24 & 26 Bay

Owner's Manual

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SAFETY INFORMATION

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

CAUTION

HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN MINOR PERSONAL INJURY OR PRODUCT AND PROPERTY DAMAGE.

WARNING

HAZARDS OR UNSAFE PRACTICES WHICH COULD RESULT IN SEVERE PERSONAL INJURY OR DEATH.

DANGER

IMMEDIATEW HAZARDS WHICH WILL RESULT IN SEVERE PERSONAL INJURY OR DEATH.

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

IMPORTANT NOTE: Your boat uses an internal combustion engine and flammable fuel. Every precaution has been taken by Crevalle to reduce the risks associated with possible injury and damage from fire or explosion, but your own precaution and good maintenance procedures are necessary in order to enjoy safe operation of your boat.

BOAT INFORMATION

Please fill out the following information section and leave it in your Crevalle Boat owner's manual. This information will be important for you, your dealer and/or Crevalle service personnel to know, if you may need to call them for technical assistance or service.

BOAT	
MODEL:	HULL SERIAL #:
PURCHASE DATE:	DELIVERY DATE:
IGNITION KEYS #:	REGISTRATION #:
DOOR KEY #:	OTHER KEYS #:
ENGINE	
MAKE:	
PORT SERIAL #:	
PROPELLER	
MAKE:	BLADES:
DIAMETER/PITCH:	
TRAILER	
MAKE:	MODEL:
SERIAL #:	GVRW:
TIRE SIZE:	
ADDITIONAL EQUIPMENT/NOTES	
DEALER	**CREVALLE BOATS**
NAME:	REPRESENTATIVE:
DEALER/PHONE:	CREVALLE BOATS PHONE:
SALESMAN:	ADDRESS:
SERVICE MANAGER:	
ADDRESS:	
DEALER E- MAIL:	CREVALLE BOATS E- MAIL:

All information, illustrations and specifications contained in this manual are based on the latest product information available at the time of publication. Crevalle Boats reserves the right to make changes at anytime, without notice, in colors, materials, equipment, specifications and models.

SPECIFICATIONS

24 Bay
Specifications

HULL LENGTH OVERALL - W/ O ENGINE OR JACK PLATE	*23' 6"*
BEAM	*8' 6"*
WEIGHT DRY - NO ENGINE (Approx.)	*3,400 lbs*
DEAD RISE	*16^0*
DRAFT WITH ENGINE UP	*12"*
BRIDGE CLEARANCE - WITHOUT HARDTOP	*5' 10"*
BRIDGE CLEARANCE - TOP OF HARDTOP (No Outriggers)	*7' 7"*
FUEL CAPACITY	*71 gal*
MAXIMUM HORSEPOWER	*300 hp*
MAXIMUM PERSONS CAPACITY	*8*

Notice:
Dry weight is the average weight of the base boat without engine, fuel, water, waste or gear.

Specifications and weights are approximate and may differ from boat to boat.

SPECIFICATIONS

26 Bay
Specifications

HULL LENGTH OVERALL - W/O ENGINE OR JACK PLATE	*25' 6"*
BEAM	*8' 6"*
WEIGHT DRY - NO ENGINE (Approx.)	*3,700 lbs*
DEAD RISE	*16^0*
DRAFT WITH ENGINE UP	*12"*
BRIDGE CLEARANCE - WITHOUT HARDTOP	*6' 0"*
BRIDGE CLEARANCE - TOP OF HARDTOP (No Outriggers)	*7' 9"*
BRIDGE CLEARANCE - OBSERVATION STATION	*9' 3"*
BRIDGE CLEARANCE - UPPER HELM STATION	*9' 9"*
FUEL CAPACITY	*83 gal*
MAXIMUM HORSEPOWER	*350 hp*
MAXIMUM PERSONS CAPACITY	*9*

Notice:
Dry weight is the average weight of the base boat without engine, fuel, water, waste or gear.

Specifications and weights are approximate and may differ from boat to boat.

INTRODUCTION & IMPORTANT INFORMATION

All instructions given in this book are as seen from the stern looking toward the bow with starboard being to your right and port to your left. The information and precautions listed in this manual are not all inclusive. It may be general in nature in some cases and detailed in others and is designed to provide you a basic understanding of your Crevalle boat and some of the responsibilities that go along with owning/operating your boat.

The suppliers of some of the major components such as the engines, pumps and appliances, provide their own owner's manuals which have been included with your boat. You should read the information in this manual and the manuals of other suppliers completely and have a thorough understanding of all component systems and their proper operation before operating your boat.

REMEMBER - IT IS YOUR RESPONSIBILITY TO ENSURE THAT YOUR BOAT IS SAFE FOR YOU AND YOUR PASSENGERS. ALWAYS EXERCISE GOOD COMMON SENSE WHEN INSTALLING EQUIPMENT AND OPERATING THE BOAT.

Hull ID # Location On Starboard Side of Transom

Warranty And Warranty Registration Cards

The Crevalle Limited Warranty Statement is included with your boat. It has been written to be clearly stated and easily understood. If you have any questions after reading the warranty, please contact the Crevalle Boats Customer Service Department

Crevalle, engine manufacturers and the suppliers of major components maintain their own manufacturer's warranty and service facilities. It is important that you properly complete the warranty registration cards included with your boat and engine and mail them back to the manufacturer to register your ownership. This should be done within 15 days of the date of purchase and before the boat is put into service. A form for recording this information for your records is provided at the beginning of this manual. This information will be important for you and service personnel to know, if and when you may need service or technical information.

The boat warranty registration requires the **H**ull **I**dentification **N**umber **"HIN"** which is located on the starboard side of the transom, just below the rubrail. The engine warranty registration requires the engine serial numbers. Please refer to the engine owner's manual for the location of the serial numbers.

IMPORTANT:

The terms and conditions of the Crevalle Boats Limited Warranty are outlined in the warranty statement included with this manual. The manufacturer will automatically honor the warranty to the original purchaser for 15 days from the date of purchase. However, during that 15 day period, owners must comply with the steps outlined in the warranty statement to validate their warranty.

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

Your Crevalle Boats Dealer will assist you in filling in the hull number and other data required on your Registration Card. Check to see that your card is complete and signed. Detach and mail. Your Warranty Registration Card will be added to our permanent files.

Transferring the Limited Structural Warranty

For a transfer fee, Crevalle Boats will offer to extend a Transferable Limited Structural Hull Warranty to subsequent owners of Crevalle Boats. Please refer to the Crevalle Limited Warranty Statement for the terms and conditions of the Transferable Limited Structural Hull Warranty and the procedure to transfer the warranty.

Product Changes

Crevalle is committed to the continuous improvement of our boats. As a result, some of the equipment described in this manual or pictured in the catalog may change or no longer be available. ***All information, illustrations and specifications contained in this manual are based on the latest product information available at the time of publication. Crevalle Boats reserves the right to make changes at anytime, without notice, in colors, materials, equipment, specifications and models.*** If you have questions about the equipment on your Crevalle, please contact the Crevalle Boats Customer Service Department.

Service

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

Crevalle will not reimburse boat owners for warranty repairs performed without prior authorization provided in writing.

It is the boat owner's responsibility to deliver the boat to the dealer for warranty service.

OWNER / OPERATOR INFORMATION

Registration And Numbering

Federal law requires that all undocumented vessels equipped with propulsion machinery be registered in the State of principal use. A certificate of number will be issued upon registering the boat. These numbers must be displayed on your boat. The owner/operator of a boat must carry a valid certificate of number whenever the boat is in use. When moved to a new State of principal use, the certificate is valid for 60 days.

In order to be valid, the numbers must be installed to the proper specifications. Check with your dealer or state boating authority for numbering requirements. The Coast Guard issues the certificate of number in Alaska; all others are issued by the state.

Insurance

In most States the boat owner is legally responsible for damages or injuries he or someone else operating the boat causes. Responsible boaters carry adequate liability and property damage insurance for their boat. You should also protect the boat against physical damage and theft. Some States have laws requiring minimum insurance coverage. Contact your dealer or state boating authority for information on the insurance requirements in your boating area.

Reporting Boating Accidents

All boating accidents must be reported by the operator or owner of the boat to the proper marine law enforcement authority for the state in which the accident occurred. Immediate notification is required if a person dies or disappears as a result of a recreational boating accident.

If a person dies or there are injuries requiring more than first aid, a formal report must be filed within 48 hours.

A formal report must be made within 10 days for accidents involving more than $500.00 damage or the complete loss of a boat.

A Boating Accident Report form is located near the back of this manual to assist you in reporting an accident. If you need additional information regarding accident reporting, please call the Boating Safety Hotline, 800-368-5647.

Education

If you are not an experienced boater, we recommend that the boat operator and other people that normally accompany the operator, enroll in a boating safety course. Organizations such as the U.S. Power Squadrons, United States Coast Guard Auxiliary, State Boating Authorities and the American Red Cross offer excellent boating educational programs. These courses are worthwhile even for experienced boaters to sharpen your skills or bring you up to date on current rules and regulations. They can also help in providing local navigational information when moving to a new boating area. Contact your dealer, State Boating Authority or the Boating Safety Hotline, 800-368-5647 for further information on boating safety courses.

Required Equipment

U.S. Coast Guard regulations require certain equipment on each boat. The Coast Guard also sets minimum safety standards for vessels and associated equipment. To meet these standards some of the equipment must be Coast Guard approved. "Coast Guard Approved Equipment" has been determined to be in compliance with USCG specifications and regulations relating to performance, construction or materials. The equipment requirements vary according to the length, type of boat and the propulsion system. Some of the Coast Guard equipment is described in the Safety Equipment chapter of this manual. For a more detailed description, obtain "Federal Requirements And Safety Tips For Recreational Boats" by contacting the Boating Safety Hotline 800-368-5647 or your local marine dealer or retailer.

Some state and local agencies impose similar equipment requirements on waters that do not fall under Coast Guard jurisdiction. These agencies may also require additional equipment that is not required by the Coast Guard. Your dealer or local boating authority can provide you with additional information for the equipment requirements for your boating area.

NOTES

Chapter 1:

SAFETY EQUIPMENT

1.1 General

Your boat and outboard engine have been equipped with safety equipment designed to enhance the safe operation of the boat and to meet U.S. Coast Guard safety standards. The Coast Guard or state, county and municipal law enforcement agencies require certain additional accessory safety equipment on each boat. This equipment varies according to length and type of boat and type of propulsion. The accessory equipment typically required by the Coast Guard is described in this chapter. Some local laws require additional equipment. It is important to obtain "Federal Requirements And Safety Tips for Recreational Boats," published by the Coast Guard and copies of state and local laws, to make sure you have the required equipment for your boating area.

Your boat is equipped with engine alarms. The alarm systems are designed to increase your boating safety by alerting you to potentially serious problems in the primary power system. Alarm systems are not intended to lessen or replace good maintenance and pre-cruise procedures.

This chapter also describes safety related equipment that could be installed on your boat. This equipment will vary depending on the type of engine and other options installed by you or your dealer.

1.2 Engine Alarms

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

If the alarm sounds:

- Immediately throttle the engine back to idle.
- Shift the transmission to neutral.
- Monitor the engine gauges to determine the cause of the problem.
- If necessary, shut off the engine and investigate until the cause of the problem is found.

Throwable Device and Personal PFD

1.3 Neutral Safety Switch

Every control system has a neutral safety switch incorporated into it. This device prohibits the engine from being started while the shift lever is in any position other than the neutral position. If the engine will not start, slight movement of the shift lever may be necessary to locate the neutral position and disengage the safety cutout switch. Control adjustments may be required to correct this condition should it persist. See your Crevalle dealer for necessary control adjustments. Please refer to the Helm Control Systems chapter for more information on the neutral safety switch.

1.4 Engine Stop Switch

Your boat is equipped with a engine stop switch and lanyard. When the lanyard is pulled it will engage the switch and shut off the engine. We strongly recommend that the lanyard be attached to the driver and the stop switch whenever the engine is running. If the engine will not start, it could be because the lanyard is not properly inserted into the engine stop switch. Always make sure the lanyard is properly attached to the engine stop switch before attempting to start the engine.

Notice:
In some states, a lanyard attached to the driver at all times is required by law.

Notice:
You should carry an extra stop switch lanyard and instruct at least one other crew member on the operation of the stop switch and location of the extra lanyard.

1.5 Required Safety Equipment

Besides the equipment installed on your boat by Crevalle, certain other equipment is required by the U.S. Coast Guard to help ensure passenger safety. Items like a sea anchor, working anchor, extra dock lines, flare pistol, life vests, a line permanently secured to your ring buoy, etc., could at some time save your passengers' lives or save your boat from damage. Refer to the "Federal Requirements And Safety Tips For Recreational Boats" pamphlet for a more detailed description of required equipment. You also can contact the U.S. Coast Guard Boating Safety Hotline, 800-368-5647, for information on boat safety courses and brochures listing the Federal equipment requirements. Also, check your local and state regulations.

The Coast Guard Auxiliary offers a "Courtesy Examination." This inspection will help ensure that your boat is equipped with all of the necessary safety equipment. The following is a list of the accessory equipment required on your boat by the U.S. Coast Guard:

Personal Flotation Devices (PFDs)

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

Notice:
Many state laws now require that children 13 years old and under must wear a PFD at all times.

Anyone being towed on skis, wakeboards and other water sports equipment is considered a passenger on the boat and must wear a Coast Guard approved life jacket at all times.

Visual Distress Signals

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

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

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

WARNING

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

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

- Orange Distress Flag (Day use only)

  The distress flag is a day signal only. It must be at least 3 x 3 feet with a black square and ball on an orange background. It is most distinctive when attached and waved from a paddle or boat hook.

- Electric Distress Light (Night use only)

  The electric distress light is accepted for night use only and must automatically flash the international SOS distress signal. Under "Inland Navigation Rules," a high intensity white light flashing at regular intervals from 50-70 times per minute is considered a distress signal.

Sound Signaling Devices

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

Navigation Lights

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

Fire Extinguishers

At least one fire extinguisher is required on all Crevalle Boats. Coast Guard approved fire extinguishers are hand-portable, either B-I or B-II classification and have a specific marine type mounting bracket. It is recommended that the extinguishers be mounted in a readily accessible position.

Fire extinguishers require regular inspections to ensure that:

- Seals & tamper indicators are not broken or missing.
- Pressure gauges or indicators read in the operable range.
- There is no obvious physical damage, corrosion, leakage or clogged nozzles.

Refer to the "Federal Requirements And Safety Tips For Recreational Boats" pamphlet or contact the U.S. Coast Guard Boating Safety Hotline, 800-368-5647, for information on the type and size fire extinguisher required for your boat.

You should refer to the information provided by the fire extinguisher manufacturer for instructions on the proper maintenance and use of your fire extinguisher.

CAUTION

INFORMATION FOR AGENT FE-241 AND FE-227 FIRE EXTINGUISHERS IS PROVIDED BY THE MANUFACTURER. IT IS ESSENTIAL THAT YOU READ THE INFORMATION CAREFULLY AND COMPLETELY UNDERSTAND THE SYSTEM, IN THEORY AND OPERATION, BEFORE USING YOUR BOAT.

1.6 Bilge & Fuel Fires

Fuel compartment and bilge fires are very dangerous because of the presence of gasoline in the various components of the fuel system and the possibility for explosion. You must make the decision to fight the fire or abandon the boat. If the fire cannot be extinguished quickly or it is too intense to fight, abandoning the boat may be your only option.

If you find yourself in this situation, make sure all passengers have a life preserver on, go over the side and swim well upwind of the boat. This will keep you and your passengers well clear of any burning fuel that could be released and spread on the water as the boat burns or in the event of an explosion. When clear of the danger, check about and account for all those who were aboard with you. Give whatever assistance you can to anyone in need or in the water without a buoyant device. Keep everyone together in a group for morale and to aid rescue operations.

WARNING

ALL TYPES OF FUEL CAN EXPLODE. IN THE EVENT OF A FUEL COMPARTMENT OR BILGE FIRE, YOU MUST MAKE THE DIFFICULT DECISION TO FIGHT THE FIRE OR ABANDON THE BOAT. YOU MUST CONSIDER YOUR SAFETY, THE SAFETY OF YOUR PASSENGERS, THE INTENSITY OF THE FIRE AND THE POSSIBILITY OF AN EXPLOSION IN YOUR DECISION.

1.7 First Aid

It is the operator's responsibility to be familiar with the proper first-aid procedures and be able to care for minor injuries or illnesses of your passengers. In an emergency, you could be far from professional medical assistance. We strongly recommend that you be prepared by receiving training in basic first aid and CPR. This can be done through classes given by the Red Cross or your local hospital.

Your boat should also be equipped with at least a simple marine first-aid kit and a first-aid manual. The marine first-aid kit should be designed for the marine environment and be well supplied. It should be accessible and each person on board should be aware of its location. As supplies are used, replace them promptly. Some common drugs and antiseptics may lose their strength or become unstable as they age. Ask a medical professional about the supplies you should carry and the safe shelf life of prescription drugs or other medical supplies that may be in your first-aid kit. Replace questionably old supplies whether they have been used or not.

In many emergency situations, the Coast Guard can provide assistance in obtaining medical advice for treatment of serious injuries or illness. If you are within VHF range of a Coast Guard Station, make the initial contact on channel 16 and follow their instructions.

Typical First Aid Kit

1.8 Additional Safety Equipment

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

Satellite EPIRBS

EPIRBs (Emergency Position Indicating Radio Beacon) operate as part of a worldwide distress system. When activated, EPIRBs will send distress code homing beacons that allow Coast Guard aircraft to identify and find them quickly. The satellites that receive and relay EPIRB signals are operated by the National Oceanic and Atmospheric Administration (NOAA) in the United States. The EPIRB should be mounted and registered according to the instructions provided with the beacon, so that the beacon's unique distress code can be used to quickly identify the boat and owner.

Marine Radio

A marine radio is the most effective method of receiving information and requesting assistance. VHF marine radios are used near shore and single sideband radios are used for long range communication.

There are specific frequencies to use in an emergency. The VHF emergency channel is 16 in the United States. You should read the owners manual for your radio and know how to use it in an emergency or for normal operation. If you hear a distress call you should assist or monitor the situation until help is provided.

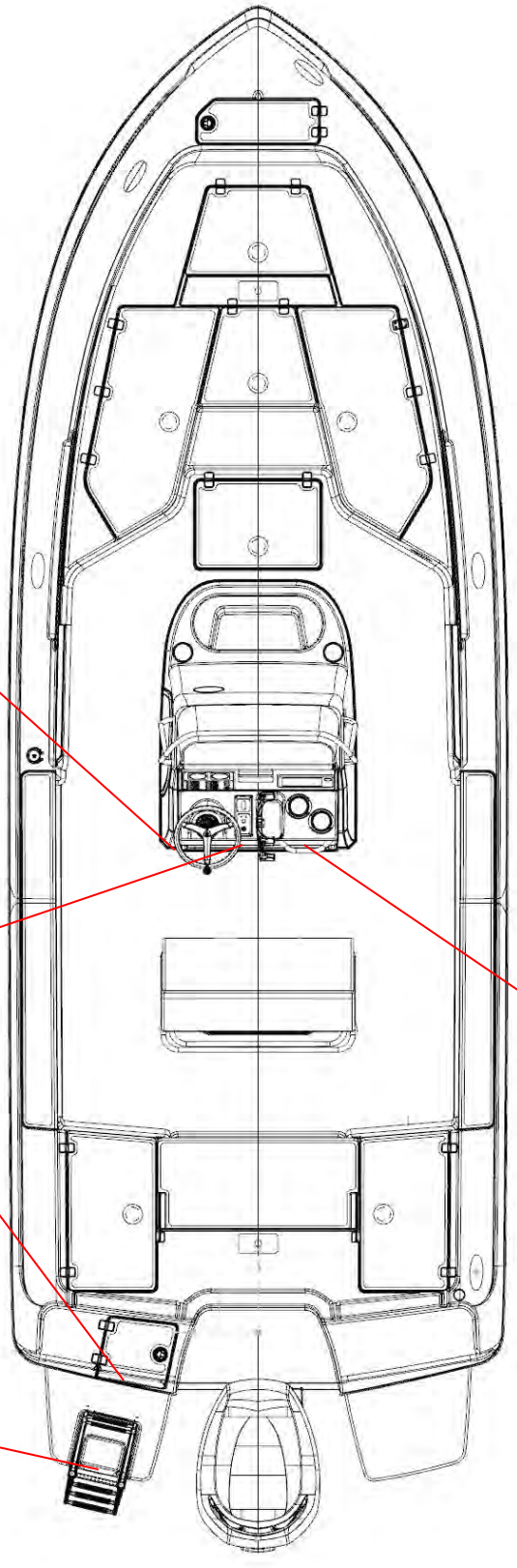
Additional Equipment To Consider

Cell Phone	Spare Anchor
Fenders	Heaving Line
Mirror	First Aid Kit
Tool Kit	Flashlight & Batteries
Anchor	Search light
Boat Hook	Sunburn Lotion
Mooring Lines	Ring Buoy or Boat Cushion
Binoculars	Whistle or Horn
Extra Clothing	Portable Radio
Chart and Compass	Marine Hardware
Food & Water	Spare Keys
Sunglasses	Spare Parts
Spare Propeller	Spare Propeller Hub Kit

1.9 Caution & Warning Labels

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

Caution and warning labels must remain legible for the safety of you and your passengers. If a label becomes missing or damaged it must be replaced. Immediately contact your dealer or Crevalle Customer Service for a replacement.



⚠ WARNING ⚠

ROTATING PROPELLER MAY CAUSE SERIOUS INJURY OR DEATH.

SHUT OFF ENGINE WHEN NEAR PERSONS IN THE WATER.

⚠ WARNING ⚠

ROTATING PROPELLER MAY CAUSE SERIOUS INJURY OR DEATH.

DO NOT APPROACH OR USE LADDER WHEN ENGINE IS RUNNING.

⚠ DANGER ⚠

CARBON MONOXIDE (CO) CAN CAUSE BRAIN DAMAGE OR DEATH.

ENGINE AND GENERATOR EXHAUST CONTAINS ODORLESS AND COLORLESS MONOXIDE GAS.

CARBON MONOXIDE WILL BE AROUND THE BACK OF THE BOAT WHEN THE ENGINES OR GENERATORS ARE RUNNING.

MOVE TO FRESH AIR, IF YOU FEEL NAUSEA, HEADACHE, DIZZINESS, OR DROWSINESS.

⚠ WARNING ⚠

CARBON MONOXIDE (CO) CAN CAUSE BRAIN DAMAGE OR DEATH.

ENGINE AND GENERATOR EXHAUST CONTAINS ODORLESS AND COLORLESS CARBON MONOXIDE GAS.

SIGNS OF CARBON MONOXIDE POISONING INCLUDE NAUSEA, HEADACHE, DIZZINESS, DROWSINESS, AND LACK OF CONSCIOUSNESS.

GET FRESH AIR IF ANYONE SHOWS SIGNS OF CARBON MONOXIDE POISONING.

SEE OWNER'S MANUAL FOR INFORMATION REGARDING CARBON MONOXIDE POISONING.

NOTES

Chapter 2:

OPERATION

2.1 General

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

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

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

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

You should be aware of your limitations and the limitations of your boat in different situations or sea conditions. No boat is indestructible, no matter how well it is constructed. Any boat can be severely damaged if it is operated in a manner that exceeds its design limitations. If the ride is hard on you and your passengers, it is hard on the boat as well. Always modify the boat speed in accordance with the sea conditions, boat traffic and weather conditions.

