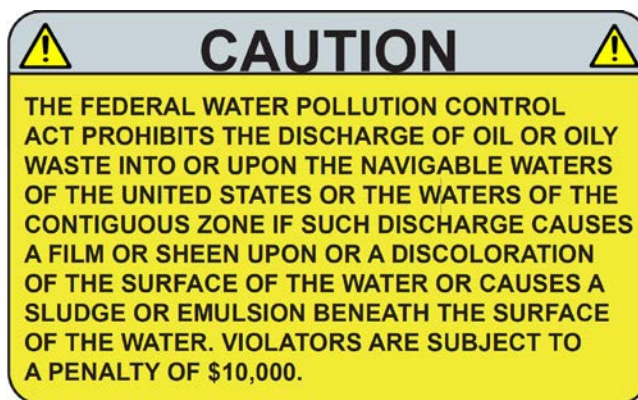
Midship Bilge Pump Access

Notice:

Any oil spilled in the bilge must be thoroughly removed and properly disposed of before operating the bilge pump. The discharge of oil from the bilge is illegal and subject to a fine. Oil in the bilge may also cause the bilge pump automatic switches to malfunction and not activate the bilge pumps when required.

Bilge High Water Alarm

An automatic float switch located in the aft bilge near the bilge pumps will sound an alarm if the bilge water level rises above the normal operating range of the bilge pump automatic switches. The alarm automatic switch is protected by a “push to reset” circuit breaker in the cabin DC panel. It remains activated when the battery switches are in the OFF position and the batteries are connected. This switch should be tested periodically to ensure it is operating properly. If the alarm does not activate, you should find and correct the problem as soon as possible.



9.4 Cabin Drainage

Cabin Sole

The cabin sole drains by gravity to the scupper drains.

9.5 Drainage System Maintenance

It is essential that the following items be done periodically to maintain proper drainage of your boat:

- Clean the cockpit drain rails with a hose to remove debris that can block water drainage.
- Clean the bilge pump strainers of debris and check the bilge for foreign material that can cause the automatic switch to malfunction.
- Frequently test the automatic bilge pump switches for proper operation. This is accomplished by pressing the test button on the side of the pumps or using a garden hose to flood the bilge until the water level is high enough to activate the pumps.
- Flush all gravity drains with fresh water to keep them clean and free flowing.

-
- Clean and flush the baitwell and storage boxes with soap or a bilge cleaner and fresh water after each use to keep them clean and fresh.
 - Operate all thru-hull valves at least once a month to keep them operating properly.
 - Clean and flush the fishboxes, coolers and storage boxes with soap or a bilge cleaner and fresh water after each use to keep them clean and fresh.

Notice:

All drains and pumps must be properly winterized before the winter layup.

Notice:

Never use harsh chemical drain cleaners in marine drain systems. Permanent damage to the hoses and fittings may result.

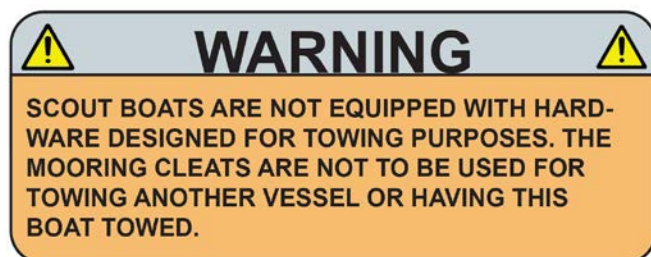
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Chapter 10: Exterior Equipment

10.1 Deck

The rail system and hardware fittings have been selected and installed to perform specific functions. Handrails are installed to provide a handhold in certain areas of the boat. You should make sure you keep at least one hand on the handholds as you move about the boat. Your boat is equipped with cleats that are retractable and flush with the deck when not in use. To use the cleats, pull up on the center of the cleat until it locks in the mooring position. Mooring lines should be secured to the cleats and not to rails or stanchions. Be sure a clear lead exists when running dock lines or anchor lines. A line inadvertently runs around a stanchion or over the rail could cause damage.

Notice: All fittings must be inspected periodically for loose fit or wear and damage. Any problems should be corrected immediately.



Cleat Down



Cleat Up

10.2 Rope Locker

Rope Locker

The anchor rope locker is concealed in a recess below a hatch in the deck. A twist latch secures the hatch when it is closed. Always make sure the hatch is closed with the latch in the secured position before operating the boat above idle speed.

The rope locker and anchor line are accessed below the forward seating opening. The anchor line is always stored in the rope locker and there is an eye fitting to secure the bitter end of the anchor line.

Rinsing with freshwater each time the anchor is hauled reduces corrosion on the anchor and hardware. The rope locker is designed for the anchor line and not for storing anchors or additional anchor lines. Do not store anchors or any heavy objects in the locker. Anchors and weights for floating markers will bounce and damage the hull or rope locker if they are stored there. Always store and secure additional anchors and weights in a storage compartment in the cockpit as far aft as possible.

The rope locker is drained by a fitting in the hull side near the bottom of the locker. It is very important to check the drain frequently to make sure it is clean and free flowing. Periodically remove the anchor line from the rope locker, rinse it with fresh water and allow it to dry in the sun. Cleaning the anchor line regularly will reduce odors in the rope locker and increase the life of the line.

The line should also be inspected for abrasions or signs of deterioration. Replace the line if it shows any sign of damage or deterioration. It is important to replace the anchor line with a new line of the type recommended or supplied by the anchor manufacturer.



Anchor Windlass Compartment

10.3 Hull

Engine Mounting System

Your Scout is equipped with an engine mounting system that is integrated into the hull and stringer system that is designed to distribute the stresses of engine weight and thrust throughout the entire hull.

The engine hoses and cables or transom gel coat can be damaged by tilting the engines to the full up position with the engines turned to the wrong position. You should monitor the engines as they tilt to determine the best full tilt engine position for your boat.

Trim Tabs

The trim tabs are mounted into the hull below the transom. The trim tabs are an important part of the control systems. Refer to the Helm Control Systems chapter for detailed information on the operation of the trim tabs.

Underwater Lights

The LED underwater lights are mounted in the transom, below the water line. The lights are activated with the Underwater Light switch in the helm electronics display. The lights should only be used when the boat is in the water with the lights submerged.



Engine Mounting System

10.4 Cockpit Features

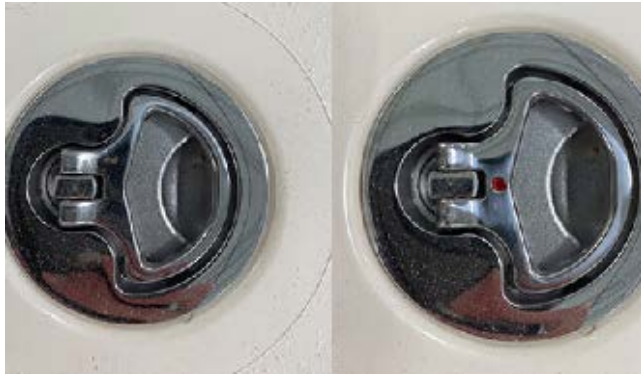
Gas charged springs are used to help raise most hatches and hold them in the open position. If applicable, make sure that all hatches are closed with the latches in the secured position before operating the boat above idle speed.

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WARNING

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IN CERTAIN CONDITIONS, OPEN EXTERIOR DOORS AND HATCHES THAT ARE NOT SECURED PROPERLY CAN SLAM CLOSED UNEXPECTEDLY AND CAUSE INJURY TO PASSENGERS OR DAMAGE TO THE BOAT. SOME DOORS AND HATCHES ARE EQUIPPED WITH SPECIAL FASTENERS, HATCH LIFTERS OR SNAPS AND/OR STRAPS TO SECURE THEM IN THE OPEN POSITION. ALWAYS MAKE SURE THAT THESE HATCHES AND DOORS ARE PROPERLY SECURED WHENEVER THEY ARE IN THE OPEN POSITION.



Latch Locked & Unlocked

To open the door, use the latch handle by lifting the handle and rotating counterclockwise. Once the handle is clear, open the hatch door.

Transom Baitwell

The transom baitwell is located in the rear of the cockpit and is held open with tension hinges. Always make sure the hatch is closed before operating the boat above idle speed.

The baitwells are equipped with a light and drains by gravity to a thru-hull fitting in the hull. A centrifugal pump located in the bilge supplies seawater to the baitwell and adjustable inlet valves control water flow. An overflow built into the rear side of the baitwell automatically controls the water level. The baitwell should be drained and rinsed clean with fresh water after each use. Refer to the Raw Water System and Drainage Systems chapters for more information on the operation of the baitwell.



Transom Baitwell

Aft Bilge Access Hatch

A hatch in the center, rear of the cockpit provides access to the fuel valves, fuel filters, pumps, seawater strainers and other equipment in the stern bilge. The fuel supply manifolds, valves and filters are located on each side of the compartment. The engine control systems, stern bilge pump, high water alarm, and baitwell pump are also among the equipment in this compartment.

The hatch is held open by gas hatch. Always make sure the hatch is closed in the secured position before operating the boat above idle speed.



Aft Bilge Hatch

Bow Seats and Storage Compartments

The bow seat cushions are secured to the hatch lids with magnets. These magnets require a firm upward pull to release and lock into place easily when placed in the bow. The bow seat cushions should be removed and stored when the boat is not being used.

There are two storage compartments located below the port and starboard bow seats. The center seat opens up to the anchor rope storage compartment. The storage compartment hatches are equipped with gas hatch lifters that hold them in the open and a draw latch to lock them in the closed position.

The port and starboard compartments drain overboard by gravity through fittings in the hull sides. Drain plugs can be inserted in each drain fitting to control drainage or isolate the compartments from the seawater. They should be cleaned and flushed thoroughly with fresh water after each use.



Bow Storage Compartments

Bow Table

The optional bow table is stored on the starboard console wall and the post on the port. At the bow, you will find a stainless-steel bracket for the table stand to slide into. Affix the tabletop to the table stand. Ensure the table is fully in the secured position prior to use.

The table should only be used when the boat is moored, at anchor or being operated below cruising speeds. Always make sure to remove the table and secure it to the stored position before operating the boat above trolling speed.

10.5 Leaning Post Equipment

The following is a description of equipment typically installed in the leaning post station. The equipment on your boat could be different, depending on the options selected.

The leaning post station may be equipped with aft cup holders, trash can, bottle opener, subwoofer, rod holders, fresh water washdown quick disconnect, sink, tackle storage, and cooler.



Aft Side of Leaning Post

Tackle Storage

The leaning post comes equipped with tackle storage compartments on the aft side above the trash can.

Sink & Prep Station

Fresh water pumps from the freshwater tank into the sink, which drains to the aft bilge thru-hull. The stainless-steel faucet swivels to your preferred position.

Leaning Post Rod Holders

On the back of the helm backrest, you will find four stainless-steel flush mounted rod holders to add to your fishing experience.



Leaning Post Tackle Storage Compartments

Helm Seats All helm seats are equipped with a flip-up bolster to provide more room between the seats and the helm. The bolsters convert the seats to a leaning post style seat with a backrest, allowing the operator and passenger to sit or stand at the helm. To convert each seat to a leaning post, lift the front of the seat cushion to raise the bolster and push it back above the seat cushion.

Arm rests on each side of the seats provide a more comfortable position and swing up into the backrest cushion to make it easier to enter and exit the helm.



Helm Seating With & Without Deployed Bolsters & Arm Rests

10.6 Console & Helm

Helm

The steering, engine controls, engine instruments and switches for exterior equipment, navigation lights and other 12-volt DC accessories are located on the helm station and in the hardtop liner above the helm.

When removing the panel above the head you will find a hatch that provides access to the back of the helm panel for servicing helm equipment and installing electronics or other accessories. There are also fuse panels that provide protection for electronics, helm accessories or other equipment added by you or your dealer.

Windshield

Your boat is equipped with an acrylic windshield and optional windshield wiper.

The windshield wiper should only be used when the windshield is wet. The windshield can be scratched by activating the wiper when there is dried salt or dirt on the windshield. The windshield washer is

supplied by the freshwater system. Always make sure the freshwater system is activated before using the windshield washer.

The windshield should be washed after each use with soap and water to keep it clean and reduce the corrosive effects of the saltwater.



Helm

Cabin Door

The cabin door is on the port side of the console. A lockable, push to close latch secures the door when it is closed.

It is very important that the door is secured properly in the closed position whenever the boat is operated above idle speed. The cabin door is heavy and if the door is not closed and properly latched, it could slam closed when the boat rocks and pinch someone's fingers between the door and cabin or damage the door.

When closing the door, make sure you push the door against the door jamb with enough pressure to allow the latch to secure the door.



Cabin Door

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WARNING

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NEVER LEAVE THE CABIN DOOR UNLATCHED. THE CABIN DOOR IS HEAVY AND SLIDES EASILY. IF THE DOOR IS LEFT UNLATCHED, IT COULD SLAM CLOSED UNEXPECTEDLY AS THE BOAT ROCKS, DAMAGING THE DOOR OR CAUSING AN INJURY TO A PASSENGER. ALWAYS MAKE SURE THE DOOR IS PROPERLY SECURED IN THE CLOSED POSITION.

Console Lounge

A double lounge seat with underside storage is located on the console, forward of the windshield. The lounge seat cushion will accommodate two people and has arm rests built into each. The bottom seat cushion is mounted to a hatch that provides access to a storage compartment below the lounge for dunnage. The compartment gravity drains to a thru-hull on the port side hull. The hatch is equipped with gas hatch lifters that hold the hatch in the open or closed position. A compression latch secures the hatch in the closed position. To prevent the hatch from opening unexpectedly,

always make sure the hatch is closed and latched before operating the boat above idle speed.

