

**RECON**

BOAT  
OWNER'S  
MANUAL

# RECON BOATS

E1680 Hwy. 161

Iola, WI 54945

## Recon Boat Owner's Manual

Model/Number: \_\_\_\_\_ Dealer Name: \_\_\_\_\_

Hull Identification Number: \_\_\_\_\_ Address: \_\_\_\_\_

Date of Ownership: \_\_\_\_\_ \_\_\_\_\_

Phone: \_\_\_\_\_

Recon reserves the right to change, alter, and modify their finished boats, parts, and specifications included in your Owner's Manual without notice. Optional equipment described in this manual may vary from model to model and year to year. Please consult with your Recon Dealer for current information on standard and optional equipment and specifications.

This manual has been compiled to help you operate your craft with safety and pleasure. It contains details of the craft, the equipment supplied or fitted, its systems, and information on its operation and maintenance. Please read it carefully and familiarize yourself with the craft before using it.

If this is your first craft, or if you are changing to a type of craft you are not familiar with, for your own comfort and safety, please ensure that you obtain handling and operating experience before "assuming command" of the craft. Your dealer will be pleased to advise you of local schools or competent instructors.

PLEASE KEEP THIS MANUAL IN A SECURE PLACE, AND HAND IT OVER TO THE NEW OWNER WHEN YOU SELL THE CRAFT.

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# WELCOME ABOARD

1

Congratulations on the purchase of one of the finest fiberglass boats in the world. It has been proudly built to give you many years of boating pleasure.

## **We've done our part –**

Pride of craftsmanship is your assurance that you've bought the very best. All Recon Boats meet or exceed U.S. Coast Guard safety standards relating to load and horsepower capacity, flotation, electrical, steering, ventilation, and fuel systems, in effect the date of manufacture.

## **But our work is not over –**

We stand behind every boat we build. Your Recon dealer will assist you with registration of your boat for warranty. They will be happy to help you maintain your boat and answer questions concerning warranty, performance, accessories, and service. The warranty card must be filled out and sent to establish your warranty.

## **Now it's your turn –**

This Owner's Manual is intended to help you become familiar with your new boat. While this manual contains information to assure safe and enjoyable boating, it does not provide everything you need to know. Above all take time to know your boat. Read the material supplied by the manufacturer of your engine, and other boat components. *This owner's manual does not supersede or change any of their specifications, operation, or maintenance instructions.* Also, read all literature supplied with your boat by the manufacturers of the various accessories which are used on your boat. Recon recommends that you read the boating literature published by your State Boating Agency and the U.S. Coast Guard.

## **OWNER'S MANUAL STRUCTURE**

Use your owner's manual as a guide to familiarize yourself with the systems and components on board your Recon boat. The procedures in this manual will assist you with safe and proper operation, and maintenance of your boat. The level of information may be general in some cases and more detailed in others.

Suppliers of the more complex components such as engine, electronics, and pumps, supply their own instructional manuals delivered to you when you purchased your boat. These suppliers maintain their own manufacturer's warranty and service facilities. It is essential that you fill out each warranty card and mail them to each manufacturer informing them that you are a registered owner of their product(s). Record all information regarding these products on

the “Log” located in this chapter under Boat Records. Keep the Boat Log in a safe place at home and never on board the boat.

Your owner’s manual is designed with the boat owner/operator in mind. The intent of the manual is to provide sufficient information to allow the user to safely operate and maintain your new Recon Boat. Your Owner’s Manual is structured as follows:

## **WELCOME ABOARD**

Included in the Welcome Aboard Chapter of your manual is our welcome aboard message to all new Recon Boat owners, construction and standards, dealer and owner responsibilities, warranty, important logs, and this summary of your owner’s manual.

The Safety portion of this chapter contains safety recommendations, safety information and practices, weather precautions, and safety equipment (On Board and Underway). Additionally, specific safety warnings and comments are located throughout your owner’s manual (and on your boat), therefore you should carefully read the entire manual.

## **SYSTEMS & COMPONENTS**

The Systems & Components Chapter provides illustrative information on items such as the fuel system, livewell, and other components installed on your boat.

## **PRE-LAUNCH & UNDERWAY**

The intent of the Pre-Launch & Underway Chapter is to familiarize the boat owner/operator with necessary information in operation of trailering, launching and putting your new boat in the water. Encountering underway adjustments and situations is also explained.

## **MAINTENANCE**

Recommendations for keeping your new boat in sound operational condition, making adjustments, and frequency of checks and inspections are all introduced in the Maintenance Chapter.

## **CARE & APPEARANCE**

Provided in the Care & Appearance chapter are inspections, cleaning, and maintenance for your boat.

## WINTERIZATION & STORAGE

The Winterization & Storage chapter presents information and procedures to follow when your boat will be winterized or stored for extended periods of time.

## RESPONSIBILITIES

### Boat Owner –

1. Set up an appointment your Recon dealer to discuss all warranties. Complete and return the Warranty Registration card, and keep a record of the serial number for future reference.
2. Inspect your boat at the time of delivery to verify that all systems and components are operating safely and acceptably. Read all manuals and instructions.
3. Operate all equipment in compliance with the manufacturer's instructions.
4. Schedule an appointment with your dealer to spell out the pre-delivery engine service record. Sign the record to indicate that it has been explained to you in detail by your dealer.
5. Schedule with your dealer your boat's 20 hour check-up.

### Recon Dealer –

1. Your Recon dealer will discuss the terms of all warranties, and emphasize the importance of registering each warranty with the appropriate manufacturer.
2. Your dealer will provide instruction for obtaining warranty service.
3. Your dealer will cover each item on the pre-delivery service record with you, and then sign it to certify that all work has been suitably performed.
4. Your dealer can provide you with a comprehensive instruction in the operation of your boat and all systems and components installed on board, just ask your dealer.

## BOAT RECORDS

You have been provided with one very useful form at the end of this section. The **Boat Log** is used to write down all of your boat's important information and data regarding the major components installed on your boat. Once you have entered all the information, remove the Boat Log from your Owner's Manual and keep it in a safe place. **Do not** keep this log on board your boat.

## **WARRANTY**

Your new boat is backed by a Limited Warranty. Being aware of its terms is important. If a problem arises with your boat as a result of workmanship or materials, contact your dealer as soon as possible to determine if it may be covered by the warranty. Please have your serial number, and necessary model numbers on hand for the items that require service or repair. Your hull identification number is located below the rub rail on the starboard rear corner of your outboard boat.

**RECON BOATS  
LIFE TIME WARRANTY**

At Recon we offer a life time structural hull warranty, because we stand behind our craftsmanship. From bow to stern we will cover the boat against any structural defects in materials and workmanship.

All interior components that are installed at Recon boats are backed by a two year warranty. This covers: carpet, seating, switches, pumps, lighting, steering etc. So you can enjoy your new Recon and get out on the water with confidence.

At Recon all warranty claims will be handled as quickly as possible with full support of our dedicated team. This warranty is transferable. See your authorized Recon dealer in your area for full warranty details.



**RECON BOAT LOG**

**Purchase Dealership**

Name: \_\_\_\_\_

Sales Manager: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

## General

Model Name: \_\_\_\_\_ State Registered: \_\_\_\_\_

Hull Identification Number: \_\_\_\_\_

Deck/Hull Colors: \_\_\_\_\_

Length: \_\_\_\_\_ Beam: \_\_\_\_\_ Weight: \_\_\_\_\_

## Engine

Manufacturer: \_\_\_\_\_ Model Name/No.: \_\_\_\_\_

Oil Type/SAE: \_\_\_\_\_ Quarts: \_\_\_\_\_ Filter: \_\_\_\_\_

Serial Number: \_\_\_\_\_

Transom Plate Serial Number: \_\_\_\_\_

## Fuel System

Tank Capacity: \_\_\_\_\_ Filter Type: \_\_\_\_\_

## Propeller

Manufacturer: \_\_\_\_\_ Pitch: \_\_\_\_\_

## Battery

Manufacturer: \_\_\_\_\_ Model Number: \_\_\_\_\_



3. Extreme CAUTION must be utilized while fueling your boat. Become familiar with your boat's fuel tank capacity and fuel consumption for often used RPMs. Avoid fueling your boat at night except under good lighting conditions. Gas spills are hard to see in the dark.
4. Maintain sufficient fuel on board for planned cruising requirements. Keep an adequate reserve of fuel in case your plans change due to adverse weather or other situations. We recommend planning for about 1/3 of your fuel to be used to reach your destination, 1/3 for your return, and 1/3 to be held in reserve.
5. All regulation life-saving and fire extinguishing equipment on board, must be eye-catching, unrestricted and in safe operating condition. All passengers should become familiar with the operation and location of all equipment.
6. Keep an eye on the weather. Be aware of possible changing conditions by monitoring local weather broadcasts prior to departure. Strong winds and electrical storms should be personally monitored.
7. Accurate up-to-date charts of your boating area should always be on board.
8. Before departure file your Cruise Log with a responsible person ashore.
9. Always operate your boat with consideration, courtesy, and common sense.
10. At least one other passenger aboard should be indoctrinated on the basic operating procedures for handling your boat, in the event you unexpectedly become unable to do so.
11. Never allow passengers to ride on areas of your boat other than designated seating areas.
12. All passengers should remain seated while the boat is moving.
13. Never use the swim platform or boarding ladder while the engine is running. Be aware of the location of the drive units or propellers before entering the water from the swim platform ladder.
14. Study and obey the Rules of the Road. Always maintain complete control of your boat.
15. Never overload or improperly load your boat.

**NOTE:** The presence of the boat's weight capacity plate does not override your responsibility to use common sense or rational judgment. The capacity of your boat is reduced by turbulent water and other adverse weather conditions. You should have prior knowledge of existing water and weather conditions before getting underway.

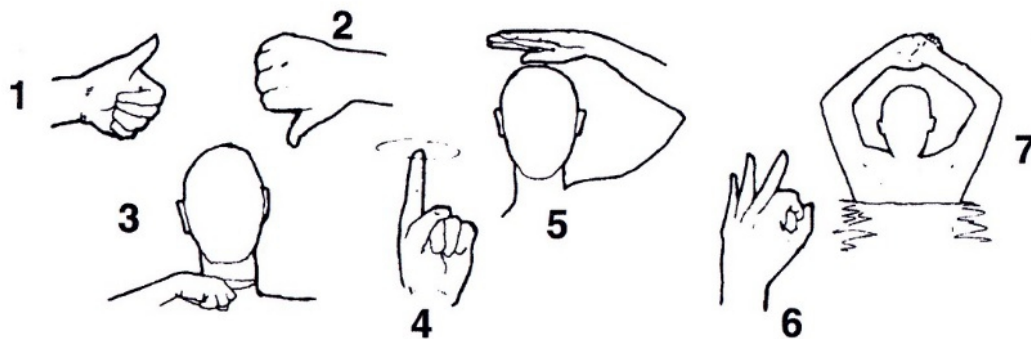
## **Water Sports**

Water skiing, knee-boarding or riding a towed inflatable apparatus are some of the more popular water sports. Taking part in any water sport requires increased safety awareness by the participant and the boat operator. Safety awareness is of primary importance in preventing accidents and injury.

**Warning:** Recon boats are not designed and should not be used for the pulling of para-sails, kites, gliders, or any other device that is designed to become airborne when drawn behind a boat.

Everyone participating in a water sport should observe these guidelines:

1. Allow only capable swimmers to take part in any water sport.
2. Always wear a personal flotation device (PFD) approved by the U.S. Coast Guard. Wearing a properly designed PFD will help a stunned or unconscious person stay afloat.
3. Always participate in water sports in safe areas. Stay away from boats, benches, swimmers, and heavily traveled waterways.
4. Have a second person aboard to observe what is going on behind the boat and keep the driver informed. The driver must give full attention to operating the boat and the waters ahead.
5. Give immediate attention to a person who has fallen. He or she is vulnerable in the water alone and may not be seen by other boaters.
6. Approach a person in the water from the lee side (opposite the direction of the wind). Stop the boat's motor before coming close to the person.



1. Thumbs Up: Speed up the boat
2. Thumbs Down: Slow down the boat
3. Cut Motor/Stop: Immediately stop boat. Slashing motion over neck (also used by driver or observer).
4. Turn: Turn the boat (also used by driver). Circle motion – arms overhead.
5. Return to Dock: Pat on the head.

6. OK: Speed and boat path OK. Or, signals understood.
7. I'm OK: Skier OK after falling.

Figure 1.1 identifies a set of hand signals recommended by the American Water Ski Association (AWSA). Skier, observer, and boat operator should all know and understand these seven (7) simple signals from the skier.

For more information about water skiing, please contact the American Water Ski Association, 799 Overlook Drive, Winter Haven, Florida 33884 (1-800-533-297).

## **Drugs and Alcohol**

In the best interest of safety, you should refrain from the use of Drugs and/or Alcohol while operating your boat. Operation of motorized vessels while under the influence is a Federal offense carrying a significant penalty. The use of Drugs and/or Alcohol will decrease reaction time, impede judgment, impair vision, and inhibit your ability to safely operate a boat.

## **Safe Boating Courses**

Your local U.S. Coast Guard Auxiliary and the U.S. Power Squadrons offer comprehensive safe boating classes several times a year. You may contact the Boat/U.S. foundation at 1-800-336-BOAT (2628), or in Virginia 1-800-245-BOAT (2628) for a course scheduled in your area. Also contact your local U.S. Coast Guard Auxiliary or Power Squadrons Flotilla for the time and place of their next scheduled class.

## **Rules of the Road**

Your boat is subject to U.S. Coast Guard – enforced marine traffic laws known as “Rules of the Road”. There are two sets of rules – the United States Inland Navigation Rules and the International Rules. The United States Inland rules are applicable to all vessels inside the demarcation lines separating inland and international waters. The “Rules of the Road” can be obtained from your local U.S. Coast Guard Unit or the United States Coast Guard Headquarters (1300 E. Street NW, Washington, D.C. 20226) in the publication titled “Navigational Rules, International – Inland”.