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

2.2 Rules Of The Road

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

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

Crossing Situations

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

Meeting Head-On Or Nearly-So Situations

When two motor boats are approaching each other head-on or nearly head-on, neither boat has the right-of-way. Both boats should reduce their speed and turn to the right so as to pass port side to port side, providing enough clearance for safe passage. The boats should sound the appropriate signals.

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

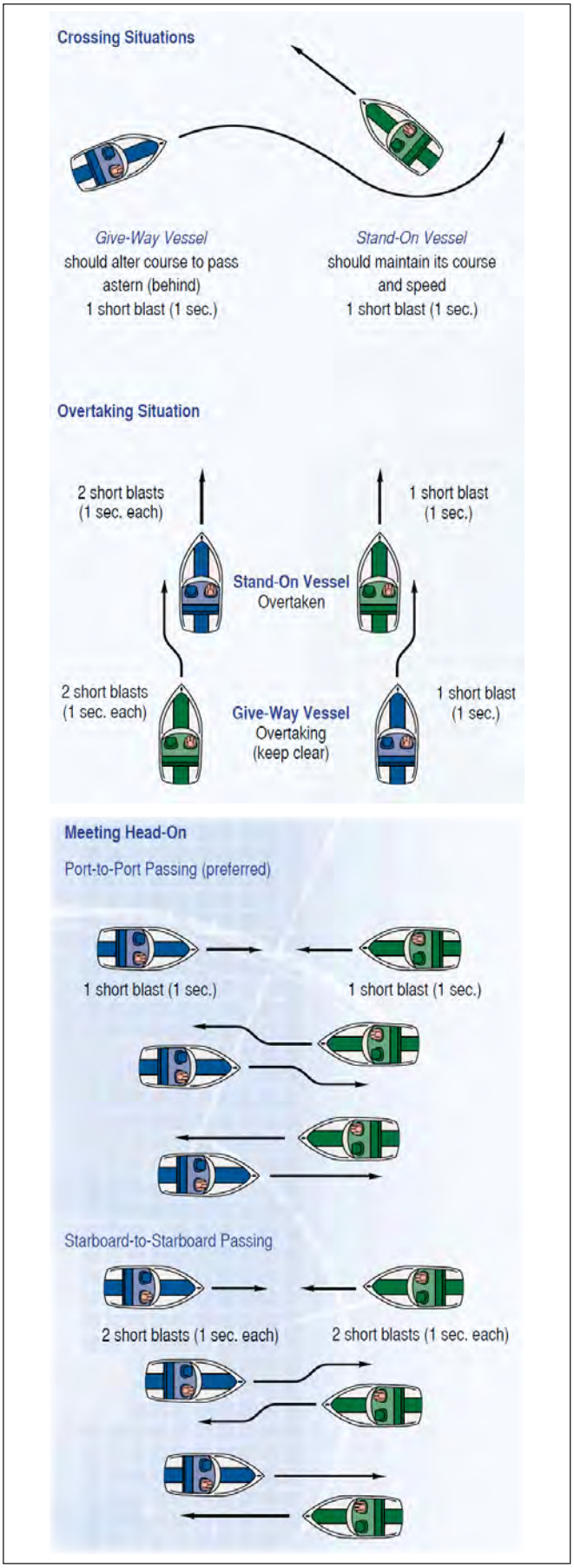
The General Prudential Rule
In obeying the Rules of the Road, due regard must be given to all dangers of navigation and collision and to any special circumstances, including the limitations of the vessels, which may justify a departure from the rules that is necessary to avoid immediate danger or a collision.

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

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

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

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



Navigational Aids Chart

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: Boat on right has the right-of-way. Slow down and permit boat to pass.

← PORT STARBOARD →

Yield right-of-way to boats in your DANGER ZONE!

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

STORM WARNINGS

RED FLAG Small craft (winds 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)

WHISTLE SIGNALS

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

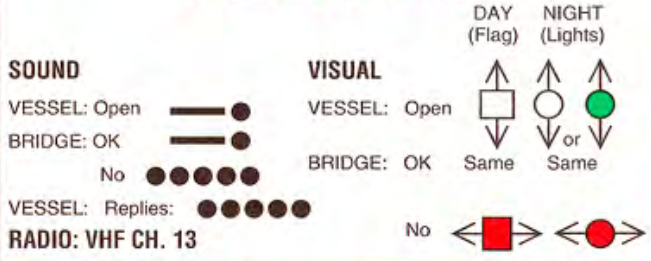
ONE SHORT BLAST: Pass on my port side

TWO SHORT BLASTS: Pass on my starboard side

THREE SHORT BLASTS: Engine(s) in reverse

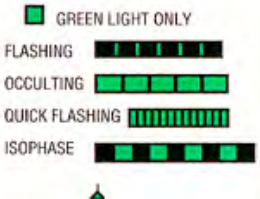
FOUR OR MORE BLASTS: Danger signal

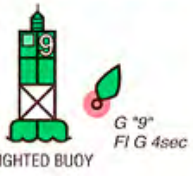
BRIDGE SIGNALS

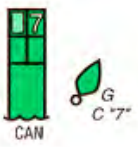


LATERAL AIDS AS SEEN ENTERING FROM SEAWARD

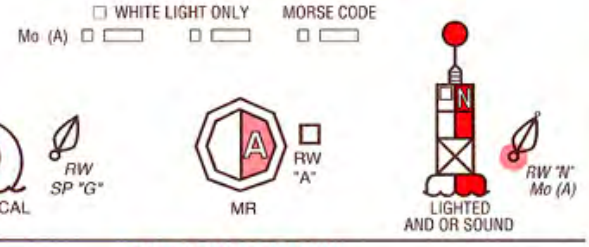
PORT SIDE
ODD NUMBERED AIDS



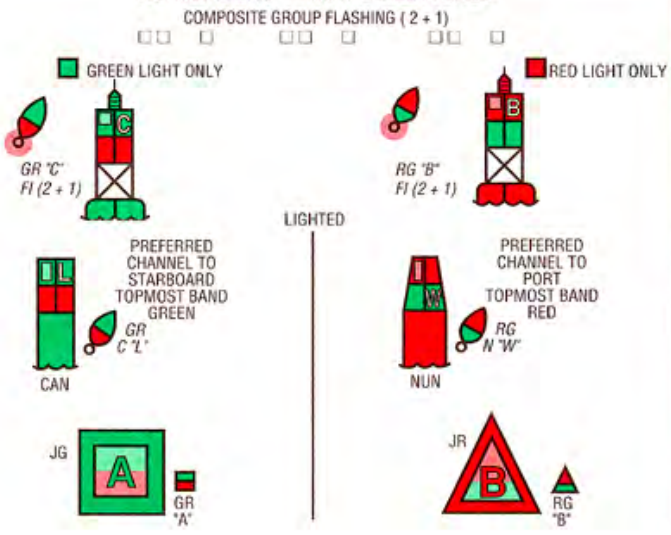




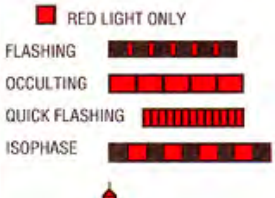
SAFE WATER MID-CHANNELS OR FAIRWAYS
NO NUMBERS — MAY BE LETTERED

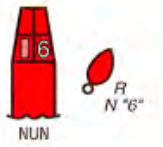


PREFERRED CHANNEL
NO NUMBERS — MAY BE LETTERED



STARBOARD SIDE
EVEN NUMBERED AIDS





2.3 Pre-Cruise Check

Before Starting The Engine

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

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

WARNING

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

- Have the following spare parts on board:

Extra light bulbs	Spark plugs
Fuses and circuit breakers	Main 12 volt fuses
Assorted stainless screws	Assorted stainless bolts
Flashlight and batteries	Drain plugs
Engine oil	Propeller
Fuel filter	Propeller hub kit
Fuel hose and clamps	Wire ties
Assorted hose clamps	Hydraulic steering fluid
Spare bilge pump	Rags

- Make sure all fire extinguishers are in position and in good operating condition.
- Check the engine and steering controls for smooth and proper operation. Be sure the shift control is in the neutral position.
- Be sure the emergency stop lanyard is attached to the operator and the stop switch.
- Refer to the engine owner's manual for pre-operation checks specific to your engine.

2.4 Operating Your Boat

After Starting The Engine

- Visibly check the engine to be sure there are no apparent water, fuel or oil leaks.
- Check the operation of the engine cooling system by monitoring the water flowing from the bypass ports.
- Check the engine gauges. Make sure they are reading normally.
- Check the controls and steering for smooth and proper operation.
- Make sure all lines, cables, anchors, etc. for securing a boat are on board and in good condition. All lines should be coiled, secured and off the decks when underway.
- Have a safe cruise and enjoy yourself.

Remember:
When you operate a boat, you accept the responsibility for the boat, for the safety of passengers and for others out enjoying the water.

- Alcohol and any drugs can severely reduce your reaction time and affect your better judgement.
- Alcohol severely reduces the ability to react to several different signals at once.
- Alcohol makes it difficult to correctly judge speed and distance or track moving objects.
- Alcohol reduces night vision and the ability to distinguish red from green.

WARNING

YOU SHOULD NEVER OPERATE YOUR BOAT WHILE UNDER THE INFLUENCE OF ALCOHOL OR DRUGS.

- Make sure one other person on the boat is instructed in the operation of the boat.
- Make sure the boat is operated in compliance with all state and local laws governing the use of a boat.

WARNING

DO NOT OPERATE THE BOAT UNLESS IT IS COMPLETELY ASSEMBLED. KEEP ALL FASTENERS TIGHT. KEEP ADJUSTMENTS ACCORDING TO SPECIFICATIONS.

WARNING

FAILURE TO FOLLOW THE BREAK-IN PROCEDURE MAY RESULT IN REDUCED ENGINE LIFE OR EVEN SEVERE DAMAGE IN YOUR OUTBOARD ENGINE. MAKE SURE YOU FOLLOW THE BREAK-IN PROCEDURE EXACTLY.

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

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

Notice:
If the running gear hits an underwater object, stop the engine. Inspect the propulsion system for damage. If the system is damaged, contact your dealer for a complete inspection and repair of the unit.

To stop the boat, follow this procedure:

- Allow the engine to drop to idle speed.
- Make sure the shift lever is in the neutral position.

Notice:
If the engine has been run at high speed for a long period of time, allow it to cool down by running the engine in the idle position for 3 to 5 minutes.

- Turn the ignition key to the "OFF" position.
- Raise the trim tabs to the full up position. Some boats are equipped with trim tabs that will automatically retract when the engine is turned off.

After Operation

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

CAUTION

TO PREVENT DAMAGE TO THE BOAT, CLOSE ALL SEACOCKS BEFORE LEAVING THE BOAT.

2.5 Docking, Anchoring & Mooring

Docking And Dock Lines

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

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

Dock lines are generally twisted or braided nylon. Nylon is strong and stretches to absorb shock. It also has a long life and is soft and easy on the hands. The line's size will vary with the size of the boat. Typically a 30 to 40 foot boat will use 5/8 inch line and a 20 to 30 foot boat will use 1/2 inch line. The number of lines and their configuration will vary depending on the dock, the range of the tide and many other factors. Usually a combination of bow, stern and spring lines is used to secure the boat.

Maneuvering To The Dock

Approach the dock slowly at a 30 to 40 degree angle. Whenever possible, approach against the wind or current. Turn the engine straight & shift to neutral when you feel you have enough momentum to reach the dock. Use reverse while turning the steering wheel towards the dock to slow the

boat and pull the stern towards the dock as the boat approaches. Straighten the engine and use the engine to stop the boat if it is still moving forward against the pilings. If you executed your approach properly, the boat will lightly touch the pilings at the same time the forward momentum is stopped. Have the dock lines ready and secure the boat as soon at it stops. Use fenders to protect the boat while it is docked. Keep the engine running until the lines are secured.

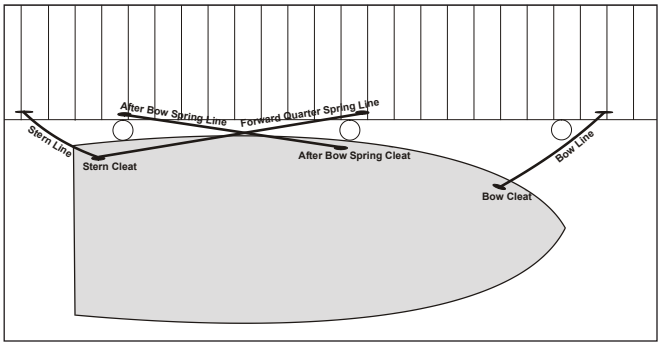
Backing Into A Slip

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

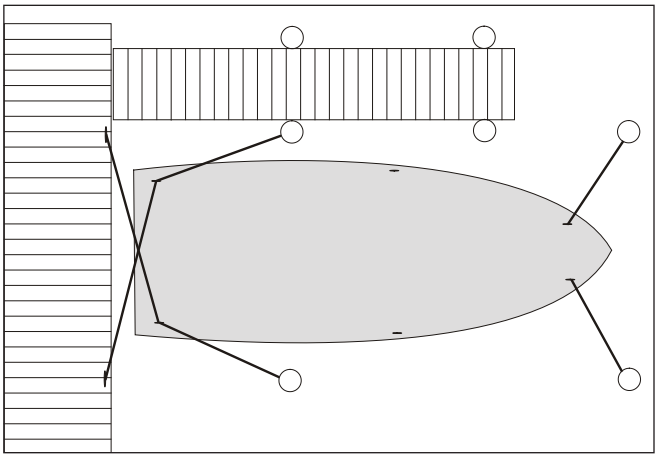
Securing Dock Lines

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

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



Securing The Boat Along Side A Dock (Typical)



Securing The Boat In A Slip (Typical)

Leaving The Dock

Always start the engine and let it warm up for 10 to 15 minutes before releasing the lines. Boats steer from the stern and it is important that you achieve enough clearance at the stern to maneuver the boat as quickly as possible. Push the stern off and maneuver such that you get stern clearance quickly. Proceed slowly until well clear of the dock and other boats.

Mooring

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

Leaving A Mooring

Start the engine and let it up for several minutes before releasing the mooring line. The boat will already be headed into the wind, so move it for-

ward enough to loosen the line and untie it. Back the boat away from the mooring until you can see the buoy. Move the boat slowly away from the mooring.

Anchoring

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

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

Releasing the Anchor

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

⚠ CAUTION ⚠

NEVER ANCHOR THE BOAT BY THE STERN. THE STERN OF THE BOAT IS VULNERABLE TO SWAMPING FROM WAVE ACTION. ADDITIONALLY, WIND AND CURRENT WILL PUT MORE STRESS ON THE ANCHOR WHEN IT IS ATTACHED TO THE STERN. ONLY ANCHOR THE BOAT BY THE BOW

2.6 Controls, Steering or Propulsion System Failure

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

2.7 Collision

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

2.8 Grounding, Towing & Rendering Assistance

The law requires the owner or operator of a vessel to render assistance to any individual or vessel in distress, as long as his vessel is not endangered in the process.

If the boat should become disabled or if another craft that is disabled requires assistance, great care must be taken. The stress applied to a boat during towing may become excessive. Excessive stress can damage the structure of the boat and create a safety hazard for those aboard.

Freeing a grounded vessel or towing a boat that is disabled, requires specialized equipment and knowledge. Line failure and structural damage caused by improper towing have resulted in fatal injuries. Because of this, we strongly suggest that these activities be left to those who have the equipment and knowledge, e.g., the U.S. Coast Guard or a commercial towing company, to safely accomplish the towing task.

DANGER

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

WARNING

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

WARNING

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

2.9 Flooding or Capsizing

Boats can become unstable if they become flooded or completely swamped. You must always be aware of the position of the boat to the seas and the amount of water in the bilge. Water entering the boat over the transom can usually be corrected by turning the boat into the waves. If the bilge is flooding because of a hole in the hull or a defective hose, you may be able to plug it with rags, close the thru-hull valve or assist the pumps by bailing with buckets. Put a mayday call in to the Coast Guard or nearby boats and distribute life jackets as soon as you discover your boat is in trouble.

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

2.10 Fishing

Fishing can be very exciting and distracting for the operator when the action gets intense. You must always be conscious of the fact that your primary responsibility is the safe operation of your boat and the safety of your passengers and other boats in the area. You must always make sure the helm is properly manned and is never left unattended while trolling.

If you are fishing in an area that is crowded with other fishing boats, it may be difficult to follow the rules of the road. This situation can become especially difficult when most boats are trolling. Being courteous and exercising good common sense is essential. Avoid trying to assert your right-of-way and concentrate on staying clear and preventing tangled or cut lines and other unpleasant encounters with other boats. Also keep in mind that fishing line wrapped around a propeller shaft can damage seals in the engine lower unit.

2.11 Spotting Tower (Optional)

Crevalle 26 bay models could be equipped with an optional spotting tower that is accessed through a sliding fiberglass sun roof style hatch in the hardtop. A welded aluminum frame bolted to the hardtop provides a bench seat with a flip up bolster that allows an observer to sit or stand while in the tower. The spotting tower is accessed by steps and a fiberglass nonskid platform built into the forward tower legs and is intended to be an observation station for one person, there are no engine controls.

The following is a list of safety precautions for the spotting tower:

- Do not allow anyone in the spotting tower during rough sea conditions. The boat's motions are exaggerated in the spotting tower and this motion may become excessive in rough seas.

WARNING

OPERATING THE BOAT AT HIGH SPEEDS WITH SOMEONE IN THE SPOTTING TOWER CAN CAUSE SEVERE INJURY OR DEATH. DO NOT OPERATE THE BOAT AT PLANNING SPEEDS WITH SOMEONE IN THE SPOTTING TOWER. THE BOATS MOTIONS ARE EXAGGERATED IN THE SPOTTING TOWER AND MAY BECOME EXCESSIVE FOR SOMEONE IN THE TOWER, EVEN THOUGH THE MOTION FEELS NORMAL AT THE LOWER HELM. ONLY OPERATE THE BOAT AT SLOW SPEEDS WHENEVER SOMEONE IS IN THE SPOTTING TOWER.

- Do not overload the spotting tower. It is designed to hold the weight of only one average-sized person. Weight in the spotting tower raises the boat's center of gravity. Too much weight could make the boat unstable. This is particularly important in small boats.
- Always pay close attention to your grip and footing on the spotting tower steps. Your ability to achieve a good grip and proper footing is reduced in wet or rough weather. Therefore, the spotting tower should be avoided in these conditions.
- Only operate the boat with someone in the spotting tower in familiar waters or where running aground is not a possibility. Running aground while someone is riding in the tower could result in severe injury.
- Always be alert for waves and boat wakes when someone is in the spotting tower. Remember that the boat's motions are exaggerated in the tower.
- Good common sense and judgment must be exercised at all times while someone is riding in the spotting tower.
- Always put the boat in NEUTRAL while someone is moving to and from the spotting tower and cockpit.

⚠ WARNING ⚠

GOOD COMMON SENSE, JUDGMENT AND EXTREME CAUTION MUST BE EXERCISED WHEN OPERATING A BOAT WITH SOMEONE IN THE SPOTTING TOWER. DO NOT ALLOW ANYONE IN THE TOWER WHEN THE WATER IS ROUGH OR WHEN OPERATING IN UNFAMILIAR WATERS WHERE RUNNING AGROUND IS A POSSIBILITY. REMEMBER, WEIGHT IN THE SPOTTING TOWER RAISES THE BOAT'S CENTER OF GRAVITY AND THE BOAT'S MOTION IS GREATLY EXAGGERATED FOR SOMEONE RIDING IN THE TOWER.

2.12 Spotting Tower Upper Station

Crevalle 26 Bay models could be equipped with a spotting tower that includes an optional upper control station that is accessed through a sliding fiberglass sun roof in the hardtop. A welded aluminum frame that is bolted to the hardtop provides a helm station and bench seat with a flip up bolster that allows the operator to sit or stand at the upper station. The upper station is accessed by steps and a fiberglass nonskid platform built into the forward tower legs and is intended for one person.

The fiberglass helm typically includes steering, full engine controls, trim tab controls, Jack Plate controls, compass, engine alarms, stop/start buttons, and an emergency stop switch. This allows for complete operation of the boat from the upper helm. Note that the controls available on your boat could be slightly different, depending on the options selected.

Operation Of The Upper Station Controls

The engine should be started at the lower helm. Monitor the gauges to make sure all systems are normal and that the engine has been allowed to warm up slightly before proceeding to the upper helm.

Make sure the engine is at idle speed with the gear shift in neutral before proceeding to the upper helm.

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

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

The following is a list of safety precautions for upper helm operation:

- Do not operate the boat from the upper helm in rough sea conditions. The boat's motions are exaggerated in the upper helm and this motion may become excessive in rough seas.
- Be careful when using the trim tabs from the upper helm. The reaction of the trim tabs will be exaggerated in the upper helm. Use small tab corrections and wait ten (10) seconds for the tabs to react. Keep making small corrections until the hull is at the desired attitude.
- Do not overload the upper helm. The upper helm is designed to hold the weight of one average-sized person. Weight in the upper helm raises the boat's center of gravity. Too much weight at the upper helm could make the boat unstable.

- Do not operate the boat in tight quarters, such as marinas, from the upper helm. The operator is isolated from the boat while at the upper helm and will not be able to assist in docking procedures.
- Always pay close attention to your grip and footing while using the steps to access the upper helm. Your ability to achieve a good grip and proper footing is reduced in wet weather or rough seas. Therefore, the upper helm should be avoided in these conditions.
- Only operate the boat from the upper helm in familiar waters or where running aground is not a possibility. Running aground while operating the boat from the upper helm could result in severe injury.
- Always be alert for waves and boat wakes when operating the boat from the upper helm. Remember that the boat's motions are exaggerated in the upper helm.
- Good common sense and judgment must be exercised at all times when operating a boat from the upper helm.
- If an engine alarm sounds, immediately put the boat in NEUTRAL and shut off the engine (if safe to do so) until the problem is found and corrected.
- Always put the boat in NEUTRAL before moving to and from the upper helm and cockpit.

⚠ WARNING ⚠

SLIPPING ON THE TOWER STEPS CAN CAUSE SEVERE INJURY AND/OR DAMAGE TO CONSOLE COMPONENTS. YOU SHOULD NOT ATTEMPT TO USE THE STEPS WHILE THE ENGINE IS IN GEAR, WHILE IN ROUGH CONDITIONS OR WHEN THE TOWER IS WET.

ALWAYS MAKE SURE THE ENGINE CONTROL IS IN THE NEUTRAL POSITION WITH THE ENGINE AT IDLE BEFORE USING THE STEPS TO ACCESS THE UPPER HELM.

⚠ WARNING ⚠

GOOD COMMON SENSE, JUDGMENT AND EXTREME CAUTION MUST BE EXERCISED WHEN OPERATING A BOAT WITH SOMEONE IN THE UPPER HELM. DO NOT ALLOW ANYONE IN THE UPPER HELM WHEN THE WATER IS ROUGH OR WHEN OPERATING IN UNFAMILIAR WATERS WHERE RUNNING AGROUND IS A POSSIBILITY. REMEMBER, WEIGHT IN THE UPPER HELM RAISES THE BOAT'S CENTER OF GRAVITY AND THE BOAT'S MOTION IS GREATLY EXAGGERATED FOR THE PEOPLE AT THE UPPER HELM.

2.13 Man Overboard

If someone falls overboard, you must be prepared to react quickly, particularly when you are offshore. The following procedures will help you in recovering a person that has fallen overboard.