The optional side boarding ladder storage is located in the console lounge seat storage hatch. The ladder is installed into a bracket fixed to the port dive door opening



Sunlounge Storage & Side Boarding Ladder

Transom Boarding Ladder

A boarding ladder is recessed into the starboard swim on the transom. To use the ladder, make sure the engine is not running, then unfold and extend the ladder to full position. The ladder is to be folded back and secured in the recessed area prior to going underway.

Notice:

Installation of the ladder while at sea may be difficult and dangerous to the installer.

Unassisted Boarding Situations

The ladder should be installed into the bracket in the upward position prior to going underway. When using the boarding ladder in an unassisted boarding situation in deep water, hold the transom handrail near the ladder and brace your feet against the hull for stability. Then rotate the ladder to the down position with your free hand. Hold the ladder for stability. Place your lead foot on the bottom ladder step and use the ladder and transom handrail for stability while boarding. Remember to bring the ladder into the upright, stored position and secure it prior to starting the engine.



Transom Ladder



Optional Side Boarding Ladder

10.7 Hardtop

The hardtop consists of a laminated fiberglass top mounted to carbon fiber frames. It is equipped with a switch panel, white/red LED overhead lighting for the helm and a mounting area for a VHF radio and other electronics or accessories. Removable panels provide access to wiring and rigging for hardtop accessories. The hardtop is designed to accommodate the standard radio antennas, radar and satellite antennas, and spreader lights. It can also be equipped with optional outriggers and rocket launchers. The navigation lights, spreader lights, windshield wiper/washer, hardtop lights, and other accessories are controlled by switches in the hardtop switch panel.

The port and starboard frames on each side of the helm are the wire chase for lights and antennas mounted to the top.

Hardtops are not designed to support the additional weight of heavy items and accessories like GPS, VHF, and other electronics in addition to those already included. Improperly mounted or supported accessories could be damaged. Antennas must be mounted to the top in the proper location. Special mounting pads are provided for a radar antenna and satellite antenna. Do not mount any antennas or equipment to the bow area forward of the front legs. Contact Scout Customer Service for support and recommendations involving additional equipment mounting.

The warranty for the hardtop will be void if the top is modified in any way or heavy accessories are mounted to the top. Additionally, if items like radar antennas, spotlights and other accessories are mounted in the wrong location, the warranty could be void. If you intend to add equipment or make modifications to the hardtop, contact Scout Customer Service or your dealer to make sure the equipment you would like to add, or the intended modification will not void the warranty on the top.

Aft Sunshade (Optional)

The optional awning extends to provide shade for the rear cockpit. The awning uses the two outer rocket launchers in the hardtop and attached to the ends of two aft facing poles for easy assembly and disassembly.

10.8 Aftermarket Hardtop or Tower

Scout does not recommend installing an aftermarket hardtop or tower. An improperly designed or installed fabrication can cause structural damage to the deck structure and void the Limited Warranty. Additionally, Scout will not be responsible for any damage resulting from the installation of a fabrication not installed at the Scout factory. If you intend to install an aftermarket hardtop, upper helm station or tower on your boat, contact your dealer or Scout Customer Service.

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Chapter 11: Interior Equipment

11.1 Head Compartment



Marine Toilet

Equipment Access Doors and Hatches

Access doors in the rear head compartment bulkhead provide access to the back of the helm and electronics compartment, as well as the forward bilge pump and waste pump. The freshwater manifolds are below the step into the console. The forward hatch gives access to the batteries.

Flush mounted, push to close latches secure the doors and panels in the closed position.

Marine Head System

The 12-volt marine toilet is connected to the pressurized freshwater system which results in less odor in the head compartment. It has an automatic pumping device that fills and empties the bowl. Once a button on the control is pressed, the entire cycle is completely automatic. The system uses very little water, approximately 2.27 quarts (2.5 liters) per flush. To use the toilet, make sure the head and freshwater systems are activated. Then press the ADD WATER button on the toilet control panel to add a preset amount of water to wet the bowl which prevents organic residues dirtying the ceramic sides. After using the toilet, pressing the

FLUSH button starts an automatic flushing cycle that moves the waste to the holding tank and leaves the bowl completely clean and dry in the rest position.

The head contains an integrated, high-speed turbine grinding pump that transfers waste to the holding tank where it remains until it is pumped out by a waste dumping station or the overboard diaphragm discharge system.

The fluid level in the waste/holding tank is monitored by the monitoring feature in the display or a lighted LED symbol toilet control panel. Symbol lighted red indicates the tank is full and flushing is not recommended. A lockout system built into the control panel prevents the toilet from flushing when the holding tank is full. Refer to the toilet manufacturer owner's manual for more information on the operation of the marine head system.

Head System Holding Tank

The tank must either be pumped out by the overboard discharge pump or an approved waste dumping station through the waste deck fitting.

A lockout system built into the toilet prevents it from flushing when the holding tank is full. You should not attempt to bypass the lockout and flush the toilet when the tank is full. An overfilled holding tank will force waste into the holding tank vent filter. This will clog the vent filter and could cause damage to the holding tank. It will also cause unpleasant odors in the cabin and cockpit.

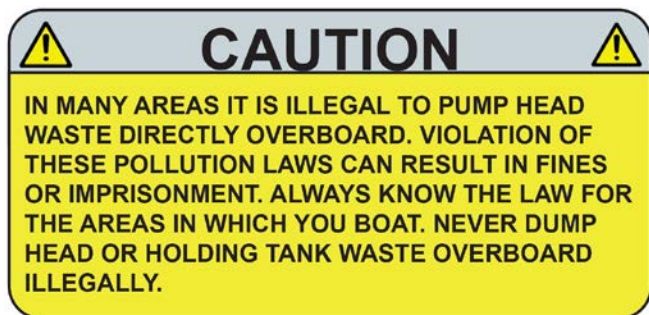
Use the following procedure to pump out the holding tank with the overboard diaphragm discharge pump system:

- Attach the handle to the ball valve which comes in the packaging with component manuals and additional items.
- Open the waste discharge valve in the compartment under the console step inside the port side of the console interior

- Use the display control feature to activate the overboard diaphragm discharge pump.
- Monitor the pumping operation closely using the Display Black Water Tank Level monitor as the tank is drained and turn the pump off immediately when draining is complete.
- Close the overboard discharge valve

Notice:

In order to comply with current State, Federal and Coast Guard regulations, the Overboard Discharge valve in the forward bilge must be closed and locked whenever the boat is operating in areas in which the discharge of sewage is prohibited.

**Head System Maintenance**

The head should be cleaned and inspected for leaks regularly.

The holding tank should be pumped out and flushed as needed. Periodically add chemical to the holding tank to help control odor and to chemically

break down the waste. See the head manufacturer owner's manual for additional operating and maintenance information. To reduce odor in the cabin, never allow waste to remain in the holding tank for more than one week. Make sure to add fresh water to the holding tank and pump the tank several times to flush it out during pump out operations.

Notice:

The head system must be properly winterized before the winter lay-up. Please refer to the Seasonal Maintenance chapter and the manufacturer owner's manual for winterizing instructions.

Cabin Light

The overhead light in the cabin is powered by the DC electrical system and protected by fuses. The overhead light controlled by the switch on the light fixture.

11.2 Cabin Woodwork

Floors and Steps

The synthetic wood floors can be vacuumed then washed with a mixture of soap and water. Wipe the floor dry with a clean towel. Teak Decking also offers a cleaner that can be used.

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Chapter 12: Routine Maintenance

12.1 Exterior Hull and Deck

Hull Cleaning-Below the Water Line

When the boat is removed from the water, clean the outer bottom surface immediately. Algae, grass, dirt and other marine growth is easier to remove while the hull is still wet. Use a pressure cleaner or a hard bristle brush to clean the surface.

Bottom Painting

If the boat is to be left in saltwater for extended periods, the hull must be protected from marine growth by antifouling paint. Because of variations in water temperature, marine growth, and pollution in different regions, a qualified boat yard in your area should be consulted when deciding what bottom paint system to apply to your hull. This is extremely important as pollution and marine growth can damage fiberglass hulls. Use only standard antifouling paints and fiberglass wax removers and primers recommended by the antifouling paint manufacturer when preparing the hull for bottom paint. Light sanding, just enough to scuff the gel coat or a skip sand primer system can be used to prepare the hull for bottom paint. The use of coatings other than standard antifouling paint or epoxy barrier coatings are not recommended and will void the hull blister warranty. Do not allow the hull antifouling paint to contact the out-board motors. Most antifouling paints designed for hull bottoms contain copper and can cause severe galvanic-corrosion damage to the motors. Always leave at least a 1/2" barrier between the hull bottom paint and outboard motors.

Most bottom paints require some maintenance. Proper maintenance is especially important when the boat is in saltwater and not used for extended periods or after dry storage. If the hull bottom has been painted with anti-fouling paint, contact your dealer or local boat yard for the recommended maintenance procedures.

Anodes

Sacrificial anodes are installed on the outboard motors, engine brackets and trim tabs. The anodes are less noble than copper-based alloys, stainless steel and aluminum. They will deteriorate first, protecting the more noble underwater hardware against galvanic corrosion. Anodes provide protection against galvanic corrosion for the engines, thru-hull fittings, trim tabs and other underwater hardware that is bonded. They must be monitored if the boat is to be left in the water. Anodes should be checked monthly and changed when they are 50% of their original size. When replacing the anodes, make sure the contact surfaces are clean, shiny metal and free of paint and corrosion. Never paint over the anode.

Boats stored in saltwater will normally need to have the anodes replaced every 6 months to one year. Anodes requiring replacement more frequently may indicate a stray current problem within the boat or at the slip or marina. Anodes that do not need to be replaced after one year may not be providing proper protection. Loose or low-quality anodes could be the problem.

There are multiple anodes on outboard engines. You should refer to the outboard engine owner's manual for the location of the anodes on your engines. Only use replacement anodes recommended by the engine manufacturer. Contact your engine dealer or Scout Customer Service for the proper size and type of anodes to be used and the specific installation procedure.

Fiberglass Gel Coat

Normal maintenance requires only washing with mild soap and water. A stiff brush can be used on the non-skid areas. Kerosene or commercially prepared products will remove oil and tar, which could be a problem on trailered boats. Harsh abrasive and chemical cleaners are not recommended because they can damage or dull the gel coat, reducing its life and making it more susceptible to stains. When the boat is used in

saltwater, it should be washed thoroughly with soap and water after each use.

At least once a season, wash and wax all exposed fiberglass surfaces. Use high quality automotive or boat wax. Follow the procedure recommended by the wax manufacturer. The washing and waxing of your boat will have the same beneficial effects as they have on an automobile finish. The wax will fill minute scratches and pores thus helping to prevent soiling and will extend the life of the gel coat or paint.

After the boat is exposed to the direct sunlight for a period of time, the gel coat or painted surfaces tend to fade, dull or chalk. A heavier buffing is required to bring the finish back to its original luster. For power cleaning use a light cleaner. To clean the boat by hand, use a heavier automotive cleaner. Before cleaning the surfaces, read the instructions given with the cleaner. After cleaning the surfaces, apply wax and polish all fiberglass surfaces except the nonskid areas

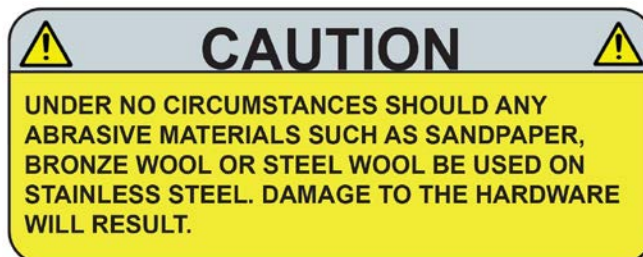
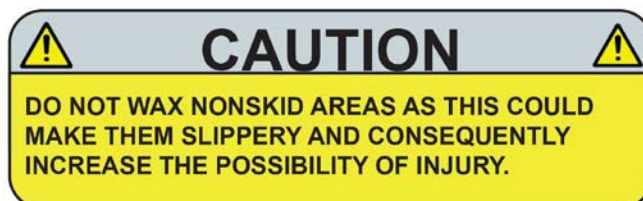
Avoid the following on gelcoat surfaces:

- Do not use plastic or other nonporous (nonbreathable) materials to cover gelcoat surfaces. Trapped moisture from condensation can cause gelcoat damage. Shrink wrap storage covers must be properly ventilated, including hull sides.
- Do not use abrasives, bleaches, ammonia, acids or harsh detergents. See your dealer for special marine formulations. Harsh abrasive and chemical cleaners are not recommended because they can damage or dull the gelcoat, reducing its life and making it more susceptible to stains.
- **NEVER** apply wax or buffing compound to a gelcoat surface in direct sunlight. Chalking, stains and minor scratches can be removed in most cases with careful rubbing and polishing with appropriate compounds or chemicals and is best done by a professional - see your dealer. If the fiberglass should become damaged and need repair, contact your dealer or Scout

Customer Service for assistance in finding an authorized repair person to make the repairs.

Never do the following on Stainless Steel.