“Aids to Navigation” (U.S. Coast Guard pamphlet #123) explains the significance of various lights and buoys. This and other pamphlets, including the “Boating Safety Training Manual” and “Federal Requirements for Recreational Boats” are also available from the U.S. Coast Guard Headquarters.

Because of proposed alterations in buoys and markers, contact the U.S. Coast Guard to stay informed of impending changes. If you have a ship-to-shore radio telephone on board, heed storm warning and answer any distress calls.

The spoken word "MAYDAY" is the international signal of distress. **"MAYDAY" should NEVER be used unless there is present danger, an emergency, and you are in need of immediate assistance.**

## **SAFETY UNDERWAY**

### **General Rules of Seamanship**

1. Cross waves at right angles.
2. When caught in heavy weather or squalls, head your boat either directly into the waves or at a slight angle. Reduce your speed, but maintain enough power to maneuver your boat safely.
3. Keep your speed under control. Respect the rights of vessels engaged in fishing, swimming, water skiing, or driving. Give them a "wide berth".
4. When meeting a vessel head-on, keep to the right whenever possible.
5. When two vessels cross, the vessel to the right or starboard has the right of way.
6. When overtaking or passing, the vessel being passed has the right of way.

### **Carbon Monoxide and Boating**

Carbon monoxide (CO) is a colorless, odorless gas by-product of the burning of carbon based fuels like gasoline. In high concentrations, CO can be fatal within minutes. The effects of CO in lower concentrations are cumulative and can be just as lethal over long periods of time. Symptoms of carbon monoxide poisoning include: itchy and watering eyes, flushed appearance, throbbing temples, inability to think coherently, ringing in the ears, tightness across the chest, headaches, drowsiness, nausea, dizziness, fatigue, vomiting, collapse, and convulsions. **CARBON MONOXIDE POISONING IS OFTENTIMES CONFUSED WITH SEASICKNESS.**

Outboard motors and stern drive engines exhaust carbon monoxide and other gases typically through the hub or the propeller. To avoid exposure to carbon monoxide, do not stand or swim near the motor when the engine is idling.

Outboard and stern drive powered open boats present a lower risk of exposure to dangerous levels of carbon monoxide from their own motors because natural ventilation dissipates the majority of the engine exhaust. However, engine or generator exhaust from other vessels docked or anchored nearby can emit poisonous carbon monoxide gas and endanger people in the vicinity. Be alert for exhaust from other vessels alongside your boat, and monitor people

around you for symptoms of carbon monoxide poisoning. If you suspect carbon monoxide poisoning, evacuate the area and move the victim to fresh air. Get medical help immediately.

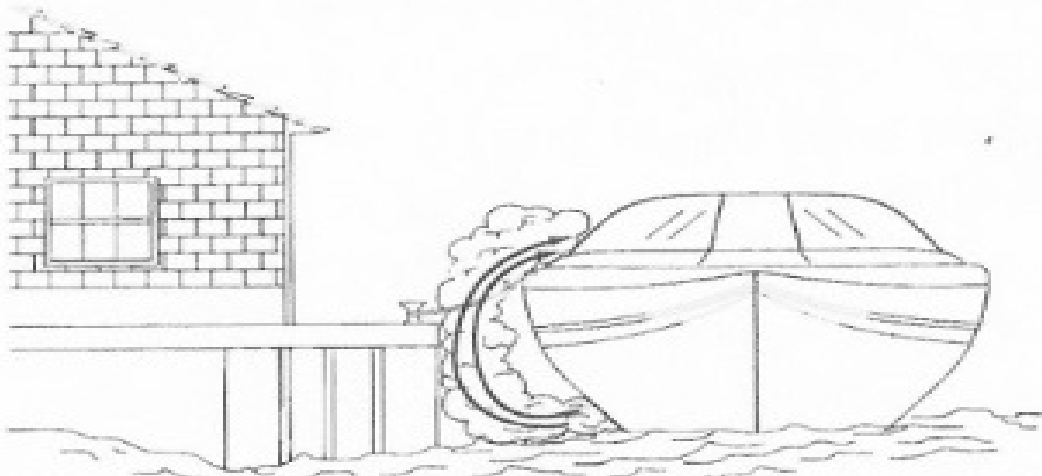
Carbon monoxide poisoning requires the operator's special and immediate attention! To prevent excess exposure and reduce the possibility of carbon monoxide accumulation in the cockpit, open doors, windows, and canvas enclosures to ensure adequate ventilation.

The following illustrations and text describe some possible situations where carbon monoxide may accumulate with your boat while docked, anchored or underway. Become familiar with these examples and their precautions to prevent DANGEROUS accidents.

### **Exhaust Gas Can Accumulate at Swim Platform**

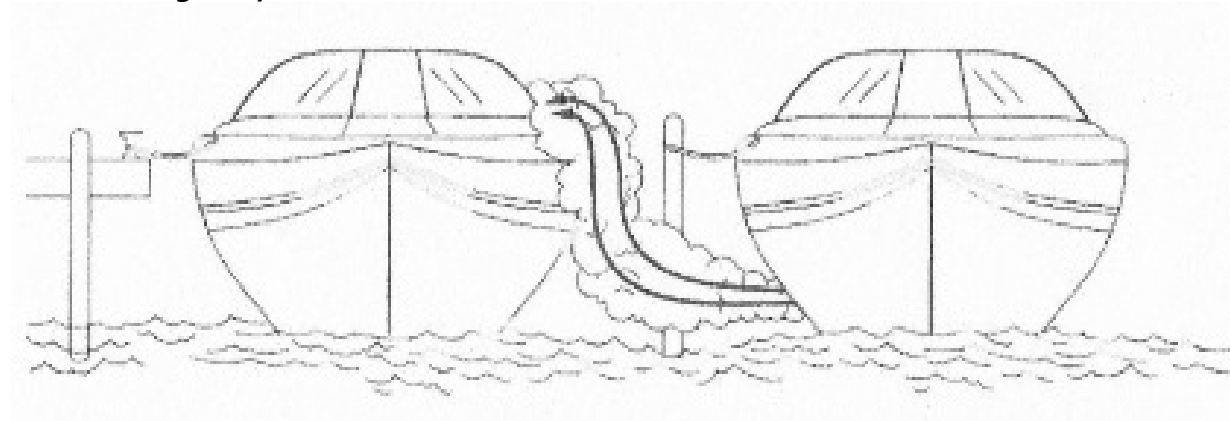
Do not sit on, occupy or hang on any stern appendages (e.g. swim platforms, boarding ladders, etc.) while underway. Do not tow persons in close proximity to the stern of the boat.

**WARNING:** Engine exhaust outlets near a pier, dock, sea wall bulkhead or outlets blocked by any other means can cause excessive accumulation of poisonous carbon monoxide gas within the cockpit areas. Make sure engine exhaust outlets are not blocked.



**WARNING:** Generator or engine exhaust from other vessels alongside your boat while either docked or anchored can emit poisonous carbon monoxide gas and cause excessive accumulation within the cockpit area of your boat. **Be alert for generator exhaust from other**

vessels alongside your boat.



**Always provide proper ventilation for yourself and passengers whenever the engine is running or others nearby have their engines running.**

### **Navigational Aids Chart**

The illustrated Navigational Aids Chart contains information concerning whistle signals, storm warnings, bridge signals and buoy description and information.

### **Running Aground**

If your boat runs aground, first check persons aboard for injury. Then check for any damage to the boat or propeller(s). Watch the temperature gauge to make sure you do not overheat the engine while running in the shallow water. If the boat is not taking on any water, it may be possible to heel the boat by shifting the weight of passengers and/or gear and raising the stern drive while reversing the engine.

**WARNING: Do not** use deck hardware for towing. Recon recommends that you use a commercial towing service if your boat becomes grounded.

## Collision

If a serious collision occurs you should first check the condition of all passengers aboard, then inspect our boat to determine the extent of the damage.

1. If your boat has a ship-to-shore radio, contact (VHF Channel 16) the U.S. Coast Guard or other rescue authorities immediately.
2. Prepare to assist the other craft unless your passengers and/or boat are in danger.
3. If the bow of the other vessel penetrated your boat's hull, prepare to block the opening once the hulls are separated.

### NAVIGATIONAL AIDS CHART

**LATERAL AIDS AS SEEN ENTERING FROM SEAWARD**

**REMEMBER THESE RULES**

1. OVERTAKING - PASSING: Boat being passed has the right-of-way. KEEP CLEAR.
2. MEETING HEAD ON: Keep to the right.
3. CROSSING: Vessel on right has the right-of-way. Slow down and permit vessel to pass.

**SAFE WATER**  
MID CHANNELS OR FAIRWAYS  
NO NUMBERS-MAY BE LETTERED

**PORT SIDE**  
ODD NUMBERED AIDS  
NO NUMBERS-MAY BE LETTERED

**STARBOARD SIDE**  
EVEN NUMBERED AIDS  
NO NUMBERS-MAY BE LETTERED

**PORT**

**STARBOARD**

**DANGER ZONE**  
(Dead ahead to 2 points abaft your starboard beam)

**DANGER ZONE!**  
(Dead ahead to 2 points abaft your starboard beam)

**WHISTLE SIGNALS**

ONE LONG BLAST: Warning signal (Coming out of slip)

ONE SHORT BLAST: Pass on my port side

TWO SHORT BLASTS: Pass on my starboard side

THREE SHORT BLASTS: Engine(s) in reverse

FOUR OR MORE BLASTS: Danger signal

**BRIDGE SIGNALS**

<b>SOUND</b>	<b>DAY (Flag)</b>	<b>NIGHT (Lights)</b>
VESSEL: Open	Open	Open
BRIDGE: OK	OK	OK
No	No	No
VESSEL: Replies	Replies	Replies
RADIO: VHF CH. 13	VHF CH. 13	VHF CH. 13

**STORM WARNINGS**

RED FLAG Small craft (winds up to 33 knots)	2 RED FLAGS Gale (winds up to 47 knots)	SQUARE RED FLAG BLACK BOX (Storm)	2 SQUARE RED FLAGS BLACK BOX (Hurricane)
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**PORT SIDE**

GREEN LIGHT ONLY

FLASHER

OCCLUDING

QUICK FLASHING

RESPONSE

SPHERICAL

MR

SP' 10'

SP' 12'

SP' 15'

SP' 18'

SP' 24'

SP' 30'

SP' 36'

SP' 45'

SP' 60'

SP' 75'

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SP' 7140'

SP' 7170'

SP' 7200'

SP' 7230'

SP' 7260'

SP' 7290'

SP' 7320'

SP' 7350'

SP' 7380'

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SP' 7530'

SP' 7560'

SP' 7590'

SP' 7620'

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SP' 7950'

SP' 7980'

SP' 8010'

SP' 8040'

SP' 8070'

SP' 8100'

SP' 8130'

SP' 8160'

SP' 8190'

SP' 8220'

SP' 8250'

SP' 8280'

SP' 8310'

SP' 8340'

SP' 8370'

SP' 8400'

SP' 8430'

SP' 8460'

SP' 8490'

SP' 8520'

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SP' 8610'

SP' 8640'

SP' 8670'

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4. Shore up the hole with a spare PFD or bunk cushion from your boat.
5. While blocking the hole, trim weight of the boat (where hole exists) so that it is out of the water, if possible.
6. If the extent of damage places your boat in a possible sinking condition, have all persons aboard put on their PFD (personal flotation devices).
7. Check outdrive lower unit or outboard propeller immediately when boat strikes bottom. Operation of boat with damaged propeller or lower unit may cause severe damage to engine.

## Fire

A fire on board your boat is a serious emergency, you must work quickly to implement safety procedures. If a fire occurs, immediately stop the engine.

1. Prompt all persons aboard to put on their PFD (personal flotation device).
2. If the fire is small, attempt to put it out with your fire extinguisher. If the fire is in the engine compartment, turn off the bilge blower. **Do not** open the engine compartment. This feeds oxygen to the fire and flashback could occur.
3. If the fire gets out of control, execute a distress signal, and call for help if equipped with a ship-to-shore radio.
4. All persons aboard should jump overboard and swim a safe distance away from the flames.

**IMPORTANT:** All persons aboard should know the location and proper operation of the fire extinguishers.

## WEATHER

Storms rarely appear without considerable advance notice. Accurate weather information from meteorological observation and reporting stations is available. Weather bureaus are known to have failures in their predictions or information gathering equipment. There is no substitute for a strong understanding of what action to take when the weather takes a turn for the worst. Many marinas fly weather signals. You should learn to recognize these signals, and monitor your local weather forecasts before leaving port.

### Storms

The present and forecasted weather conditions are of primary consideration, but a threat of possible storms should always be a concern. Observance of the following information will help in your safety if storms do occur:

- Keep a watch on the horizon for approaching storm indicators.
- Turn radio ON, if available. Dial in local weather station and monitor forecast.
- The best possible situation is to return to a safe port if time allows.
- Stow all loose gear and tie down any gear required to remain on deck.
- Reduce speed as the seas build. Prompt all persons aboard to put on their PFD (personal flotation device).
- Place a sea anchor out over the bow to maintain the boat's bow into the seas. If there is no sea anchor on board, use a canvas bucket or any object that will offer resistance against the flow of the current.
- Radar reflectors (if installed on your boat) should be 18 inches diagonally and placed 12 feet above waterline.