- Immediately stop the boat and sound a man overboard alarm and have all passengers point to the person in the water.
- Circle around quickly and throw a cushion or life jacket to the person, if possible and another to use as a marker.
- Keep the person on the driver side of the boat so you can keep him in sight at all times.
- Make sure to approach the person from the downwind side and maneuver the boat so the propeller is well clear of the person in the water.
- Turn off the engine when the person is alongside and use a ring buoy with a line attached, a paddle or boat hook to assist him to the boat. Make sure you don't hit him with the ring buoy or the boat.
- Pull the person to the boat and assist him on board.
- Check the person for injuries and administer first aid if necessary. If the injuries are serious, call for help. Refer to the Safety chapter for more information on first aid and requesting emergency medical assistance.

⚠ WARNING ⚠

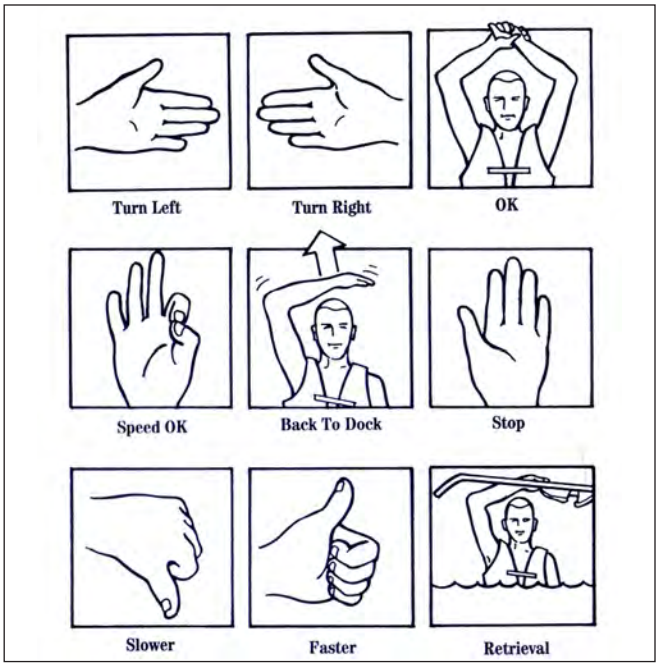
MOVING PROPELLERS ARE DANGEROUS. THEY CAN CAUSE DEATH, LOSS OF LIMBS OR OTHER SEVERE INJURY. DO NOT USE THE SWIM PLATFORM OR SWIM LADDER WHILE THE ENGINE IS RUNNING. STOP THE ENGINE IF DIVERS OR SWIMMERS ARE ATTEMPTING TO BOARD. ALWAYS PROPERLY STORE THE LADDER BEFORE STARTING THE ENGINE.

2.14 Water Skiing & Wakeboarding

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

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

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



Common Hand Signals for Water Sports Activities

- Never follow behind another boat pulling a skier for any reason, even if you are not pulling a skier. If the skier you are following falls, you may not be able to respond quick enough and could run over the skier.
- When pulling multiple skiers, make sure the ropes are the same length. Never pull multiple skiers with tow ropes of different lengths.
- Always make sure to slowly pull the slack out of the ski rope and wait for the OK from the skier before advancing the throttle to ensure the rope is not wrapped around the skier and that the skier is ready. Never advance the throttle until the skier provides the ready signal.
- When turning around to pick up a fallen skier, make sure to look for other boat traffic in the direction of the turn before you turn the boat.
- Approach a skier in the water from the downwind side and be certain to stop the motion of the boat and your motor before coming in close proximity to the skier.
- Give immediate attention to a fallen skier. A fallen skier is very hard to see by other boats and is extremely vulnerable. When a skier falls, be prepared to immediately turn the boat and return to the skier.

- Never leave a fallen skier alone in the water for any reason and have an observer display a skier down flag to alert other boaters that your skier has fallen.
- Agree on hand signals to be used between the observer and skier to communicate. This is important to eliminate confusion and ensure the safety of your skiers, wakeboarders or tubers. Refer the Hand Signals drawing in this section for signals that are commonly used during water sports activities.
- Make sure the observer watches for the skier's signal to indicate he or she is OK. If the signal is not seen immediately, assume the skier is injured and in need of immediate assistance. Be prepared to respond quickly.
- For additional information on water skiing, including hand signals and water skiing manuals, contact the American Water Skiing Association in Winter Haven, Florida, 813-324-4341.

WARNING

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

2.15 Teak Surfing

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

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

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

WARNING

TEAK SURFING (HOLDING ONTO THE SWIM PLATFORM WHILE BOAT IS UNDERWAY) IS EXTREMELY DANGEROUS AND CAN CAUSE SEVERE INJURY OR DEATH. TEAK SURFING PUTS AN INDIVIDUAL DIRECTLY IN THE PATH OF THE BOAT'S EXHAUST AND EXPOSES THEM TO POISONOUS LEVELS OF CARBON MONOXIDE. IT ALSO EXPOSES AN INDIVIDUAL TO THE POSSIBILITY OF BEING THROWN INTO THE PROPELLER. YOU SHOULD NEVER ALLOW ANYONE TO TEAK SURF BEHIND YOUR BOAT OR TO BE IN THE WATER NEAR THE LADDER OR SWIM PLATFORM WHILE THE ENGINE IS RUNNING.

2.16 Trash Disposal

The discharge of plastic trash or trash mixed with plastic is illegal anywhere in the marine environment. U.S. Coast Guard regulations also restrict the dumping of other forms of garbage. Regional, State and local restrictions on garbage discharges also may apply.

Responsible boaters store refuse in bags and dispose of it properly on shore. You should make sure your passengers are aware of the local waste laws and the trash management procedure on your boat. 26 Bay models are equipped with a placard mounted on the boat. Refer to the placard for specific information regarding solid waste disposal.

2.17 Trailering Your Boat

If you trailer your boat, make sure that your tow vehicle is capable of towing the weight of the trailer, boat and equipment and the weight of the passengers and equipment inside the vehicle. This may require that the tow vehicle be specially equipped with a larger engine, transmission, brakes and trailer tow package. Additionally, the laws in your state may require special permits to tow a large boat on some or all highways.

The boat trailer is an important part of your boating package. The trailer should be matched to your boat's weight and hull. Using a trailer with a capacity too low will be unsafe on the road and cause abnormal wear. A trailer with a capacity too high, can damage the boat. Contact your

dealer to evaluate your towing vehicle and hitch and to make sure you have the correct trailer for your boat.

Important Note:
Your Crevalle is a heavy boat and care must be taken when selecting the trailer. We recommend that you use a bunk style trailer that incorporates a combination of heavy duty rollers or bunks, to support the keel and long bunks running under and parallel to the stringers to support the hull. Avoid using a full roller trailer that does not have bunks. Roller trailers have a tendency to put extreme pressure points on the hull, especially on the lifting strakes and have damaged boats. The situation is worse during launching and haul out. Damage resulting from improper trailer support or the use of a full roller trailer will not be covered by the Crevalle Warranty.

Notice:
Contact your trailer dealer to evaluate your towing vehicle and hitch and to make sure you have the correct trailer for your boat.

- Make sure the trailer is a match for your boat's weight and hull design. More damage can be done to a boat by the stresses of road travel than by normal water operation. A boat hull is designed to be supported evenly by water. So, when it is transported on a trailer it should be supported structurally as evenly across the hull as possible allowing for even distribution of the weight of the hull, engine and equipment.
- Make sure the trailer bunks and/or rollers properly support the hull and do not put pressure on the lifting strakes. The rollers and bunks must be kept in good condition to prevent scratching and gouging of the hull.
- The capacity rating of the trailer should be greater than the combined weight of the boat, motor and equipment. The gross vehicle weight rating must be shown on the trailer. Make sure the weight of the boat, engine, gear and trailer is not more than the gross vehicle weight rating.
- Make sure the boat is securely fastened on the trailer to prevent movement between the boat and trailer. The bow eye on the boat should be secured with a rope, chain or turnbuckle in addition to the winch cable or strap. Additional straps may be required across the beam of the boat or from the transom eyes to the trailer.

Notice:
Your dealer will give instructions on how to load, fasten and launch your boat.

CAUTION

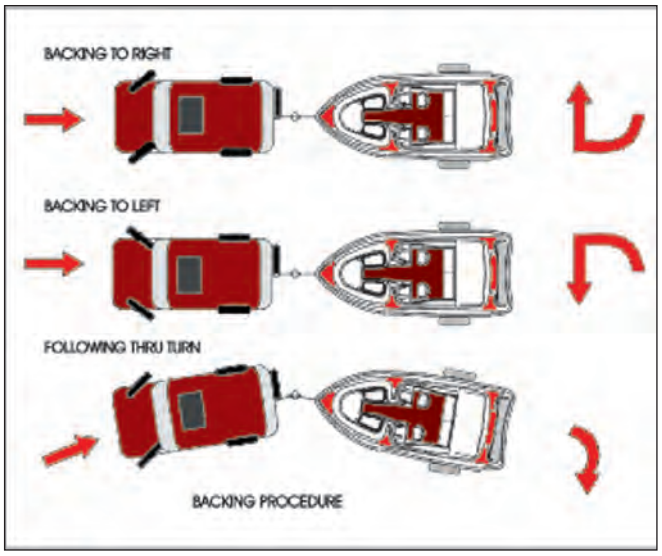
BOATS HAVE BEEN DAMAGED BY TRAILERS THAT DO NOT PROPERLY SUPPORT THE HULL. ALWAYS MAKE SURE THE TRAILER BUNKS AND ROLLERS ARE ADJUSTED SO THEY ARE NOT PUTTING EXCESSIVE PRESSURE ON THE LIFTING STRAKES AND ARE PROVIDING ENOUGH SUPPORT FOR THE HULL. HULL DAMAGE RESULTING FROM IMPROPER TRAILER SUPPORT IS NOT COVERED BY THE CREVALLE WARRANTY.

Before Going Out On The Highway

- Side curtains, clear connector, backdrop and aft curtain must be removed when trailering. Canvas enclosures are not designed to withstand the extreme wind pressure encountered while trailering and will be damaged. Always remove and properly store the enclosure before trailering your boat.
- Make sure the tow BALL and TRAILER COUPLER are the same size and bolts and nuts are tightly secured.
- The COUPLER MUST BE COMPLETELY OVER THE BALL and the LATCHING MECHANISM LOCKED DOWN.
- Make sure the TRAILER IS LOADED EVENLY from front to rear as well as side to side and has the correct weight on the hitch. Too much weight on the hitch will cause the rear of the tow vehicle to drag and may make steering more difficult. Too little weight on the hitch will cause the rig to fishtail and will make controlling the tow vehicle difficult. Contact the trailer manufacturer or your dealer for the correct weight on the hitch for your trailer.

- The SAFETY CHAINS must be attached crisscrossing under the coupler to the frame of the tow vehicle. If the ball was to break, the trailer would follow in a straight line and prevent the coupler from dragging on the road. Make sure the trailer emergency brake cable or chain is also installed to the tow vehicle frame.
- Make sure the LIGHTS on the trailer function properly.
- CHECK THE BRAKES. On a level parking area roll forward and apply the brakes several times at increasing speeds to determine if the brakes on the tow vehicle and trailer are working properly.
- Make sure the tow vehicle has SIDE VIEW MIRRORS that are large enough to provide an unobstructed rear view on both sides of the vehicle.
- CHECK THE TIRES and WHEEL BEARINGS.

Notice:
Make sure your towing vehicle and trailer are in compliance with all state and local laws. Contact your state motor vehicle bureau for laws governing the towing of trailers.



Backing Procedure for Boat Trailers

NOTES

Chapter 3:

PROPULSION SYSTEM

3.1 General

Your boat is designed to be powered with a 2-cycle or 4-cycle outboard motor. 4-cycle outboard engines do not use an oil injection system and are not equipped with a remote oil tank. They have an oil sump in the crankcase that must be kept full of the type of oil recommended by the engine manufacturer. The oil must be checked before each use and changed regularly.

Each manufacturer of the various outboard motors provides an owner's information manual with its product. It is important that you read the manual(s) very carefully and become familiar with the proper care and operation of the engines and drive systems. A warranty registration card has been furnished with each new engine and can be located in the engine owner's manual. All information requested on this card should be filled out completely by the dealer and purchaser and then returned to the respective engine manufacturer as soon as possible.

WARNING

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

WARNING

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

3.2 Drive System Corrosion

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

Outboard Power System

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

Galvanic corrosion is the corrosion process occurring when different metals are submerged in an electrolyte. Seawater is an electrolyte and submerged engine components must be properly protected. Outboard motors are equipped with sacrificial anodes to prevent galvanic corrosion problems. The anodes must be monitored and replaced as necessary. For locations and mainte-

nance, please refer to the engine owner's manual. When leaving the boat in the water, tilt the motor as high as possible. This will decrease the risk of marine growth around the cooling inlets, propeller and exhaust ports and damage from galvanic corrosion.

CAUTION

DO NOT PAINT THE OUTBOARD MOTOR WITH ANTIFOULING PAINTS DESIGNED FOR BOAT HULLS. MANY OF THESE PAINTS CAN CAUSE SEVERE DAMAGE TO THE ENGINE. CONTACT YOUR CREVALLE DEALER OR ENGINE MANUFACTURER FOR INFORMATION ON THE PROPER PAINTING PROCEDURES.

3.3 Engine Lubrication

2-Cycle Engine Lubrication

2-cycle outboard motors are lubricated by a variable ratio oil injection system. The oil tank is mounted in the bilge near the transom. It is filled through a fill fitting in the stern labeled "OIL." The oil fill is opened by turning it counter clockwise. After filling the tank, tighten the fill by turning it clockwise until it is snug.

Notice:
Do not over tighten the oil tank fill cap. If the cap is over tightened, the O-ring seal could be damaged allowing water to contaminate the oil system.

CAUTION

SOME ENGINE MANUFACTURERS USE OIL TANKS THAT ARE UNDER PRESSURE WHEN THE ENGINES ARE OPERATING. IF THE ENGINE LUBRICATION SYSTEM FOR YOUR ENGINES IS PRESSURIZED, YOU MUST WAIT 5 MINUTES AFTER SHUT DOWN BEFORE OPENING THE OIL FILL CAP. YOU SHOULD REFER TO THE ENGINE OWNER'S MANUAL FOR SPECIFIC INFORMATION ON THE OIL SUPPLY SYSTEM AND REFILLING INSTRUCTIONS FOR YOUR ENGINE.

The vent for the oil tank is located in the oil fill deck fitting, just below the deck. Therefore, the oil tank fills and vents through the fill hose. Be careful not to fill the oil tank too quickly. Too much oil in the fill hose will prevent air in the tank from escaping and cause oil to burp out of the fill.

Always monitor the oil level before each cruise by checking the gauge or indicator lights in the helm (not available on all engine installations) or visually checking the oil level using the reference marks on the tank.

When additional oil is needed, use only the type of oil specified by the engine manufacturer. Refer to the engine owner's manual for oil specifications and additional information on the oil injection system.

4-Cycle Engine Lubrication

4-cycle outboard engines have an oil sump in the crankcase that must be kept full of the type and grade of oil recommended by the engine manufacturer. It is normal for 4-cycle engines to consume a small amount of oil. Therefore, the oil must be checked before each use and changed at regular intervals as instructed by the engine owner's manual. As with 2-cycle engines, use only the type of oil specified by the engine manufacturer.

3.4 Engine Cooling System

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

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

CAUTION

NEVER RUN AN OUTBOARD MOTOR WITHOUT WATER FLOWING TO THE WATER PUMP. SERIOUS DAMAGE TO THE WATER IMPELLER OR ENGINE COULD RESULT.

3.5 Propellers

Propellers convert the engine's power into thrust. They come in a variety of styles, diameters and pitches. The one that will best suit the needs of your boat will depend somewhat on your application and expected average load. Propeller sizes are identified by two numbers stamped on the prop in sequence. The 1st number in the sequence (example 14" x 21") is the diameter of the propeller and the 2nd number is the pitch. Pitch is the theoretical distance traveled by the propeller in each revolution.

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

Yamaha Propeller

3.6 Performance Issues & Propellers

It is extremely important that the boat is propped to run at or very near the recommended top RPM with an average load. If the top RPM is above or below the recommend range, the propeller must be changed to prevent loss of performance and possible engine damage.

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

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

Some are as follows:

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

Notice:
Outboard engines can be damaged and the engine warranty void if the boat is not propped correctly. Always consult your Crevalle dealer or authorized engine service dealer when making changes to the propeller or if the boat does not run near the top recommended RPM.

Yamaha Command Link Plus® Display

3.7 Engine Instrumentation

The helm station is equipped with a set of engine instruments and/or alarms. These instruments allow the operator to monitor the operational condition of the engine. Close observation of these instruments allows the operator to operate the engine at the most efficient level and could save it from serious costly damage. The instrumentation is unique to the type of outboard motor installed on your boat.

Most Crevalle boats are equipped with Yamaha engines with Command Link® multifunction instruments or the Command Link® Plus LCD multifunction display. Either of these systems can be integrated with optional electronic navigation equipment installed on your boat. A brief description of the Command Link integrated gauges and their basic functions are listed in this section. Other functions that are dependent on the electronics installed on your boat may be available. Refer to the Yamaha engine and Command Link® owner's manuals and the manuals for the electronics installed on your boat for detailed information on the operation of the instruments and additional functions available.

The instrumentation is unique to the type of outboard motor installed on your boat. Always refer to the engine manufacturers owner's manual for information and instructions for the gauges installed with your engine. Some or all of the following gauges may be displayed:

Tachometer

The tachometer displays the speed of the engine in revolutions per minute (RPM). This speed is not the boat speed or necessarily the speed of the propeller.

With Command Link instruments the tachometer also contains the engine trim meter, oil pressure indicator, water pressure and the overheat warning indicator.

With Command Link Plus®, the tachometer display also contains the engine trim meter, oil pressure indicator, water pressure, water temperature, volt meter and the overheat warning indicator.

Typical Command Link
Tachometer and Speed/Fuel Instruments

Typical Command Link Plus®
Tachometer and Engine Monitoring Display

CAUTION

NEVER EXCEED THE MAXIMUM RECOMMENDED OPERATION RPM OF THE ENGINE. MAINTAINING MAXIMUM OR CLOSE TO MAXIMUM RPM FOR EXTENDED PERIODS CAN REDUCE THE LIFE OF THE ENGINE.

CAUTION

CONTINUED OPERATION OF AN OVERHEATED ENGINE CAN RESULT IN ENGINE SEIZURE. IF AN UNUSUALLY HIGH TEMPERATURE READING OCCURS, SHUT THE ENGINE OFF IMMEDIATELY. THEN INVESTIGATE AND CORRECT THE PROBLEM.

Speedometer

Yamaha Command Link or Command Link Plus® speedometers can indicate boat speed via the engine pickup or an optional GPS or depth sounder triducer, if these optional electronics are installed in your boat. Refer to the engine gauge and electronics operating manuals for more information on the speedometer options available for your boat.

Overheat Warning Indicator

The temperature warning indicates that the temperature of the engine is too high. A sudden increase in the temperature could indicate an obstructed water inlet or an impeller failure.

With Command Link instruments, the overheat warning indicator is built into the tachometer. On boats equipped with Command Link Plus®, the overheat warning indicator is built into the LCD display.

The warning indicator will start to blink and sound an alarm if the engine temperature is too high.

Fuel Gauge

The fuel gauge indicates the amount of fuel in the fuel tank.

With Command Link instruments, the fuel gauge is built into the speedometer multi-gauge. On boats equipped with Command Link Plus®, the fuel gauge is built into the LCD Display.

The fuel indicator on the display will begin to blink if the fuel in the tank drops to a critical level. The system can monitor up to 4 fuel or water tanks.

Voltmeter

The voltmeter displays the voltage for the battery and the charging system. The normal voltage is 11 to 12 volts with the engine off and 13 to 14.5 volts with the engine running.

With Command Link instruments, the voltmeter is built into the speedometer multi-gauge. On boats equipped with Command Link Plus®, the voltmeter is built into the LCD Display.

The voltmeter display will begin to blink if the voltage in the battery drops too low.

Hour Meter
The hour meter keeps a record of the operating time for the engine.

Engine Tilt/Trim Gauge
The tilt/trim gauge monitors the position of the outboard engine. The upper range of the gauge indicates the tilt, which is used for trailering and shallow water operation. The lower range indicates the trim position. This is the range used to adjust the hull angle while operating your boat on plane.

With Command Link instruments, the trim gauge is built into the speedometer multi-gauge. On boats equipped with Command Link Plus®, the trim gauge is built into the LCD Display.

Refer to the engine and instrument owner's manuals for more information on the operation of the outboard power tilt and trim.

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

CAUTION

IF THE ENGINE ALARM SOUNDS, IMMEDIATELY SHUT OFF THE ENGINE UNTIL THE PROBLEM IS FOUND AND CORRECTED.

Fuel Management
Fuel management systems are standard equipment with some outboard engines. On Yamaha engines, the fuel management gauge is built into the Command Link or Command Link Plus® display and can monitor miles per gallon, total gallons used and total gallons remaining.

If you have a fuel management system installed on your boat, refer to the engine or instrument manuals for detailed information on that system.

Compass

Depth Gauge (Optional)
The depth gauge indicates the depth of the water below the bottom of the boat.

Compass
All boats are equipped with a compass on the top of the instrument panel. The compass cannot be adjusted accurately at the factory as it must be compensated for the influence of the electrical equipment and electronics unique to your boat. Therefore, the compass should be adjusted by a professional after the electronics and additional electrical accessories are installed and before operating the boat. To adjust the compass for your area, read the instructions on "Compass Compensation" given to you in the literature packet.

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

Chapter 4:

HELM CONTROL SYSTEMS

4.1 General

The helm controls consist of three systems: the engine throttle and shift control, the steering system and the trim tab control switches. These systems provide the operator with the ability to control the direction and attitude of the boat from the helm station. Your boat is also equipped with a hydraulic Jack Plate that allows the operator to control the height of the engine.

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

4.2 Engine Throttle & Shift Controls

The shift and throttle control on your boat may vary depending on the engine used. The following control description is typical of most cable and electronic outboard remote controls. Refer to the engine or control manuals for specific information on the controls installed on your boat.

Cable Engine Control

The engine throttle and shift control system consists of three major components: the control handle, the throttle cable and the shift cable. Two push/pull type cables are required. One cable connects the remote throttle control to the carburetor or fuel injectors and the other connects the remote shift control to the engine shift rod linkage.

The helm on your Crevalle is designed for a binnacle style control with a single lever that operates as a gear shift and a throttle. General operation will include a position for neutral (straight up and down), a forward position (the 1st detent forward of neutral) and a reverse position (the 1st detent aft of neutral). Advancing the control lever beyond the shift range advances the throttle in forward or reverse. Each control is equipped with a means of permitting the engine to be operated at a higher than idle RPM while in neutral for cold starting and warm-up purposes.

Typical Yamaha Electronic Control

Electronic Engine Control

Electronic engine controls are optional on some outboard engines. The following control description is typical of most electronic control installations.

The helm is designed for a binnacle style control with a single lever. The electronic control system consists of three major components: the electronic control head, Command Link instruments (Yamaha engines) and keypad, the control processors and applicable harnesses. The controls are completely electronic and there are no cables.

The controls have a single lever for the engine that operates as a gearshift and a throttle. General operation will include a position for neutral (straight up and down or slightly aft of vertical), a forward position (the 1st detent forward of neutral) and a reverse position (the 1st detent aft of neutral). Advancing the control lever beyond the shift range advances the throttle in forward or reverse. Each control is equipped with a means of permitting the engine to be operated at a higher than idle RPM while in neutral for cold starting and warm-up purposes. The control lever is equipped with an adjustable control head detent and friction settings.