- Do not use coarse abrasives like sandpaper or steel wool which may cause rusting.
- Do not use acids or bleaches which may etch the naturally occurring protective coating.
- Do not leave stainless steel in contact with iron, steel or other metals which cause contamination leading to rust or corrosion



Stains can be removed with a metal polish or fine polishing compound. To minimize corrosion, use only high-quality stainless-steel fasteners on aluminum fabrications. Isolate the fasteners from the aluminum by using fiber washers and caulking compound or Tef Gel to bed hardware and fasteners mount to aluminum fabrications. If the anodized coating is badly scratched, it will require special attention and more frequent cleaning to the damaged area. With proper care, anodized aluminum will provide many years of service.

Powder Coated Aluminum

Powder coated aluminum should be washed periodically with soap and water to keep it clean. If



the boat is used in saltwater or polluted water, the aluminum should be washed with soap and water after each use.

Saltwater allowed to remain on powder coated aluminum will penetrate the coating and attack the aluminum, usually around fasteners and hardware mounted to the aluminum.

Pay special attention to the area just below the top. This area is subject to salt buildup from salty condensation and sea spray. It is also frequently overlooked when the boat is washed and will not be rinsed by the rain. Consequently, the powder coating near fasteners and hardware mounted just below the top is more likely to be attacked by the salt and become corroded than the exposed areas on the structure. Make sure the aluminum in this area is washed frequently with soap and water and rinsed thoroughly. Pay particular attention to places where the top material and lacing contact the frame.

Once a month check the entire frame for damaged powder coating and corrosion around fasteners and hardware. Nicked or badly scratched powder coating can be sanded and touched up with enamel paint. Corrosion around fasteners will have to be sanded, then touched up with paint. The fasteners will require fiber washers and sealing with caulk or Tef Gel to isolate the fastener from the aluminum and prevent damage to the paint or powder coating when the fastener is installed. Periodically applying automotive or boat wax to the powder coating will provide additional protection from the harsh effects of saltwater.

Always repair scratches, nicks and corroded areas in powder coating as soon as possible. Corrosion left unaddressed will lift the powder coating allowing moisture to travel between the power coating and the aluminum causing the corrosion to spread below the coating and damage the aluminum.

If excessive chipping and peeling occurs, it could be an indication of an electrical fault in the boat or aluminum fabrication. You should contact a qualified marine electrician to inspect your boat immediately and correct the problem if you suspect

that your boat may have a fault in the aluminum frame. You should also contact Scout Customer Service.

Notice:

Boats that are towed behind larger vessels require special attention to the aluminum hardware. The salt spray, salty steam, and chemicals in exhaust gases are particularly corrosive and will damage the surface of anodized or powder coated aluminum. It is imperative that the boat and the aluminum are cleaned thoroughly at the completion of each trip or at the end of each day on long cruises to reduce accelerated deterioration of the anodizing or powder coating and premature corrosion to the aluminum.

Notice:

You should contact Scout Customer Service before making any modifications to aluminum fabrications. Unauthorized modifications can void the warranty.

Chrome Hardware

Use a good chrome cleaner and polish on all chrome hardware.

Acrylic Plastic Glass

Acrylic glass scratches easily. Never use a dry cloth or glass cleaning solutions on acrylic. Use a soft cloth and mild soap and water for routine cleaning. Solvents and products containing ammonia can permanently damage acrylic plastic glass. Fine scratches can be removed with a fine automotive clear coat polishing compound. A coat of automotive or boat wax is beneficial to protect the surface.

Do not use the following on acrylic glass:

Abrasive Cleaners	Acetone
Solvent	Alcohol
Cleaner with Ammonia	Glass Cleaner

Counter Tops - Corian Surfaces

A mild liquid detergent and water or ammonia-based cleaner will remove most dirt and stains from Corian. For heavy cleaning, oil, and grease, use Fantastik spray cleaner. Rinse with a clean cloth

moistened with fresh water. Wipe dry with a clean cloth.

In most cases, Corian can be repaired if accidentally damaged. Minor damage, including scratches, general or chemical stains, scorching or burns, and minor impact marks, can be repaired with a light abrasive cleanser and a Scotch-Brite® pad. For heavier damage, light sanding and machine buffing may be necessary, so contact your Scout dealer or a professional.

- Avoid exposing Corian to strong chemicals, such as paint removers, oven cleaners, etc. If contact occurs, quickly flush the surface with water.
- Remove nail polish with a non-acetone-based polish remover and flush with water.
- Do not cut directly on Corian counter tops.

12.2 Upholstery, Canvas and Enclosures

Vinyl Upholstery

The vinyl upholstery used on the seats, cushions, bolsters, and for the headliner in some cabins, should be cleaned periodically with mild soap and water. Any stain, spill or soiling should be cleaned up promptly to prevent the possibility of permanent staining.

When cleaning, always rub gently. Avoid using products containing ammonia, powdered abrasive cleaners, steel wool, ink, strong solvents, acetone and lacquer solvents or other harsh chemicals as they can cause permanent damage or shorten the life of vinyl. Never use steam heat, heat guns or hair dryers on vinyl. Stronger cleaners, detergents and solvents may be effective in stain removal but can cause either immediate damage or slow deterioration. Lotions, suntan oil, waxes and polishes, etc., contain oils and dyes that can cause stiffening and staining of vinyl.

- Dry soil, dust and dirt - Remove with a soft cloth.
- Dried on dirt - Wash with a soft cloth dampened with water.

- Variations in surface gloss - Wipe with a water dampened soft cloth and allow to air dry.
- Stubborn dirt - Wash with a soft cloth dampened with Ivory Flakes® and water. Rinse with clean water.
- Stubborn spots and stains - Spray with either Fantastik Cleaner® or Tannery Car Care Cleaner® and rub with a soft cloth. Rinse with clean water.
- Liquid spills - Wipe immediately with a clean absorbent cloth. Rinse with clean water.
- Food grease and oily stains - Spray immediately using either Fantastik Cleaner® or Tannery CarCare Cleaner®, wiping with a soft cloth. Take care not to extend the area of contamination beyond its original boundary. Rinse with clean water.

Acrylic Canvas

Modern, bright colored canvas tops are usually fabricated from acrylic fabrics with trade names like Sunbrella®, Argonaut®, etc. Acrylic fabrics look like cotton canvas but are much more durable and color fast.

Acrylic canvas can be cleaned by using Ivory Flakes, Ivory Liquid or another mild soap and water. Scrub lightly and rinse thoroughly to remove the soap. Do not use detergents, as they will deteriorate the waterproofing in the fabric. The underside can be brushed with a soft brush and sprayed with a disinfectant to prevent the accumulation of dirt and mildew.

The top or accessories should never be folded or stored wet.

In freshwater areas, the top and curtains should be washed weekly. This is particularly important if the boat is stored near a highway, airport or in a large city. Residue from jet fuel, exhaust fumes and industrial pollution can shorten the life of tops and enclosures. In saltwater areas, the top and curtains should be rinsed with fresh water after each use and at least weekly if it is stored outside. Saltwater attracts moisture and dirt that can shorten the life of fabric tops and enclosures. The salt is also

abrasive and can cause premature wear in the fabric and stitching.

After several years, the acrylic canvas may lose some of its ability to shed water. If this occurs, wash the fabric and let it dry thoroughly. Then treat the outside surface with commercially available waterproofing designed for this purpose. Waterproofing is available in bulk at most canvas shops. One-gallon Garden sprayers are excellent for applying waterproofing.

Notice:

Some leakages at the seams is normal and unavoidable with acrylic enclosures.

Laminated Vinyl Tops

Laminated vinyl top material is a lamination of two plies of specially formulated vinyl with an inner reinforcing core fabric. The most common trade name for this fabric is Weblon.® It is not unusual for the interior to be a different color than the exterior. There is a greater tendency for this type of fabric to leak at the seams than with acrylic or vinyl coated polyester. Paraffin wax that matches the top can be used to seal the seams if necessary.

Laminated vinyl fabrics should be cleaned periodically by using Ivory Flakes, Ivory Liquid or another mild soap and water. Scrub lightly and rinse thoroughly to remove the soap. Do not use detergents, or harsh cleaners like bleach and ammonia. They will attack the vinyl in the fabric and shorten its life. The top or accessories should never be folded or stored wet.

In freshwater areas, the top and curtains should be washed weekly. This is particularly important if the boat is stored near a highway, airport or in a large city. Residue from jet fuel, exhaust fumes and industrial pollution can shorten the life of tops and enclosures.

In saltwater areas, the top and curtains should be rinsed with fresh water after each use and at least weekly if it is stored outside. Saltwater attracts moisture and dirt that can shorten the life of fabric

tops and enclosures. The salt is also abrasive and can cause premature wear in the stitching.

Notice:

Do not use any polish containing lemon scents or lemon. The lemon juice will attack the vinyl and shorten its life.

Snap should be lubricated periodically with petroleum jelly, silicone grease or a lubricant designed for snaps. Zippers should be lubricated with silicone spray, paraffin or silicone stick.

13.3 Interior

The cabin can be cleaned just like you clean a home interior. To preserve woodwork, use teak oil.

Fiberglass should be wiped down with a damp towel as necessary to remove dust and dirt. If you leave the boat for a long period of time, open all interior cabin and locker doors, and hang a commercially available mildew protector in the cabin.

Notice:

Always read the label carefully on mildew protectors. Remove the protector and allow the cabin to ventilate completely before using the cabin.

12.4 Engine & Fuel

Proper engine maintenance is essential to the proper performance and reliability of your outboard engines. Maintenance schedules and procedures are outlined in your engine owner's manual. They should be followed exactly.

If the boat is used in saltwater, flush the cooling systems after each daily use. To flush the systems when the boat is out of the water, follow the procedure outlined in your engine owner's manual.

Proper engine operation requires a good supply of clean, dry fuel. Improper marina fuel storage techniques, limited boat usage, etc. can cause the fuel to become contaminated.

The age of fuel can affect engine performance. Chemical changes occur as the fuel ages that can cause deposits and reduce the octane rating of the fuel. Severely degraded fuel can damage the engines and boat fuel tank and lines. Therefore, if your boat is not being run enough to require at least one full tank of fresh fuel a month, a fuel additive should be added to protect it from degradation. Your dealer or the engine manufacturer can provide additional information on fuel degradation and fuel stabilizers recommended for your engine.

In many states, most gasoline is blended with ethanol alcohol. Ethanol is a strong solvent and can absorb water during periods of storage. You should refer to the engine operating manual for information regarding alcohol blended fuels and how it affects the operation of your marine engine.

12.5 Bilge

To keep the bilge clean and fresh, it is recommended that you use a commercial bilge cleaner on a regular basis. Follow the directions carefully. All exposed pumps and metal components in the bilge should be sprayed periodically with a protector to reduce the corrosive effects of the high humidity always present in these areas. Periodically check the bilge pumps and alarms for proper operation and clean debris from the strainers and float switches. Inspect all hoses, clamps and thru-hulls for leaks and tightness on a regular basis and operate all thru-hull valves at

least once a month to keep them operating properly.

Frequently test the automatic switches for the bilge pumps and alarms for proper operation. This is accomplished by lifting the float switch or pressing the “Push to Test” button on the side of the pump until the pump or alarm is activated. You can also use a garden hose to flood the bilge until the water level is high enough to activate the pump or alarm.

12.6 Drainage

It is essential that the following items be done periodically to maintain proper drainage of your boat:

- Clean the cockpit drains with a hose to remove debris that can block water drainage.
- Flush all gravity drains with fresh water to keep them clean and free flowing.
- Clean and flush the baitwell, coolers and storage boxes with soap or a bilge cleaner and fresh water after each use to keep them clean and fresh.
- Operate the thru-hull valves once a month and service as required.
- Run all overboard pumps briefly at least once a month to keep them operating properly.

Notice:

All drains and pumps must be properly winterized before winter lay-up.

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Chapter 13: Seasonal Maintenance

13.1 Storage and Lay-up

Before Hauling:

- Pump out the head holding tank. Flush the holding tank using clean water, soap and a deodorizer. Pump out the cleaning solution.
- The fuel tanks should be left nearly full to reduce condensation that can accumulate in each tank. Allow enough room in the tanks for the fuel to expand without leaking out the vents. Moisture from condensation in the fuel tank can reach such concentrations that it becomes heavy enough to settle out of the fuel to the bottom of the tank. Since fuel pick-up tubes are located near the bottom of the tank, this accumulated moisture can cause the engines to run poorly, or not at all, after extended storage. Chemical changes also occur as the gasoline ages that can cause deposits and varnish in the fuel system as well as reduce the octane rating of the fuel. Severely degraded fuel can damage the engines and boat fuel tank and lines. Therefore, if your boat is not being run enough to require at least one full tank of fresh fuel a month or during winter storage, a fuel stabilizer should be added to the gasoline to help protect the fuel system from these problems.
- Your dealer or the engine manufacturer can provide additional information on fuel degradation and fuel stabilizers recommended for your engines. For more recommendations for your specific area, check with your local Scout dealer.
- Drain water from the freshwater system.
- Consult the engine owner's manual for detailed information on preparing the engines for storage.