## Fog

Fog is a result of either warm-surface or cold-surface conditions. You can judge the likelihood of fog formation by periodically measuring the air temperature and dew point temperature. If the spread (difference) between these two temperatures is small, you likely will incur a fog situation. Remember the following guidelines:

- As fog sets in, take bearings and mark your position on the chart while continuing to log your course and speed.
- Prompt all persons aboard to put on their PFD (personal flotation device).
- If equipped with sounding equipment, you should take soundings and match them with soundings on your chart.
- Station a person forward on the boat as a lookout.
- Reduce your speed. From time to time stop engine and listen for other fog signals.
- Sound the horn or fog bell intermittently to warn other boaters.
- If there is any doubt in continuing boat movement, anchor. Listen for other fog signals while continuing to sound the fog horn or bell.

## **SAFETY EQUIPMENT**

**NOTE:** As the owner of the boat, you are responsible for supplying a fire extinguisher approved by the U.S. Coast Guard and all other required safety equipment. Check state and local regulations and call the U.S. Coast Guard Boating Safety Hotline at 1-800-368-5647 for information about required safety equipment. You should also consider supplying additional equipment recommended for your safety and that of your passengers. Make yourself aware of its availability and its use.

### **Personal Flotation Devices (PFDs)**

United States Coast Guard (USCG) approved wearable personal flotation devices of Type I, II, III, or IV must be on board your boat. The PFDs must be of a suitable size for each person aboard and shall be in serviceable condition and readily accessible.

#### **PFD TYPE I, WEARABLE**

This PFD has the greatest required buoyancy. Its design allows for turning most unconscious persons in the water from face down position to a vertical or slightly backward position. Type I is most effective for all waters, especially offshore when rescue may be delayed.

#### **PFD TYPE II, WEARABLE**

Type II turns its wearer the same as Type I, but the turning action is not as pronounced as the Type I. The Type II will not turn as many persons under the same conditions as Type I.

#### **PFD TYPE III, WEARABLE**

Type III allows the wearers to place themselves in a vertical or slightly backward position. Type III has the same buoyancy as a Type II PFD. It has little or no turning ability.

#### **PFD TYPE IV, THROWABLE (REQUIRED IN ADDITION TO THE ABOVE MENTIONED PFDs)**

The PFD Type IV can be thrown to a person in the water, grasped and held by the user until rescued. The design does not allow for it to be worn. The most common Type IV PFDs are a buoyant cushion or ring buoy. The throw-able Type IV PFD shall be immediately available for use and in serviceable condition.

## PFD TYPE V WEARABLE

This PFD must be worn to be effective. When inflated, it provides buoyancy equivalent to Type I, II or III PFDs. When it is deflated; however, it may not support some people.

## EMERGENCY RE-BOARDING MEANS

**ATTENTION:** If optional boarding ladder is not installed on the boat, the engine's cavitation plate can be used for emergency re-boarding purposes.

**WARNING:** Rotating propeller may cause serious injury or death – do not approach while engine is running.

## Fire Extinguishers

All Class 1 (16 to 26 feet) powerboats are required to carry one (1) B-I type hand portable fire extinguisher, if not equipped with a fixed (Halon) fire extinguishing system in the engine compartment.

All hand portable fire extinguishers should be mounted in a readily accessible location, and away from the engine compartment. All persons aboard should know the location and proper operation of the fire extinguisher(s).

If your fire extinguisher has a charge indicator gauge, cold or hot weather may have an effect of the gauge reading. Consult the instruction manual supplied with the fire extinguisher to determine the accuracy of the gauge.

## Visual Distress Signal Devices

Visual Distress Signal devices are required and may be of the pyrotechnic or non-pyrotechnic type. The regulation requires all recreational vessels when used on coastal water, which includes the Great Lakes, territorial seas, and those waters directly connected to the Great Lakes and the territorial seas, up to a point where the waters are less than two miles wide, and the boats owned in the United States when operating on the high seas, to be equipped with visual distress signal devices.

Pyrotechnic and non-pyrotechnic equipment must be U.S. Coast Guard approved, in serviceable condition and stowed in a readily accessible location. Equipment providing a date for serviceable life, must be within the specified usage date as shown.

## PYROTECHNIC EQUIPMENT

Pyrotechnic U.S. Coast Guard approved visual distress signals and associated equipment include:

- Red flares, hand held or aerial
- Orange smoke, hand held or floating
- Launchers for aerial red meteors or parachute flares

## NON-PYROTECHNIC EQUIPMENT

- Orange distress flag
- Electric distress light

No single signaling device is flawless under all conditions for all purposes. Consideration should be given to possessing various types of equipment. Careful selection and proper stowage of the equipment is very **IMPORTANT** if young children are frequently aboard.

### Sound Signaling Device

All Class 1 (16 to 26 feet) powerboats are required to carry a hand, mouth or power operated horn or whistle. It must produce a blast of two-second duration and audible at a distance of at least one-half (1/2) mile.

### Navigational Lights

Boats operating between sunset and sunrise are required to display appropriate navigation lights. The bow and stern lights are located in the side storage compartment just behind the driver's seat. The bow light should be installed in the socket at the front of the boat and the stern light socket at the rear drivers side of the boat.

**NOTE:** When conditions require the use of navigation lights, the bow mount trolling motor does not need to be deployed to prevent obstruction of the navigation lights.

## **ADDITIONAL RECOMMENDED EQUIPMENT**

The following list (not an exhaustive list) indicates some additional recommended equipment which should be considered for safe enjoyable boating.

### ***Tools***

- Spark plug wrench
- Screw drivers
- Pliers
- Adjustable wrench
- Hammer
- Jackknife
- Electrician's tape
- Lubricating oil

### ***Spare Parts***

- Extra bulbs
- Extra fuses
- Extra drain plug
- Shear-pin (if used)
- Spare propeller
- Extra prop nut and washer
- Spark plugs
- Spare wire

### ***Basic Gear***

- Anchor and Line
- Tow line
- Mooring lines
- Dock Fenders
- First Aid kit
- Foul weather gear
- VHF radio
- Searchlight
- Ring buoy
- Flashlight
- Oar or paddle
- Compass
- Distress signals
- Boat hook
- Charts or navigation maps
- Signal mirror
- Sunburn lotion
- Binoculars

## **BOATING LAWS AND REGULATION**

### **Boat Registration**

Federal and state laws require that every boat equipped with propulsion machinery of any type must be registered in the main state of usage.

Registration numbers and validation stickers must be displayed on the boat according to regulations.

The registration certificate must be carried on board when the boat is in use.

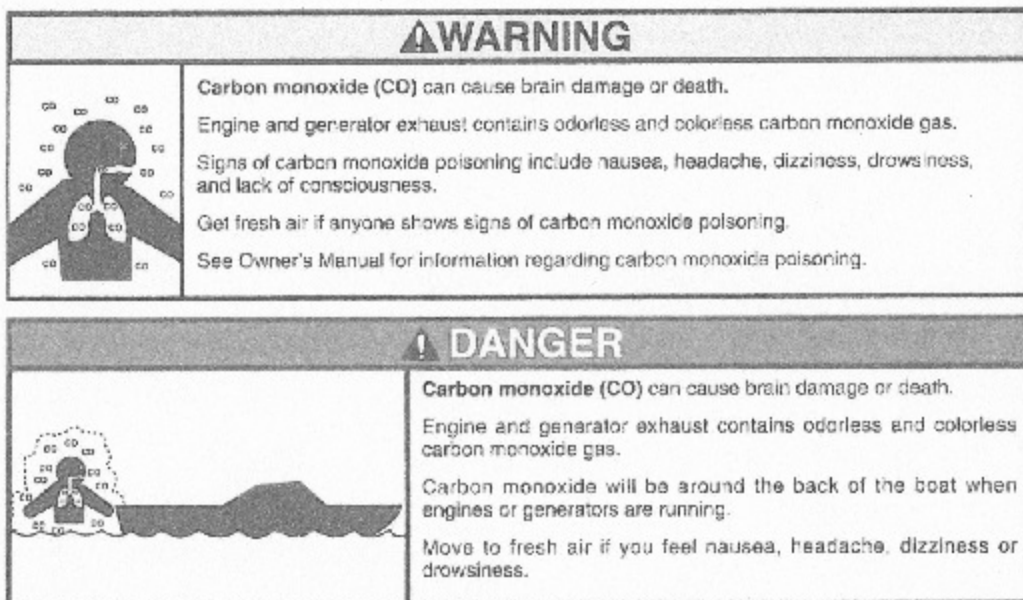
# SYSTEMS & COMPONENTS

This section introduces information related to major systems and components that are or can be installed on your Recon Boat.

Your boat may not have all the equipment and/or controls described in this manual as equipment levels vary by model. Consult your dealer when in doubt as to how information in this manual pertains to your boat.


## Safety Labels


You will see equipment safety labels at various locations on your boat. Recon has displayed these labels to help ensure that the time you spend on your boat is safe and enjoyable. Please do your part by reading ALL safety labels. Understanding the information on these labels is of vital importance. Check with your dealer if you have any questions about the labels or if they are missing from your boat. These safety labels should be on your boat:




## SAFETY LABELS




 **WARNING**

 Avoid serious injury or death from fire or explosion, resulting from leaking fuel. Inspect system for leaks at least once a year.

The use of fuels containing ethanol higher than 10% (E-10) can damage your engine or fuel system and will void the warranty. Never use (E-85).

 **WARNING**


 Fuel vapors are a fire and explosion hazard. To avoid injury or death, do not store fuel or flammable liquids here.

GMF 847701

 **WARNING**


 Do not use ski tow fitting for lifting or parasailing. Fitting could pull out of deck resulting in serious injury or death.


GMF 850001

 **WARNING**

 Rotating propeller can cause serious injury or death. Shut off motor when near persons in water.

GMF 850001

 **WARNING**

 Rotating propeller can cause serious injury or death. Never approach or use ladder when motor is running.

GMF 851001

 **WARNING**

 To minimize shock and fire hazards:

- (1) Turn off the boat's shore connection switch before connecting or disconnecting shore cable.
- (2) Connect shore power cable at the boat first.
- (3) If polarity warning indicator is activated, immediately disconnect cable.
- (4) Disconnect shore power cable at shore outlet first.
- (5) Close shore power inlet cover tightly.


**DO NOT ALTER SHORE POWER CONNECTORS**

GMF 850401

### BOATMAN'S CHECK LIST

For maximum enjoyment and safety, check each of these items BEFORE you start your engine:

- DRAIN PLUG (Securely in place?)
- LIFE-SAVING DEVICES (One for every person on board?)
- STEERING SYSTEM (Working smoothly and properly?)
- FUEL SYSTEM (Adequate fuel? Leaks? Fumes?)
- BATTERY (Fully charged? Cable terminals clean and tight?)
- ENGINE (In neutral?)
- CAPACITY PLATE (Are you overloaded or overpowered?)
- WEATHER CONDITIONS (Safe to go out?)
- ELECTRICAL EQUIPMENT (Lights, horn, pump, etc.?)
- EMERGENCY GEAR (Fire extinguisher, bailer, paddle, anchor & line, signalling device, tool kit, etc.?)

 **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:**

- Engine and generator exhaust
- Engine and generator fuel, and other liquids such as coolants and oil, especially used motor oil
- Cooking oils
- 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:**

- Keep away from engine, generator, and cooking fuel exhaust fumes
- Wash areas thoroughly with soap and water after handling the substances above

### SAFETY LABELS

## Systems

**CAUTION: READ ALL** literature materials supplied with your boat prior to operating any of the systems and components. Any electrical accessories you would like to add to your boat should be installed by your dealer or a qualified electrician. Improper installation could result in damage to your boat's electrical system and/or cause a fire.

**IMPORTANT:** Operation, maintenance, and safety information is outlined by the manufacturer of most installed equipment. Properly operating and maintaining the equipment on your boat will help you to enjoy many years of SAFE boating.

### 12-Volt DC Electrical System

Your boat's 12-Volt DC system obtains its power from a battery. The battery is charged through the engine-driven alternator and/or an AC battery charger. The voltmeter on the helm dash instrument panel indicates the charging level of the battery. Depending on which Recon model you own, there could be fuses or breakers on either the distribution panel, or instrument panel, which control the operation of DC equipment on your boat.

The negative terminal of the battery is connected to the grounding studs of the main engine. This type of negative ground system is the approved system for marine DC electrical systems. If additional equipment is to be installed, it must be adaptable to the negative ground system. When installing additional equipment, ensure that each item's current supply is taken from the main DC distribution panel. All required additional circuit protection must also be added at the DC distribution panel.

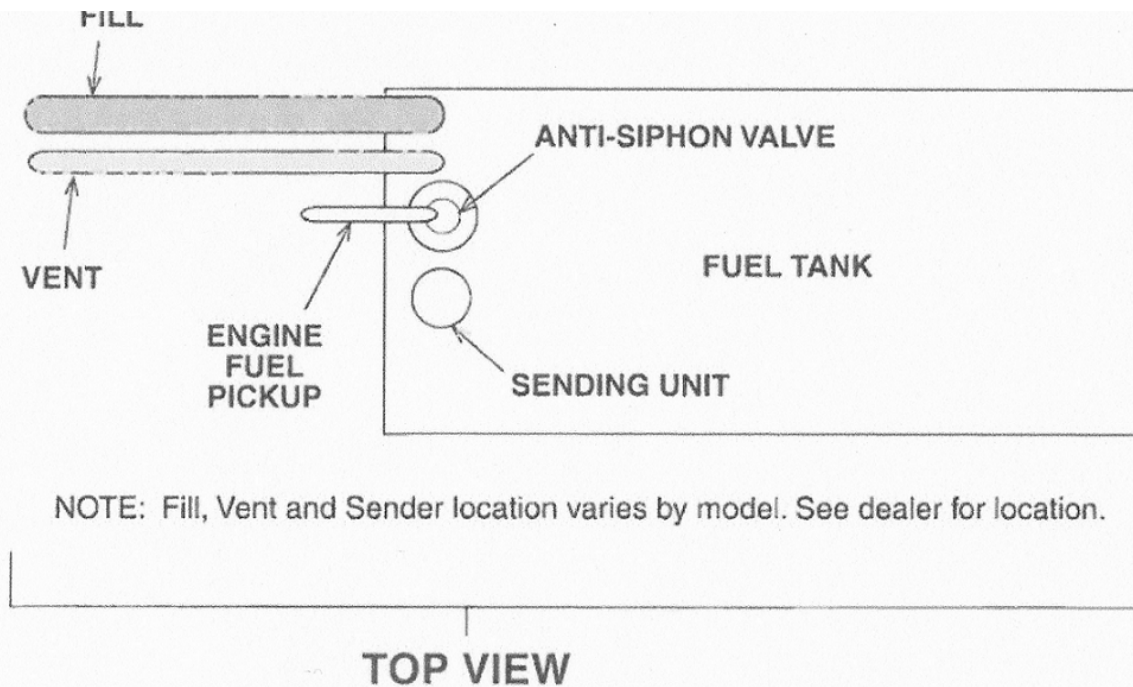
**NOTE:** Power feeds for accessory equipment must NOT be taken from the voltmeter terminals.