The engine control and key pad typically have integrated switches and indicator lights which allow the operator to control all aspects of the boat's propulsion system. LED lights on the control indicate that the control is activated and the engine can be started.

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

- Starter lockout, which prevents the engine from being started in gear.
- Gear lockout, which allows the engine RPM to be advanced in neutral safely.
- Battery voltage warning indicator that warns the operator of high or low voltage supplied to the system (audible alarm).
- Trolling feature that allows the operator to increase the engine speed in 50 RPM increments while operating at trolling speeds between 600 - 1000 RPM.
- Station selection (a separate button with Yamaha controls) that allows the operator to transfer control from one station to another with the push of a button on boats with two helm stations. Each station must be selected by the operator before the controls will operate from that station.

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

Typical Yamaha Station Transfer Button

CAUTION

ALWAYS RETURN THE ENGINE THROTTLE LEVER TO THE EXTREME LOW SPEED POSITION BEFORE SHIFTING. NEVER SHIFT THE UNIT WHILE ENGINE SPEED IS ABOVE IDLE RPM.

4.3 Neutral Safety Switch

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

The neutral safety switch should be tested periodically to ensure that it is operating properly. To test the neutral safety switch, make sure the engine is tilted down and move the shift lever to the forward position. Make sure the control lever is not advanced past the idle position. Turn the ignition key to the start position just long enough to briefly engage the starter for the engine. Do not hold the key in the start position long enough to start the engine. The starter should not engage.

Repeat this test with the shift lever in reverse and the engine throttle at idle. Again, the starter should not engage. If the starter engages with the shift control in any position other than the neutral position, then the neutral safety switch is not functioning properly and you should contact your dealer and have the neutral safety switch repaired before using your boat. If the engine starts in gear during this test, immediately move the control lever to the neutral position.

WARNING

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

Typical Power Tilt & Power Trim Switch

4.4 Engine Power Tilt & Trim

All outboard engines have a tilt and trim feature. Most outboard engines a have tilt/trim switch built into the engine shift and throttle control that allows the operator to control the position of the outboard from the helm. The switch on the control lever grip activates the tilt/trim for the engine.

Moving the outboard closer to the boat transom is called trimming "in" or "down." Moving the outboard further away from the boat transom is called trimming "out" or "up." In most cases, the boat will run best with the outboard adjusted so the hull will run at a 3 to 5 degree angle to the water.

The term "trim" generally refers to the adjustment of the outboard within the first 20^0 range of travel. This is the range used while operating your boat on plane. The term "tilt" is generally used when referring to adjusting the outboard further up for shallow water operation or trailering. For information on the proper use and maintenance of the power tilt and trim, please refer to the engine owner's manual.

CAUTION

THE ENGINE HOSES AND CABLES CAN BE DAMAGED BY TILTING THE ENGINE TO THE FULL UP POSITION WITH THE ENGINE TURNED TO THE WRONG POSITION OR WITH THE OPTIONAL JACK PLATE SET TOO LOW. MOST BOATS REQUIRE THE STEERING WHEEL TO BE TURNED COMPLETELY TO STARBOARD AND THE JACK PLATE APPROXIMATELY HALFWAY (LEVEL 3-4) BEFORE TILTING THE ENGINE TO THE FULL UP POSITION. YOU SHOULD MONITOR THE ENGINE AS IT TILTS TO DETERMINE BEST FULL TILT ENGINE AND JACK PLATE POSITIONS FOR YOUR BOAT.

CAUTION

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

4.5 Engine Stop Switch

Your boat is equipped with an engine stop switch and lanyard. When the lanyard is pulled it will engage the switch and shut off the engine. We strongly recommend that the lanyard be attached to the driver whenever the engine is running. If the engine will not start, it could be because the lanyard is not properly inserted into the engine stop switch. Always make sure the lanyard is properly attached to the engine stop switch before attempting to start the engine.

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

Typical Engine Stop Switch

4.6 Hydraulic Jack Plate

Your boat is equipped with a hydraulic Jack Plate engine mounting system that allows the operator to raise and lower the engine with a switch at the helm. The engine can be moved up for shallow water operation and moved down for normal operation.

Most Jack plates provide lift beyond the operation range of the outboard. If the engine is set too high, it can cause handling difficulties or raise the intake for the cooling system above the waterline and cause the engine to overheat and/or damage to the water pump. You should know the maximum safe height for your engine and never operate the boat with the engine set too high.

In some situations, engine hoses and rigging can be damaged if the engine is tilted to the full up position with the Jack Plate set too low. Typically, the Jack Plate should be raised to level 3 or 4 before tilting the engine to the full up position. The minimum safe setting is dependant on the engine and other features unique to your boat. You should be aware of the proper setting for the Jack Plate on your boat and monitor the engine when it is tilted to prevent damage.

Typical Hydraulic Jack Plate

Jack Plate "Pro Trim" Control Switch

Jack Plate Level Indicator

4.7 Steering System

Hydraulic Steering System

The standard steering system is hydraulic and made of two main components: the helm assembly and the hydraulic cylinder. The helm unit acts as both a fluid reservoir and pump. Turning of the helm or steering wheel pumps the fluid in the hydraulic hoses and activates the hydraulic cylinder causing the motor to turn. A slight clicking sound may be heard as the wheel is turned. This sound is the opening and closing of valves in the helm unit and is normal.

Typical Tilt Helm

Power Assist Hydraulic Steering

A power assisted steering system is standard on boats equipped with 300 HP engines and optional on most other engine options. The system is comprised of two hydraulic circuits: a manual system, which is the control element, and a hydraulic power assist pump, which is the working element.

The manual system is hydraulic and made of three main components: the helm assembly, hydraulic hoses and the steering cylinder. The fluid reservoir for the system is built into the power assist pump assembly and the helm acts as a pump. Turning of the steering wheel, pumps fluid through the hydraulic hoses and activates the hydraulic steering cylinder causing the motor to turn. A slight clicking sound may be heard as the wheel is turned. This sound is the opening and closing of valves in the helm pump unit and is normal.

Typical SeaStar Power Steering Assist Pump

The power system is an electronically controlled, 12 volt hydraulic pump that boosts the fluid pressure being sent from the helm pump to the steering cylinder to provide "Power" for the steering system which results in much easier effort at the steering wheel, even under heavy loads. In the event of a power loss or failure of the hydraulic assist pump, the steering system will automatically revert to a manual hydraulic system. The manual system operates as described previously in this section and will require more effort on the steering wheel to turn the motor.

Hydraulic Steering Cylinder

Single outboard engines with hydraulic steering are equipped with one hydraulic steering cylinder mounted on the engine that is connected directly to the engine tiller arm.

Typical Steering Cylinder

Electronic Steering

Electronic steering is optional on some engines or on boats equipped with a spotting tower and an upper helm station. The system is 100% elec-

tronic and there are no mechanical connections between the steering wheel and the engine.

For safety and improved tight quarter maneuvering, the controlling software on most systems senses engine speed and adjusts maximum steering angle and steering wheel resistance to preset limits as the engine speed increases or decreases. The steering angles and steering wheel resistance at specific engine speeds are programed into the system at the factory and are not adjustable.
If a fault occurs in the steering system, the controlling software will sense the fault and limit the engine RPM as a safety precaution and alert the operator. Each steering control system has emergency procedures that are specific to the steering system and type of fault detected. It is very important to follow the correct procedure to enable the operator to return safely to port for repairs. Refer to the engine manufacturer owner's manuals for specific information on the operation, maintenance and emergency procedures for the steering system installed in your boat.

Steering Wheel Tilted Up

Steering Wheel Tilted Down

Steering Wheel
The steering wheel can be tilted to five different positions by activating the tilt lock lever located on the bottom side of the helm station. When the lever is released, it automatically locks the steering wheel at or close to that angle. Refer to the steering manufacturer owner's manual for specific information on the steering system.

4.8 Trim Tabs

The recessed trim tabs are mounted to the hull below the integrated transom engine mounting system. A dual rocker switch is used to control the trim tabs. The switch controls bow up and down movements. It also controls starboard and port up and down movements. Bow up and bow down will control the hull planing attitude, while port and starboard up and down provides control for the hull listing.

An LED indicator built into the switch displays the position of your trim tabs. When one LED is flashing at the top of the display, the tabs are in the "full-up" (bow up) position. When all LED lights are lit from the top to the bottom of the display, the tabs are fully extended (bow down).
The trim tabs are programmed to automatically retract when the engine is shutdown to keep the actuators clean and set the tabs in the full "UP" position when leaving the dock. Refer to the trim

LED Indicator Trim Tab Switch

tab operating manual for more information on the operation and programming of the trim tabs.

Before leaving the dock, make sure that the tabs are in the full "UP" position. If they are not, press and hold the control in the bow up position for ten (10) seconds to fully retract the tabs.

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

After depressing a trim tab switch, always wait a few seconds for the change in the trim plane to take effect. Avoid depressing the switch while awaiting the trim plane reaction. By the time the effect is noticeable the trim tab plane will have moved too far and thus the boat will be in an overcompensated position.

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

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

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

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

4.9 Control Systems Maintenance

Control Maintenance

Periodic inspection of the control systems and all connections should be made. Signs of rust, corrosion, wear or other deterioration should immediately be serviced. Generally, periodic lubrication of all moving parts and connections with a light waterproof grease is in order.

Trim Tab Plane & Actuator

Lubrication should be performed as often as necessary to keep the system operating smoothly.

Control system adjustments may become necessary. If adjustments become necessary, see your Crevalle dealer.

WARNING

DO NOT ATTEMPT CONTROL ADJUSTMENTS UNLESS YOU ARE FAMILIAR WITH SERVICING CONTROL SYSTEM PROCEDURES. CONTROL MISADJUSTMENT CAN CAUSE LOSS OF CONTROL AND SEVERE ENGINE OR LOWER UNIT DAMAGE.

Hydraulic Steering System Maintenance

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

The fluid level for hydraulic steering should be checked frequently and maintained at the proper level. For hydraulic steering without assist, the fluid level at the vent/fill plug at the helm should be maintained at no less than 1/2" below the bottom of the filler cap threads. If your boat is equipped with the optional spotting tower and upper helm, the steering fluid level must be checked and filled at the upper helm.

The fluid level for power assist hydraulic steering should be maintained at no less than 1/2" below the bottom of the fill plug hole on the hydraulic power assist pump reservoir located in the bilge. Only use power steering fluid recommended by the steering system manufacturer when adding fluid.

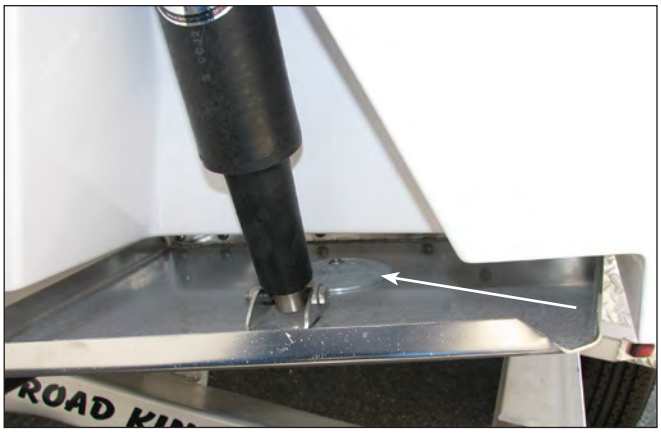
If your boat is equipped with an after market tower, the procedure for checking the steering fluid level and adding fluid may be different. Refer to the steering system manual for instructions on checking and filling the steering system on your boat.
Generally, periodic lubrication of all moving parts and connections with a light waterproof grease is in order. Check the hydraulic hoses and fittings for chaffing, rub marks and leaks. Replace if necessary. Failure to do so could lead to steering system failure that would result in loss of control.

When new or after repairs, hydraulic steering systems may need to have all air purged from the system. Only use hydraulic steering fluid recommended by the steering system manufacturer. Difficult steering and premature seal failure can result if the wrong fluid is used in the steering system. Review the information provided by the steering system manufacturer for proper specifications and details on system service and maintenance.

Electronic Steering And Control Systems Maintenance

Electronic steering and control systems are supplied by the engine manufacturer. The systems have maintenance requirements that are specific to the engine and control options installed in your boat.

You should refer to the engine and controls systems owner's manuals for information and maintenance on the control and steering system installed in your boat. Their recommendations should be followed exactly.
The engine controls and steering systems are fully electronic and activated by micro processors and controlling software in each engine controller. If adjustment becomes necessary do not attempt to address the problem yourself. You should contact your Crevalle or outboard engine dealer for assistance.



Trim Tab Plane & Sacrificial Anode

WARNING

IMPROPERLY ADJUSTED ELECTRONIC ENGINE CONTROLS CAN CAUSE LOSS OF CONTROL AND SEVERE ENGINE DAMAGE. IF YOUR CONTROLS ARE NOT OPERATING PROPERLY, DO NOT ATTEMPT CONTROL SYSTEM ADJUSTMENTS YOURSELF. CONTACT YOUR CREVALLE OR ENGINE DEALER FOR ASSISTANCE AND DO NOT USE THE BOAT UNTIL THE SITUATION IS CORRECTED.

Engine Lubrication

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

Trim Tab Maintenance

The trim tab actuators are electric and require no routine maintenance except to periodically inspect the tab actuators for corrosion or marine growth and test the system to ensure that it is operating properly.

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

If the boat is kept in the water, the trim tabs must be equipped with a sacrificial anode to prevent galvanic corrosion. Galvanic corrosion is the corrosion process occurring when different metals are submerged in an electrolyte. Seawater is an electrolyte and submerged metal components must be properly protected. The anodes will need to be changed when they are 75% of their original

size (25% depleted). Refer to the Routine Maintenance chapter of this manual for information on maintaining sacrificial anodes.

To discourage any marine growth on the tabs or actuators, antifouling paint can be applied. When applying paint to the actuator, make sure it is fully retracted. Do not paint the stainless ram above the area that is exposed when fully retracted. The bottom paint will damage the O-ring seals when the ram is retracted and allow seawater to enter the actuator motor. When painting the trim tabs, do not apply paint to the sacrificial anodes or the mounting surface under the anode. The sacrificial anode must have full metal to metal contact with the trim tab plane or it will become ineffective. Contact your dealer or the trim tab manufacturer for information regarding the correct bottom paint for the trim tabs.

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

SeaStar Hydraulic Jack Plate

Jack Plate Maintenance

Inspect electrical cables for damage and coat connection terminals with dielectric grease to prevent corrosion as required. Grease the Jack Plate at the grease fittings once or twice every 6 months.

Inspect the Jack plate for damage, cracks, wear and binding. Inspect the Jack plate brackets, guide rods, guide rod seals, actuator shaft and actuator shaft seal. Check for leaking components.

The hydraulic fluid level should be checked periodically. The fluid level should be checked with the Jack Plate in the full down position and you be careful not to overfill the reservoir.

Jack Plates have specific maintenance requirements. You should refer to the Jack Plate owner's manual for maintenance information, specifications and operating instructions for the Jack Plate installed on your boat.

SeaStar Jack Plate Guide Rods & Actuator

Notice:
Jack Plate engine and transom mounting bolt torque should be checked once each season or every 100 hours.

NOTES

Chapter 5:

FUEL SYSTEM

5.1 General

The gasoline fuel system used in Crevalle boats sold in the United States is designed to meet or exceed the emission control standards of the Environmental Protection Agency (EPA) and the requirements of the U.S. Coast Guard, the Boating Industry Association and the American Boat and Yacht Council in effect at the time of manufacture.

All gasoline fuel systems have been factory inspected and pressure tested in accordance with regulations in effect at the time of manufacture. This inspection assures that the system is air tight, leak proof and safe. It is the responsibility of the purchaser to maintain it in that condition. Make frequent inspections to assure that no deterioration or loosening of connections is resulting from vibration.

DANGER

DO NOT LET THE ODOR OF GASOLINE GO UNCHECKED. ANY ODOR OF GASOLINE MUST BE IMMEDIATELY INVESTIGATED AND STEPS TAKEN TO PROTECT THE BOAT AND ITS OCCUPANTS UNTIL THE PROBLEM IS CORRECTED. IF THE ODOR OF GASOLINE IS NOTED, SHUT THE ENGINE AND ALL ELECTRICAL EQUIPMENT. INVESTIGATE AND CORRECT THE SITUATION IMMEDIATELY. HAVE ALL PASSENGERS PUT ON PERSONAL FLOTATION DEVICES AND KEEP A FIRE EXTINGUISHER READY UNTIL THE SITUATION IS RESOLVED.

Fuel Withdrawal Tube

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

Fuel Gauge

This indicates the amount of fuel in the tank. Due to the mechanical nature of the fuel sender, variations in readings during various speeds of operation may occur. This system is merely a relative indication of the available fuel supply and not a calibrated instrument.

Typical Keyless Fuel Fill

Fuel Fill

In order to comply with U.S. EPA emission regulations, your boat is equipped with a special fuel system that does not vent directly to the atmosphere. The system is equipped with a "keyless" fuel cap located on the port gunnel that is marked "GAS." The fill cap is not vented and the fill system is completely sealed when the cap is closed.

There is a fuel tank vent built into the fuel fill. Another vent equipped with vapor emission control components in the hull side provides ventilation for the tank when the fuel fill system is sealed. While the tank is being filled, most air displaced by the fuel escapes through the fuel fill vent. The fuel fill and vent system are designed such that an automatic shutoff valve in the marina fuel pump nozzle will stop the flow before fuel can be ejected into the vent system when the tank is full. You should never attempt to "top off" the tank after the pump nozzle shutoff valve has activated. This could force fuel into the vent system and damage emission control components.

The fuel fill cap is opened by turning the cap counter clockwise until it can be removed. After refueling, replace the fill cap and tighten until it clicks, indicating that the cap has been properly closed and the fill system is sealed. Wash the areas around the fuel fill if any fuel splashed on

the deck or hull during filling operations. Residual fuel left on the deck and hull sides can be dangerous and will yellow the fiberglass or damage the striping.

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

WARNING

DO NOT CONFUSE FUEL FILL WITH THE WATER FILL DECK PLATE. IF GASOLINE IS ACCIDENTALLY PUMPED INTO THE WATER TANK, DO NOT ATTEMPT TO PUMP IT OUT YOURSELF. WATER PUMPS ARE NOT DESIGNED TO PUMP FUEL AND A FIRE OR EXPLOSION COULD RESULT. CONTACT YOUR DEALER OR THE CREVALLE CUSTOMER SERVICE DEPARTMENT FOR ASSISTANCE IN HAVING THE FUEL PROFESSIONALLY REMOVED.

Typical Yamaha Engine Fuel Filter

Fuel Tank Vent

In order to comply with U.S. EPA regulations, the fuel tank is equipped with a special vent located on the hull side and vent system emission control components. A carbon filled canister in the vent hose between the fuel tank and the vent absorbs fuel vapors before they can escape to the atmosphere and returns them to the fuel tank.

Carbon canisters can be damaged if they are repeatedly exposed to liquid fuel. Special valves in the vent system and the automatic shutoff valve on marina fuel pump nozzles prevent the tank from being overfilled and forcing fuel into the vent system. You should never attempt to "top off" the tank after the pump nozzle shutoff has activated. This could force fuel into the vent system that can damage the carbon canister or other components.

Typical Fuel System Primer Bulb

5.2 Engine Fuel Delivery System

The fuel system has one fuel tank. The Fuel withdrawal line is equipped with an anti-siphon valve where the line attaches to the fuel tank. This valve prevents gasoline from siphoning out of the fuel tank should a line rupture.

WARNING

DO NOT REMOVE THE ANTI-SIPHON VALVE FROM THE SYSTEM. SHOULD THE VALVE BECOME CLOGGED, CLEAN AND REINSTALL OR REPLACE.

The fuel filter is installed in the stern bilge of the boat. It is accessed through a hatch below the aft seat. The filter is the water separator type and should be serviced frequently to assure an adequate supply of clean, dry fuel to the engine. It is recommended that the filter be inspected periodically and the element changed as needed.

There is a primer bulb in the fuel line located near the fuel filter that is used to prime the fuel system after service or as required. See Fuel System Maintenance and the engine owner's manual for additional information on the fuel filter and the outboard engine fuel system.

5.3 Fueling Instructions

WARNING

FUEL IS VERY FLAMMABLE. BE CAREFUL WHEN FILLING THE FUEL TANK. NO SMOKING. NEVER FILL THE TANK WHILE AN ENGINE IS RUNNING. FILL THE FUEL TANK IN AN OPEN AREA. DO NOT FILL THE TANK NEAR OPEN FLAMES.

CAUTION

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

WARNING

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

Preparing The Boat For Fueling

- Make sure all switches are in the OFF position.
- Make sure the boat is securely moored.
- Make sure all passengers leave the boat.
- Close all doors and hatches to prevent fuel fumes from entering the console or bilge.
- Estimate how much fuel is needed and avoid over filling the tank.

WARNING

STATIC ELECTRICITY CAN BE GENERATED WHILE FUELING AND CAN CAUSE A FIRE OR EXPLOSION. TO PREVENT STATIC SPARKS WHEN FILLING THE TANK, MAKE SURE THE NOZZLE IS IN CONTACT WITH THE FUEL OPENING.

Fueling Instructions

In order to comply with U.S. EPA emission regulations, your boat is equipped with a special fuel system that prevents fuel vapors from entering the atmosphere when fueling operations are complete.

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

Notice:
When the fuel tank is full, the shutoff valve in the marina fuel pump nozzle will activate and automatically shut off the flow, indicating that the tank is filled to the maximum level. You should stop filling the tank at this point and never attempt to "top off" the tank. Attempting to "top off" the tank could damage fuel level control valves or force fuel into the vent system which could damage vapor emission control components.

To fill the fuel tank follow this procedure:

- The fuel cap is designed to be opened by hand and does not require a key. Turn the cap counterclockwise to remove it for fueling.
- Make sure the marina fuel pump nozzle is equipped with an automatic shutoff valve. Then put the nozzle in the fuel fill opening and make sure it stays in contact with the fuel fill fitting during the entire fueling operation.
- Fill the tank until the shutoff valve clicks and automatically stops the fuel flow.
- Remove the nozzle.
- Install the fuel cap and tighten until the cap clicks, indicating that the cap is tight and the system is sealed.
- Open all hatches and doors.
- Check the fuel compartment and below the deck for fuel odors. If you smell fuel, do not start the engine.

WARNING

SPILLED FUEL IS DANGEROUS AND CAN YELLOW FIBERGLASS OR IGNITE. MAKE SURE YOU DO NOT SPILL ANY FUEL. IF FUEL IS SPILLED ON THE DECK, USE A CLOTH TO REMOVE THE FUEL AND PROPERLY DISPOSE OF THE CLOTH ON SHORE. IF FUEL IS SPILLED ON THE WATER, EXERCISE EXTREME CAUTION. FUEL FLOATS ON TOP OF THE WATER AND CAN IGNITE. IF EXCESS FUEL IS SPILLED INTO THE WATER, IMMEDIATELY EVACUATE THE AREA AND NOTIFY THE MARINA AND THE PROPER OFFICIALS.

WARNING

TO REDUCE THE RISK OF A FIRE AND/OR EXPLOSION, DO NOT START THE ENGINE WHEN FUEL FUMES ARE PRESENT. FUEL FUMES ARE DANGEROUS AND HARMFUL TO YOUR HEALTH.

WARNING

MAKE SURE ALL GASOLINE ODORS ARE INVESTIGATED IMMEDIATELY.