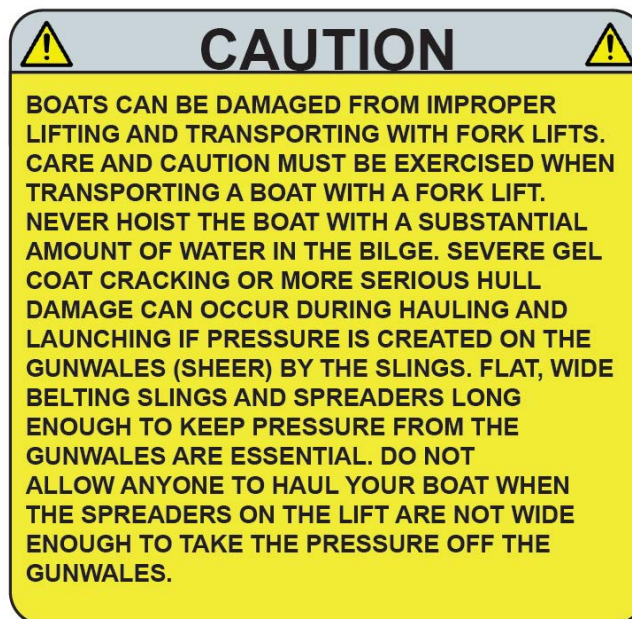
Lifting

It is essential that care be used when lifting your boat. Make sure the spreader bar at each sling is at least as long as the distance across the widest point of the boat that the sling will surround. Put the slings in position. Refer to the sling locations for the correct position of the lifting slings. The fore and aft

slings should be tied together to prevent the slings from sliding on the hull.

SLING

Sling Decal for Lifting Points



When Storing the Boat on a Lift or Cradle:

- The cradle must be specifically for boat storage.
- Make sure the cradle or lift is well supported with the bow high enough to provide proper drainage of the bilge and cockpit.
- Make sure the engines are in full down position.
- The cradle or lift must be in the proper fore and aft position to properly support the hull. When the cradle or lift is in the correct location, the bunks should match the bottom of hull and should not be putting pressure on the lifting strakes.

When Supporting the Boat with Blocking:

- Make sure the boat is blocked on a level surface and the bow is high enough so that water will drain from the bilge and cockpit.
- Make sure the keel is supported with large, solid wood blocks in at least four points.
- Use at least three heavy duty jacks on each side of the hull and make sure the boat is level from

side to side. The jacks must be on a solid surface like packed gravel, concrete or pavement. All of the supports must be set up properly to prevent the boat from shifting while it is in storage.

Preparing The Boat for Storage:

- Remove the bilge drain plug(s), if installed. (Some boats do not have bilge drain plugs)
- Remove all oxidation from the exterior hardware and apply a light film of moisture displacing lubricant, wax or a metal protector.
- Thoroughly wash the fiberglass exterior, especially the antifouling portion of the bottom. Remove as much marine growth as possible. Lightly wax the exterior fiberglass components.
- Remove propellers and grease the propeller shafts using light waterproof grease.
- Remove the batteries and store them in a cool place. Clean using clear, clean water. Be sure the batteries have sufficient water and clean terminals. Keep the batteries charged and safe from freezing throughout the storage period.

Notice:

Refer to the Electrical System chapter, for information on the maintenance of the and DC electrical systems



- Coat all faucets and exposed electrical components in the cabin and cockpit with a protecting oil.
- Clean out, totally drain and completely dry the fishboxes, coolers, sinks and baitwells.

- Thoroughly clean the interior of the boat. Vacuum all carpets and dry clean drapes and upholstery.
- Remove cushions and open as many locker doors as possible. Leaving as many of these areas open as possible will improve the boat's ventilation during the storage period.

Notice:

It is recommended that a mildew preventer be hung in the cabin before it is closed for storage.

Clean the exterior upholstery with a good vinyl cleaner and dry thoroughly. Spray the weather covers and boat upholstery with a spray disinfectant. Enclosed areas such as the shower basin, storage locker areas, etc. should also be sprayed with this disinfectant

13.2 Freshwater System Winterizing

The entire freshwater system must be completely drained and winterized using the following procedure.

Draining the Freshwater System

- Make sure the filters and freshwater tank are completely drained.

Using Antifreeze

A recommended alternative to the above-mentioned procedure is the use of commercially available nontoxic, freshwater system antifreeze.

- After draining the freshwater tank, lines, filters and water heater, pour 10 gallons of potable water antifreeze into the freshwater tank.
- Prime and operate the pumps until antifreeze flows from all freshwater faucets. Be sure to open all hot and cold-water faucets, including the freshwater shower in the head compartment, anchor locker and cockpit washdown hose nozzles, cockpit shower, leaning post sink and windshield washers.
- Activate the marine toilet flush cycle several times to properly winterize the freshwater supply line at the toilet. Make sure to repeat the flush cycle as necessary until antifreeze is flowing to the toilet bowl.

- Make sure antifreeze has flowed through all the freshwater drains.

13.3 Raw Water System Winterizing

The raw water washdown and seawater supply pumps and systems must be completely drained and winterized using the following procedure.

Sea Water Supply Systems The raw water systems require the following procedure to be properly winterized.

Boat Sea Water Pumps

1. Remove and clean the screens for both sea strainers on the intake lines for the sea chest. Reassemble the strainers.
2. Close all pump supply valves and open both inlet valves.
3. Remove the vent hose from the raw water pump and use compressed air at very low pressure to blow the water from the pump.
4. Remove the drain plugs in both sea strainer bowls and use compressed air to blow all water from the intake lines and both sea strainers.
5. Replace the strainer drain plugs and close the intake valves.
6. Disconnect the inlet and outlet water lines from the raw water washdown pump at the pump.
7. Open the nozzle on the cockpit washdown hose and use very low pressure to blow as much water from the pressure line and hose as possible.
8. Open the raw water supply valve on raw water connections and use compressed air to blow the water from the raw water pump intake line.
9. Because of the check valve mechanism built into the raw water washdown pump, blowing the lines will not remove the water from the raw water pump. Make sure the inlet and outlet lines are disconnected from the pump. Turn the pump on and allow it to pump out any remaining water, about a cup full.
10. Reconnect the lines to the pump.
11. Connect one end of a five-foot length hose to the vent fitting on the raw water pump and place the other end in a 5-gallon bucket filled with potable water anti-freeze. Have another 5-gallon bucket of antifreeze available to fill the supply bucket as necessary.
12. Open the raw water pump supply valve and the nozzles on the washdown hoses. Make sure the hose connected to the sea chest vent fitting is at the bottom of the bucket of antifreeze and activate pump. The pump will create a vacuum and draw the antifreeze from the bucket into the raw water system. Add antifreeze to the bucket as necessary and allow the pump to run until antifreeze is flowing from the washdown hose nozzle. Then shut off the pump and close the hose nozzles and supply valve.
13. Be sure antifreeze has flowed through all raw water drain thru-hull fittings.

Notice:

Refer to the Raw Water System chapter for additional information on the raw water system.

13.4 Drainage & Other Water System Winterizing

Cabin and Cockpit Drains

Use very low pressure compressed air to blow the water from all cabin storage compartments and cockpit drains. Make sure to blow out the scupper drains. Pour potable water antifreeze into each drain until it flows from the thru-hull fitting. Dry the self-bailing cockpit troughs. Water freezing in these areas could cause damage.

Baitwell and Recirculation System

Install the baitwell drain plug and pour potable water antifreeze in the baitwell until it covers the intake for the recirculation pump. Then activate the recirculation pump until antifreeze is visible at the discharge fitting. Remove the drain plugs and wipe down the inside of the wells.

Marine Toilet and Waste Overboard Discharge System

Drain the discharge hoses completely using low air pressure if necessary. The waste holding tank and diaphragm discharge pump must be pumped dry and two gallons of potable water antifreeze poured

into the tank through the deck waste pump out fitting. After the antifreeze has been added to the holding tank, open the overboard discharge valve and activate the diaphragm pump until the antifreeze solution is visible at the discharge thru-hull. The marine toilet must be properly winterized by following the manufacturer's winterizing instructions in the marine toilet owner's manual.

Notice:

Make sure you follow the marine toilet manufacturer's winterizing instructions exactly. The freshwater supply line to the toilet must be properly winterized when winterizing the freshwater system.

13.5 Winterizing Bilge Components & Engines

Coat all metal components, wire busses, pumps and connector plugs in the bilge with a protecting oil. It is also important to protect all strainers, seacocks and steering components.

The bilge pumps and discharge hoses must be completely free of water and dried out when the boat is laid-up for the winter in climates where freezing occurs. Compartments and areas in the bilge that will not drain completely should be pumped out and then sponged until completely free of water. Water freezing in these areas could cause damage.

Outboard Engines

The engines should be flushed with fresh water for at least 15 minutes prior to winter storage. This will remove salt, sand and other contamination that can damage the engine. It is also important to "Fog" the cylinders, change the gear and crankcase oil, coat each engine with a protector, wax the exterior and properly store and charge the batteries. You should refer to the engine owner's manual or contact your dealer for specific instructions on winterizing your engines.

13.6 Preparing Exterior & Interior Equipment for Winter Storage

Hardtop

Remove canvas and thoroughly clean and store in a safe, dry place. Remove all electronics. Coat all wire connectors and bus bars in the helm compartment with protective oil.

Special Notes Prior To Winter Storage

If the boat is in outside storage, properly support a storage cover and secure it over the boat. It is best to have a frame built over the boat to support the canvas. It should be a few inches wider than the boat so the canvas will clear the rails and allow the passage of air. If this cover is fastened too tightly there will be inadequate ventilation and this can lead to mildew, moisture accumulation, etc. It is essential to fasten the canvas down securely so that the wind cannot remove it or cause chafing of the hull superstructure. Do not store the boat in a damp storage enclosure. Excessive dampness can cause electrical problems, corrosion, and excessive mildew.

Whenever possible, do not use a sunshade or other boat canvas in place of a winter storage cover. The life of these canvases may be significantly shortened if exposed to harsh weather elements for long periods.

Proper storage is very important to prevent serious damage to the boat. If the boat is stored indoors, make sure the building has enough ventilation. It is very important that there is enough ventilation both inside the boat and around the boat.



Notice:

If the boat is to be stored indoors or outdoors, open all interior drawers, clothes lockers, cabinets, and doors a little. If possible, remove

the upholstery, mattresses, clothing, and rugs. Then hang a commercially available mildew protector in the interior compartments

13.7 Recommissioning



Notice: It is important and recommended that the fitting out procedure for the marine gear be done by a qualified service person. Read the engine owner's manual for the recommended procedure.



Reactivating The Boat After Storage:

- Charge and install the batteries.
- Check the engines for damage and follow the manufacturer's instructions for recommissioning.
- Check the mounting bolts for the engines to make sure they are tight.

- Perform all routine maintenance.
- Check all hose clamps for tightness.
- Pump the antifreeze from the fresh and raw water systems and flush several times with fresh water. Make sure all antifreeze is flushed from the water heater, and it is filled with fresh water before it is activated.
- Check and lubricate the steering system.
- Clean and wash the boat.
- Install all upholstery, cushions and canvas.

After Launching:

- Carefully inspect the engine bolts and other transom mounted equipment for leaks.
- Open the sea chest inlet valves and carefully check the sea chest and all water systems for leaks. Operate each system one at a time checking for leaks and proper operation.
- Check the bilge pump manual and automatic switches.
- Check the high-water alarm.
- When each engine starts, check the cooling system port below the engine cowling for a strong stream of water. This ensures that the cooling pump is operating.
- Carefully monitor the gauges and check for leakage and abnormal noises.
- Operate the boat at slow speeds until the engine temperature stabilizes and all systems operate normally.

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Appendix A: Glossary of Terms

Aft: In, near, or toward the stern of a boat.

Aground: A boat stuck on the bottom.

Amidships: In or toward the part of a boat midway between the bow and stern.

Anchor: A specially shaped heavy metal device designed to dig efficiently into the bottom under a body of water and hold a boat in place.

Anchorage: An area specifically designated by governmental authorities in which boats may anchor.

Ashore: On shore.

Astern: Behind the boat, to move backwards.

Athwartship: At right angles to the center line of the boat.

Barnacles: Small, hard-shelled marine animals which are found in salt water attached to pilings, docks and bottoms of boats.

Beam: The breadth of a boat usually measured at its widest part.

Bearing: The direction of an object from the boat, either relative to the boat's direction or to compass degrees.

Berth: A bunk or a bed on a boat.

Bilge: The bottom of the boat below the flooring.

Bilge Pump: A pump that removes water that collects in the bilge.

Boarding: Entering or climbing into a boat.

Boarding Ladder: Set of steps temporarily fitted over the side of a boat to assist persons coming aboard.

Boat Hook: Short shaft of wood or metal with a hook fitting at one end shaped to aid in extending one's reach from the side of the boat.

Bow: The front end of a boat's hull

Bow Line: A line that leads forward from the bow of the boat.

Bow Rail: Knee high rails of solid tubing to aid in preventing people from falling overboard.

Bridge: The area from which a boat is steered and controlled.

Bridge Deck: A deck forward and usually above the cockpit deck.

Broach: When the boat is sideways to the sea and in danger of capsizing; a very dangerous situation that should be avoided.

Bulkhead: Vertical partition or wall separating compartments of a boat.

Cabin: Enclosed superstructure above the main deck level.

Capsize: When a boat lays on its side or turns over.

Chock: A deck fitting, usually of metal, with inward curving arms through which mooring or anchor lines are passed so as to lead them in the proper direction both on board and off the boat.

Cleat: A deck fitting, usually of metal with projecting arms used for securing anchor and mooring lines.

Closed Cooling System: A separate supply of fresh water that is used to cool the engine and circulates only within the engine.

Coaming: A vertical piece around the edges of cockpit, hatches, etc. to stop water on deck from running below.

Cockpit: An open space, usually in the aft deck, outside of the cabin.

Companionway: Opening in the deck of a boat to provide access below.

Compartment: The interior of a boat divided off by bulkheads.

Cradle: A framework designed to support a boat as she is hauled out or stored.

Cutlass Bearing: A rubber bearing in the strut that supports the propeller shaft

Deck: The floor-like platform of a boat that covers the hull.

Displacement: The volume of water displaced by the hull. The displacement weight is the weight of this volume of water.