### Fuel System

**WARNING:** Do not use E85 fuel in this product. Do not use fuel or additives containing more than 10% alcohol by volume (methanol or ethanol).

The internal fuel system on board your boat is designed to meet or excel federal requirements, at the time of manufacture, of the U.S. Coast Guard.

The fuel system has been factory inspected and pressure tested in accordance with regulations in effect at time of manufacture. Additionally, each fuel tank must pass rigid tests and inspections performed by the fuel tank manufacturer.



Before you take delivery of your boat, check that your dealer completes a full inspection of the entire fuel system. You should also inspect the entire system at least once a year.

1. **Fuel Fill Plate** – All boats equipped with an internal fuel tank may have a fuel fill plate and are labeled FUEL. Be sure to utilize the proper grade fuel as specified in your engine owner’s manual.
2. **Fuel Vent** – The internal fuel tank is vented through the fill fitting. While the tank is being filled, the air is expelled by the fuel and escapes through the fuel vent. When the fuel tank is almost FULL, fuel will be ejected from the fuel vent.
3. **Anti-Siphon Valve** – Engine fuel pick-up lines on boats are equipped with an anti-siphon valve where the line attaches to the internal fuel tank. The valve prevents gasoline from siphoning out of the fuel tank in the event of a fuel line separation.
4. **Fuel Filter** – The fuel filter supplied by engine manufacturers is installed on or near the engine. The filter should be replaced frequently to maintain an adequate supply of clean, uncontaminated fuel to the engine.
5. **Fuel Tank** – The internal fuel tank is accessible through a removable cover board and is equipped with a fuel vent line, fuel fill line, sending unit, and engine fuel pick-up as shown in Figure 2.1. Some models with a permanent tank need to be visually inspected. Some models have a portable fuel tank.

## Protection Against Electrolysis

**IMPORTANT:** It is the boat owner's responsibility to periodically inspect and replace the sacrificial zinc anodes on the outboard motor. Damage resulting from electrolytic corrosion is not covered by the Recon Warranty.

Sacrificial zinc anodes, installed by the dealer or the engine manufacturer, protect the hardware that is exposed to the water. Electrolysis attacks the softest or least "noble" metals first. Because zinc is a less "noble" metal, it will decompose before the more "noble" metals. Check these zinc anodes periodically and have them replaced as required. See your Recon dealer for parts and service.

## Equipment

Various pieces of equipment on your boat are supplied with manuals specific to that product. The information in these manuals supersedes the information in the Recon Owner's Manual. Owners are responsible for reading all manuals supplied with their boat.

**WARNING:** When using electrical components, observe basic safety precautions to reduce the risk of fire, electrical shock, personal injury or damage to your boat and/or component.

## Battery

Marine batteries use an absorbent electrolyte principle to provide high reserve capacity, plus cold cranking performance.

Check with your dealer if you wish to install more than one battery on your boat. All batteries should be installed in such a manner that they are electrically isolated from each other.

**WARNING:** During charging, batteries produce gases which can explode if ignited. Explosion can shatter the battery. Acid can cause severe personal injury such as blindness. Keep flame, spark and smoking materials away from battery while charging. Charge battery in a well-ventilated area.

Batteries produce hydrogen and oxygen gases when being charged. These explosive gases escape through the vent/fill caps and may form an explosive atmosphere around the battery if ventilation is poor. This gas may remain around the battery for several hours after charging. Sparks or flames can ignite the gas and cause an explosion.

**WARNING: POISON!** Batteries contain sulfuric acid which can cause severe burns. Avoid contact with skin, eyes, or clothing. Wear goggles, rubber gloves, and protective apron when working with a battery. In case of contact, flush with water at least 15 minutes. If swallowed,

drink large quantities of water or milk. Follow with Milk of Magnesia, beaten egg, or vegetable oil. Get medical attention immediately.

### **Battery Charger**

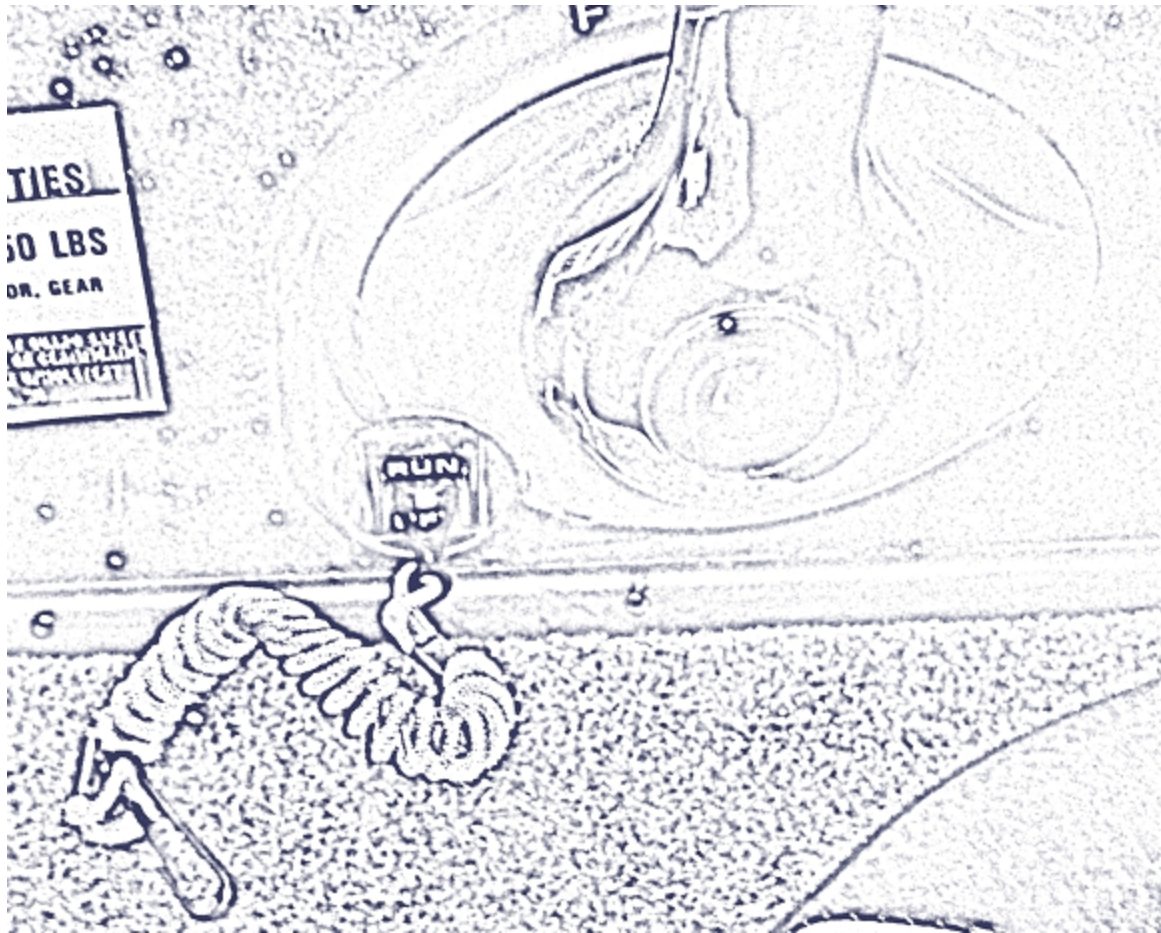
Your boat may be equipped with a battery charger that can charge the trolling motor battery. It is very important that you read the battery charger manual for the proper safety and operation instructions before using the battery charger.

### **Lanyard Stop Switch (*This switch does not apply to all motors*)**

**CAUTION:** The lanyard stop switch should not be used as the normal engine shut off.

The purpose of this safety device is to stop the engine when the operator leaves the control station accidentally by falling into the boat or by falling or being ejected overboard.

The lock plate on the end of the lanyard must be attached to the engine stop switch for the engine to run. Securely attach the lanyard to the operator's clothing, arm, or leg. Be careful not to attach the lanyard to clothing that could easily tear loose or to place it where it can become entangled. Either situation defeats the lanyard's purpose.



## Bilge Pump

**NOTE:** The Federal Water Pollution Act prohibits the discharge of oil or oily waste into or upon the navigable waters and contiguous zone of the United States if such discharge causes a film or sheen upon, or discoloration of, the surface of the water, or causes a sludge or emulsion beneath the surface of the water. Violators are subject to a penalty of \$5000.

The bilge pump is used to remove water from the bilge. Many models are equipped with a manual bilge pump that operates only when you turn on the switch at the helm. The pump stops as soon as you turn the switch off.

Some models are equipped with an automatic bilge pump. Rising water in the bilge activates a float switch to start the pump. When most of the water has been pumped out, the float switch automatically shuts the pump off. Automatic bilge pumps can also be turned on manually using the switch at the helm.

**IMPORTANT:** Electrically operated bilge pumps can fail. There is no substitute for checking the bilge frequently, especially during periods of heavy rain, high seas, or storm conditions. If, for some reason, the pump fails to start, check the fuse and wiring connections. If the pump

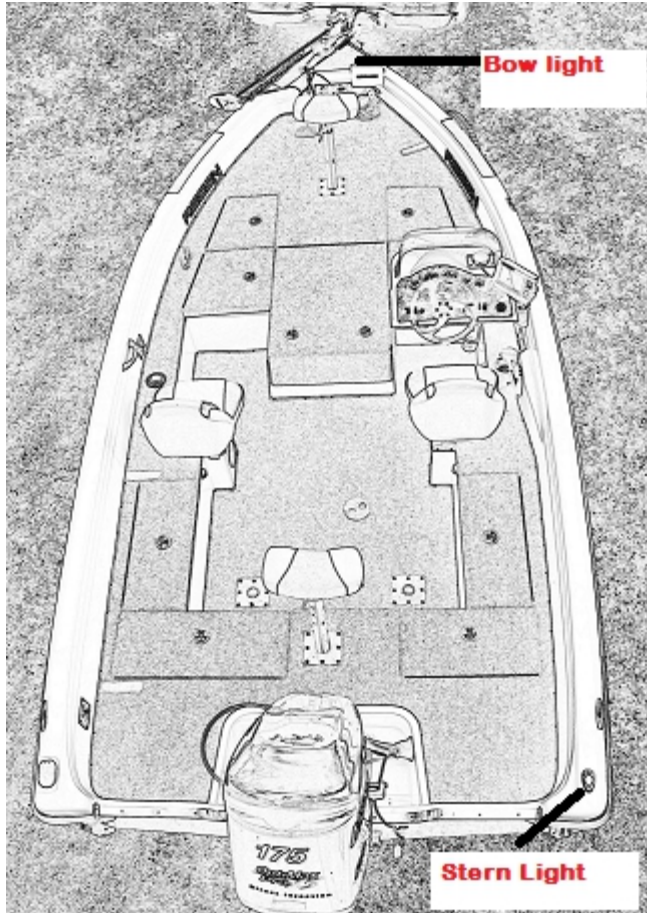
motor runs but no water is discharged, it may be clogged. Keep the area around the switch and the pump free of debris. If there is no visible debris clogging the pump or blocking the float switch and water is still not being removed, inspect the discharge hose for kinds of obstructions. If oil or fuel is spilled in the bilge, do not run the pump. Keep the oil or fuel from spreading in the bilge and properly dispose of it on shore. Your dealer can help you select products you can use to soak up the oil or fuel and give you advice about methods of disposal.

**WARNING:** Never assume all explosive fumes have been removed from the engine compartment. If you detect any fuel odors, shut down the engine and electrical circuits, and immediately determine the source of the odor.

## **Navigation Lights**

Although activities are limited at night, night cruising can be pleasurable. Be especially careful of shallow waters and be on the watch for submerged debris, rocks, and other obstacles in the water. Navigation lights are intended for collision avoidance only and are not intended to improve the operator's night vision. If your boat has factory installed navigational lights, the all-around light is white, and there is a red and green light for the port and starboard side respectively.

Check lights for proper operation before heading out. You should also learn to identify the running light combinations for other vessels. We recommend your participation in a boating safety course to further learn about navigation lights and safe boating practices.