5.4 Fuel System Maintenance

Periodically inspect all primer bulbs, connections, clamps and hoses for leakage and damage or deterioration. Replace as necessary. Spray the tank fuel gauge sender and ground connections with a metal protector. Removable access plates in the cockpit sole provide access to the fuel gauge sender, fuel tank fittings and tank ground connection.

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

Contaminated fuel may cause serious damage to your engine. Fuel filters must be checked for corrosion and deterioration frequently. Fuel filters must be changed at least once a season or more frequently depending on the type of engine and the quality of the fuel. Please refer to the engine or fuel filter manufacturer's instructions for information on servicing and replacing the fuel filter. The age of gasoline can effect engine performance. Chemical changes occur as the gasoline ages that can cause deposits and varnish in the fuel system as well as reduce the octane rating of the fuel. Severely degraded fuel can damage the engine and boat fuel tank and lines. Therefore, if your boat is not being run enough to require at least one full tank of fresh fuel a month, a fuel stabilizer should be added to the gasoline to protect the fuel from degradation. Your dealer or the engine manufacturer can provide additional information on fuel degradation and fuel stabilizers recommended for your engine.

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

WARNING

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

AFTER THE FILTER ELEMENT HAS BEEN CHANGED, PRIME THE FUEL SYSTEM AND CHECK ALL FITTINGS FOR LEAKS BEFORE AND AFTER STARTING THE ENGINE.

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

Chapter 6:

ELECTRICAL SYSTEM

6.1 General

Your boat is equipped with a 12 volt DC electrical system and could be equipped with an optional trolling battery charging system. The 12 volt DC system draws current from two onboard batteries.

Boats equipped with the optional trolling motor will also have a 36 volt DC electrical system dedicated to the trolling motor. The 36 volt system draws current from three onboard batteries that are completely isolated from the boat's 12 volt system.

The boat engine charging system is designed for 12 volt, lead acid wet cell or AGM (Absorbed Glass Matt) marine batteries. They will require similar maintenance as those found in automobiles.

All wires in the electrical system are color coded to make identifying circuits easier. Wiring schematics have been included with this manual to aid in following an individual circuit of the boat.

6.2 Boat DC System Overview

The 12 volt system is a standard marine system. There are two batteries located in the center console. They are controlled by a battery selector switch and charged by the engine.

Most 12 volt power is distributed to the 12 volt accessories through individual circuit breakers located in the 12 volt switch panels. A main helm circuit breaker located in the battery switch panel protects the system from an overload. Other circuit breakers located in the battery switch panel protect the circuits for the bilge pump automatic float switch, the stereo and other accessories not protected by circuit breakers in the switch panels. Most 12 volt accessories are operated directly by switches in the helm accessory switch panel, T-Top switch panel or separate accessory switches.

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

⚠ CAUTION ⚠

PROPER FUSE OR BREAKER PROTECTION MUST BE PROVIDED FOR ALL 12 VOLT EQUIPMENT ADDED. DO NOT OVERLOAD THE ACCESSORY CIRCUIT BREAKERS OR OTHER CIRCUITRY THROUGH ADDITIONAL 12 VOLT EQUIPMENT.

6.3 Batteries & Battery Switch

The DC electrical system on your boat is designed for wet cell or AGM marine batteries. You should not mix the size or brand of wet cell or AGM batteries. Always consult your Crevalle dealer before changing the type of batteries in your boat.

Your boat has provision for two batteries. These batteries should be of the size and capacity recommended by the manufacturer of your engine. See the engine owner's manual. These specifications should be considered to be the minimum size battery required. Consider increasing the capacity of the battery if you will be trolling, drift fishing or have extensive electronics onboard. Larger batteries will give you additional capacity to operate the baitwells, release wells, washdown, electronics and other 12 volt accessories at low speed when the charging system output of the engine is minimal.

The battery selector switch is located in a panel below the helm. The switch feeds the engine and the 12-volt accessory panel. The engine battery switch is a dual circuit switch that has three positions, OFF, ON and COMBINE BATTERIES. When the battery switch is in the ON position, the engine and accessory circuits are activated simultaneously and current flows from the batteries to the engine, accessories and electronics. The dual circuit sensing feature in the switch allows the engine battery and circuit to be completely separate from the accessory battery and circuit. The COMBINE BATTERIES (EMERGENCY PARALLEL ONLY) position is highlighted in yellow and used to temporarily connect both batteries in parallel to provide additional starting power in the event of a low or dead engine starting battery. Once the engine is started, the switch should be moved to

the ON position to isolate the circuits for normal operation.

The engine charging system charges the engine battery and the accessory battery through an ACR (Automatic Charging Relay) battery isolator system. The ACR manages the charging current for the 12-volt system whenever the engine is running. It automatically combines batteries during charging and isolates batteries when discharging. The Start Isolation feature protects electronics from voltage sags and spikes by automatically isolating the engine and accessory batteries during engine cranking. A status LED indicates the current mode of the ACR. The modes are as follows:

- LED Solid On - Batteries combined & charging
- Single Flash - Batteries isolated & on standby
- Double Flash - Batteries isolated during engine cranking
- Triple Flash - Batteries isolated due to low voltage in one or both batteries

When the engine is running, the ACR circuit senses the charge and monitors the engine battery voltage. When the battery voltage increases to the "Combine" level, the ACR connects the charging circuit to both batteries and the charge is split between the batteries. When the engine is turned off, the charging stops and the sensing circuit turns off the ACR, disconnecting the batteries from the charging circuit, thereby automatically isolating the batteries from one another.

While in port, while trolling, or at anchor, the accessory battery will provide current to the boat accessories and electronics. This will keep the engine battery in reserve for starting the engine. The battery switch should be turned to the "OFF" position when leaving the boat unattended.

Notice:
Current is supplied to the automatic float switch and manual switch for the bilge pump when the batteries are connected, even if the battery switch is off.

6.4 Switch/Circuit Breaker Panels

Ignition Switch Panel

Ignition switch panels are unique to each engine manufacturer and the engine control options selected. Your dealer will provide you with the proper starting procedure for your boat at the time of delivery. Additional information for the ignition switch system installed in your boat is located in the engine and control system operating manuals included in your information packet.

Battery Switch Panel
Battery Selector Switch, ACR & Circuit Breakers

Typical Yamaha Engine Ignition Switch

Yamaha Command Link Plus® Ignition
Most Crevalle Boats are equipped with Yamaha engines and the Command Link or Command Link Plus® ignition key panels that offer the latest in technology and durability.

The ignition switch is a key activated switch, located near the helm below the steering wheel, which starts and stops the engine. The switch has OFF - ON and momentary START positions.

Starting Procedure
Make sure the engine is down with the shift lever in the neutral position and your hand on the control lever. Turn the ignition key to the ON position to activate the fuel pump and ignition system. Wait 5 seconds for the fuel pump to pressurize the system then turn the key to the start position. When the engine starts, release the key and the switch will automatically return to the run position. Stop the engine by turning the key to the OFF position.

The engine ignition circuits are protected by fuses or circuit breakers located on each engine.

Helm Accessory Switch Panel

The main accessory switch panel is located at the helm. The "push to reset" circuit breakers that protect the accessories are located in the panel near the switches. An LED light built into the switches indicates that the circuit is activated.

If a breaker trips, the reset button pops out and can be felt through the protective cover. Press the button to reset the tripped breaker. If the breaker trips again, find and correct the problem before resetting the breaker.

Your boat may have all or some of the switches described in this section, depending on the accessories and optional equipment installed on your boat.

The following is a description of the accessories typically controlled by switches in the helm accessory switch panel:

Nav/Anc Lights
The switch is a three-position switch. The middle position is OFF. Moving the switch in one direction will activate the navigation lights. Moving the switch in the opposite direction activates the anchor light.

Cockpit Lights Blue/White
The switch is a three-position switch. The middle position is OFF. Moving the switch in one direction will activate the white cockpit lights. Moving the switch in the opposite direction activates the blue cockpit lights.

Livewell Lights
Activates the lights that illuminate the release and baitwells.

ACC/UW Lights
Activates the optional underwater lights in stern below the water line.

Helm Switch Panel

If your boat is not equipped with underwater lights, this switch is reserved for additional 12 volt equipment.

ACC/Water Pump
Activates the fresh water pump that supplies the optional fresh water shower. The pump is the pressure demand type. The pressure switch automatically controls the water pump when the system is activated and properly primed.

If your boat is not equipped with the fresh water shower, this switch is reserved for additional 12 volt equipment.

Horn
A momentary switch that activates the boat horn.

Port Release Well
Activates the centrifugal pump that supplies water to the port release well.

STBD Release Well
Activates the centrifugal pump that supplies water to the starboard release well and the baitwell. An adjustable inlet valve in the baitwell controls the flow of water to the baitwell and is used to balance the flow between the two wells when both wells are being used.

Washdown
Activates the raw water pump that supplies sea-water to the raw water washdown hose connection in the cockpit. The pump is the pressure demand type. The pressure switch automatically controls the water pump when the system is activated and properly primed.

Bilge
The switch has two positions, ON and OFF. When the switch is in the ON position it activates the aft bilge pump located in the stern bilge near the transom. The pump moves water out a thru-hull fitting in the hull side. When pumping is complete, move the switch to the OFF position to turn the pump off.

When the switch is in the OFF position the pump is controlled by an automatic float switch that is activated whenever the batteries are connected. The pump will run as needed whenever the water in the bilge accumulates high enough to raise the float switch to the ON position and turn OFF when the water is removed.

Notice:
The bilge pump will start automatically when there is sufficient water in the bilge to activate the float switch. The pump and float switch is protected by a circuit breaker located in the battery switch panel and is always supplied current when the batteries are connected.

T-Top Switch Panel

T-Top Switch Panel (T-Top Option)
A T-top is available as optional equipment. A storage compartment and an accessory switch panel is located in the hardtop liner or mounted to the frame above the helm. The "push to reset" circuit breakers that protect the accessories are located in the panel near the switches. An LED light built into the switches indicates that the circuit is activated.

The following is a description of the accessories typically controlled by switches in the T-top switch panel:

Overhead Lights
Activates the red, white or blue LED lights above the helm. Turn the switch off and on quickly to change the color.

Spreader Lights
Activates the forward and rear flood (spreader) lights located on the hardtop that illuminate the cockpit of the boat.

Mister
Activates the mister pump that supplies freshwater to the mister jets in the hardtop. If the mister option is not installed, this switch is reserved for additional 12 volt equipment.

Acc
Reserved for additional 12 volt equipment.

Notice:
Red lights have less effect on night vision and should be selected if you need to illuminate the helm area while navigating at night.

Recirculation Switch Panel (Optional)

FWD Recirc
Activates the pump that recirculates the water in the forward baitwell below the console bench seat.

Port AFT Recirc
Activates the pump that recirculates the water in the port aft release well/baitwell.

STBD AFT Recirc
Activates the pump that recirculates the water in the starboard aft release well/baitwell.

Release Well/Baitwell Switch Panel

Additional DC Switch Panels

Trim Tab Switch
Located in the helm. This switch panel controls the trim tab planes located on the transom of the boat. It is protected by a circuit breaker located in the battery switch panel. Refer to the Helm Control Systems chapter for detailed information on the operation of the trim tab controls.

Jack Plate Switch
A lever style switch located on the steering wheel bezel that controls the height of the engine on the transom. Refer to the Helm Control Systems chapter and the Jack Plate owner's manual for information regarding the proper use of the Jack Plate control switch.

Power Pole Switch (Optional)
Located in the helm. Controls the power pole mounted on the transom, if this option is installed.

Engine Trim and Tilt Switch
This switch is typically installed in the engine control handle. It controls the trimming and tilting of the engine. Refer to the Helm Control Systems chapter and the engine owner's manual for information regarding the proper use of the tilt and trim switch.

Battery Switch Panel
Battery Selector Switch and Circuit Breakers

6.5 Additional DC Circuit Protection

Battery Switch Circuit Breakers

The battery switch circuit breakers are located next to the battery switch in the battery switch panel.

The "push to reset" circuit breakers are labeled for the accessory circuit they protect. If a breaker trips, the reset button pops out and can be felt through the protective cover. Press the button to reset the tripped breaker. If the breaker trips again, find and correct the problem before resetting the breaker.

Helm Main
Provides protection and electrical current to the primary circuit for the helm accessory switch panel. Other circuit breakers located near the switches in the panel protect the individual circuits. This "push to reset" breaker is supplied current when the battery switch is activated.

Electronics
Provides protection and electrical current to the main electronics circuit for the helm. This "push to reset" breaker is supplied current when the battery switch is activated.

12V Recept
Provides protection and power for the 12 volt accessory plugs. This "push to reset" breaker is supplied current when the battery switch is activated.

Stereo
Provides protection and 12 volt electrical current to the stereo. This "push to reset" breaker is supplied current when the battery switch is activated.

Bilge
A continuous power circuit breaker that provides protection and power for the automatic float switch on the bilge pump located in the stern bilge. This "push to reset" breaker is always supplied current when the batteries are connected.

Amplifier
A "push to reset" circuit breaker that provides protection and power for the stereo amplifier for the boat speaker system. This breaker is supplied current when the battery switch is activated.

Trim Tabs
Provides protection and electrical current to the switches that control the trim tabs. This "push to reset" breaker is supplied current when the battery switch is activated.

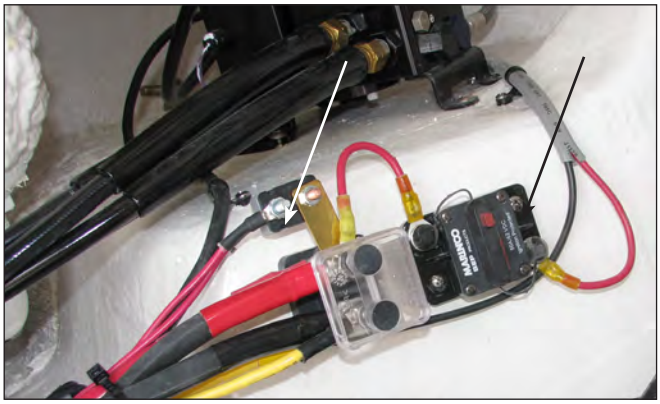
T-Top Power (Optional)
Provides protection and electrical current to the primary circuit for the optional T-top switch panel. Other circuit breakers located near the switches in the panel protect the individual circuits. This "push to reset" breaker is supplied current when the battery switch is activated.

Heavy Duty Circuit Breakers & Fuses

The following are high amperage circuits supplied and protected by individual heavy duty fuses or circuit breakers:

Power Steering Pump Circuit Breaker (Optional)
A heavy duty circuit breaker located in the bilge near the power steering assist pump that provides protection and power for the pump. This breaker is supplied current whenever the battery switch is activated.

If the circuit breaker is tripped by an overload, a yellow lever will be exposed near the center of the breaker. Reset the breaker by raising the lever until it locks in the horizontal position. A test button near the reset lever can be pressed to test the breaker to ensure it is operating properly.



Typical Power Assist Pump & Jack Plate Circuit Breakers In Stern Bilge

Typical Trolling Motor Circuit Breaker

Electronic Steering Fuses or Circuit Breakers (Optional)
Heavy duty fuses or circuit breakers located in the stern bilge that provide protection and power to the engine electronic steering pump if the electronic steering option is installed on your boat. Refer to the engine manual for additional information on the steering system pump and fuse or circuit breaker requirements for your boat.

Engine Charging System Fuses
Some engine installations are equipped with a heavy duty fuse located near each engine battery that provides protection for the engine battery charging circuit. Refer to the engine manual for additional information on the engine charging system and the fuse requirements for your boat.

Trolling Motor Circuit Breaker
A heavy duty circuit breaker located in the battery switch panel that provides protection and power for the main DC circuit for the trolling motor. This breaker is supplied current whenever the trolling motor batteries are connected.

If the circuit breaker is tripped by an overload, a yellow lever will be exposed near the center of the breaker. Reset the breaker by raising the lever until it locks in the horizontal position. A test button near the reset lever can be pressed to test the breaker to ensure it is operating properly or to deactivate the circuit.

Other Circuit Protection

Circuit protection for other optional equipment is typically located in the stern bilge or near the batteries. The type of circuit protection and the size of the fuse or circuit breaker is specific to the manufacturer and installation. Always refer to the manufacturer's owner's manuals for specific information on the circuit protection for optional equipment installed on your boat.

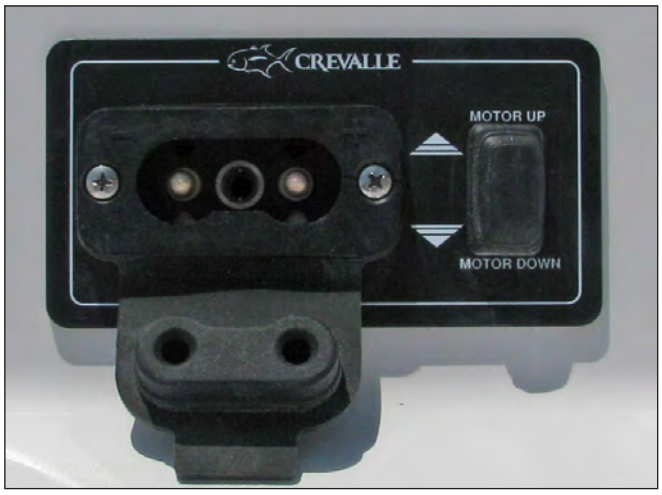
The following is a description of the typical circuit protection for common optional equipment.

Jack Plate Circuit Breaker
Located in the stern bilge or near the battery switch. This breaker provides protection and electrical current to the primary circuit for the Jack Plate hydraulic pump.

Power Pole Circuit Protection
A fuse or circuit breaker located in the stern bilge or near the battery switch. This breaker provides protection and electrical current to the primary circuit for the Power Pole hydraulic pump.
Some Power Pole control switches could also be equipped with an in-line fuse located near the switch in the helm.

Notice:
If a heavy duty circuit breaker trips or fuse blows, always make sure the problem that caused the breaker to trip or fuse to blow is found and corrected before resetting the breaker or replacing the fuse.

Typical Trolling Motor



Trolling Motor Connection Panel In Bow

6.6 36 volt Trolling Motor System

If your boat is equipped with the optional trolling motor, it will also be equipped with a 36 volt DC electrical system that provides power to the trolling motor. The 36 volt system consists of three 12 volt, deep cycle batteries wired in series, a three bank battery charger and circuit protection. A heavy duty outlet plug with a protective cover is installed near the bow that provides the connection for the trolling motor. The system is completely isolated from the boat 12 volt engine and accessory circuits. A heavy duty circuit breaker located near the battery switch protects the circuit from an overload and a three bank battery charger recharges the batteries whenever the boat is plugged into shore power.

The momentary Motor Up/Motor Down rocker switch in the panel next to the plug allows the operator to tilt the outboard engine for shallow water operation. Press and hold the top of the switch to raise the motor. Press and hold the bottom of the switch to lower the motor .

The trolling motor batteries are located in the forward bilge storage compartment in the bow. The circuit breaker is located in the battery switch panel below the helm.

Make sure the trolling motor batteries are fully charged and the main circuit breaker is activated before using the trolling motor. The trolling motor will not operate properly if the batteries are low. Always remember to turn the trolling motor circuit breaker ON before using the trolling motor and OFF when the system is not in use.

An owners manual is included with the trolling motor. It is essential that you read the manual and be completely familiar with the operation of the trolling motor, controls and mounting brackets before using the trolling motor on your boat.

WARNING

DO NOT USE A BATTERY EQUALIZER OR OTHER DEVICE THAT WILL CONNECT THE ENGINE AND HOUSE BATTERIES TO THE TROLLING MOTOR BATTERIES. IN SOME SITUATIONS, THESE DEVICES CAN CAUSE THE BATTERY CHARGER TO OVERCHARGE THE BATTERIES WHICH WILL RESULT IN THE RELEASE OF DANGEROUS HYDROGEN GAS.

HYDROGEN GAS WILL CORRODE METAL HARDWARE NEAR THE BATTERIES AND CAN CAUSE AN EXPLOSION. A BATTERY CAN EXPLODE IF A FLAME OR SPARK IGNITES THE HYDROGEN GAS THE BATTERY EMITS WHILE BEING CHARGED. THIS CONDITION IS PARTICULARLY DANGEROUS WHEN BATTERIES ARE BEING OVERCHARGED.

6.7 AC Battery Charging System

General

A 120 volt AC battery charging system is an available option. The system is fed 120 volt AC current by a power cable connected to a shore side outlet and the shore power inlet located in the center console below the helm. It is wired totally separate from the 12 volt DC system and charges the engine and/or the optional trolling motor batteries simultaneously when connected.

Notice:
The power cord used for the battery charger system is not equipped with lock rings on the shore side or boat connector plugs. Each battery charger has integrated reverse polarity protection and the circuit is not equipped with a reverse polarity light.

DANGER

TO REDUCE THE POSSIBILITY OF AN ELECTRICAL SHOCK, IT IS IMPORTANT THAT THE AC GROUND SYSTEM IS FUNCTIONING PROPERLY AND THAT A PROPER CONNECTION EXISTS BETWEEN THE SHORE POWER CORD AND THE SHORE POWER INLET AND THE OUTLET GROUND CIRCUITS. IF THERE IS ANY DOUBT ABOUT THE INTEGRITY OF THE GROUND CIRCUIT, A QUALIFIED MARINE ELECTRICIAN SHOULD BE CONTACTED IMMEDIATELY AND THE SHORE POWER SHOULD BE DISCONNECTED UNTIL THE NECESSARY REPAIRS ARE COMPLETED.

ELECTRICAL SHOCKS FROM 120 VOLT CIRCUIT CAN CAUSE SEVERE INJURY OR DEATH. TO REDUCE THE RISK OF ELECTRICAL SHOCK IN WET WEATHER, AVOID MAKING CONTACT WITH THE SHORE CABLE OR MAKING A CONNECTION TO A LIVE SHORE OUTLET. NEVER SPRAY WATER ON ELECTRICAL CABLES WHILE WASHING DOWN DECKS.

Procedure For Making A Shore Connection

If the dockside outlet includes a disconnect switch or circuit breaker, turn it to the OFF position. To avoid strain on the cable make sure it has more slack than the mooring lines. Dress the cable so that it cannot be damaged by chafing between the boat and the dock. Make sure the cable does not come in contact with the water.

Open the cover on the inlet port and pull the boat inlet power cord out. Then connect the shore cable to the inlet cord plug making sure the shore cord includes a three-prong plug with a ground wire. Turn the dockside disconnect switch or circuit breaker ON and check that each battery charger is operating properly. If the battery charger is not working, turn off the shore disconnect switch/circuit breaker and remove the cable. Contact your dealer or a qualified electrician to find and correct the problem.

Boat 120 Volt Inlet Cord & Inlet Port

WARNING

DO NOT ATTEMPT TO CORRECT THE WIRING YOURSELF. ELECTRIC SHOCK CAN CAUSE SEVERE INJURY OR EVEN DEATH. ALWAYS HAVE A QUALIFIED ELECTRICIAN CHECK WIRING.

KEEP CHILDREN AWAY FROM ANY ELECTRICAL CABLES OR EQUIPMENT.

WARNING

UNDETECTED FAULTS IN THE AC BATTERY CHARGING SYSTEM COULD CAUSE THE WATER AROUND THE BOAT TO BECOME ENERGIZED. THIS COULD CAUSE A SEVERE SHOCK OR EVEN DEATH TO SOMEONE IN THE WATER NEAR THE BOAT. NEVER SWIM OR ALLOW SWIMMING AROUND THE BOAT WHEN THE BATTERY CHARGING SYSTEM IS ACTIVATED BY THE SHORE POWER CONNECTION.