Draft: The depth of water a boat needs to float.

Dry Rot: A fungus attack on wood areas.

Dry-dock: A dock that can be pumped dry during boat construction or repair.

Electrical Ground: A connection between an electrical connector and the earth.

Engine Beds: Sturdy structural members running fore and aft on which the inboard engines are mounted.

EPIRB: Emergency Position Indicating Radio Beacon. Operates as a part of a worldwide satellite distress system.

Even Keel: When a boat floats properly as designed.

Fathom: A measure of depth. One Fathom = 6 feet.

Fender: A soft object of rubber or plastic used to protect the top sides from scarring and rubbing against a dock or another vessel.

Fend off: To push or hold the boat off from the dock or another boat.

Flying Bridge: A control station above the level of the deck or cabin.

Flukes: The broad portions of an anchor which dig into the ground.

Fore: Applies to the forward portions of a boat near the bow.

Foundering: When a boat fills with water and sinks.

Freeboard: The height from the waterline to the lowest part of the deck.

Galley: The kitchen of a boat.

Grab Rail: Hand-hold fittings mounted on cabin tops or sides for personal safety when moving around the boat, both on the deck and below.

Ground Tackle: A general term including anchors, lines, and other gear used in anchoring.

Grounds: A boat touches the bottom.

Gunwale: The upper edge of a boat's side.

Handrail: Rail mounted on the boat, for grabbing with your hand, to steady you while walking about the boat.

Harbor: An anchorage which provides reasonably good protection for a boat, with shelter from wind and sea.

Hatch: An opening in the deck with a door or lid to allow for access down into a compartment of a boat.

Head: A toilet on a boat.

Heat Exchanger: Used to transfer the heat that is picked up by the closed cooling system to the raw cooling water.

Helm: The steering and control area of a boat.

Hull: The part of the boat from the deck down.

Inboard: A boat with the engine mounted within the hull of the boat. Also refers to the center of the boat away from the sides.

Inboard/outboard: Also stern drive or I/O. A boat with an inboard engine attached to an outboard drive unit.

Keel: A plate or timber plate running lengthwise along the center of the bottom of a boat.

Knot: Unit of speed indicating nautical miles per hour. 1 knot = 1 nautical mile per hour (1.15 miles per hour). A nautical mile is equal to one minute of latitude: 6076 feet. Knots times 1.15 equals miles per hour. Miles per hour times .87 equals knots.

Lay-up: To decommission a boat for the winter (usually in northern climates).

Leeward: The direction toward which the wind is blowing.

Length On The Waterline (L.W.L.): A length measurement of a boat at the waterline from the stern to where the hull breaks the water near the bow.

Limber Hole: A passage cut into the lower edges of floors and frames next to the keel to allow bilge water to flow to the lowest point of the hull where it can be pumped overboard.

Line: The term used to describe a rope when it is on a boat.

List: A boat that inclines to port or starboard while afloat.

L.O.A.: Boat length overall.

Locker: A closet, chest or box aboard a boat.

Loran: An electronic navigational instrument which monitors the boat's position using signals emitted from pairs of transmitting stations.

Lunch hook: A small light weight anchor typically used instead of the working anchor. Normally used in calm waters with the boat attended.

Midship: The center of the boat.

Marina: A protected facility primarily for recreational small crafts.

Marine Ways or Railways: Inclined planes at the water's edge onto which boats are hauled.

Moored: A boat secured with cables, lines or anchors.

Mooring: An anchor permanently embedded in the bottom of a harbor that is used to secure a boat.

Nautical Mile: A unit of measure equal to one minute of latitude. (6076 feet)

Nun Buoy: A red or red-striped buoy of conical shape.

Outboard: A boat designed for an engine to be mounted on the transom. Also, a term that refers to objects away from the center line or beyond the hull sides of a boat.

Pad Eye: A deck fitting consisting of a metal eye permanently secured to the boat.

Pier: A structure which projects out from the shoreline.

Pile or Piling: A long column driven into the bottom to which a boat can be tied.

Pitching: The fore and aft rocking motion of a boat as the bow rises and falls.

Pitch: The measure of the angle of a propeller blade referring to the theoretical distance the boat travels with each revolution of the propeller.

P.F.D.: Personal Flotation Device.

Port: The left side of the boat when facing the bow.

Porthole (port): The opening in the side of a boat to allow the admittance of light and air.

Propeller: A device having two or more blades that is attached to the engine and used for propelling a boat.

Propeller Shaft: Shaft which runs from the back of the engine gear box, aft, through the stuffing box, shaft log, struts, and onto which the propeller is attached.

Pyrotechnic Distress Signals: Distress signals that resemble the brilliant display of flares or fireworks.

Raw Water Cooled: Refers to an engine cooling system that draws seawater in through a hull fitting or engine drive unit, circulates the water in the engine, and then discharges it overboard.

Reduction Gear: Often combined with the reverse gear so that the propeller turns at a slower rate than the engine.

Reverse Gear: Changes the direction of rotation of the propeller to provide thrust in the opposite direction for stopping the boat or giving it sternway.

Roll: A boat's sideways rotational motion in rough water.

Rope Locker: A locker, usually located in the bow of a boat, used for stowing the anchor line or chain.

Rubrail: Railing (often rubber or hard plastic) that runs along the boat's sheer to protect the hull when coming alongside docks, piers, or other boats.

Rudder: A moveable flat surface that is attached vertically at or near the stern for steering.

Sea Anchor: An anchor that does not touch the bottom. Provides drag to hold the bow in the most favorable position in heavy seas

Scupper: An opening in the hull side or transom of the boat through which water on deck or in the cockpit is drained overboard.

Seacock: Safety valves installed just inside the thru-hull fittings and ahead of the piping or hose running from the fittings.

Shaft Log: Pipe through which the propeller shaft passes.

Sheer: The uppermost edge of the hull.

Sling: A strap which will hold the boat securely while being lifted, lowered, or carried.

Slip: A boat's berth between two pilings or piers.

Sole: The deck of a cockpit or interior cabin.

Spring Line: A line that leads from the bow aft or from the stern forward to prevent the boat from moving ahead or astern.

Starboard: The right side of a boat when facing the bow.

Steerageway: Sufficient speed to keep the boat responding to the rudder or drive unit.

Stem: The vertical portion of the hull at the bow.

Stern: The rear end of a boat.

Stow: To pack away neatly.

Stringer: Longitudinal members fastened inside the hull for additional structural strength.

Strut: Mounted to the hull which supports the propeller shaft in place.

Strut Bearing: See "cutlass bearing."

Stuffing Box: Prevents water from entering at the point where the propeller shaft passes through the shaft log.

Superstructure: Something built above the main deck level.

Swamps: When a boat fills with water from over the side.

Swimming Ladder: Much the same as the boarding ladder except that it extends down into the water.

Taffrail: Rail around the rear of the cockpit.

Thru-hull: A fitting used to pass fluids (usually water) through the hull surface, either above or below the waterline.

Topsides: The side skin of a boat between the waterline or chine and deck.

Transom: A flat stern at right angles to the keel.

Travel Lift: A machine used at boat yards to hoist boats out of and back into the water.

Trim: Refers to the boat's angle or the way it is balanced.

Trough: The area of water between the crests of waves and parallel to them.

Twin-Screw Craft: A boat with two propellers on two separate shafts.

Underway: When a boat moves through the water.

Wake: Disrupted water that a boat leaves astern as a result of its motion.

Wash: The flow of water that results from the action of the propeller or propellers.

Waterline: The plane of a boat where the surface of the water touches the hull when it is afloat on even keel.

Watertight Bulkhead: Bulkheads secured so tightly so as not to let water pass.

Wharf: A structure generally parallel to the shore.

Working Anchor: An anchor carried on a boat for most normal uses. Refers to the anchor used in typical anchoring situations.

Windlass: A winch used to raise and lower the anchor.

Windward: Toward the direction from which the wind is coming.

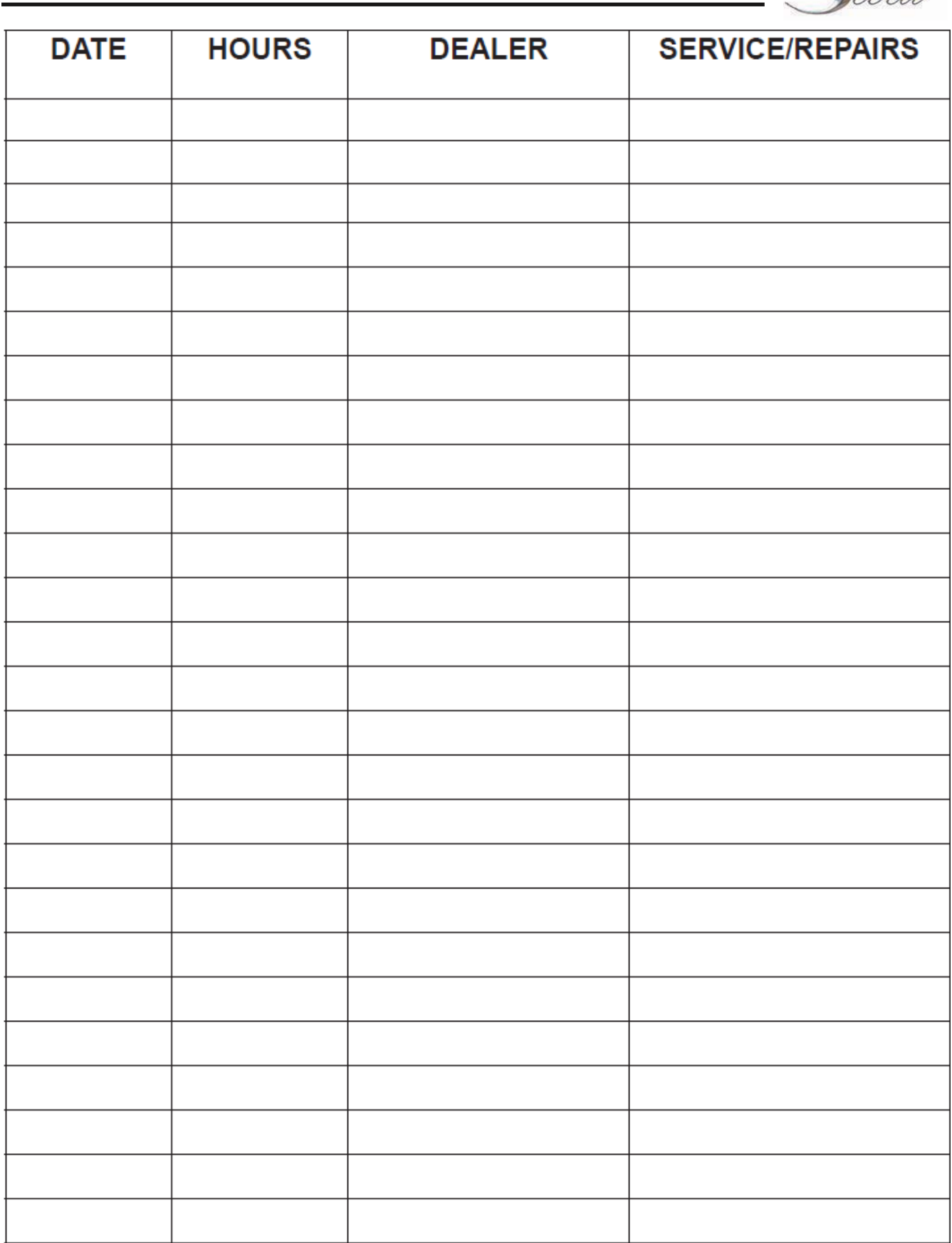
Yacht Basin: A protected facility primarily for recreational small craft.