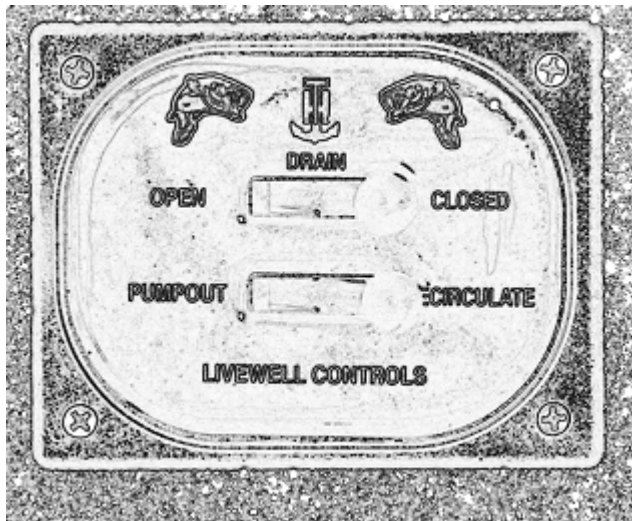
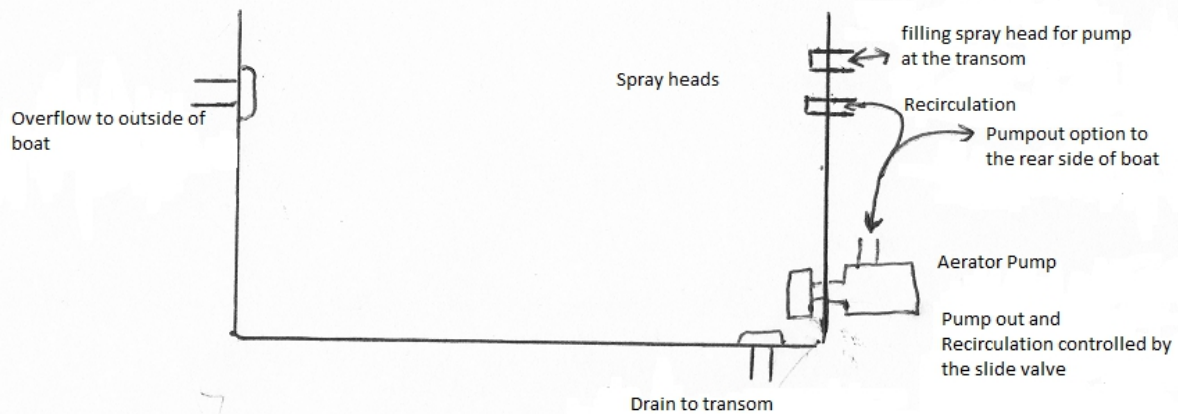
The navigation lights are controlled at the helm by a three position switch. This allows for selection of the all-around (white) light ON when anchored or moored, or to have the all-around (white), port (red), and starboard (green) lights all ON while underway and all lights are OFF in the OFF position.

**NOTE:** When conditions require the use of navigation lights, the bow mount trolling motor does not need to be deployed to prevent obstruction of the navigation lights.

### **Marine Stereo (Standard or Optional)**

The unit is an electronic tuning AM/FM stereo receiver with water-proof MP3. This unit may be adjusted to improve radio reception. Your dealer can help you with this adjustment. Refer to the stereo manual for operating instructions.

## LIVEWELL (Standard or Optional)



An aerated livewell is included as standard equipment on all models. The primary function of the livewell is to provide the means for keeping your catch alive until your day of fishing ends. Figure 2.3 shows a typical livewell system.

The livewell system has a pump that draws water in and pumps the water into the livewell.

Water above the level of an overflow, a fitting on the side of the livewell, flows through a hose and out through a fitting on the hull. The slide valve located near the livewell with open/close controls the livewell drain.

1. Toggle the LIVEWELL switch at the helm panel to ON. The livewell pump will start, and the livewell will fill with water up to the level of the overflow.
2. Toggle the switch OFF when the livewell is filled.

3. Adjust by turning spray head in or out.

Operate the livewell pump as needed to freshen and maintain the oxygen supply by aerating the water in the livewell. All livewells come standard with a recirculation system which pumps water from the livewell back through a spray head and is controlled by the livewell timer and the slide valve.

To ensure that your livewell remains clean and the water in it remains fresh, empty the livewell after you have finished using it. To drain the livewell, turn the slide valve to open and it will drain. To use the pump-out option, turn the slide valve to PUMP OUT and the timer to CONTINUOUS.

**IMPORTANT:** if water in the livewell system freezes, hoses can break as the frozen water expands. Be sure to empty the livewell completely during freezing weather.

Do not operate the livewell pump if it is not pumping water. Operating the pump dry can overheat its water-cooled motor and damage the unit. If water does not come out of the aerator nozzle:

1. Check the livewell fuse on the bow panel. Replace the fuse if necessary.
2. Make sure the pump is not clogged. If the pump is clogged, you may be able to clear the obstruction by forcing water back through the pump. Using a garden hose, direct water flow into the pump outlet until water flows freely from the inlet.
3. Make sure current is reaching the pump. Check and tighten connections. Make sure wires are not broken.

If you still have problems with the pump, contact your dealer.

## SEATING

Many Recon Boats are equipped with swivel seats. Most swivel seats have locking mechanisms, which when engaged, will prevent the seat from turning. These seats must be locked in order to be used when the boat's speed exceeds five miles per hour. Swivel seats without a locking mechanism must not be used when the boat's speed exceeds five miles per hour.



## TROUBLE SHOOTING

### DC ELECTRICAL SYSTEM

Problem	Causes	Solution
No power to 12-Volt equipment	Weak or dead battery	Recharge battery
	Poor Connection	Check all connections
Battery not charging (engine running)	Engine alternator malfunction	See dealer
Battery not holding charge	Bad battery	Replace battery
12-Volt device not working	Circuit breaker for device is OFF	Reset breaker to ON
	Fuse is blown	Replace fuse
	Weak or dead battery	Charge battery
	Faulty electrical connection	Check 12-Volt connections Tighten or repair as needed
	Device is not connected	Verify all wires are connected

## ENGINE

Problem	Causes	Solution
Engine will not start	Battery dead	Charge battery or replace
	Bad connections	Clean battery connections and make sure all are tight
	Control not in neutral	Shift control to neutral
	Ignition interrupter disconnected	Re-connect ignition interrupter
	No fuel	Check tank for fuel, fill if needed
	Other engine problems	Check fittings, connections, feel lines for blockages, repair or clean as needed
		See dealer

NOTE: ALSO REFER TO SECTIONS #2, #3, AND #4 IN THIS MANUAL FOR SYSTEMS, EQUIPMENT, LIVEWELL, FUEL, CONTROLS, STARTING PROCEDURES, AND MAINTENANCE INFORMATION.

## PRE-LAUNCH & UNDERWAY

3

Boat ownership carries with it certain responsibilities to yourself as well as your passengers and the general public. Safety, common sense operation, careful maintenance, and compliance with the law will not hamper your boating pleasure, but will make boating more enjoyable.

### TRAILERING

Selection of a trailer for your boat is extremely important. Recon Boats can supply the proper trailer for your boat. Your trailer should be able to accommodate the weight of the boat, engine, and any other equipment that will normally be carried. Take the time to have your boat weighed while it is empty, and again when completely loaded including a full fuel tank. You will save a great deal of trouble by staying within the maximum load limits of the trailer.

Check the certification label on the frame of the trailer for the Gross Vehicle Weight Rating (GVWR). The total weight of our boat, engine, fuel, gear, and trailer should not exceed the GVWR.

If your towing vehicle is equipped with a weight-distribution hitch, it must be capable of handling the GVWR. The weight on the trailer should be evenly distributed and can be checked by determining the tongue weight.

Tongue weight is measured as a percentage of the total weight of the loaded trailer on its tongue. Ideal tongue weight is not less than five percent (5%) and not more than ten percent (10%) of the GVWR. For example, if the weight of the loaded trailer is 3000 pounds, the weight on the tongue should be more than 150 pounds but less than 300 pounds. Excessive tongue weight will cause the front end of the towing vehicle to sway. Insufficient tongue weight will cause the trailer to sway or fishtail.

**WARNING:** Improper trailer size and improper weight distribution can cause swaying and fishtailing that can result in extensive damage to the trailer, the boat, and the towing vehicle. Swaying and fishtailing are especially dangerous at higher speeds where they can become uncontrollable. Damage caused as a result of improper trailering is not covered under the Recon Boat Warranty.

### Trailering Guidelines

1. Be sure that the bunks displace a large amount of hull surface, and be sure the boat and equipment distribute evenly on the trailer.
2. Make sure your boat is properly tied down and a safety chain is used.
3. Check local and state laws concerning any trailer requirements.
4. Do not trailer with your boat's convertible top up. It will be severely damaged. Use a mooring cover for extended trips.
5. You are required by state and federal laws to equip boat trailers with functional taillights and turn signals.
6. Some states require registration of boat trailers and license plates. Check with the Department of Motor Vehicles for regulations governing your particular state.
7. 4-pin versus 5-pin connector. Newer trailers have disc brakes with 5-pin connectors. The fifth pin is for disengaging the brakes when backing up. The 5-pin connector can be plugged into a 4-pin connector and all lights will work fine, but you may have to manually engage the "Back-Up Position" feature on the side of the trailer coupler in order to back up. If you have a 5-pin connector on your vehicle, this will not be necessary.

**CAUTION: Do not** exceed these capacity ratings. An overpowered boat can become unstable, sometimes resulting in loss of control or capsizing. An overloaded boat can become sluggish and hard to handle. Overloading or overpowering can also increase the danger of swamping, particularly in rough water. In addition, overloading or overpowering is illegal under most state laws and the Recon Boat Warranty is void if the owner exceeds the recommended capacity ratings.

## LAUNCHING

### Pre-Launch Inspection

All boats under 26-feet in length are required to have a capacity rating plate showing the recommended persons capacity as well as the actual weight capacity of the boat including persons, engine, and gear. Also, on outboard models, the plate will show the maximum horsepower which can be safely installed.

### INSPECTION CHECKLIST

Before beginning your boating excursion, get a current weather report. If the weather will not be favorable, postpone your trip.

1. Inspect the hull and propeller for damage, excessive dirt or marine growth which will affect your boat's performance.
2. Check the electrical system and navigation lights.
3. Check that all required safety equipment is on board and in good working condition. Examples include personal flotation devices (PFDs), horn, fire extinguisher, visual distress signals, etc. Take along a gallon of water.
4. Check that all other required equipment is on board. Examples include mooring lines, anchor lines, tool kit, etc.
5. Visually inspect engine for oil, fuel, or water leaks; cracked hoses; defective belts; or other signs of engine problems. Check engine oil and battery water levels.

**WARNING: POISON!** Batteries contain sulfuric acid which can cause severe burns. Avoid contact with skin, eyes, or clothing. Wear goggles, rubber gloves, and protective apron when

working with a battery. In case of contact, flush with water at least 15 minutes. If swallowed, drink large quantities of water or milk. Follow with Milk of Magnesia, beaten egg, or vegetable oil. Get medical attention immediately.

**WARNING:** During charging, batteries produce gases which can explode if ignited. Explosion can shatter the battery. Acid can cause severe personal injury such as blindness. Keep flame, spark, and smoking materials away from battery while charging. Charge battery in a well-ventilated area.

6. Check that all engine drains and petcocks are closed.
7. Check fuel levels

**DANGER:** Fuel leaking from any part of the fuel system can lead to fire and explosion that can cause serious bodily injury or death. Inspect system before starting the engines. Do not smoke and keep open flames away when checking fuel system.

8. If launching from a trailer, remove the engine support bracket (if used), and tilt the drive up to the high tilt position to avoid damage during the launch.
9. Before backing your boat down the launch ramp:
  - a. Remove all stern tie-downs
  - b. Properly secure all loose gear
  - c. Inventory your safety equipment
  - d. Load all personal gear
  - e. Lock winch and trailer unit
  - f. Disconnect trailer wiring from towing vehicle to prevent short circuits caused by submersion

### Launching Guidelines

**NOTE:** For more specific information, refer to your trailer owner's manual.

Here are some tips to remember when putting your boat in the water.

1. Have an individual at the launch ramp give you directions. Back slowly down the ramp. If the trailer needs to be maneuvered to the right, turn the towing vehicle's steering wheel to the left. If trailer movement to the left is required, turn the steering wheel to the right. Always remember to launch your boat at a right angle to the shoreline.

**NOTE:** if you do not have experience in backing up with a trailer, PRACTICE. Take your trailer to an open area and master using it before you get into a confined public or private launch site.

2. When the trailer fenders are in the water with only about 12" showing:
  - a. STOP the towing vehicle
  - b. Leave manual transmissions in gear or place automatic transmissions in park
  - c. Turn off the engine
  - d. Set the parking break

**NOTE:** If you have a bunk trailer, the hull must be deeper than several inches of water before launching.

3. Place blocks behind the vehicle's back wheels.
4. Do not unclasp the winch cable from the bow eye until a mooring line has been secured to the boat. Attach one line to the bow and one line to the stern to help control the boat. See the **Mooring Lines** information that follows for suggested securing procedures.
5. Launch the boat; move it down and OFF the trailer into the water. Secure the boat to the dock or have someone hold the mooring lines.
6. Lower the drive unit into the water.
7. Pull your towing vehicle away from the launch ramp.
8. Park only in designated areas. When parking, be sure your towing vehicle and trailer do not block other boaters from approaching the launch ramp or hinder their ability to maneuver a boat and trailer when launching.