Procedure For Disconnecting A Shore Connection

Turn the disconnect switch or circuit breaker on the dockside outlet to the OFF position. Disconnect the cable from the dockside outlet and replace the outlet cap. Disconnect the cable from the boat inlet power cord. Push the boat inlet cord into to the inlet port and close the cap. Store cable.

Battery Chargers

One or two battery chargers, depending on the options selected, are mounted on the side of the center console. There can be a two bank charger for the engine batteries and/or a three bank charger for the optional trolling motor batteries.

AC electrical current is supplied directly to the battery chargers by the shore power cable. The chargers automatically charge and maintain the engine and/or trolling motor 12 volt batteries simultaneously when activated. Each charger is equipped with led lights to indicate the state of charge for each battery.

Charging for the engine batteries also can be monitored by using the voltmeter in the engine gauge cluster. With the charger activated, make sure the battery switch is ON and turn the ignition key switch for the engine to the ON position. DO NOT START THE ENGINE. Then read the voltage on the volt meter. If the batteries are in good condition and charging properly, the voltmeter will indicate between 12 and 14.5 volts. If the reading is below 12 volts, then the battery is not accepting a charge or the charger is not working.

The wires that supply DC charging current to the batteries are protected by an internal fuse in the battery charger and external fuses, one for each battery output wire, located near each battery. The external fuses protect the DC charging circuit from the batteries to the charger. The internal fuses in the charger protect the DC charging circuit from the charger to the batteries. See the battery charger manual for more information.

Typical Engine Battery Charger

Battery Charger Output Wire Circuit Protection

6.8 Electrical System Maintenance

General System Maintenance

At least once a year, spray all exposed electrical components behind the helm, in the stern bilge area and in the plugs with a protector. Removable light fixture bulbs should be removed and the metal contact areas coated with a non-water soluble lubricant like Teflon or Silicone grease. The sockets should be sprayed with a protector. Care must be taken not to get any oil or grease on the glass portion of the bulbs as this will cause the bulb to overheat and burn out.

Notice:
Most LED light fixtures are sealed and not serviceable.

CAUTION

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

Check all below deck wiring to be sure it is properly supported, that the insulation is sound and that there are no loose or corroded terminals. Corroded terminals should be thoroughly cleaned with sandpaper or replaced, tightened securely and sprayed with a metal and electrical protector. Inspect all engine wiring.

Your boat is equipped with batteries that were supplied by your Crevalle dealer. Some batteries are sealed, maintenance free batteries that do not require inspection or service. However, if your boat is equipped with standard wet cell type batteries that are not maintenance free, they will require the following inspection and service.

Check the electrolyte level in the batteries regularly and add distilled water as necessary. If the batteries are frequently charged by an automatic battery charger, the electrolyte level will have to be checked more often. The correct fluid level in the cells is approximately 1/4 to 1/2 inch above the plates. If fluid is needed, fill to the proper level with distilled water. Do not over fill and only use distilled water!

Keep all battery tops clean and dry. Dirt and water can conduct electricity from one post to the other causing the battery to discharge.

The battery posts on all batteries should be kept free of corrosion. Remove the cables and clean the posts and cable clamps with a battery post cleaner or sandpaper as required. Coating the battery posts and cable clamps with Teflon or Silicone grease will protect them and reduce corrosion. Battery cables, both hot and ground, must be replaced when they show signs of corrosion or fraying. Deteriorated cables cause a considerable voltage loss when high currents are drawn, as for starting the engine.

WARNING

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

WARNING

CORROSION ALLOWED TO BUILD ON THE ELECTRICAL CONNECTORS CAN CAUSE A POOR CONNECTION RESULTING IN SHORTS OR POOR GROUND CONNECTIONS. ELECTRICAL CONNECTORS SHOULD BE CHECKED AT LEAST ANNUALLY AND CLEANED AS REQUIRED. DO NOT ALLOW CORROSION TO BUILD ON CONNECTIONS.

THE ELECTRICAL SYSTEM SHOULD ALWAYS BE DISCONNECTED FROM THE POWER SOURCE BEFORE INSPECTING OR SERVICING THE SYSTEM. NEVER SERVICE ANY COMPONENT OF AN ELECTRICAL SYSTEM WHILE IT IS ENERGIZED.

NOTES

Chapter 7:

FRESH WATER SYSTEM

7.1 General

The optional fresh water shower system consists of a potable water tank, distribution lines and a distribution pump. The pump is equipped with an automatic pressure switch and is located in the stern bilge aft of the water tank.

CAUTION

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

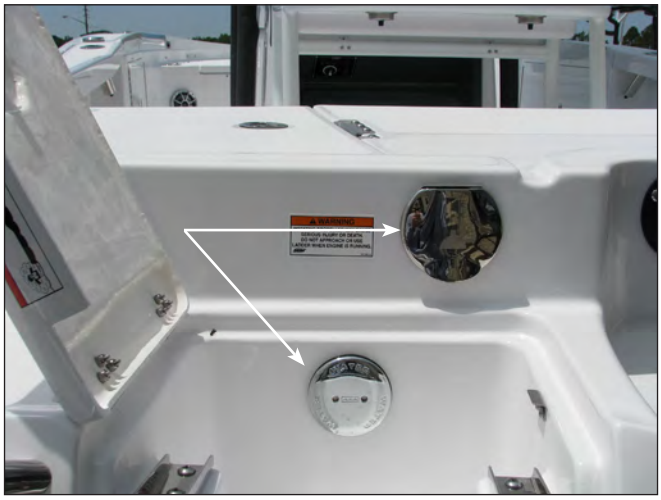
WARNING

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

7.2 Fresh Water System Operation

Fill the water supply tank slowly through the labeled deck plate located on the port side of the transom in the boarding ladder compartment. After filling the water tank, activate the shower head. The Fresh Water switch on the helm switch panel should be on. Allow the pump to run until all of the air is purged from the system and a steady stream of water is flowing. Turn off the shower. As the pressure builds, the pump will automatically shut off.

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



Fresh Water Fill & Fresh Water Shower

Fresh & Raw Water Pump Location In Stern Bilge

Whenever the boat is left unattended, the Fresh Water switch should be placed in the OFF position.

CAUTION

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

Fresh Water Shower

The fresh water shower is located in the transom above the ladder compartment. It is equipped with a spray head on a retractable hose. To use the shower, pull the shower head out of the recess. Activate the shower with the thumb activated valve on the spray head. Make sure the Fresh Water switch in the helm switch panel is activated before using the shower.

Fresh Water Shower Head

7.3 Mister System (Optional)

A High pressure misting system with nozzles incorporated into the hardtop above the helm could be installed as optional equipment. When activated by a switch in the hardtop switch panel, a dedicated booster pump supplied by the freshwater system delivers a continuous supply of water at high pressure to the nozzles. The system produces an ultra fine water mist that significantly lowers the temperature at the helm.

A dedicated water strainer on the intake hose for the mister booster pump protects the system from debris that could clog mister nozzles. The system is also equipped with an automatic drain valve that drains water from the nozzle pressure lines when the system is turned off to help prevent scale buildup at the nozzles. The mister pump strainer should be cleaned at the same time the freshwater pump strainer is cleaned.

Refer to the mister system operation manual for additional information and instructions for the mister system.

Mister Booster Pump Mounted In Center Console

7.4 Fresh Water System Maintenance

Information supplied with water system components by the equipment manufacturers is included with this manual. Refer to this information for additional operation and service data.

Routine Maintenance

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

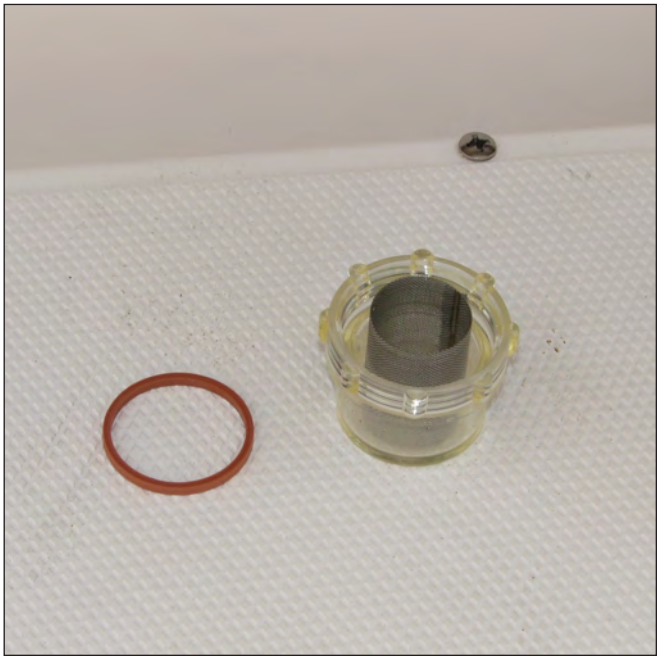
- Periodically remove and clean the fresh water pump and mister booster pump strainers. The fresh water pump strainer is located near the intake side of the fresh water pump. The mister strainer is located in the mister pump supply hose near the pump or the fresh water tank. To clean the strainer, make sure the Fresh Water switch is off. Rotate the strainer bowl counterclockwise to release it. Remove and clean the screen with fresh water. Lubricate the O-ring lightly with Teflon or silicone grease and reinstall the strainer bowl.
- Remove the filter screen from the shower head and eliminate any accumulation of debris. A build up of debris can cause the pump to cycle excessively.
- Periodically spray the pump and metal components with a metal protectant.
- The batteries must be properly maintained and charged. Operating the pressure pump from a battery with a low charge could lead to pump failure.
- Add a commercially available potable water conditioner to the water tank to keep it fresh.

Notice:
The fresh water system must be properly winterized prior to winter lay-up. Refer to the section on winterizing for more information.

CAUTION

THE FRESH WATER SWITCH SHOULD BE PLACED IN THE "OFF" POSITION WHENEVER LEAVING THE BOAT UNATTENDED OR WHEN THE FRESH WATER SYSTEM IS NOT IN USE.

Fresh Water Pump and Strainer


Typical Fresh Water Pump Strainer Removed for Cleaning

Sanitizing The Fresh Water Tank

The fresh water system should be sanitized if it has not been used for a long period or you are unsure of the quality of the water in the system.

The following steps can be used to sanitize the system:

- Activate the system and pump out as much water as you can.
- Make a chlorine solution by mixing two ounces of household chlorine bleach in a gallon of water. This mixture will treat approximately fifteen gallons. If the water tank on your boat is larger or smaller than 15 gallons, then adjust the mixture accordingly. Always mix the chlorine with water in a separate container first and never add straight chlorine to the fresh water tank.
- Fill the water tank half full with fresh water and pour the mixture into the water tank. Top off the tank.
- Activate the system and allow the water to run for about one minute at each faucet. Let the treated water stand for 4-6 hours.
- Drain the system by pumping it dry and flush with several tank fills of fresh water.
- The system should now be sanitized and can be filled with fresh water. If the chlorine smell is still strong, it should be flushed several more times with fresh water.

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

Chapter 8:

RAW WATER SYSTEM

8.1 General

In the raw or seawater systems, the baitwell and release well water pumps are mounted to seacocks on thru-hull fittings located in the stern bilge. The water system pressure pump is connected to an auxiliary supply fitting at the base of the starboard pump. Always make sure the seacock valves are open before attempting to operate any component of the raw water system.

Priming The System

Make sure both seacock valves are open and the Raw Water switch in the helm switch panel is on. Run the pressure pump by turning on the raw water washdown hose until all of the air is purged from the system. Then turn the hose off. Turn the Starboard Release Well/Baitwell pump switch to the ON position and run the pump until all of the air is purged from the release well and baitwell supply systems. Then turn the pump off. Repeat this process to prime the port release well.

The intake fittings for the release well/baitwell centrifugal pumps are an anti-venture design with an ON/OFF valve. If a pump runs but will not prime, make sure the valve is open. If the pump still won't prime, it may be air locked. Make sure the valve is open and run the boat at or above 15 M.P.H. Water pressure from the intake fitting will force feed water to the pump pushing the trapped air through the pump and allow it to prime. If this procedure doesn't work, contact your Crevalle dealer.

Closing the thru-hull valves before the boat is hauled from the water will help to eliminate air locks in raw water systems. The valves should also be closed whenever you leave the boat in the water unattended.

Notice:
It may be necessary to reprime the raw water system if it is not used for an extended period and at the time of launching.

Starboard Release Well/Baitwell Pump
& Washdown Pump Supply Hose Fitting

Port Release Well Pump & Seacock ON/OFF Valve

8.2 Raw Water System Operation

A high pressure pump, controlled by a pressure sensor, is activated by the Raw Water switch located in the helm switch panel. When activated, the pressure switch will automatically control the pump that supplies the raw water hose connector.

As the pressure builds in the system, the pump will shut off. When the system is in use and the pressure drops, the pump will turn on. The water system is equipped with a strainer on the intake side of the pump. The strainer should be checked frequently and cleaned as necessary.

Whenever the boat is left unattended, the Raw Water switch should be placed in the OFF position.

Raw Water Washdown Pump & Strainer

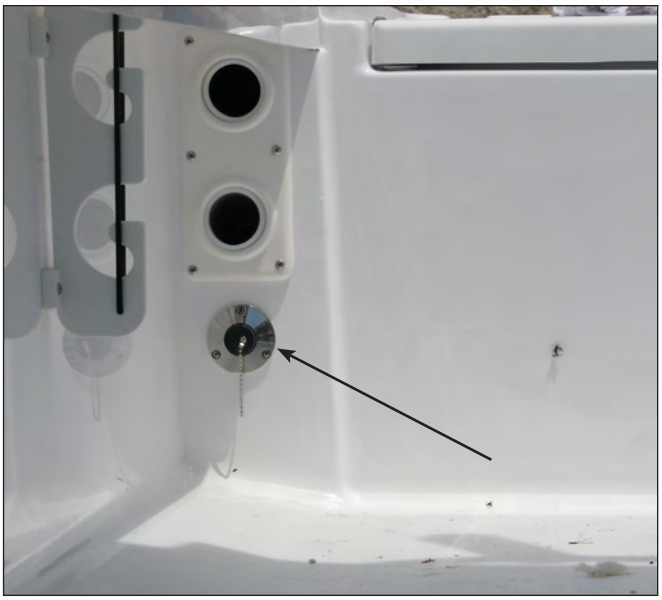
Washdown Hose Connector

The raw water washdown hose connection is located on the starboard rear of the cockpit and uses a standard garden hose connector. The outlet is equipped with a cap attached to a chain on the outlet. The cap should be installed whenever the hose is not attached to the outlet.

Make sure the Raw Water switch in the helm switch panel is on before using the washdown hose.

CAUTION

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



Washdown Hose Connection & Cap

8.3 Release Wells

Seawater is provided to the release wells by 12 volt centrifugal pumps. Each pump is designed to carry a constant flow of water to the release well it supplies. The pumps do not have a pressure sensor and are activated by switches in the helm switch panel. There is also a light in each well that is activated by the switch.

An overflow tube in each drain fitting automatically controls the water level. Always turn the pumps off when the release wells are not in use.

Typical Washdown Hose

To fill the release wells, slide the standpipe protector out of the well and insert the overflow tube into the drain fitting. Then replace the standpipe protector. Make sure the seacock valves for each pump are open. Then activate the pump for each well. When the water level reaches the overflow, it will begin to circulate and aerator valves in each well will automatically add oxygen to the water as it circulates through the system.

Notice:
The starboard release well and the baitwell are supplied by the starboard pump. The baitwell is equipped with an adjustable supply valve that can be turned off to stop the flow of water to the baitwell when it is not being used or adjusted to balance the water flow between the release well and baitwell when both wells are in use.

The raw water intakes for the pumps are an anti-venturi design that will supply water to the release wells if a pump should fail and helps prime the system during normal operation. To supply water to a release well using the pickup, make sure the seacock valve is open and run the boat at a speed above 15 miles per hour. Water will circulate through the well and out the overflow.

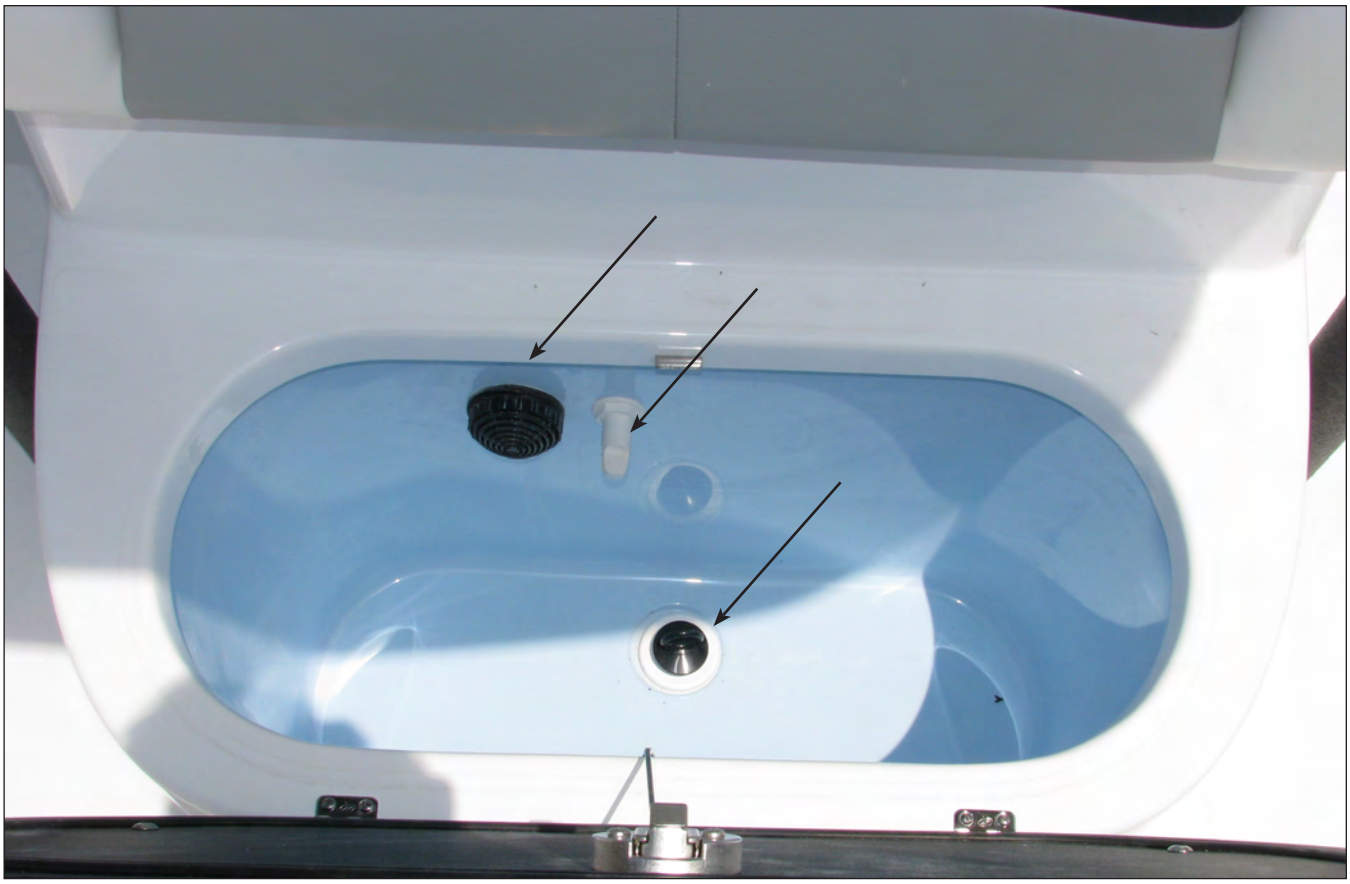
To drain the release wells, turn off the pump and remove the overflow tube from each drain fitting. When the well has completely drained, use the washdown hose to flush the wells and drain fittings of debris.

The pump seacock valves should be closed whenever the wells are not in use. This will prevent water from entering the release wells while the boat is cruising.

Notice:
Do not use a release well as a dry storage area when it is not in use. Seawater could accidently be delivered to the wells from the thru-hull fitting and damage equipment stored there.

Release Well & Standpipe

Release Well With Standpipe Protector Slid Out Protector



Baitwell, Supply Valve, Drain Plug & Overflow

8.4 Baitwell

Seawater is provided to the baitwell by the starboard 12 volt centrifugal pump. This pump supplies the starboard release well and the baitwell. It is designed to carry a constant flow of water to the wells. The pump does not have a pressure sensor and is activated by the Starboard Release Well/Baitwell switch in the helm switch panel. There is also a light in the baitwell that is activated by the switch.

An overflow built into the baitwell automatically controls the water level. Always turn the pump off at the switch panel when the wells are not in use.

To fill the baitwell, insert the plug into the drain fitting at the bottom of the well. Make sure the seacock for the starboard pump is open. Then activate the pump. If you are using the starboard release well and the baitwell, close the baitwell supply valve until the release well is filled to the top of the overflow, then open the baitwell supply valve until the baitwell fills to the overflow and begins to circulate. Then adjust the baitwell supply valve to balance the flow between the release well and baitwell.

To drain the baitwell, turn off the pump and remove the plug in the drain fitting at the bottom of the well. When the well has completely drained, use the washdown hose to flush the well and drain of debris.

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

The baitwell can be converted to an insulated cooler by turning off the supply valve.

⚠ CAUTION ⚠

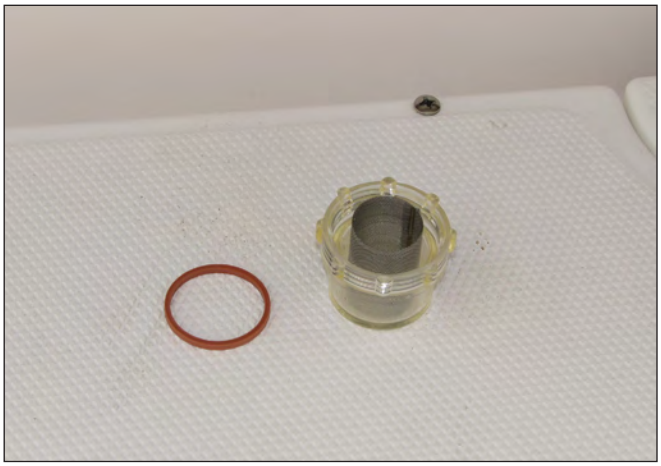
A RUPTURED RAW WATER INTAKE OR PRESSURE LINE COULD CAUSE THE BOAT TO TAKE ON WATER. ALWAYS TURN THE RAW WATER SYSTEMS OFF AND CLOSE THE THRU-VALVES WHEN LEAVING THE BOAT UNATTENDED.

8.5 Recirculation Systems

Recirculation systems on the release wells and the baitwell are available as optional equipment. Each recirculating system is powered by a separate pump for each well and only recirculates and aerates the existing seawater in the well, it does not deliver additional water to the well.

Once the baitwell or release well water level is up to the overflow, the recirculating system can be activated, if desired, to increase current in the well or provide additional aeration. The recirculating system is activated by switches in the helm switch panel. The switches are labeled for each well they activate. To avoid damage to recirculating pumps, always make sure the recirculating system is turned off before draining the well.

Raw Water Pump Strainer


Typical Fresh Water Pump Strainer Removed for Cleaning

8.6 Raw Water System Maintenance

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

- Check hoses, particularly the seawater supply lines, for signs of deterioration. Tighten fittings or replace deteriorated hoses and components as necessary.
- Periodically remove and clean the water strainer located near the intake side of the washdown pump. To clean the strainer, make sure the Raw Water switch is off and close the valve at the thru-hull fitting. Rotate the strainer bowl counterclockwise to release it. Remove and clean the screen with fresh water. Lubricate the O-ring lightly with silicon or Teflon grease and reinstall the strainer bowl.
- Spray pumps and thru-hull valves with a protective oil periodically.
- Release wells and the baitwell should be drained and cleaned after each use.
- Operate all seacock valves at least once a month to keep them operating properly.