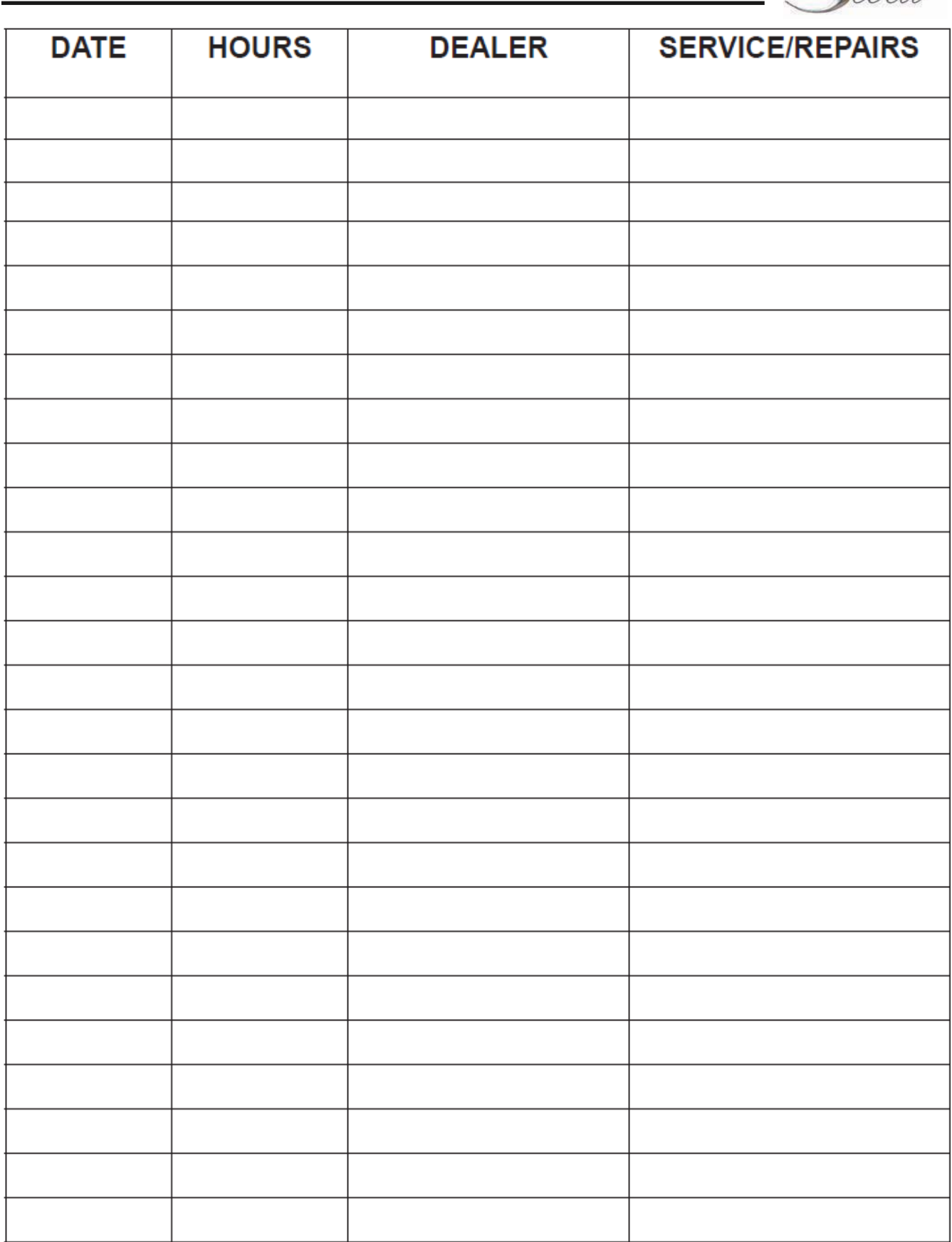
Yaw: When a boat runs off her course to either side.

Appendix B: Maintenance Log

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Appendix C: Boating Accident Report



SCAN BARCODE ABOVE TO GO TO U.S. COAST GUARD BOATING
ACCIDENT REPORT TO FILL OUT

Appendix D: Float Plan



SCAN BARCODE ABOVE TO GO TO U.S. COAST GUARD
FLOAT PLAN TO FILL OUT

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Appendix E: Troubleshooting Guide

PROBLEM	CAUSE AND SOLUTION
CONTROL SYSTEMS	
Hydraulic steering is slow to respond and erratic and/or the steering wheel feels bumpy.	<ul style="list-style-type: none"> Steering system is low on fluid. Fill and bleed system. Steering system has air in it. Fill and bleed system. A component in the steering system is binding. Check and adjust or repair binding component. Engine steering spindle is binding. Grease spindles.
The boat wanders and will not hold a course at cruise speeds with hydraulic steering.	<ul style="list-style-type: none"> There could be air in the steering system. Fill & bleed the system. The engines are not aligned properly. Align engines. Engine steering spindle is binding. Grease spindles.
Hydraulic steering is unusually hard.	<ul style="list-style-type: none"> The fuse for the power steering circuit has blown. Replace the fuse. An internal fuse in the power steering pump system has blown. Refer to the steering owners manual for fuse location and replace the fuse or contact your dealer for assistance. A steering line is kinked or collapsed. Replace kinked or collapsed line.
An engine will not start with the shift control lever in neutral.	<ul style="list-style-type: none"> The shift control lever is not in the neutral detent. Try moving the shift lever slightly. There is a loose wire on the neutral safety switch in the control. Inspect wires and repair loose connections. The starter or ignition switch is bad. There is a problem with the electronic control system at the helm control, module or at the engine. Have the system serviced by a qualified marine technician.
PERFORMANCE PROBLEMS	
The boat vibrates at cruising speeds.	<ul style="list-style-type: none"> Propellers may be damaged & need repair. A propeller or propeller shaft is bent. Repair or replace damaged components. The running gear is fouled by marine growth or rope. Clean running gear. The engines are not trimmed properly. Trim engines.

PROBLEM	CAUSE AND SOLUTION
PERFORMANCE PROBLEMS	
Boat is sluggish and has lost speed and RPM.	<ul style="list-style-type: none"> • The boat may be need to have marine growth cleaned from hull and running gear. • Propellers may be damaged & need repair. • Weeds or line around the propellers. Clean propellers. • Boat is overloaded. Reduce load. • Check for excessive water in the bilge. Pump out bilge & find & correct the problem. • One of the throttles is not responding properly and the engine is not getting full throttle. Have the throttle control system checked by a qualified marine technician.
ENGINE PROBLEMS	
An engine is running too hot.	<ul style="list-style-type: none"> • The engine raw water pick up strainer is clogged with marine growth. Clean pick up. • The engine raw water pump impeller is worn or damaged. Repair the pump. • The engine thermostat is faulty and needs to be replaced.
An engine alternator is not charging properly.	<ul style="list-style-type: none"> • The battery cable is loose or corroded. Clean and tighten battery cables. • The alternator is not charging and must be replaced. • The battery is defective. Replace the battery.
An engine suddenly will not operate over 2000 RPM.	<ul style="list-style-type: none"> • The engine emergency system has been activated. The on board computer has sensed a problem and has limited the RPM to protect the engine. Find & correct the problem. • The tachometer is bad and needs to be replaced. • A throttle control is not responding properly. Have the throttle setting checked by a qualified technician.
An engine is loosing RPM. The boat is not overloaded and the hull bottom and running gear are clean and in good condition.	<ul style="list-style-type: none"> • The engine may be having a problem with a sticky anti-siphon valve, located in the fuel line near the fuel tank, that is restricting the fuel flow. Remove & clean or replace the anti-siphon valve. • The remote gasoline fuel filter could be dirty. Inspect and replace the fuel filter. • The primary fuel filter on the engine may be dirty. Inspect and replace the fuel filter. • The electronic engine control system on the engine is malfunctioning. Repair the engine control system. • The fuel injection system on the engine is malfunctioning. Repair the fuel injection system.

PROBLEM	CAUSE AND SOLUTION
ACCESSORY PROBLEMS	
The baitwell pump runs, but does not pump water.	<ul style="list-style-type: none"> • The sea chest supply valve is not open. Open valve. • The sea chest intake strainers are clogged with weeds or debris. Clean the intake sea strainers. • There is an air lock in the system. Prime the system.
The fresh water pumps run, but will not pump water.	<ul style="list-style-type: none"> • The water tank is empty. Fill the tank. • The water pump strainers are clogged. Clean strainers. • The intake hose is damaged and sucking air. Replace or repair the hose. • The pump is defective. Repair or replace the pump.
The fresh water pumps fail to turn off after all outlets are closed.	<ul style="list-style-type: none"> • There is a leak in a pressure line or outlet. Repair the leak. • There is an air leak in the intake line. Repair the air leak. • The pressure switch is defective. Replace the pressure switch. • The voltage to the pump is low. Check for corroded or loose wiring connections or low battery. • The strainer is clogged. Clean strainer. • A pump is defective. Repair or replace the pump.
The washdown pump runs, but will not pump water.	<ul style="list-style-type: none"> • The sea chest supply valve is not open. Open valve. • There is an air leak in the intake line. Repair the air leak. • The sea chest intake strainers are clogged with weeds or debris. Clean the sea strainers
The washdown pump fails to turn off after all nozzles are closed.	<ul style="list-style-type: none"> • The intake hose is damaged and sucking air. Replace hose. • The pump is defective. Repair or replace the pump. • There is a leak in a pressure line or outlet. Repair the leak. • There is an air leak in the intake line. Repair the air leak. • The pressure switch is defective. Replace the pressure switch. • The voltage to the pump is low. Check for corroded or loose wiring connections or low battery.
Reduction in water flow from the bilge pump.	<ul style="list-style-type: none"> • The pump strainer is clogged. Clean strainer. • The pump is defective. Repair or replace the pump. • The discharge hose is pinched or clogged. Check discharge hose and clean or repair. • Low voltage to the pump. Check the battery and wire connections.

PROBLEM	CAUSE AND SOLUTION
ACCESSORY PROBLEMS	
The automatic switch on the bilge pump does not activate the pump.	<ul style="list-style-type: none"> • The fuse or circuit breaker for the automatic switch has tripped or blown. Replace the fuse or reset the circuit breaker. • The battery is dead. Charge or replace the battery. • The pump impeller is jammed by debris. Clean pump impeller housing. • The pump automatic switch has sensed excessive oil the bilge and shut the pump down. Clean the bilge and follow the pump manufacturer's instructions to clean and reset the pump. • The wire connections in the bilge have corroded. Replace connectors and secure above the bilge waterline. • The automatic switch is defective. Replace the switch. • The pump is defective. Replace pump.
The bilge pump will not run when the manual switch is activated.	<ul style="list-style-type: none"> • The circuit breaker or fuses supplying the switch has tripped or blown. Reset the circuit breaker or replace the fuse. • The battery switch is off. Turn on the battery switch. • The pump impeller is jammed by debris. Clean pump impeller housing. • The wire connections in the bilge have corroded. Replace connectors and secure above the bilge waterline. • The switch is defective. Replace the switch. • The pump is defective. Replace pump.
Head will not flush.	<ul style="list-style-type: none"> • The fuse or circuit breaker for the head circuit is blown. Replace the fuse or reset the breaker. • The holding tank is full. Pump out the holding tank. • There is bad connection at the head pump or the switch. Repair the connection. • The switch is defective. Replace the switch. • The head pump is defective. Replace the pump.
Excessive odor from marine head.	<ul style="list-style-type: none"> • Back pressure in the holding tank. Pump out holding tank and clean the vent and vent hose or replace the in-line filter. • No deodorizer in the holding tank. Add deodorizer to the holding tank each time it is pumped out. • The waste in the tank is over two weeks old. Pump the holding tank if it has contained waste for two weeks or more.
Holding tank will not empty.	<ul style="list-style-type: none"> • Holding tank vent is clogged. Clean the vent and vent hose. • There is a vacuum leak in the hose from the holding tank to the deck pump out fitting. Tighten loose fittings or replace damaged hoses.

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PROBLEM	CAUSE AND SOLUTION
ACCESSORY PROBLEMS	
The air conditioner runs for a short time & then cuts out.	<ul style="list-style-type: none"> • The intake strainers for the sea chest are clogged with weeds or debris. Clean the sea strainers. • The air conditioner pump raw water supply valve is closed. Open the valve. • The air conditioner seawater pump is air-bound. Make sure the sea chest inlet and air conditioner supply valves are open and run the boat above 15 m.p.h. The scoops on the thru hull fittings will pressurize the sea chest and force the air lock through the pump. • The air conditioner raw water pump is not pumping and needs to be repaired or replaced.
The cabin or cockpit refrigerator compressor runs frequently and the house battery life seems shorter than it should be when the refrigerators are operating on DC power.	<ul style="list-style-type: none"> • The thermostat in the refrigerator is set too cold. Check the temperature in the refrigerator and set the thermostat to a warmer setting if necessary. • The door gasket is dirty or moldy and not sealing properly. Clean or replace the door seal. • The house battery is weak and not providing the proper voltage to the refrigerator compressor. Replace the battery. • The refrigerator is defective. Replace the refrigerator.
The carbon monoxide detector sounds the alarm when the engines or generator are running.	<ul style="list-style-type: none"> • The boat is operating at slow speed and the wind is on the stern pushing CO into the cockpit and cabin. Increase boat speed or change heading if possible. • The carbon monoxide detector is defective and needs to be calibrated by the manufacturer or replaced. Have the boat checked by a professional before condemning the CO monitor.
No AC power to the AC distribution panel and shore cord is properly connected.	<ul style="list-style-type: none"> • The breaker at the shore outlet is off. Activate breaker. • The shore power cord is damaged or defective. Replace the cord. • The ELCI at the inlet connection has detected a fault in the electrical system and the breaker has tripped. Contact a qualified marine electrician to find and correct the problem.
The Main Breaker for AC distribution panel trips when activating the system from shore power.	<ul style="list-style-type: none"> • The AC accessory breakers on the distribution panel are on and the power surge is tripping the breaker. Turn off all AC accessory circuits and reactivate distribution panel. • The main breaker is defective. Contact a qualified marine electrician to replace the breaker.
The AC main breaker activates the distribution panel but trips while using accessories.	<ul style="list-style-type: none"> • There are too many AC accessories activated causing excess amperage draw. Manage AC accessory use to reduce excess amperage draw. • Voltage supplied from the shore outlet is low or high. Check the voltage. Contact the marina operator or qualified marine electrician to correct the problem. • The main breaker is defective. Contact a qualified marine electrician to replace the breaker.