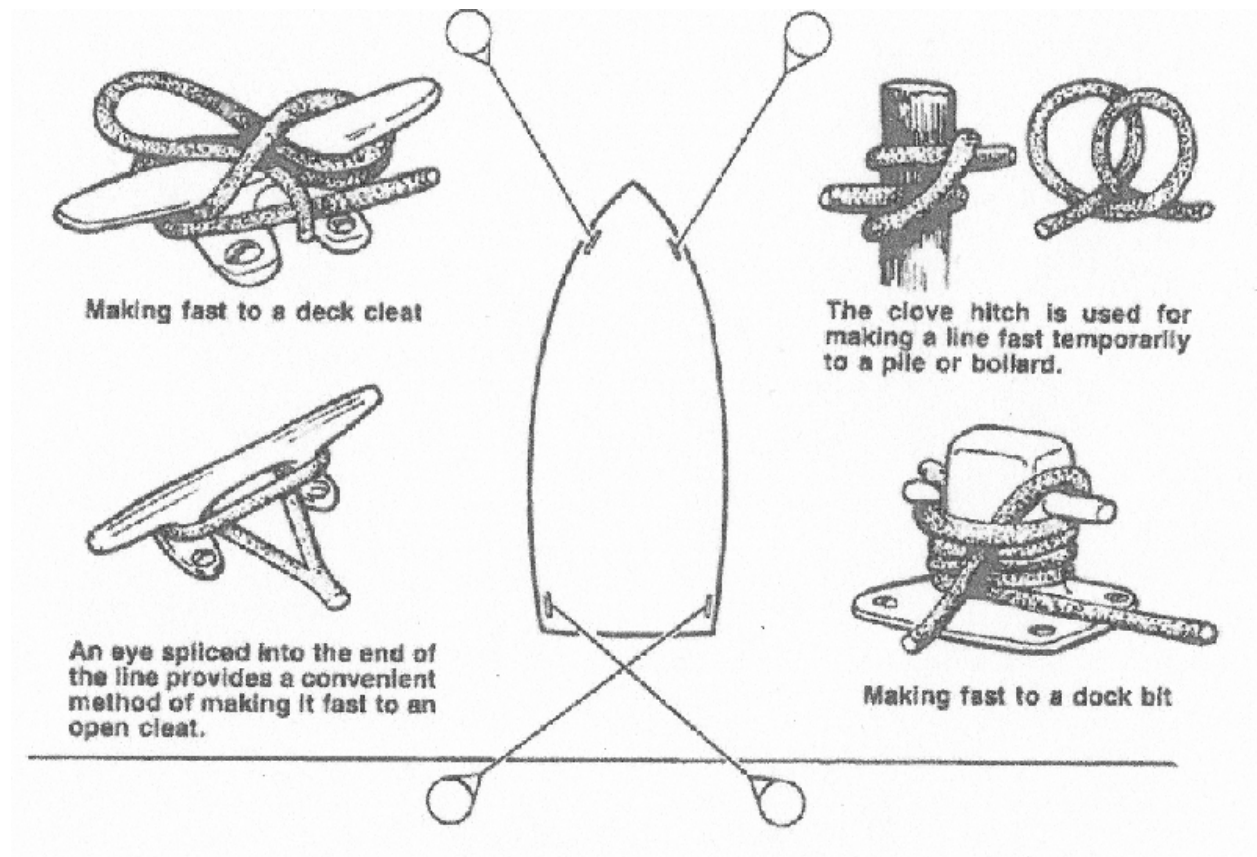
## **Mooring Lines**

The mooring lines you will use most often are the bow line, the stern line, and spring lines as shown in Figure 3.1. Each line has a specific purpose. The bow line and the stern line secure your boat's bow and stern. The two spring lines keep your boat from moving forward or backward when you are moored alongside a dock.

Mooring lines must be long enough to secure your boat in any docking situation. For example, the length of the lines for a 16-foot boat should be at least 15 feet. An eye splice at the end of each line (shown on Figure 3.1) should be large enough to fit comfortably over bow or stern cleats.

**NOTE:** If you are mooring your boat in an area where tides are a consideration, be sure to leave slack in the lines to make up for the rise and fall of the water.

If you are mooring your boat for a short time, bow and stern lines may be the only lines you will need. If you are mooring your boat for a longer time, or if the currents are swift, you should



use spring lines. The stern spring line leads from the vessel's stern cleat forward to the piling or cleat on the dock. The bow spring line leads from the bow cleat aft to the dock (see figure 3.1).

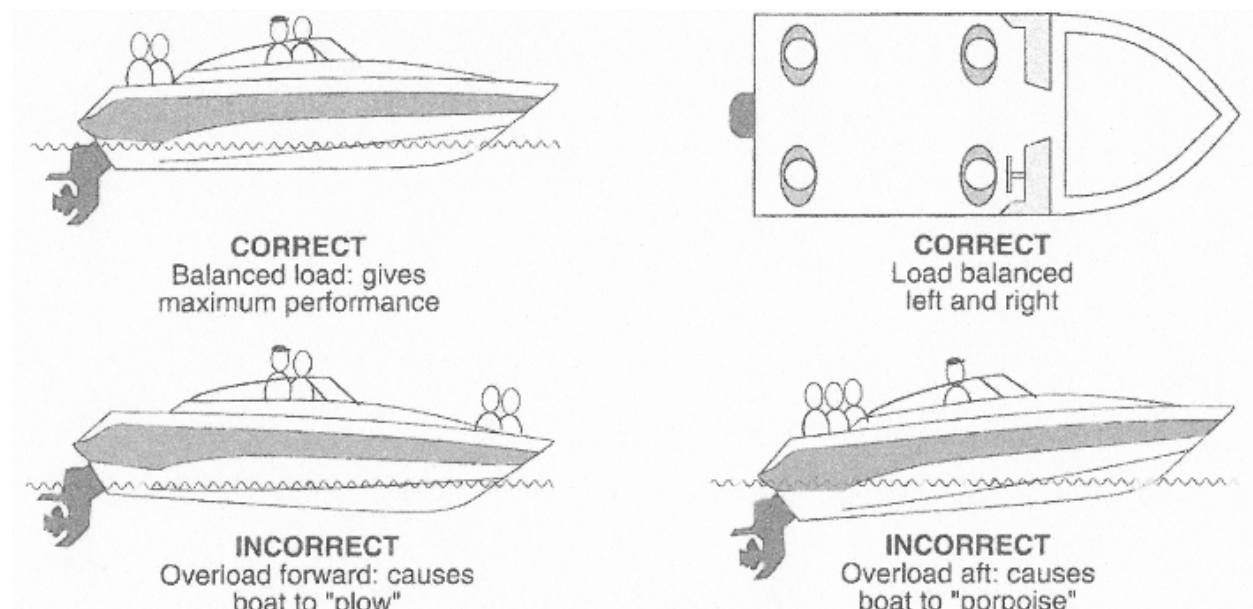
## LOADING

When loading your boat, remember to distribute the load evenly. Keep the load low and do not overload. The capacity plate affixed to our boat states the maximum load capacity. The plate shows persons and gear in pounds that the boat will safely handle under normal conditions. The U.S. Coast Guard establishes these load capacity ratings.

When loading always step onto the boat, never board by jumping. Have someone on the dock pass your gear aboard. Secure all gear firmly so it will not move or interfere with operation of the boat.

Passengers should board the boat one-at-a-time and be seated. Passengers should remain seated during loading of the boat to maintain an even trim. Prohibit passengers from riding on

the bow with feet hanging over the side, or riding while sitting on the stern. Passengers should choose the proper seat based on the vessel's speed. (See information in chapter 2 on seating.) Falls from moving boats are a major cause of fatal recreational boating accidents.



**WARNING:** Swivel seats may rotate suddenly while underway. Injury is possible if rotation causes occupant to fall to deck or fall overboard. At speeds greater than 5 MPH, occupy only designated seats. Before getting underway, secure swivel seats in base by turning to locked position.

**IMPORTANT:** The presence of the capacity plate does not relieve the operator from the responsibility of using common sense or sound judgment. Turbulent waters and adverse weather conditions will reduce the maximum load capacity rating of the boat.

**IMPORTANT:** When passengers are seated in the bow area, care should be taken so as not to obstruct the driver's vision.

## ANCHORING

1. The weight of the anchor and diameter of anchor line should be governed by the size and weight of your boat. Obtain advice from your dealer before purchasing an anchor.

2. Keep anchor secure while underway to prevent damage or injury due to sudden shifting in the boat's attitude.
3. Make sure the anchor line is secured to the bow eye or bow cleat. Never tie to a rail fitting, or other hardware which is not meant to support this stress. Never tie anchor to the stern unless you also are using a bow anchor. Anchoring by the stern only could cause wind driven waves to enter your boat.
4. Use two or more anchors if anchoring overnight or for extended periods. If not using two anchors, make certain there is sufficient clearance for your boat to swing in a full circle to prevent damage in case of shifting winds.

### **Dropping Anchor**

1. Have a crew member carefully lower the anchor. Keep slight tension on the anchor while lowering and maintain your tension after anchor reaches bottom.
2. Maneuver the boat backwards slowly until the proper length of anchor line is handed out.
3. Fasten the anchor line around the deck cleat. Anchor flukes should dig in and catch.

Watch for anchor drag by checking shoreline landmarks at the time the anchor is dropped and one-half hour later. If the boat has drifted away from these reference marks, the anchor is dragging and must be reset.

### **Weigh (pull in) Anchor**

1. It is recommended to have the engine running when you pull in anchor.
2. Slowly maneuver the boat forward to reduce tension on the line and make retrieval of the anchor line easier.
3. Pull in the length of anchor line until the line is vertical. Pull firmly to lift the anchor's shank and free the flukes from the bottom.

If the anchor becomes stuck, attach the vertical line to the mooring cleat. Wave action on the bow may lift flukes from the bottom and free the anchor. If the anchor is still stuck, feed out a few feet of line and attach it to the bow cleat. Maneuver the boat around the anchor, keeping the line firm. Locate an angle that will pull the anchor free.

## FUELING RECOMMENDATIONS

Your boat is equipped with a gasoline fuel system. **Please take time to read and understand all the fuel related information and warnings regarding gasoline and your boat in the engine owner's manual.**

Care should be taken to select fuels having the octane rating recommended for the engine, as indicated in the owner's manual, for proper operation.

### Filling the Tank

It is best to maintain a full tank of fuel when the engine is not in use. This will reduce air flow in and out of the tank due to changes in temperature as well as limiting exposure of the ethanol in the fuel to humidity and condensation.

### Maintenance

Periodically inspect for the presence of water in the fuel tank. If any is found, all water must be removed and the tank completely dried before refilling the tank with any fuel containing ethanol.

### Storage

Long periods of storage and/or non-use, common to boats, create unique problems. When preparing to store a boat for extended periods, of two months or more, it is best to completely remove all fuel from the tank. If it is not possible to remove the fuel, maintaining a full tank of fuel with a fuel stabilizer added to provide fuel stability and corrosion protection is recommended.

REFER TO THE ENGINE MANUFACTURER'S MANUAL IN YOUR OWNER'S MANUAL PACKET FOR COMPLETE INSTRUCTIONS AND WARRANTY.

**WARNING:** Use only marine fuel hose marked "USCG Type A" if replacement is necessary. Inspect all fuel distribution lines often to reduce the risk of fire hazard.

If only fuel containing alcohol is available, or the presence of alcohol is unknown, you must perform more frequent inspections for leaks and abnormalities. Any sign of leakage or deterioration requires replacement before further engine operation.

## Preliminary Guidelines

1. Safely secure your boat to the dock.
2. Do not smoke, extinguish all open flames, STOP all engines and other devices that could cause sparks, **including the bilge blower**. Do not use electrical switches or accessories, shut OFF all stoves that may produce a spark or flame.

**WARNING:** Vapor from spilled fuel is heavier than air and will flow to the lowest part of the boat. Ventilate before starting.

3. Close compartments to prevent the accumulation of fuel vapors.
4. Ensure a fire extinguisher is readily available.
5. Remove portable fuel tanks from the boat when filling. Wipe any spilled fuel from portable tanks before placing them in boat.
6. Do not store fuel in areas that are not adequately ventilated.

**DANGER:** Gasoline vapors are highly explosive. Follow all safety precautions before, during, and after fueling.

7. Use only fuel lubricants recommended by the engine manufacturer.

## Fueling

**NOTE:** See your dealer or the sales literature to determine your boat's fuel tank capacity.

1. Always fuel in an area supplying sufficient lighting conditions. Gasoline spills are unnoticeable under poor lighting or in darkness.
2. Remove the fuel fill plate.
3. Insert the fuel supply nozzle, keeping the nozzle in contact with the fuel fill plate while fueling, to guard against static produced sparks.
4. Stand away from the fuel tank vent and fill plate during fueling. Splash-back may occur and can be an eye irritant as well as a fire hazard.
5. *Avoid spillage.* Wipe any excess fuel immediately.

6. After pumping approximately 10 gallons of fuel into the fuel tank, inspect the engine and fuel tank area for any signs of fuel leakage. Continue fueling if no leaks or other problems are detected.
7. If fuel cannot be pumped in at a reasonable rate, check for fuel vent blockage or kink in the line.

### **After Fueling**

Replace the fuel fill plate and wipe up any fuel spillage. Fuel allowed to remain on the boat's painted surface or decals may damage or degrade these surfaces. Discard any rags that you may have used to wipe up fuel spillage in a safe place.

## **GETTING UNDERWAY**

### **Instrumentation**

The gauges described are not available on all Recon models. Consult with your dealer for various applications. Your dealer can also advise you on the normal readings of the gauges at the time of delivery of your boat. This will provide you with a reference point for the life of the engine. Keep in mind some gauges tend to fluctuate which is not uncommon. But, when operating your vessel, investigate all gauges that show a greater or less than normal reading.

### **Fuel Gauge**

Displays the amount of fuel contained within the fuel tank. The most accurate reading of the fuel gauge is at idle speed when your boat maintains an approximately level position. Underway, the fuel gauge will usually indicate a higher fuel level than is actually in the tank due to the bow of the boat being higher than at rest. Since gauge readings are approximate, they should be compared to the hours of use versus known fuel consumption, or gallons per hour (GPH). The most common practice of good fuel management is the "one-third" rule. You use one-third of your total fuel on board to travel to your destination and one-third in returning. The remaining one-third in the fuel tank should be reserved for emergencies.

### **Tachometer**

Displays the number of revolutions per minute (RPM) that the engine is running. The gauge displays increments of 100. The tachometer will show the RPMs necessary under various engine operating conditions. Do not exceed engine manufacturer's recommendations.

### **Speedometer**

Indicates boat speed in MPH (miles per hour). The accuracy of this instrument depends on the placement and cleanliness of the pickup tube. The pickup tube will be attached to the motor.