CAUTION

SHOULD A HOSE RUPTURE, TURN THE PUMP OFF IMMEDIATELY. ALWAYS CLOSE THE THRU-HULL VALVE WHEN PERFORMING MAINTENANCE ON A SEAWATER PUMP.

THE BATTERIES MUST BE PROPERLY CHARGED. OPERATING ANY PUMPS FROM A BATTERY WITH A LOW CHARGE MAY LEAD TO A PUMP FAILURE.

THE RAW WATER SYSTEM MUST BE PROPERLY WINTERIZED PRIOR TO WINTER LAY-UP. SEE SECTION ON WINTERIZING.

NOTES

Chapter 9:

DRAINAGE SYSTEMS

9.1 General

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

9.2 Cockpit Scupper Drains

Your Crevalle has two scupper drains located in the rear of the cockpit. External check valves reduce the surge of seawater through the scuppers and into the cockpit while maneuvering or in rough water. The check valves should be inspected periodically to make sure they are free, clear of debris and not damaged.

Cockpit Scupper Drains

A removable drain plug near the cockpit scuppers in the cooler recess below the bench seat allows the cockpit to be drained to the bilge if the scupper drains become clogged. Make sure the drain plug is installed and tight when draining operations are complete.

Cockpit To Bilge Drain Plug

Water is channeled away from all hatches by a gutter or drain rail system. The water then drains overboard through the scupper drain system or thru-hull fittings below the hatch drain rail.

9.3 T-Top/ Spotting Tower Drains

There is a hole drilled in the leg bases on the frame to prevent water from being trapped within the legs. Additional drain holes are drilled in the tubing to drain other areas as required.

Always make sure the leg drain holes are clear when the boat is laid up for the winter. Water trapped inside the legs could freeze and cause the legs to split.

Scupper Drain Thru-Hull Fittings With Check Valves

9.4 Bilge Drainage

Standard Stern Bilge Pump

The stern bilge pump is activated both manually by a switch in the helm switch panel and automatically by a float switch built into the pump. The automatic float switch remains activated when the battery switch is in the OFF position and the batteries are connected. The bilge pump pumps water out of a thru-hull fitting located above the waterline in the hull.

The manual bilge pump should be activated briefly each time the boat is used. This will ensure that it is operating properly and increase the service life of the pump. The automatic switch should be manually activated periodically to verify operation by turning the test knob on the side of the pump. This is particularly important before operating your boat offshore.

Refer to the Electrical Systems chapter and the bilge pump operating manual for additional information on bilge pump operation.

Standard Automatic Bilge Pump & Auto Switch Test Knob

High Water Bilge Pump (Optional)

A high water bilge pump with a built in automatic switch could be installed as optional equipment. The pump is mounted above the normal operating range of the standard stern bilge pump and automatic switch.

The automatic switch activates the high water pump if the bilge water level rises above the normal operating range of the stern bilge pump automatic switch. The switch is connected to the engine batteries and is protected by a fuse or circuit breaker near the battery switch panel. It remains activated when the battery switch is in the OFF position and the batteries are connected.

The automatic switch should be manually activated periodically to verify operation by turning the test knob on the side of the pump. This is particularly important before operating your boat offshore.

Bilge Drain Plug

Notice:
Refer to the Electrical Systems chapter and the bilge pump operator's manual for additional information on bilge pump operation.

Transom Drain Plug

When the boat is out of the water the bilge can be drained by a garboard drain located in the transom near the bottom of the hull. The plug should be removed whenever the boat is hauled out of the water and installed just prior to launching. It is important to check the drain plug regularly to make sure it is tight.

WARNING

A LOOSE DRAIN PLUG WILL ALLOW SEAWATER TO ENTER THE BILGE, DAMAGING COMPONENTS AND CREATING A POTENTIALLY HAZARDOUS SITUATION. IT IS VERY IMPORTANT TO CHECK THE DRAIN PLUG FREQUENTLY TO ENSURE IT IS PROPERLY TIGHTENED.

Important:
Any oil spilled in the bilge must be thoroughly removed and properly disposed of before operating the bilge pump. The discharge of oil from the bilge is illegal and subject to a fine.

CAUTION

THE FEDERAL WATER POLLUTION CONTROL ACT PROHIBITS THE DISCHARGE OF OIL OR OILY WASTE INTO OR UPON THE NAVIGABLE WATERS OF THE UNITED STATES OR THE WATERS OF THE CONTIGUOUS ZONE IF SUCH DISCHARGE CAUSES A FILM OR SHEEN UPON OR A 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 $10,000.

9.5 Baitwell & Release Well Drains

Release Wells

Both release wells are drained by gravity to thru-hull fittings in the hull sides. The overflow in each well drains into the overboard drain system.

To drain the release wells, make sure the pumps are turned off and remove the overflow pipe in each well.

Baitwell

The baitwell is drained by gravity to a thru-hull fitting in the hull side. The overflow drains into the overboard drain system.

To drain the baitwell, make sure the pump is turned off and remove the drain plug in the bottom of the baitwell.

9.6 Rod Locker/Fishbox Drains

The forward rod lockers and fishbox drain by gravity to thru-hull fittings in each hull side. Make sure to flush the fishbox and both rod lockers with freshwater after using the fishbox.

Rope Locker Drain Fitting

9.7 Cockpit Equipment & Storage Compartment Drains

Cup Holder Drains

All cup holders in the helm and cockpit areas drain by gravity to the cockpit sole or to the compartment below the cup holder.

Leaning Post Drains

The storage compartment below the leaning post seat drains to the cockpit sole. Make sure to inspect the drain frequently and remove any accumulated debris.

There is a hole drilled in the leg bases on the frame to prevent water from being trapped within the legs. Additional drain holes are drilled in the tubing to drain other areas as required.

Always make sure the leg drain holes are clear when the boat is laid up for the winter. Water trapped inside the legs could freeze and cause the legs to split.

Below Deck Storage Compartment

The below deck storage compartment in the forward cockpit drains to the bilge. The hatch drain rail drains by gravity to the overboard drainage system for the baitwell and fishbox/rod lockers.

9.8 Anchor Locker Drain

The anchor locker drains overboard thru a drain hole in the bottom of the locker and a thru-fitting in the hull. It is important to inspect the drain frequently and remove any accumulated debris.

9.9 Drainage System Maintenance

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

- Clean the cockpit drain rails with a hose to remove debris that can block water drainage.
- Clean the T-Top and leaning post frame and leg drain holes. This is especially important just before winter lay-up.
- Clean the bilge pump strainers of debris and check the bilge for foreign material that can cause the automatic switch to malfunction.
- Frequently test the automatic bilge pump switches for proper operation.
- Flush all gravity drains with fresh water to keep them clean and free flowing.
- Clean and flush the fishbox, forward rod lockers and storage boxes with soap or a bilge cleaner and fresh water after each use to keep them clean and fresh.
- Clean and flush the release wells and baitwell with fresh water after each use to keep them clean and fresh.

Notice:
Never use soap or any type of cleaning solution when flushing the release wells and baitwell. Residue from soap and cleaning solutions can kill live bait and fish.

- Operate all seacock valves at least once a month to keep them operating properly.

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

CAUTION

NEVER USE HARSH CHEMICAL DRAIN CLEANERS IN MARINE DRAIN SYSTEMS. PERMANENT DAMAGE TO THE HOSES AND FITTINGS MAY RESULT.

Chapter 10:

EXTERIOR EQUIPMENT

10.1 Deck

Deck Hardware

The rail system and hardware fittings have been selected and installed to perform specific functions. Hand rails are installed to provide a handhold in certain areas of the boat. You should make sure you keep at least one hand on the handholds as you move about the boat.

Fenders or mooring lines should be secured to the cleats and not to rails or hand rails. The cleats on your boat are retractable and flush with the deck when not in use. To use the cleats, pull up on the center of the cleat until it locks in the mooring position. Be sure a clear lead exists when running dock lines or anchor lines.

An optional stainless steel bow cleat that is also a lifting ring is an available option. It is flush with the deck when it is not in use. To use the cleat, pull up on the center of the cleat until it locks in the mooring position. A stainless steel threaded rod connects the lifting ring/cleat to the bow eye, transferring the lifting load to the hull. If your boat is equipped with this option, the bow lift ring/cleat and rod hardware should be checked at least once a year to make sure it is sound and tight.

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

⚠ WARNING ⚠

CREVALLE BOATS ARE NOT EQUIPPED WITH HARDWARE DESIGNED FOR TOWING PURPOSES. THE MOORING CLEATS ARE NOT TO BE USED FOR TOWING ANOTHER VESSEL OR HAVING THIS BOAT TOWED.

Anchor/Rope Locker

The anchor/rope locker is in the bow of the boat and accessed through a hatch in the deck. A flush, "push to close" latch secures the hatch in the closed position. Always make sure the hatch is closed and latched before operating the boat above idle speed.

Typical Cleat

Anchor Rope Locker

The anchor line is always stored in the locker. If the anchor is stored in the anchor locker, it must be properly secured to prevent it from bouncing in the locker and causing damage to the hull or anchor locker. The anchor locker has a molded cradle designed to secure a fluke style anchor.

The anchor locker is designed for only one fluke style anchor that is properly secured in the cradle. Do not store additional anchors or any heavy object in the anchor locker. Heavy objects like weights for floating markers will bounce and damage the hull or

rope locker if they are stored in the anchor locker. Always store and secure additional anchors and weights in a storage compartment in the cockpit, as far aft as possible.

The anchor locker is drained by a thru-hull fitting in the hull side near the bottom of the locker. It is very important to check the drain frequently to make sure it is clean and free flowing.

CAUTION

THE ANCHOR MUST BE POSITIONED SO IT DOES NOT REST DIRECTLY AGAINST THE SIDES OF THE LOCKER AND BE PROPERLY SECURED AT ALL TIMES WHEN IT IS STORED IN THE ANCHOR LOCKER. A LOOSE ANCHOR IN THE ANCHOR LOCKER WILL BOUNCE AND CAN DAMAGE THE BOAT. DAMAGE RESULTING FROM THE ANCHOR BOUNCING IN THE ANCHOR LOCKER IS NOT COVERED BY THE CREVALLE WARRANTY.

Periodically remove the anchor line from the locker, rinse it with fresh water and allow it to dry in the sun. Cleaning the anchor line regularly will reduce odors in the anchor locker and increase the life of the line.

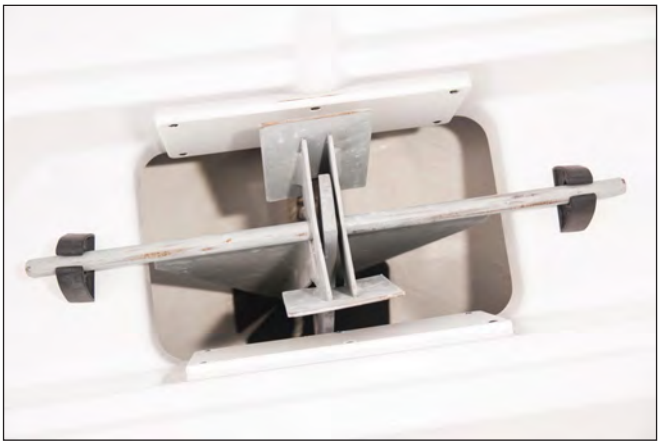
The line should also be inspected for abrasions or signs of deterioration. Replace the line if it shows any sign of damage or deterioration.

Trolling Motor (Optional)

A trolling motor mounted near the bow can be installed as optional equipment. The features, operation and controls are unique to the trolling motor system and options you choose. A special DC electrical circuit activated by a heavy duty main circuit breaker near the battery switch connects the three trolling motor batteries in series to supply 36-volt current to the trolling motor system. Make sure the 36-volt circuit is activated before using the trolling motor and turned off when the system is not in use. Refer to the 36 Volt Trolling Motor System section of the Electrical System chapter for additional information on the trolling motor electrical system.

A special heavy duty outlet plug with a protective cover, located in the forward bow backrest cushion provides the connection for the trolling motor. The momentary Motor Up/Motor Down switch in the panel next to the plug allows the operator to tilt the outboard engine from the bow fishing seat for shallow water operation.

An owners manual will be included with the trolling motor. It is essential that you read the manual and be completely familiar with the operation of the



Anchor Properly Secured in Locker Cradle

Typical Trolling Motor

Trolling Motor Outlet Panel

trolling motor and the trolling motor controls before using your boat.

10.2 Hull

Engine Mounting System

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

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

Engine Mounting System

Hydraulic Jack Plate

Your boat is equipped with a hydraulic Jack Plate engine mounting system that allows the operator to raise and lower the engine with a switch at the helm. The engine can be moved up for shallow water operation and moved down for normal operation.

In some situations, the engine rigging and boat transom can be damaged if the engine is tilted to the full up position with the Jack Plate set too low. Typically, the Jack Plate should be raised to level 3 or 4 before tilting the engine to the full up position.

Please refer to the Hydraulic Jack Plate section of the Helm Control Systems chapter for additional information on Jack Plate precautions and operation.

Hydraulic Jack Plate

Boarding Platform And Ladder

Your boat is equipped with an integral, fiberglass boarding platform in the stern of the boat. The platform is equipped with a gelcoat non-skid surface.

A telescoping boarding ladder is recessed into a compartment in the swim platform below a special hatch. The compartment is drained overboard to a thru-hull fitting below the platform in the trim tab recess.

To use the ladder, make sure the engine is off and the steering wheel is turned straight ahead or slightly to starboard to move the prop as far away from the ladder as possible. Open the ladder compartment hatch and rotate the ladder out of the recess to the down position. Release the strap securing the ladder in the retracted position, then pull to extend the ladder out to the extended position. The ladder must be retracted and folded into the recess with the hatch closed and latched before starting the engine.


Boarding Platform & Ladder Hatch

When using the stern ladder in an unassisted boarding situation in deep water, hold the transom hand rail for stability, open the ladder hatch and rotate the ladder out of the recess to the down position. Release the strap securing the ladder in the retracted position, then use your free hand and feet to extend the ladder to the extended position. Use the hand rail and ladder for stability while boarding. Remember to retract the ladder, fold it into the recess and close the hatch before starting the engine.

Telescopic Ladder Extended

Optional Swim Platforms And Boarding Ladder

An optional port side swim platform or a port and starboard side platform could be mounted to the transom, depending on the options selected. A telescopic boarding ladder is recessed into the port swim platform.

To use the ladder, make sure the engine is off and the steering wheel is turned straight ahead or slightly to starboard to move the prop as far away from the ladder as possible. Rotate the ladder out of the recess to the down position. Release the strap securing the ladder in the retracted position, then pull to extend the ladder out to the extended position. The ladder must be retracted and folded into the recess before starting the engine.


Optional Port Side Swim Platform & Boarding Ladder

⚠ WARNING ⚠

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

When using the swim platform ladder in an unassisted boarding situation in deep water, hold the top ladder rail for stability and rotate the ladder out of the recess to the down position. Release the strap securing the ladder in the retracted position, then use your free hand and feet to extend the ladder to the extended position. Use the top rail for stability while boarding. Remember to retract the ladder and fold it into the recess before starting the engine.

Trim Tabs

The trim tabs are located on the transom. The trim tabs are an important part of the control systems. Refer to the Helm Control Systems chapter for detailed information on the operation and maintenance of the trim tabs.

Trim Tab

Under Water Lights & Power-Pole

Underwater Lights (Optional)

LED underwater lights are mounted in the transom, below the water line. The lights are activated by ACC/UW Lights switch at the helm and should only be used when the boat is in the water with the lights submerged.

Power-Pole™ (Optional)

The Power-Pole is mounted on the transom and activated by a switch in the helm. It is a hydraulically powered fiberglass stake designed to stop and hold your boat in up to eight feet of water. The unit is designed to hold your boat while fishing in relatively calm waters. Never leave your boat unattended with the Power-Pole™ as the primary anchorage. It is equipped with a safety relief valve in the hydraulic system that will release the pole to protect your boat's transom in high winds or if the pole is accidently left down when the boat is moved. The relief valve also allows the stake to be lifted manually if the hydraulic system fails.
The Power-Pole must be in the full up position whenever the boat is operating at high speeds. When trailering, make sure it is properly secured with the travel strap. An owners manual for the Power-Pole is included with your boat. It is essential that you read the manual and be completely familiar with the Power-Pole operation before using your boat.

⚠ WARNING ⚠

THE POWER-POLE IS A POWERFUL HYDRAULIC UNIT THAT CAN CAUSE SERIOUS INJURY IF IT IS ACTIVATED WHEN SOMEONE IS HOLDING ON TO THE TRANSOM UNIT OR IS IN THE WATER BELOW THE POLE. ALWAYS CHECK TO MAKE SURE NO ONE IS NEAR THE TRANSOM UNIT BEFORE ACTIVATING THE POWER-POLE.

- **KEEP YOUR HANDS AND CLOTHING COMPLETELY CLEAR OF THE POWER-POLE AT ALL TIMES.**
- **DO NOT USE THE POWER-POLE AS A STEP OR HANDLE TO ENTER OR EXIT THE BOAT.**
- **NEVER ALLOW CHILDREN TO PLAY WITH OR AROUND THE POWER-POLE.**
- **BE SURE TO HAVE THE POWER-POLE IN THE FULL UP POSITION WHEN OPERATING THE BOAT AT HIGH SPEEDS.**
- **BE SURE THE POWER-POLE IS PROPERLY SECURED WITH THE TRAVEL STRAP WHEN EVER THE BOAT IS ON THE TRAILER.**

10.3 Cockpit Features

General

Most hatches and doors in the cockpit are secured with special cam action, draw or "push to close" latches. Special hinges are used on some hatches that hold them in the open position.

Some hatches are secured with special flush mounted, twist lock latches with handles that store flush in the latch when in the latched position. Always make sure that all hatches are closed with the latches in the secured position before operating the boat above idle speed.

Round access plates located in the sides of the cockpit liner provide access to hoses and fittings near the bow. Service ports in cockpit storage compartments provide access to fill hoses and fittings. Another access plate in the cockpit sole provides access to fuel supply lines, fuel gauge sender and the fuel fill and vent hose connections on the fuel tank.

WARNING

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

Aft Seat

Your boat is equipped with a aft seat. The seat backrest is designed to fold flush with the rear deck, converting the seat to a casting deck. The backrest is secured in the folded position by a draw latch. A special cam action hinge holds the backrest in the seat position.

To use the seat, release the latch and rotate the backrest to the seat position. To convert the seat to a casting deck, fold the backrest forward until it lays flat on the seat cushion. Press down on the backrest and secure it in the folded position with the draw latch.

When the backrest is in the folded position, the seat assembly can be raised to provide access to the stern bilge and equipment installed there. To

Aft Seat Backrest Folded & Secured With Draw Latch

Aft Seat Assembly Spring Latch & Lanyard

Aft Seat Raised & Supported With Strut

raise the seat, make sure the backrest is folded down and secured with the draw latch. Then release the latch on the port side of the seat base by pulling forward on the lanyard attached to the latch. Raise the front of the seat assembly and rotate it to the full up position. Support it with the strut that swings down from the port side of the seat base to the seat support on the side of the cockpit.

To lower the seat, make sure the access hatch is installed then raise the seat assembly slightly and swing the strut parallel with the back of the seat. Lower the seat assembly to the cockpit supports and press down firmly to engage the spring latch and secure the seat in the down position.

Notice:
Periodically inspect the seat latches, hinges and support for wear, damage or loose fit. Any problems should be corrected immediately.

WARNING

PASSENGERS SITTING OR STANDING ON THE REAR DECK WHILE THE BOAT IS CRUISING COULD LOOSE THEIR BALANCE AND FALL OVERBOARD INTO THE BOAT PROPELLER OR BE LOST IN OPEN WATER. ALWAYS MAKE SURE PASSENGERS RIDING IN THE REAR OF THE COCKPIT ARE PROPERLY SEATED IN THE AFT SEAT WHENEVER THE BOAT IS UNDERWAY.

Bilge Access Hatch Below Aft Seat

Aft Cooler

Stern Bilge Access Hatch

There is a removable access hatch at the rear of the cockpit below the aft seat that provides access to the fuel filter, bilge pump, seawater pumps, fresh water pump and other equipment mounted in the stern bilge.

With the aft seat supported in the raised position, remove the cooler, if it is installed, then release the latch on the stern bilge access hatch. Open the hatch slightly then raise it straight up to remove it and access the stern bilge. Place the hatch in a safe location. Always make sure this hatch is closed and properly secured before operating the boat.

Aft Cooler (Optional)

If your boat is equipped with the optional aft cooler, it will be secured in special chocks mounted to the cockpit with adjustable straps.

To access the cooler, raise the aft seat assembly and support it in the UP position with the strut. To remove the cooler, raise and support the aft seat. Then loosen and remove the straps securing the cooler to the cockpit sole. Reverse the process to install the cooler. Make sure the cooler is secured with the straps and the seat assembly is secured in the down position with the spring latch before operating the boat.

Ski Tow Pylon (Optional)

A removable ski tow pylon that mounts just forward of the center of the splashwell is optional equipment. To install the pylon, raise the aft seat and remove the bilge access panel to provide access to bilge and the pylon base plate receiver.

Slide the pylon through the flush deck plate in the aft deck just forward of the splashwell and into the base plate receiver. Align the hole in the pylon with the hole in the base receiver and insert the pin to secure the pylon.

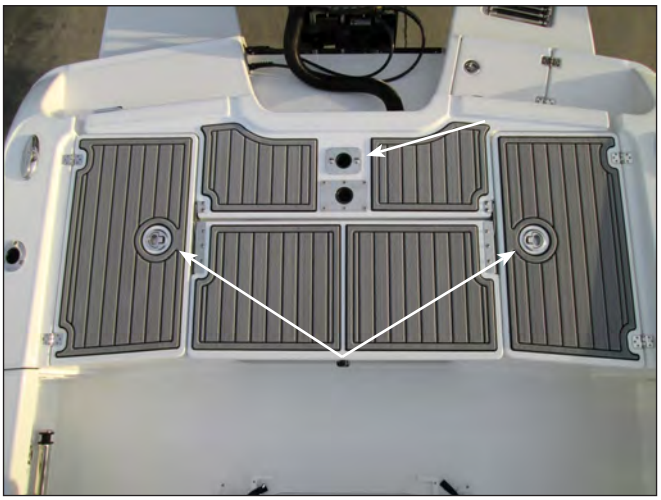
Ski Tow Pylon

Using The Ski Tow Pylon

The tow pylon is designed for pulling one or two averaged sized skiers or wakeboarders. Always use high quality tow ropes with attachment loops when pulling wakeboarders or skiers. The tow rope should always be attached to the ski tow using the attachment loops and never tied to the ski tow or to any type of metal hook. Tied ski ropes are very difficult to remove and metal hooks will damage the ski tow. Additionally, metal hooks can cause injury to your skiers or damage the engine cowling if the metal hook breaks under the strain of the tow.

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

Refer to Water Skiing in the Operation chapter for safety information on operating the boat with a skier.