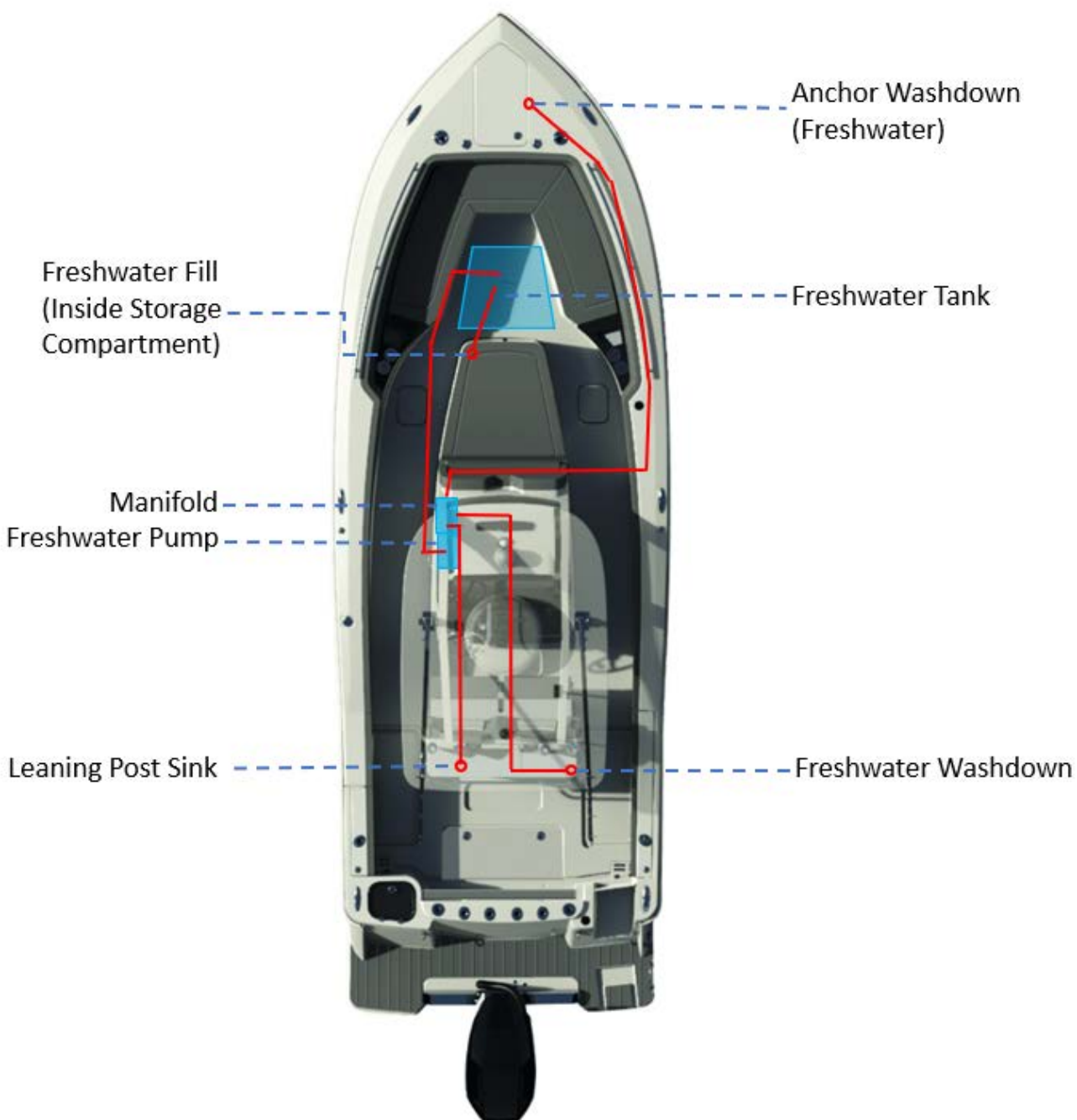
PROBLEM	CAUSE AND SOLUTION
ACCESSORY PROBLEMS	
No AC power at outlets.	<ul style="list-style-type: none">• Outlet breaker in AC distribution panel is off. Activate breaker.• Ground fault interrupter on the GFI outlet has tripped. Push reset button on outlet to reset.• Accessory powered by the outlet has a fault that is tripping the interrupter. Turn the circuit in the distribution panel off and contact a qualified marine electrician to repair the defective accessory. Replace defective accessory.• The GFI outlet is defective. Contact a qualified marine electrician to replace the outlet.

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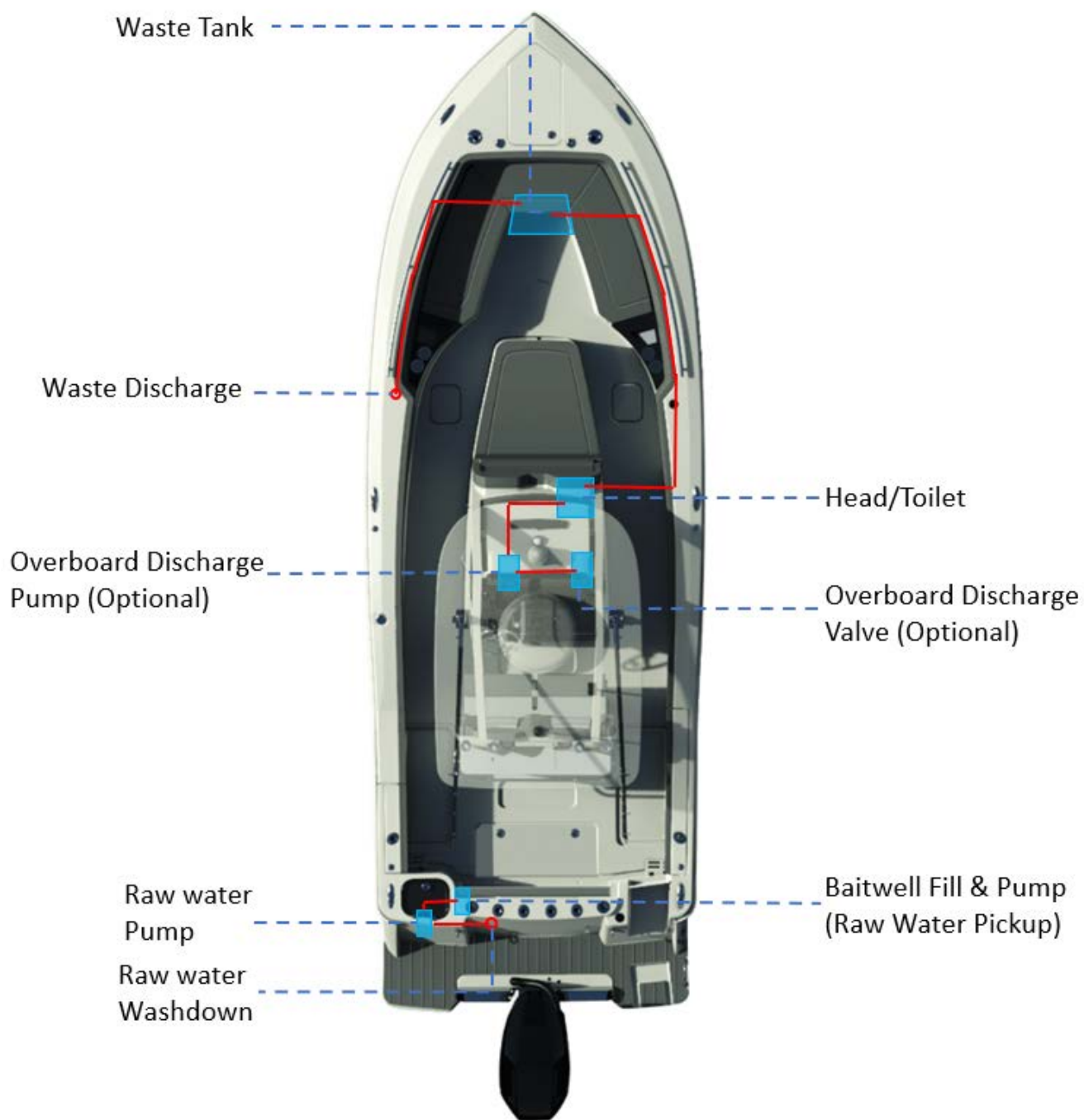
Appendix F: Schematics

For schematics of various component layouts and wiring, see separate attachments.

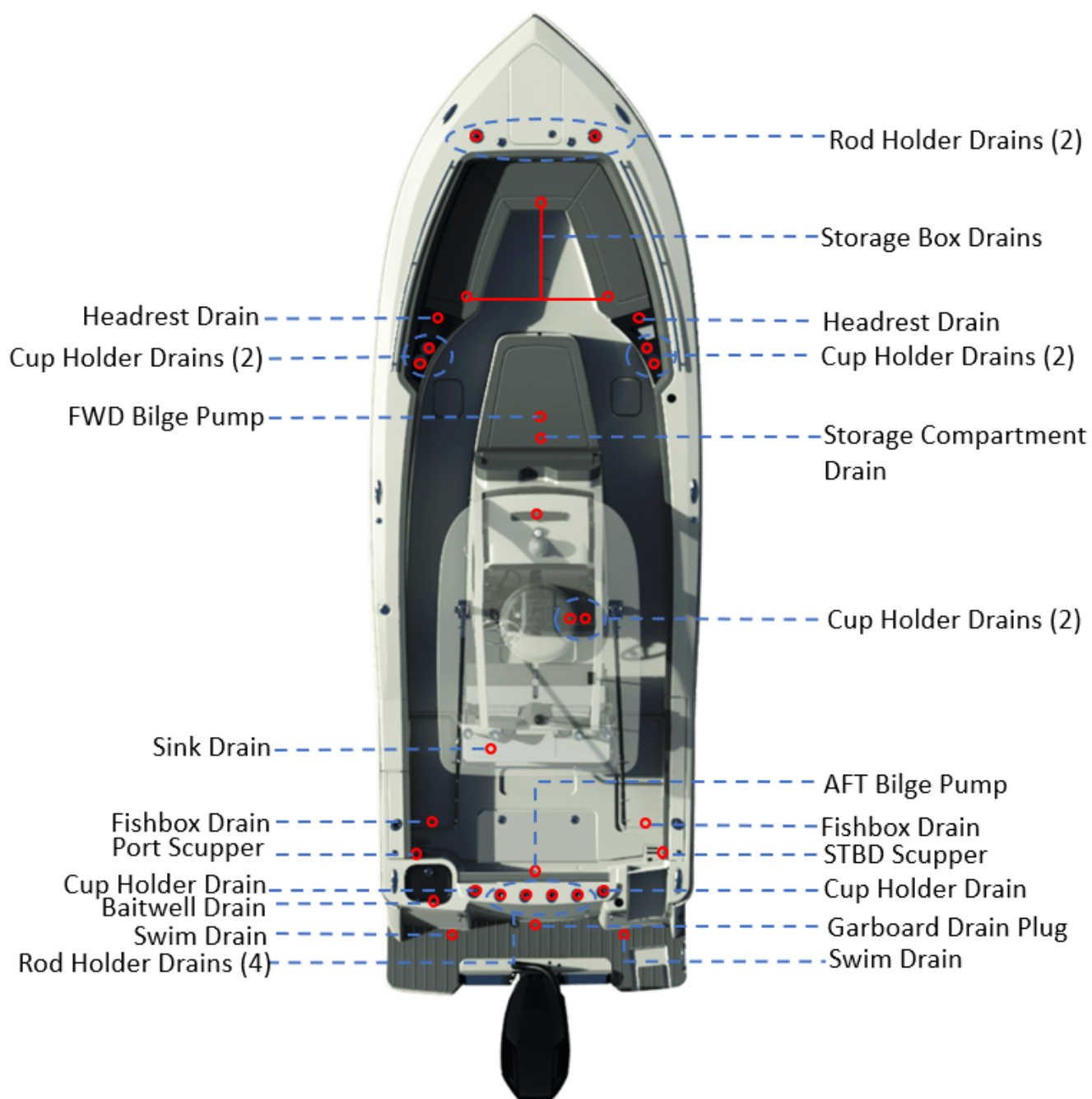
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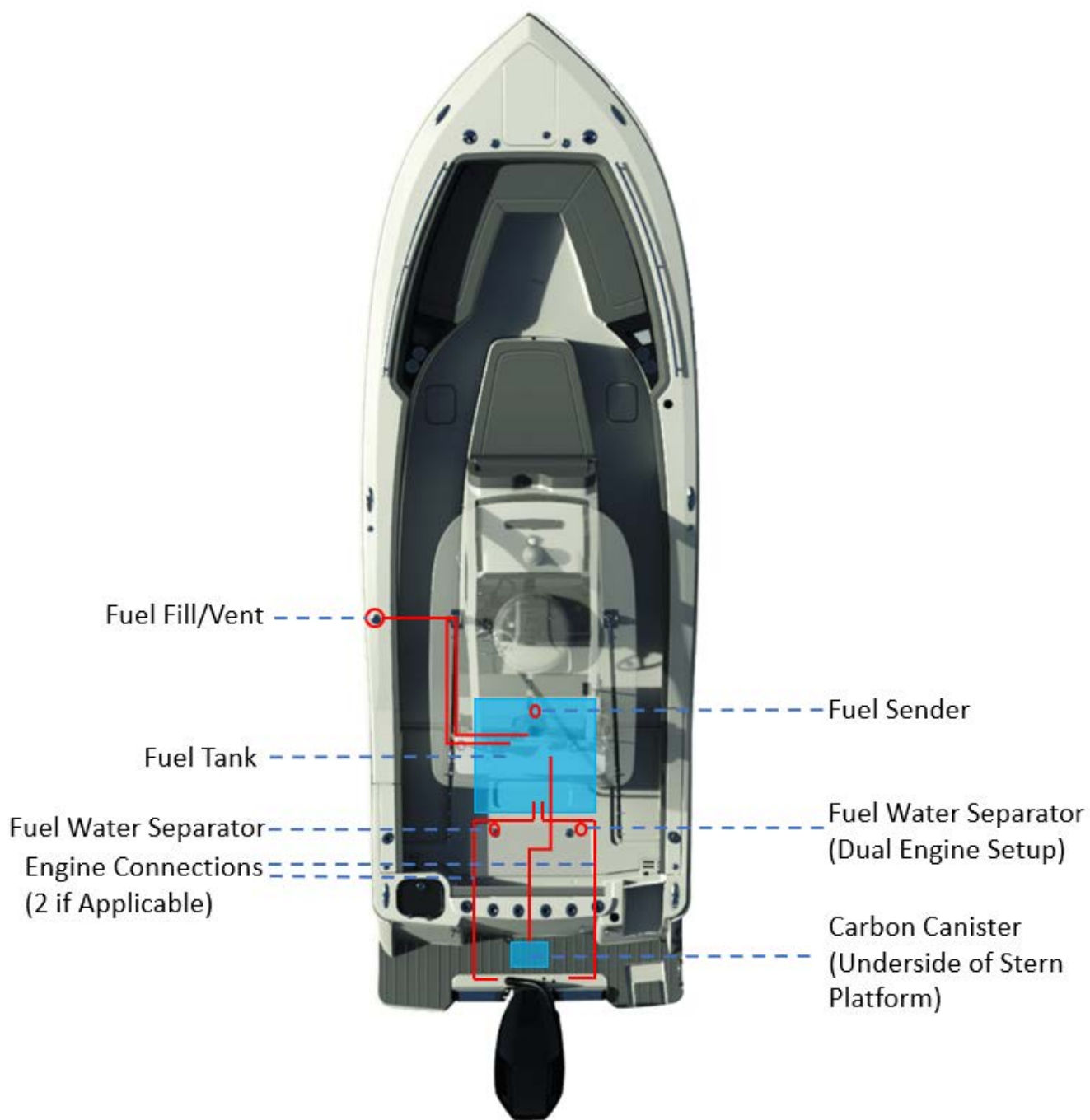
Raw Water & Waste System