### **Voltmeter**

Displays battery voltage. Under normal engine running conditions (1000 RPMs or higher), the voltage will range between 11 and 14 volts when the alternator is charging. With the engine OFF and ignition key or switch ON a fully charged battery is indicated by a high voltmeter reading. Significantly higher or lower readings show a battery problem, alternator malfunction, or heavy drain on the battery. You should check the charging system and battery system for these higher or lower readings. An oscillating reading shows a loose voltage regulator connection or loose belts. Displayed low voltage readings after stopping engine shows a bad battery or heavy load on the battery. Refer to your engine owner's manual for proper gauge readings.

### **Power Trim Gauge**

Indicates the relative position of the drive unit. This should be read carefully as it does not show position of the drive unit in degrees. Proper trim should be indicated by bow attitude and engine RPM.

## **CONTROLS**

### **Steering Control**

It is important that you get the "feel" of your vessel's steering system. Steering does vary from boat to boat depending on engine type and horsepower, water and wind condition, and load.

Turn wheel from full left to full right and make certain the engine or drive unit is turning correctly. The system should run freely and smoothly.

Some outboard models are equipped with hydraulic steering. Check the steering fluid level before starting the engine. Be sure to read the hydraulic steering system information supplied with your boat for complete maintenance procedures.

A manually adjustable trim fin is provided on most outboard engines. Follow the instructions provided by the engine manufacturer for proper adjustment. This trim fin, when correctly adjusted, will help reduce steering effort through the entire trim range.

To maintain a straight course, keep at least one hand in control of the steering wheel at all times while underway.

### **Throttle/Shift Control**

**NOTE:** For optional or dealer installed controls, see the information supplied by the manufacturer of the control.

**CAUTION:** Do not over-tighten bolts or nuts that have been previously tightened. Use only manufacturer's specifications and parts when repairing or replacing steering parts.

**IMPORTANT:** Allow the engine to warm up before engaging the shift control. Monitor all instruments while engine is idling during warm up. See the engine manufacturer's specifications for proper operating ranges.

Place the throttle/shift control handle in the NEUTRAL position. The engine should not start unless the control is in NEUTRAL, or the NEUTRAL safety switch is activated.

The throttle/shift control regulates the RPM of the engine. Forward movement of the throttle increases the RPM of the engine. It also increases boat speed through the water when the engine is in either forward or reverse gear. The throttle control also acts as the gear shift lever to control the forward and aft movement of the boat.

**CAUTION:** The throttle on a hand operated remote control does not return to idle as on an automobile, when the pressure is released. Make sure you can reach the control lever quickly at all times when the engine is running.

Moving the throttle forward from the neutral position engages the shifting mechanism causing the boat to move forward. Continuing the forward movement of the throttle will increase engine RPM, and cause the boat to move faster in a forward direction.

Moving the throttle aft from the neutral position reverses the shift mechanism causing the boat to move backward. Continuing the aft movement of the throttle will increase engine RPM and cause the boat to move faster in a backward direction.

When maneuvering at low speeds you can reverse (move throttle forward or aft) the shift mechanism. This will result in a braking action.

**CAUTION:** When shifting between forward and reverse, always pause in neutral for a few seconds before reversing the rotation of the propeller(s). This will prevent unnecessary damage to the drive system.

**WARNING:** High speed acceleration in reverse can create a wake that could wash over the transom and flood the boat pan.

### **Stopping – You do not have brakes on a boat!**

Practice stopping maneuvers and learn early how your boat reacts. From forward motion, pull back the throttle towards NEUTRAL. Depending on your speed, the distance the boat travels until it comes to a complete stop will vary. The ability to measure this distance will only be acquired through experience.

To aid in a quicker stop the throttle/shift can be moved to the reverse position once it has been returned to NEUTRAL.

**NOTE:** Be certain that all persons who operate the boat are acquainted with all facets of boat handling.

## **STARTING PROCEDURES**

The operation and maintenance manual supplied with your engine provides pre-start, starting, and cold-starting instructions. The following information is merely a guide and not intended to explain in detail all starting procedures and instructions. **Refer to your engine owner's manual.**

### **Preliminary Checks**

1. Secure boat to the dock before attempting to start engine. The boat should be kept secure until the engine is running and warmed up.
2. Check engine oil level, power steering and power trim fluid levels.
3. Check fuel supply to ensure you have enough fuel for your expected travel plan.

4. Inspect for fuel odors and visible leaks in the fuel.

**DANGER:** Gasoline vapors are highly explosive. To prevent possible explosion and fire, check the engine and fuel compartments before each engine start for the accumulation of fumes or fuel leakage.

5. Make sure the throttle is in the neutral position. Check that the drive unit is in the water and not in the raised trailering position.
6. Make sure passengers seating in the bow area do not obstruct the driver's vision.

### Starting

1. Check all electrical systems and navigational lights.
2. Start engine. Engine should reach operating temperature before engaging forward or reverse.

**NOTE:** Engine will not turn over if throttle is not in the neutral position. Consult your engine owner's manual or see your nearest dealer.

**DANGER:** Engine and generator exhaust systems produce carbon monoxide (CO), a poisonous gas which is odorless, colorless, and heavier than air. Direct prolonged exposure can result in CO poisoning that may be harmful or fatal. Indications of excessive exposure to CO concentrations may include nausea, dizziness, and drowsiness.

### Acceleration

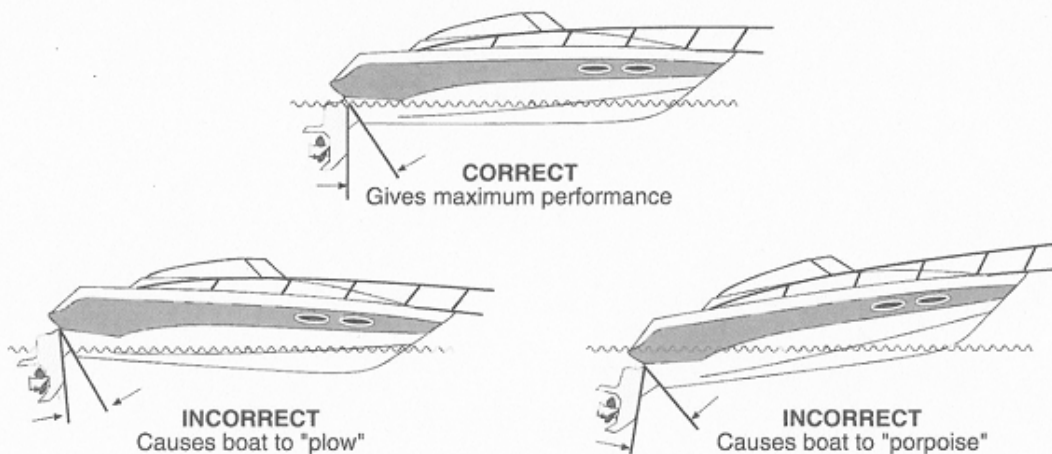
**CAUTION:** Accelerating a full throttle is not recommended before the engine "break-in period" has been completed. This "break-in period" also coincides with the engine "twenty (20) hour check-up". Therefore, full throttle acceleration should not be attempted until your engine has surpassed this usage time. Refer to engine owner's manual.

Before accelerating, make sure all passengers are in the proper seats. (See seating information in chapter 2.)

**WARNING:** Swivel seats may rotate suddenly while underway. Injury is possible if rotation causes occupant to fall to deck or fall overboard. At speeds greater than 5 MPH, secure swivel seats by engaging locking mechanism. If seat is not equipped with locking mechanism, do not occupy seat at boat speeds exceeding 5 MPH.

Before accelerating your boat, check the entire area to make sure you have a clear, safe path.

## TRIMMING



## TILT/TRIM Control Switches

1. The standard trim control switch is located on the control lever handle.
2. The switch controls the "trim" of your boat under various conditions, loads, and uses. Proper trim is very important in boating. Trim refers to the angle of the lower unit in relation to the bottom of the boat.
3. In the case of low or heavy bow attitude, the lower unit is normally trimmed too far under or forward. Trim the unit out or up to correct this situation.
4. If the bow is too high or steering is difficult, your lower unit could be trimmed up too far. Trim IN to correct.

5. A good practice is to get underway (especially when fully loaded or pulling a skier) with the unit trimmed all the way under or IN. After the boat is underway, adjust the trim out slightly to obtain the proper bow attitude and engine RPM.
6. Trim also affects propeller selection and fuel efficiency. All models should be “propped” to be in the upper half of the maximum RPM range with the boat lightly loaded and the lower unit trimmed up to the maximum. This configuration will allow the engine to operate within the recommended RPM range with a heavy load.

The lower unit should never be trimmed up to a point where the propeller cavitates (or slips). A rapid increase in engine RPMs is evidence of cavitation. If this occurs accidentally while running at full throttle, immediately lower the lower unit trim and reduce the throttle until the slipping stops. Have your dealer reset the trim limit switch to avoid over trimming in the future.

If the prop slips at lower planing speeds, the lower unit may be trimmed too high. Immediately lower the lower unit until the prop “grabs” again to restore efficiency.

**DANGER:** Excessive trim will decrease maneuverability, change steering characteristics, and may cause cavitation.

**NOTE:** Refer to our lower unit instruction manual regarding the power trim controls installed on your boat.

On outboard engines without power trim, the trim angle can be controlled by using the following “Rule of Thumb”: If the bow runs low or heavy in the water, move the unit out one or two pinhole settings. If the bow runs too high or light in the water, move the unit in towards the transom one or two pinhole settings.

## **ADDITIONAL UNDERWAY INFORMATION**

You are responsible for any damage or injury caused by your boat’s wake. Observe no wake speed zone warnings. Operate your vessel with regard for the safety of other boats and people in your boating area.

Keep your engine well-tuned to decrease exhaust hydrocarbon emissions that pollute the air and water.

Be a good boating neighbor. Sounds can carry a long distance over water, especially at night. Loud conversations and music can be disturbing to others as can excessive engine noise. Check with local authorities regarding any noise restrictions.

## **ENGINE SHUT DOWN**

1. Turn OFF ignition switch.
2. Turn OFF all other switches.
3. Raise the lower unit to the high tilt or trailer position. This is to avoid damage to the propeller or lower unit before removing the boat from the water.
4. After securing the boat to the trailer (if removing from water), remove the drain plug and drain the bilge. If boat is being secured to floating dock, boat house, etc., and will remain in water, drain the bilge by using the boat's bilge pump.

## **RELOADING YOUR BOAT**

1. Back the trailer into the water, covering the bunks completely, and then pull back up so about 12" of the fender top is visible.
2. STOP the towing vehicle.
  - a. Leave manual transmission in gear or place automatic transmission in park.
  - b. Turn off the engine and set the parking brake.
3. Tilt the boat's lower unit up to the high tilt position to avoid damage while loading.
4. Winch boat up onto trailer and secure safety cable.
5. Start engine on towing vehicle and pull trailer out of water to boat securing area.
6. Use tie-downs to secure boat on trailer.
7. Remove the drain plug.
8. Make sure lower unit is raised and secure.
9. Wipe hull down to prevent water spots and keep clean.
10. Make sure everything in the boat is secure or tied down. Place anything loose in towing vehicle.
11. Check that lights are working.

12. Check for and remove any aquatic vegetation.

### **Hauling Out**

1. Prepare before approaching ramp.
2. Tilt outboard or stern drive unit up.
3. Back trailer down ramp.
4. Set brake and place chocks behind wheels of tow vehicle.
5. Guide vessel onto trailer. Use bow and stern lines to help.

**DANGER:** Excessive trim will decrease maneuverability, change steering characteristics, and may cause cavitation.

6. Hook winch cable to boat bow eye.
7. Keep clear as boat is cranked onto trailer.
8. Attach the safety cable.
9. Open drain plugs while boat is tilted.
10. Remove chocks and drive tow vehicle and trailer from ramp.
11. If in salt water, wash down hull and trailer with fresh water as soon as possible.
12. Inspect propeller for nicks or other damage.
13. Wipe hardware, including canvas snaps, with clean, soft, cloth and spray with de-moisturant.
14. Check that trailer lights are working properly.
15. Complete tie-down and secure gear for road.

### **Maneuvering with Trailer**

1. Start with the basics – accelerating, slowing, and stopping smoothly and steadily.
2. Increase distance from vehicle ahead.
3. Do not pass other vehicles until you feel comfortable pulling trailer.
4. Maintain steady control in the wake of large trucks and buses.
5. When turning, signal your intention well ahead of time.

6. Swing a little wider than you would turn without a trailer.
7. Stop every hour or so to inspect wheel bearings, connections, tie-downs, cover, and other fastenings.
8. Back up slowly with a trailer.
  - a. Practice with an empty trailer in an empty parking lot.
  - b. Get the feel of backing straight. Small S-shaped steering corrections will be needed.
  - c. When you're ready to turn while going backward, put your hands on the bottom of the vehicle's steering wheel. The trailer turns opposite the towing vehicle's direction. By moving the bottom of the steering wheel in the direction you want the trailer to go, the towing vehicle will go the opposite way.
  - d. As the trailer starts to turn, move the bottom of the steering wheel back to the center. The trailer will continue to turn at an increasing rate. Move the bottom of the steering wheel opposite the direction of the trailer in order to slow the turning rate.
  - e. If the trailer turns too sharply ("jack-knives") or does not turn enough – stop, pull ahead, and try again.
  - f. Practice, practice, practice!