Drainage System



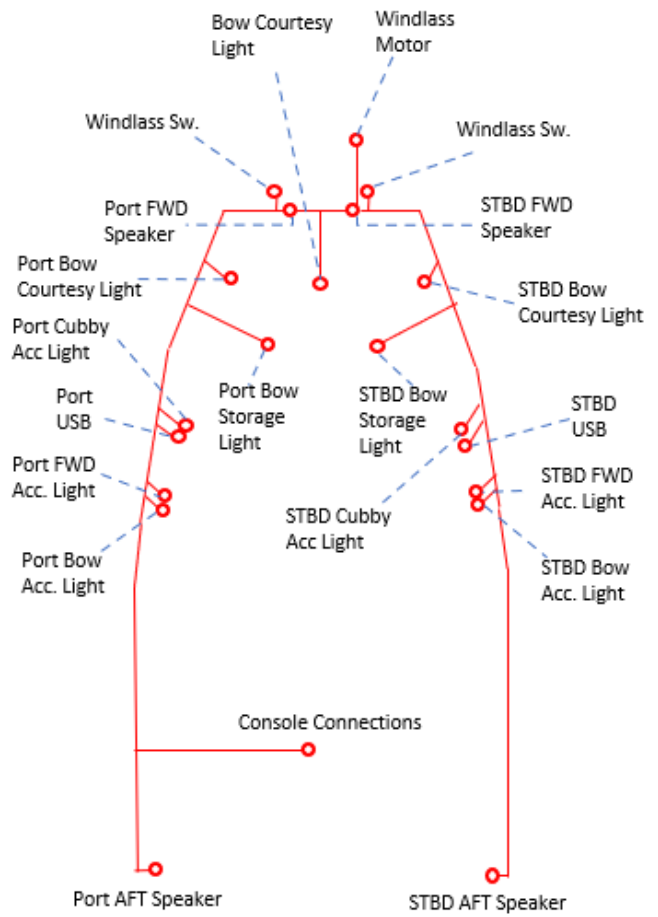
Fuel System



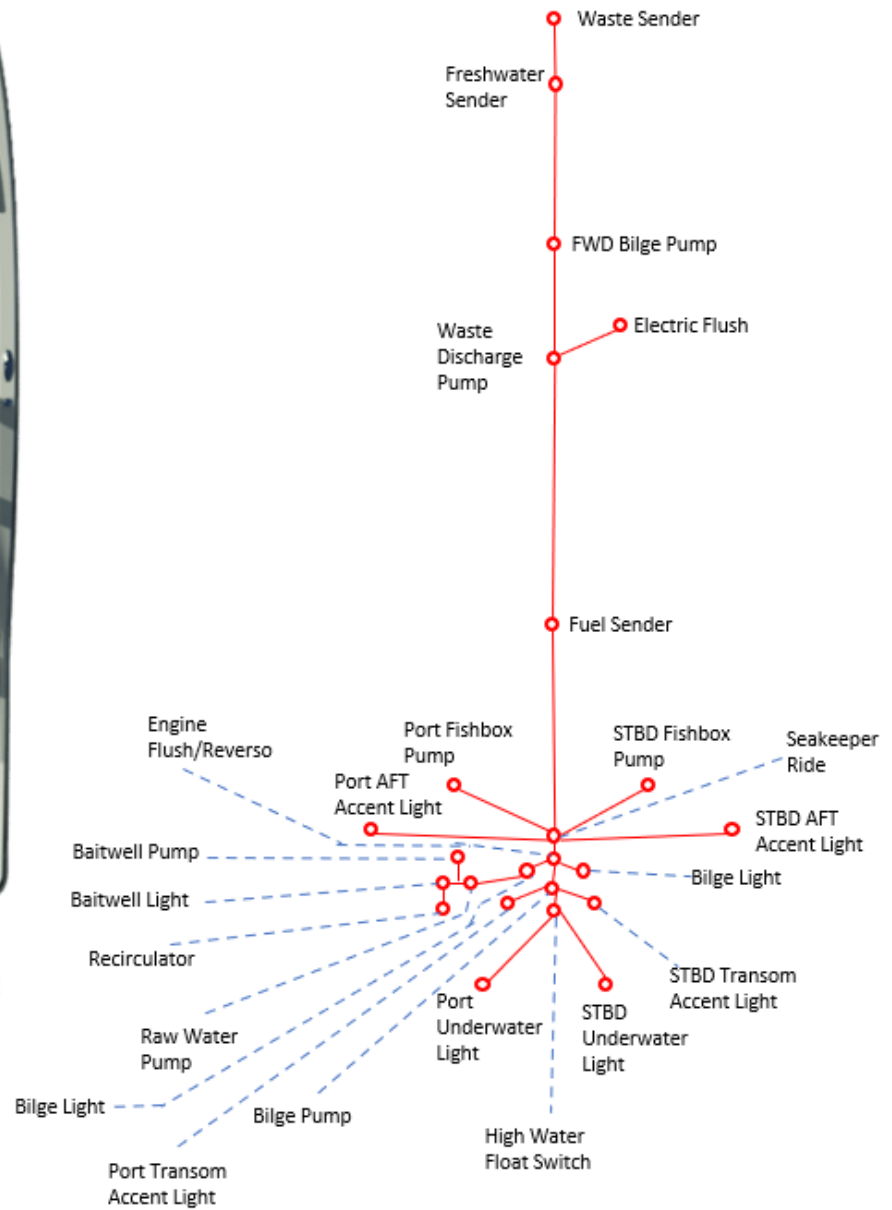
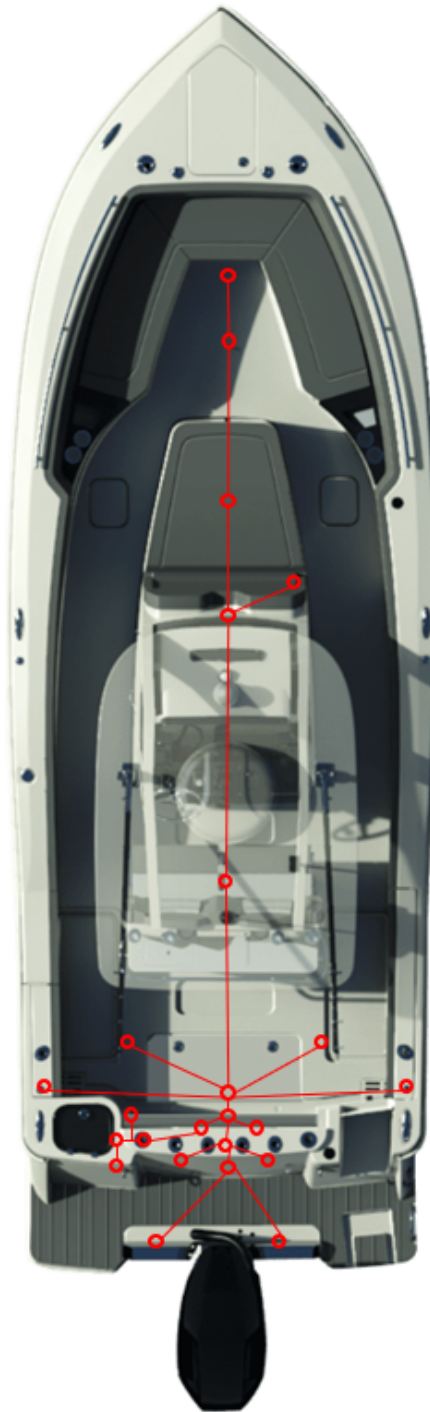
Batteries & Motors



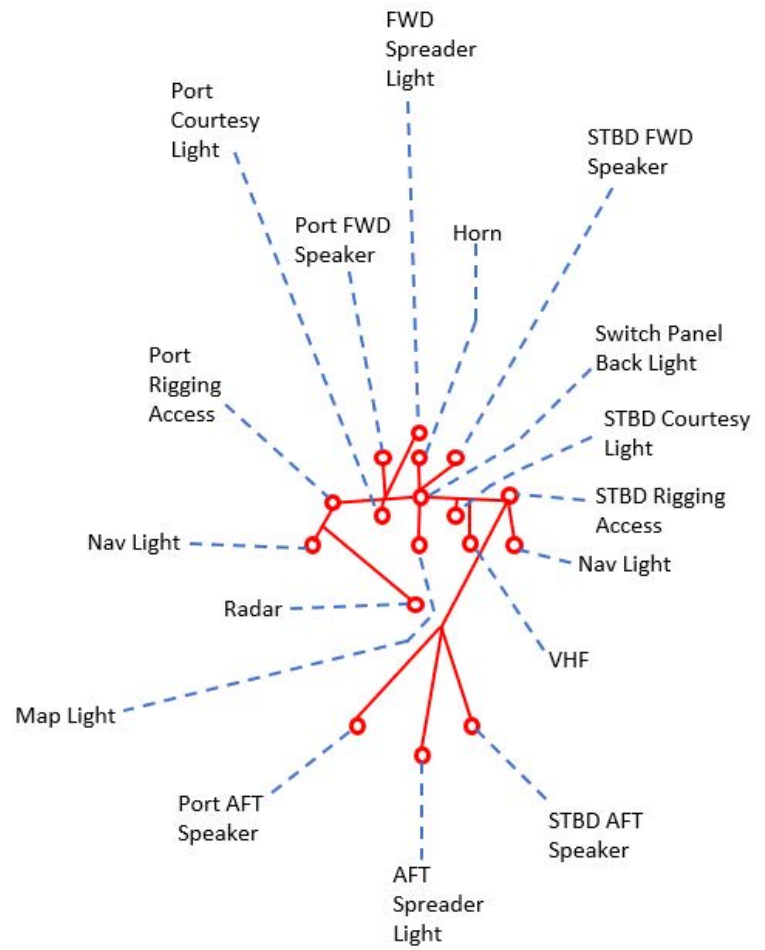
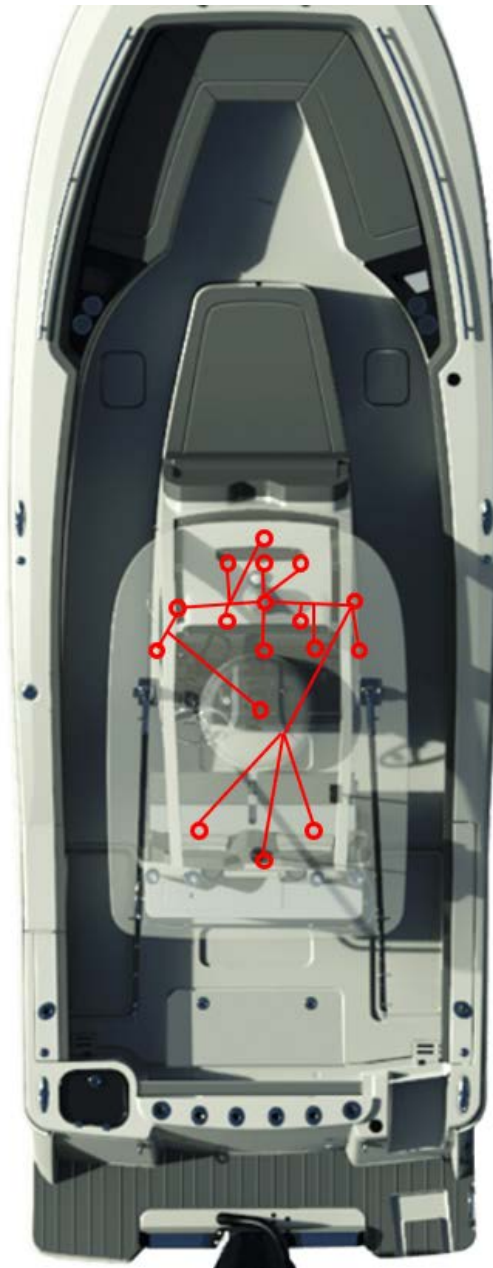
Deck Harness



Hull Harness



Hardtop Harness



[illegible]