## **PRE-TRIP CHECKLIST**

- \_\_ Trailer wheel bearings – greased
- \_\_ Trailer and tow vehicle tires – correct pressure
- \_\_ Trailer and tow vehicle lights and brakes – operating
- \_\_ Spare tires, jacks, parts – usable
- \_\_ Steering mechanism – lubricated
- \_\_ Connections and linkages – tight
- \_\_ tongue weight – 5 to 10% of total boat and trailer weight
- \_\_ Tie-downs – secured
- \_\_ Winch line – taut
- \_\_ Winch anti-reverse gear – engaged
- \_\_ Turnbuckle/safety hook – secured
- \_\_ Motor – in traveling position
- \_\_ Coupler – tight
- \_\_ Hitch ball – greased lightly to reduce friction
- \_\_ Safety chains – crossed under trailer tongue and secured
- \_\_ Tongue jack – raised
- \_\_ Boat canvas – down and secured
- \_\_ Boating gear – secured
- \_\_ Registration, proof of insurance, other documentation – present

## **MAINTENANCE**

This section contains a general maintenance schedule and troubleshooting chart. If you do not fully understand the information contained within this section of your owner's manual, or any of the related product service manuals contact your dealer. Recon recommends maintenance be performed at an authorized Recon dealer. The following information is of a general nature.

**NOTE: Only use approved marine replacement parts available from your Recon dealer.**

## SERVICE & MAINTENANCE SCHEDULE

The following time intervals are intended to be used as a guide under normal operating conditions. Other operating conditions may warrant shorter time intervals. Instructions for performing listed items can be found in either your owner's manual, installed equipment manuals, or by contacting your Recon dealer.

### Time Interval Description

**1** = 48 hours after launch

**2** = 25 hour check during each boating season

**3** = Twice during boating season/Every 6 months/Every 100 hours of operation

**4** = Beginning of boating season/Every 12 months/Every 200 hours of operation

### Maintenance Terminology

**Check** = to observe for satisfactory conditions, accuracy, safety, or performance

**Inspect** = to examine closely, in critical appraisal, while testing or evaluating components or systems

**Lubricate** = to apply a lubricant (oil, grease, etc.) as specified for reducing friction, heat, and wear between solid surfaces

Engine, Lower Unit or Outboard	1	2	3	4
Check:				
Prop for trueness				X

Propellers				X
<b>Engine &amp; Drive System</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Perform engine and drive unit maintenance as recommended by manufacturer				
<b>Clean:</b>				
All gauges				X
<b>Control System</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Adjust throttle and shift		X		X
Test "neutral" safety switch				X
Lubricate cables and control				X
<b>Steering System</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Inspect linkage and connections			X	X
Adjust steering		X		X
Check fluid		X		X
Lubricate steering system				X
<b>DC Electrical System</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Inspect:</b>				
Battery connections			X	X
Battery cable				X
12V wiring and connections				X
<b>Check:</b>				
Battery water level		X	X	X
Operation of 12V electrical equipment		X		X
All receptacles and connections			X	X
Bilge blower operation		X	X	X

<b>Fuel System</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
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<b>Inspect:</b>				
For fuel leaks and condition of fuel hoses		X	X	X
Fuel pump & filter		X	X	X
Fuel tank			X	
Clean fuel filter		X	X	X
<b>Ventilation &amp; Drainage</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Check:</b>				
Operation of bilge pump(s)		X		X
<b>Clean:</b>				
Vent system			X	X
Bilge pump(s)		X		X
<b>Exterior Equipment</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>Clean:</b>				
Navigational lights			X	X
<b>Seating &amp; Canvas</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Clean upholstery				X
Wash canvas				X
<b>Hull &amp; Deck components</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Check rail and seat fastenings				X
Wax deck and hull			X	X
Inspect areas for damage				X
Perform minor touch-up repairs				X

This chapter includes recommendations for cleaning the hardware, fabrics, vinyl, and carpeting on your boat. Although household cleaners may be used, they should be used in small quantities. Cleaners containing chlorine, solvents, or petroleum may damage your boat's components and are a pollutant if they get into the water. In addition, cleaners containing phosphates encourage algae blooms. Mixing cleaners can cause harmful chemical reactions. Use citrus-based cleaners or the cleaners recommended. Check with your dealer for additional information.

Properly used and maintained, your boat will give you years of service and enjoyment. By keeping your boat "shipshape", you will be doing more than protecting your investment, you will also ensure good performance and safety on the water.

The first step in ensuring good performance is keeping your boat clean, particularly below the waterline where a build-up of scum, algae, or other marine growth can rob you of performance and fuel efficiency.

**NOTE:** Before attempting to use a particular cleaning solution or method for cleaning, test the material to be cleaned in a hidden or inconspicuous area for possible adverse reactions.

**CAUTION:** Wire brushes, scouring pads, or other abrasive type materials/solutions should never be used on the fiberglass surface. They create small scratch marks that will collect marine growth and other foreign materials in addition to dulling the finish.

### HULL AND DECK CARE

The finish on your boat is a clear gel coat and with proper care, will last for many years, retaining its lustrous appearance. Algae, forms of marine growth, and barnacles (in salt water) are extremely hard to remove once firmly attached to the bottom of your hull. To avoid attachment of barnacles or marine plant life, it is recommended you wash the bottom of your hull after every outing. In addition, it is a good idea to completely hose down the boat after use, especially in salt water areas. Consult your dealer for deck and hull commercial cleaners and their use.

Once your deck and hull have been cleaned, (except for heavy grime or oil, a mild detergent and water will suffice – DO NOT USE ABRASIVES) you are ready for a wax application to bring back the original sheen of your deck and hull. Ask your Recon dealer to recommend a good commercial product.

It is a good idea to wax your boat at least twice a year. Keep the interior and exterior of your boat in nice condition, and inspect your boat regularly to keep minor problems from becoming major ones. REMEMBER, AN OLDER BOAT IN NEARLY NEW CONDITION RETAINS A HIGH RESALE VALUE.

### **Hardware and Fittings**

Chrome and stainless steel hardware should be cleaned with water and a cloth, followed with an application of commercial chrome cleaner. For excessively dirty or oily hardware, use alcohol. AVOID THE USE OF DETERGENTS OR ABRASIVES WHEN CLEANING HARDWARE.

Inspect all hardware and fittings to make sure they are secure. All screws, bolts, clamps, cleats, etc., must be tight.

## **UPHOLSTERY**

Your boat's seats and vinyl upholstery should be kept as clean as the exterior finish to prolong life and beauty.

### **Seat Coverings & Vinyl**

The seat coverings and vinyl trim are made of temperature resistant vinyl and made to withstand the effects of sun, heat, rain, and other outdoor elements under normal conditions. It is still important to clean and care for it. Many substances may stain the vinyl if left on for a period of time. Remember to remove any such contaminants and clean vinyl immediately.

1. Always try to clean up spills quickly to prevent staining.
2. Clean dirt and smudges with mild soap and warm water. If necessary, scrub with a soft bristle brush to remove dirt from textured vinyl. Dry with a soft, lint-free cloth or towel.
3. Certain household cleaners, powdered abrasives, steel wool, and industrial cleaners can cause damage and discoloration and are not recommended. Dry cleaning will remove the printed pattern and gloss. Waxes should be used with caution. Many contain dyes or solvents that can permanently damage the protective coating.
4. Periodic applications of a vinyl protection solution will help keep vinyl clean and pliable. Follow instructions provided by vinyl manufacturer. Check cleaning solution labels before using.

Protect vinyl from being ripped or torn. Mildew, mold, pinking, yellowing, or other forms of staining can occur if vinyl is not cared for properly. Suntan lotion and insect repellents can also stain quickly and cause permanent damage.

## **WINDSCREENS & WINDSHIELDS**

**CAUTION:** Never use acetone, benzene, carbon tetrachloride, lacquer thinner, or similar type solvents. They penetrate the surfaces and cause hazing which will obstruct visibility.

Plastic windscreens should be cleaned with clear water. After dirt is removed, use a plastic window cleaner and non-abrasive polish. Vibration may loosen windscreen fasteners during normal use. These should be checked periodically for tightness.

Safety glass windshields may be cleaned just like those on a car.

## **CARPETING**

### **Exterior**

Scrub carpeting with a brush using mild detergent and warm water, then thoroughly rinse with clear water. Allow carpet to dry completely before use. Apply a light coating of Scotch Guard® to protect against accidental spills.

## **CANVAS**

Bimini-tops are designed and intended to provide coverage of the helm seating areas from the sun. These tops are not a weather cover. While these tops are intended to provide ample weather protection for the helm, the tops are not completely weather tight like a winter storage cover.

### **Cleaning**

**IMPORTANT:** Do not use hot water, dry in an automatic dryer, dry clean or steam press canvas.

1. Wet down all canvas. Use a soft bristle brush and scrub with a mild detergent and water solution.
2. Brush or sweep underside of the top. Spray with Lysol™ or other disinfectant to prevent mildew.

### **Care**

1. Air dry all canvas material before storing. Never store canvas while damp or wet, and provide proper ventilation to prevent mildew.
2. Avoid mooring under trees.
3. Never tow your boat with the top up.
4. When not in use, remove the top and store in the boot on board your boat.

## WINTERIZATION & STORAGE

6

This section of your owner's manual will assist you in preparing your boat for prolonged storage. When cold weather has arrived, or a change in your boat's usage requires extended storage, we suggest you follow the guidelines contained within this section. For areas that do not require seasonal storage, Recon recommends a thorough annual inspection.

**IMPORTANT:** Consult your engine manual for specific instructions covering winterization of the engine. For recommended cleaning solutions and procedures referenced, see Section 4, "Maintenance" in your owner's manual.

### PRIOR TO STORAGE

#### Hull

1. Clean off any barnacles or crusted marine growth.
2. Scrub the hull thoroughly to remove marine growth and scum. DO NOT use abrasives.
3. Inspect the underwater gear and propellers for excessive wear or damage.
4. Remove the hull drain plug and store in a safe place.

#### Deck

1. Wash the deck, superstructure and cockpit.
2. Clean all deck hardware (i.e. cleats, rails, instruments, etc.) and apply a coat of metal polish or wax.
3. Clean the carpet.

## ENGINE

Consult your engine's owner's manual.

### Fuel System

Fill the fuel tank completely, or empty completely. Either method will minimize condensation. You may want to add a gasoline stabilizer solution to the fuel, if the tank is to remain full. Follow the product manufacturer's recommended procedure.

### Battery

1. Remove battery, check water level, and store away from freezing temperatures.

**IMPORTANT:** Battery should be stored in a cool, dry place.

**WARNING:** To prevent personal injury, wear goggles, rubber gloves, and a protective apron when working with battery. Battery electrolyte can cause severe eye damage and burns to the skin. In case of spillage, wash area with a solution of baking soda and water.

2. Clean outside battery case, terminals, and battery clamps with a solution of baking soda and water. DO NOT allow baking soda/water to enter the cells.
3. Lightly sand battery posts and clamps with fine grit emery cloth.
4. Apply a light coat of petroleum jelly to the cover end of the battery cables.
5. A monthly recharge or continuous trickle charge should be applied to the battery during storage.

## LIVEWELL

It is important to remove the water remaining in the hoses and pumps. Use a compressed air hose in all fittings and drain holes to remove all remaining water.

**IMPORTANT:** Failure to remove all water from the livewell system in freezing weather could result in component damage and/or leaks. This damage is not covered by the Recon Warranty.

## INTERIOR CLEANING

1. Scrub all interior surfaces.
2. Be sure to remove everything that can hold moisture and cause mildew. Remove and store OFF the boat, all cushions, mattresses, towels, and clothing.

3. Personal flotation devices (PFDs) and other safety equipment must be cleaned and dried. If left on board, place them where air can circulate around them.
4. Clean and thoroughly dry the bilge area. Remove all rags, sponges, or other cleaning materials from bilge area.
5. Allow the interior to completely air out for a couple of days, weather permitting.
6. If you store your boat outside, we recommend that you do not store it with the canvas or optional full enclosure on. Cover with a storage cover, tarp, or plastic, especially if you live in an area of heavy snow. Whatever material you use for a cover, be sure the boat is properly ventilated.

**NOTE:** After cleaning, make sure everything is thoroughly dry and air can circulate freely throughout the inside of your boat.

## **RECOMMISSIONING**

**IMPORTANT:** For detailed information concerning recommissioning of the engine, refer to your engine manual.

1. Inspect the fuel system and all associated equipment for proper connections, corrosion, leaks, or other damage. Always be alert for the odor of fuel vapors.
2. Clean battery terminal posts with a wire brush or steel wool before installing.
3. Check the charge on the battery. Recharge or replace if necessary.
4. Inspect all battery wiring. Repair or replace if necessary.
5. Attach the battery cables and tighten the cable clamps.
6. Apply petroleum jelly or marine grade grease on posts and clamps to eliminate air pockets and corrosion build-up.
7. Clean the bilge area.
8. Test the navigational lights and all other lighting on board.

## **WIRING COLOR CODING**

**WARNING:** It is important to have a qualified technician work on your boats electrical system.

### **Never:**

- a. Work on ANY electrical installation while the electrical system is energized.

- b. Modify the craft's electrical system or relevant drawings. Installation, alterations and maintenance should be performed by a competent marine electrical technician.
- c. Alter or modify the rated current amperage of overcurrent protective devices.
- d. Install or replace electrical appliances or devices with components which exceed the rated current amperage of the circuit.

All navigation lights and electrical components can be obtained from your dealer, marine supply stores or directly from the factory.

## **12 VOLT DC ELECTRICAL SYSTEM**

### **18 Gauge Wiring Code**



Red---12 volt positive



Black---Negative

Blue---switched 12 volt dash lights



White---switched 12 volt navigation and anchor lights

Purple---switched 12 volt from key switch

Green---switched 12 volt front livewell pump out and recirculate

Yellow---switched 12 volt rear livewell pump out and recirculate

Brown---switched 12 volt bilge pump

### **12 Gauge Wire Code**

Red---12 volt positive directly from battery to fuse panel

Black---negative directly from battery to fuse panel

### 6 Gauge Wire Code



Red---12/24/36 volt from battery/s to the bow trolling panel



Black---negative from battery/s to the bow trolling panel

**NOTE:** Breaker or fuse must be installed for the bow panel wires when the trolling motor or any other electronics are installed.