Stern Release Wells & Ski Tow Pylon Deck Plate

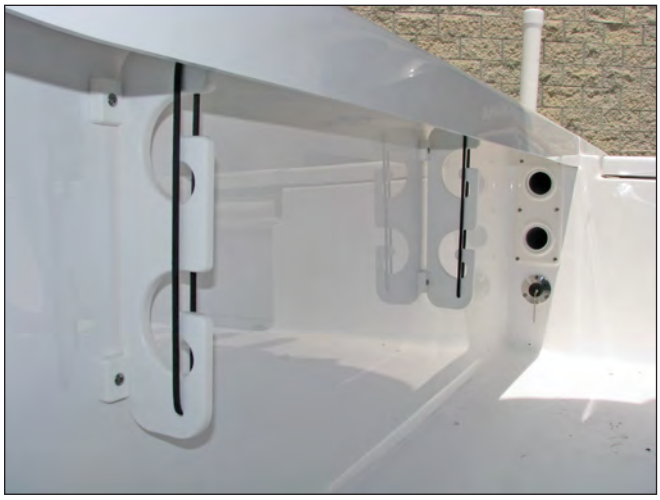
Stern Release Wells

A release well is located on each side of the aft deck, just forward of the engine. Each release well is equipped with a fiberglass hatch secured with a flush mounted twist lock latch. The wells drain by gravity to a thru-hull fitting in the hull sides. Always make sure the hatches are closed with the latches in the secured position before operating the boat above idle speed.

Centrifugal pumps located in the stern bilge supply seawater to the release wells and a removable overflow tube controls the water level. The wells should be drained and rinsed clean with fresh water after each use. Refer to the Raw Water System and Drainage Systems chapters for more information on the operation of the release wells.

Rod Racks

There are recessed rod storage racks located below the gunnel on each side of the cockpit. They are equipped with stretch cords to secure the rods to the racks. Always make sure the rods are properly secured in the storage racks with the rod tips forward.



Cockpit Rod Racks

Rod Lockers And Fishbox

There are rod storage lockers located below hatches on either side of the cockpit below the forward casting deck. The hatches are secured with special locking, flush mounted, twist lock latches. Always make sure the hatches are closed with the latches in the secured position before operating the boat above idle speed.

The rod racks are equipped with stretch cords to secure the rods. Always make sure the rods are properly secured to the racks with the rod tips forward.

There is a large compartment located between the rod lockers that can be used as a storage compartment or a fishbox. The hatch is secured with a flush mounted, twist lock latch.

A panel on the port side of the compartment can be opened to expand the compartment into the port rod locker. Twist latches in the rod locker secure the panel in the open or closed position.

The center compartment drains by gravity to the rod lockers which drain overboard to thru-hull fittings in the hull sides.

Rod Lockers & Fishbox

Forward Storage Compartment/Cooler

An storage compartment/cooler is located below the center of the bow casting deck just aft of the anchor locker. Drain rails around the hatch channel water away from the compartment to the cockpit sole. The compartment drains by gravity to the fishbox then overboard through the overboard drain system.

A flush, twist lock latch secures the hatch in the closed position. Always make sure the hatch is closed with the latch in the secured position before operating the boat above idle speed.

Forward Storage Compartment/Cooler

Optional Forward Seat Cushions

Forward Seat Cushions

Forward seat cushions with removable molded backrests are an available option. Snaps and straps with snaps secure the cushions to the bow compartments and cockpit sides. The cushions must be unsnapped to open the hatches for the rod lockers, fishbox or bow storage compartment.

The molded backrest cushions are equipped with a special fitting that slides into a receiver on each side the cockpit. The backrests can be installed to face forward or aft. To install the backrests, align the fitting on the backrest with the receiver on the side of the cockpit. Press firmly to seat the fitting into the receiver.

Optional Backrest Cushions

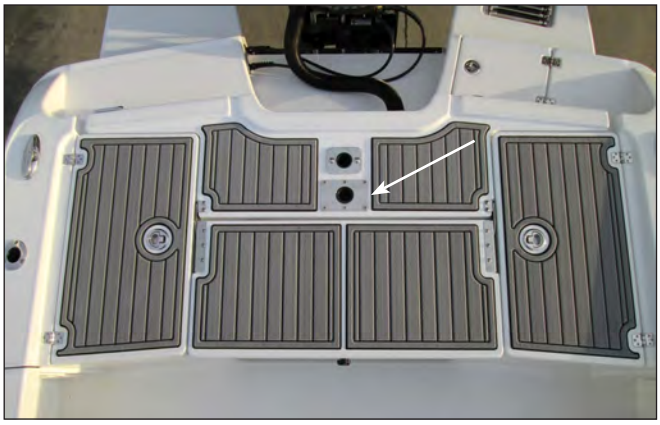
Below Cockpit Storage Compartment

A large storage compartment is located below the center of the cockpit sole, just forward of the center console. Drain rails around the hatch are connected to the overboard drain system. The compartment drains by gravity to the bilge.

The compartment is equipped with a bracket to secure a casting net bucket. It also provides the mounting location for the optional trolling motor batteries and battery trays.

Below Cockpit Storage Compartment

A flush, twist lock latch secures the hatch in the closed position. Always make sure the hatch is closed with the latch in the secured position before operating the boat above idle speed.



Aft Deck Casting Chair Deck Plate

Casting Chairs (Optional)

Deck plates that accept a removable pedestal for a casting chair can be installed on the forward or aft decks as optional equipment.

To use the casting chair, insert the pedestal into the receiver in the center of the forward or aft deck. Press down firmly to seat the pedestal in the receiver. Install the casting chair on the pedestal.

Casting chairs are designed to be used only while fishing at anchor or at trolling speeds. They are not intended to be a passenger seat and should never be used when the boat is cruising or operating above trolling speed.

⚠ WARNING ⚠

A PASSENGER SITTING IN THE CASTING CHAIR WHILE CRUISING OR OPERATING THE BOAT ABOVE TROLLING SPEEDS CAN BE THROWN FROM THE SEAT TO THE COCKPIT OR OVERBOARD BY THE MOTION OF THE BOAT. THIS CAN CAUSE SEVERE INJURY OR EVEN DEATH. THIS SEAT IS DESIGNED TO BE USED ONLY WHILE FISHING AT ANCHOR OR AT TROLLING SPEEDS. NEVER ALLOW A PASSENGER TO SIT IN THE CASTING CHAIR WHILE THE BOAT IS OPERATING ABOVE TROLLING SPEED.

Forward Deck Casting Chair Deck Plate

Side Storage/life Jacket Compartments

There are storage compartments on each side of the cockpit. The compartments are designed to accommodate life jackets or dunnage.

Each compartment drains to the bilge and is accessed by a door secured with a "push to close" latch. Access ports in each compartment provide air circulation to keep jackets dry and help prevent mold and mildew. They also provide access to service hoses and other components installed on the gunnels and in the bilge near the compartments.

Side Storage Compartments

10.4 Leaning Post/Seat & Center Console

Standard Leaning Post

The leaning post/seat is made of welded anodized or powder coated aluminum. The base accommodates a large cooler that is secured with special brackets and straps. It is equipped with a backrest, storage below the cushion, rigging tray, cup holders and rocket launcher type rod holders. Molded in footrests on the rear of the console makes the helm more comfortable when the operator and passenger are sitting or standing at the helm.

The storage compartment below the seat drains to the cockpit sole and is accessed by releasing the snap on the strap located at the center rear of the seat and swinging the seat cushion forward. A retainer cable holds the seat in the open position. Always make sure the seat is closed and secure with the strap and snap before operating the boat.

Standard Leaning Post

Optional Helm Seat/Leaning Post

The optional leaning post upgrade includes helm seats that are equipped with flip up bolsters to provide more room between the seats and the helm. The bolsters convert the seats to a leaning post style seat with a backrest, allowing the operator and passenger to sit or stand at the helm. It is equipped with a rigging tray, cup holders and rocket launcher type rod holders and tackle station. Molded in footrests on the rear of the console makes the helm more comfortable when the operator and passenger are sitting or standing at the helm.

Standard Leaning Post Rigging Tray

To convert each seat to a leaning post, lift the front of the seat cushion to raise the bolster and push it back above the seat cushion. Arm rests on each side provide a more comfortable driving position and swing up into the backrest cushion to make it easier to enter and exit the helm area.

Molded in footrests on the rear of the console makes the helm more comfortable when the bolsters are set to the seat or leaning post positions.

Optional Helm Seat/Leaning Post

Leaning Post Cooler

The cooler is secured below the leaning post in special chocks mounted to the cockpit with adjustable straps. To remove the cooler, loosen and remove the straps securing the cooler to the cockpit sole and slide it out of the seat base. Reverse the process to install the cooler. Make sure the cooler is secured with the straps before operating the boat.

Leaning Post Cooler

Helm

The steering, engine controls, engine instruments and switches for exterior equipment and navigation lights are located on the helm station. An area for flush mounted electronics is located forward of the steering and engine controls. The helm is also equipped with cup holders, MP3 plug, 12 volt accessory plugs and grab rails.

Typical Helm

Windshield

Your boat is equipped with a tinted, scratch resistant acrylic glass windshield mounted to the front of the center console. The acrylic glass is treated to resist scratching and damage from typical household or automotive glass cleaners. However, it is still best to observe the following precautions when cleaning the windshield.

- Avoid using a dry cloth or typical glass cleaning solutions on acrylic glass. Use a soft, clean cloth and mild soap and water for routine cleaning.
- When operating the boat in saltwater, the windshield should be washed after each use with soap and water to keep it clean and reduce the possibility of damage from dried salt on the glass.
- Never use strong solvents such as lacquer thinner or acetone on the windshield. Strong solvents can permanently damage acrylic glass.

Refer to the Routine Maintenance chapter for additional information on the proper care and maintenance of acrylic plastic glass.

Forward Console Seat And Baitwell

A molded insulated baitwell is located under the front seat of the console that can also be used as a cooler. The seat includes a backrest mounted to the console and a seat cushion on the baitwell hatch. The hatch is secured with a "push to close" latch and should be closed and latched before operating or trailering the boat.

Forward Console Seat & Baitwell

The baitwell is supplied seawater by the starboard raw water pump located in the stern bilge. If your boat is equipped with the optional baitwell circulation system, another circulation pump can be activated by a switch in the helm panel to

recirculate and aerate the water in the baitwell. An overflow built into the side of the well automatically controls the water level. The baitwell drains to the overboard drain system and should be cleaned thoroughly after each use.

Refer to the Raw Water System and Drainage Systems chapters for more information on the operation of the baitwell.

Console Compartment Door

The door on the port side of the console is equipped with vents that provide ventilation to the compartment. A lockable, "push to close" latch secures the door when it is closed.

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

CAUTION

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

Console Compartment Door

10.5 Bimini Top (Optional)

The Bimini top is designed with a relatively flat profile and a snug fit. To install the top, attach the main legs to the deck hinges using the quick release pins and leave the rear stanchions loose. Next, open the Bimini and attach the front straps to the metal eye straps on the deck, forward of the center console. Attach the rear stanchions, one at a time, to the rear deck hinges located on the deck aft of the leaning post. Use your body weight on the rear corner of the top to pull down and stretch the fabric until the stanchion eye end lines up with the hole in the deck hinge. Secure each eye end to the deck hinge with the quick release pins. If the top is adjusted to factory specifications, the top will be level and the canvas tight.

Notice:
The front straps of the Bimini must be secured to the front eye straps before the rear stanchions are secured to the deck. If the rear stanchions are secured first, it will be difficult to secure the front straps without loosening them. If the front straps are loosened, the Bimini top will be too loose.

Typical T-Top/Hardtop

10.6 Canvas T-Top (Optional)

The optional canvas T-top is equipped with an acrylic canvas top laced to a welded anodized or powder coated aluminum frame that is bolted to the console and cockpit sole. It is equipped with a storage compartment, switch panel and overhead lighting for the helm.

The top is designed to accommodate radio antennas, forward and aft spreader lights, navigation/anchor lights and rod holders. It could also be equipped with optional outriggers.

The hardtop is not designed to support the additional weight of heavy items like a life raft. Electronics antennas must be mounted to the top between the front and rear legs in the mounting areas provided. Do not mount any antennas or equipment to the brow area forward of the front legs. The hardtop frame is not designed to support the weight of accessories in this area and could be damaged. The rear legs provide the wire chase for lights and antennas mounted to the top.

10.7 T-Top/Hardtop (Optional)

The optional T-top with a fiberglass hardtop consists of a laminated fiberglass top mounted to a welded anodized or powder coated aluminum frame that is bolted to the console and cockpit sole. It is equipped with a storage compartment, switch panel, and overhead lighting for the helm.

The top is designed to accommodate radio antennas, radar antennas, forward and aft spreader lights, navigation/anchor light and rod holders. It could also be equipped with optional outriggers.

The hardtop is not designed to support the additional weight of heavy items like a life raft. Radar and electronics antennas must be mounted to the top between the front and rear legs in the mounting areas provided. Do not mount any antennas or equipment to the brow area forward of the front legs. The hardtop frame is not designed to support the weight of accessories in this area and could be damaged. The rear legs provide the wire chase for lights and antennas mounted to the top.

10.8 Mister System (Optional)

High pressure misting nozzles could be incorporated into the hardtop frame above the helm. When activated by a switch in the hardtop switch panel, a dedicated booster pump supplied by the freshwater system delivers a continuous supply of water at high pressure to the nozzles. The system produces an ultra fine water mist that significantly lowers the temperature at the helm.

Refer to the mister system operation manual for additional information and instructions for the mister system.

10.9 Spotting Tower & Upper Control Station (Optional)

26 Bay boats could be equipped with an optional spotting tower with an observation seat or a spotting tower with a seat and upper control station, depending on the options selected. The configuration of the tower, upper station seat and access hatch in the hardtop is the same with both options.

The forward console seat and steps welded to the front of the frame provide access to the spotting tower. The hardtop is equipped with a sliding sunroof style access hatch that opens to access the spotting tower and is closed to protect the operator from the weather when the tower is not in use. Always make sure the hatch is latched in the open or closed position before operating the boat.

Use extreme caution when moving to the spotting tower. It is possible to slip or lose your balance while climbing the steps to the observation and upper station area. Make sure the engine control is in neutral before using the steps, then resume operation once you or the observer are in position in the tower. You should only use the spotting tower or upper station when the seas are calm and the console steps are dry.

Do not overload the spotting tower. It is designed to hold the weight of only one average-sized person. Weight in the spotting tower raises the boat's center of gravity. Too much weight could make the boat unstable or damage the frame.

Operating the boat from the upper control station or while someone is in the spotting tower requires special precautions. Refer to the Operation chapter for information on the safe operation of the boat from the upper station or with someone in the tower.

⚠ WARNING ⚠

SLIPPING ON THE TOWER STEPS CAN CAUSE SEVERE INJURY. YOU SHOULD NOT ATTEMPT TO USE THE STEPS WHILE THE ENGINE IS IN GEAR, WHILE IN ROUGH SEA CONDITIONS OR WHEN THE CONSOLE AND TOWER ARE WET.

ALWAYS MAKE SURE THE ENGINE CONTROL IS IN THE NEUTRAL POSITION BEFORE USING THE STEPS TO ACCESS THE UPPER STATION. RESUME OPERATION ONCE YOU OR THE OBSERVER ARE IN POSITION AT UPPER THE STATION.

Typical Spotting Tower, Steps & Platform

⚠ WARNING ⚠

GOOD COMMON SENSE, JUDGMENT AND EXTREME CAUTION MUST BE EXERCISED WHEN OPERATING A BOAT WITH SOMEONE IN THE UPPER HELM OR OBSERVATION SEAT. DO NOT ALLOW ANYONE IN THE SPOTTING TOWER WHEN THE WATER IS ROUGH OR WHEN OPERATING IN UNFAMILIAR WATERS WHERE RUNNING AGROUND IS A POSSIBILITY. REMEMBER, WEIGHT IN THE TOWER RAISES THE BOAT'S CENTER OF GRAVITY AND THE BOAT'S MOTION IS GREATLY EXAGGERATED FOR THE PERSON IN THE TOWER.

Spotting Tower And Observation Seat

The spotting tower is a welded powder coated or anodized aluminum frame with a fiberglass nonskid platform just above the helm and a seat with a backrest and flip up bolster bolted to the hardtop that allows the observer to sit or stand while using the spotting tower. The flip up bolster is raised to stand at the observation station and lowered to sit in the upper seat. The observation/seat station includes cup holders, rod holders and storage.

The spotting tower is intended to be an observation station only, it does not have controls. Refer to the Operation chapter for information on the safe operation of the boat while someone is riding in the spotting tower.

Spotting Tower With Upper Station

Your boat could be equipped with a spotting tower that includes an optional upper control station. The tower and seat configuration is the same as with the spotting tower and observation seat.

The fiberglass helm typically includes steering, full engine controls, trim tab controls, Jack Plate controls, compass, engine alarms, stop/start buttons, and an emergency stop switch. It could also be equipped with a depth and navigation display screen, depending on the options selected. This allows for complete operation of the boat from the upper helm.

Electronic engine controls are equipped with a station transfer button that allows the operator to transfer control from one station to another with the push of a button. Always make sure that you activate the control as soon as you reach the upper helm station. Note that the controls on your boat could be slightly different, depending on the engine options selected.

Operating the boat from the upper control station requires special precautions. Refer to the Operation chapter for information on the safe operation of the boat from the upper station.

Typical Spotting Tower Observation Seat & Hardtop Hatch

10.10 Aftermarket Hardtop

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

NOTES

Chapter 11:

INTERIOR EQUIPMENT

11.1 Center Console Storage & Head Compartment

The console storage/head compartment is accessed through a door on the port side of the console. A vent in the door provides ventilation for the compartment when the door is closed. The compartment sole drains by gravity to the bilge.

Natural lighting and fresh air is provided by opening the cabin door. Additional lighting is provided by a 12 volt light controlled by a switch in the helm panel.

The compartment provides access to the back of the helm station to service helm components or install electronics. It also provides the mounting location for the engine batteries and optional battery chargers, stereo amplifier and mister booster pump. The equipment installed in the console on your boat will be determined by the options selected.

Center Console Compartment & Portable Marine Head

11.2 Portable Marine Head (Optional)

A portable marine head could be installed inside the console as optional equipment. The system is made up of two major components, an upper tank and a lower tank. The upper tank contains the fresh water supply, a bellows pump, a seat and the lid. The bottom tank contains the flush valve, a waste holding tank, a chemical storage compartment and the drain nozzle. The components are secured together by a clamping mechanism when the portable head is ready for use.

In some areas the law requires that portable heads be equipped with an optional permanent deck mounted pump out system to evacuate the waste with a dockside pump. Boats with a portable head pump out will be equipped with a deck fitting marked "WASTE" located on the side of the console. Since this system is required to be permanent, the bottom waste tank cannot be removed and the only way to evacuate the system is by a dockside pump.

To use the portable head, add the recommended amount of holding tank deodorant to the waste tank and fill the fresh water tank. To flush after use, pull the waste valve handle straight out, then press the flushing bellows one or more times to rinse. To close and seal the waste holding tank, simply push the valve handle all the way in. Monitor the level in the waste tank and empty as necessary.

Maintenance

To keep your portable head operating properly and reduce odor in the console compartment, it must be emptied and properly cleaned at least once every two weeks. Please refer to the manufacturer owner's manual for detailed instructions on the proper operation of your portable head.

Notice:

In some areas the law requires a waste pump out system on portable heads. If your boat is equipped with the waste pump out, make sure you know the laws for the areas in which you boat before modifying or removing the pump out system.

Notice

The portable head must be properly winterized before winter lay-up or for cold weather use. Please refer to the manufacturer owner's manual for winterizing and cold weather instructions

Chapter 12:

ROUTINE MAINTENANCE

12.1 Exterior Hull & Deck

Hull Cleaning-Below the Water Line

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

Bottom Painting

If the boat is to be left in saltwater for extended periods, the hull must be protected from marine growth by antifouling paint. Because of variations in water temperature, marine growth and pollution in different regions, a qualified boat yard in your area should be consulted when deciding what bottom paint system to apply to your hull. This is extremely important as pollution and marine growth can damage fiberglass hulls.

Use only standard antifouling paints and fiberglass wax removers and primers recommended by the antifouling paint manufacturer when preparing the hull for bottom paint. Light sanding, just enough to scuff the gel coat or a skip sand primer system can be used to prepare the hull for bottom paint. The use of a coating other than standard antifouling paint or epoxy barrier coatings are not recommended and will void the hull blister warranty.

Do not allow the hull antifouling paint to contact the outboard motor. Most antifouling paints designed for hull bottoms contain copper and can cause severe galvanic corrosion damage to the motor. Always leave at least a 1" barrier between the hull bottom paint and outboard motors.

⚠ CAUTION ⚠

SANDBLASTING THE HULL BOTTOM WILL DAMAGE THE FIBERGLASS. USE A FIBERGLASS WAX REMOVER AND SAND TO SCUFF THE GELCOAT SURFACE. THE INSTRUCTIONS AND RECOMMENDATIONS OF THE BARRIER COATING AND ANTIFOULING PAINT MANUFACTURERS SHOULD BE FOLLOWED EXACTLY.

⚠ CAUTION ⚠

BARRIER COATINGS AND BOTTOM PAINT SHOULD BE APPLIED ONLY BY QUALIFIED MARINE PROFESSIONALS IN A BOAT YARD OR DEALERSHIP THAT SPECIALIZES IN THEIR APPLICATION. USE ONLY STANDARD, HIGH QUALITY ANTIFOULING PAINTS AND BARRIER COATINGS FROM NAME BRAND MANUFACTURES SUCH AS INTERLUX AND PETTIT.

DO NOT ALLOW THE HULL ANTIFOULING PAINT TO CONTACT THE OUTBOARD MOTOR. MOST ANTIFOULING PAINTS DESIGNED FOR HULL BOTTOMS CONTAIN COPPER AND CAN CAUSE SEVERE GALVANIC CORROSION DAMAGE TO THE OUTBOARD DRIVE UNIT. USE ONLY ANTIFOULING PAINT DESIGNED FOR OUTBOARD MOTORS IF APPLYING ANTIFOULING PAINT TO THE ENGINE. ALWAYS LEAVE A ONE INCH BARRIER BETWEEN THE HULL BOTTOM PAINT AND OUTBOARD MOTOR.

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

Anodes

Sacrificial anodes are installed on the outboard motor, engine brackets and could be installed on the transom and/or trim tabs. Sacrificial anodes are less noble than copper based alloys, stainless steel and aluminum. They will deteriorate first, protecting the more noble underwater hardware against galvanic corrosion.

They must be monitored if the boat is to be left in the water. Anodes should be checked monthly and changed when they are 75% of their original size (25% depleted). When replacing the anodes, make sure the contact surfaces are clean, shiny metal and free of paint and corrosion. Never paint over the anode.

Boats stored in saltwater will normally need to have the anodes replaced every 6 months to one year. Anodes requiring replacement more frequently may indicate a stray current problem within the boat or at the slip or marina. Anodes

that do not need to be replaced after one year may not be providing the proper protection. Loose or low quality anodes could be the problem.

There are multiple anodes on outboard engines. You should refer to the outboard engine owner's manual for the location of the anodes on your engines. Only use replacement anodes recommended by the engine manufacturer.

Contact your engine dealer or Crevalle Customer Service for the proper size and type of anodes to be used and the specific installation procedure.

Fiberglass Gel coat

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

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

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

Avoid the following on gelcoat surfaces:

- Do not use plastic or other nonporous (nonbreathable) materials to cover gelcoat surfaces. Trapped moisture from condensation can cause gelcoat damage. Shrink wrap storage covers must be properly ventilated, including hull sides.
- Do not use abrasives, bleaches, ammonia, acids or harsh detergents. See your dealer for special marine formulations. Harsh abrasive and chemical cleaners are not recommended because they can damage or dull the gelcoat, reducing its life and making it more susceptible to stains.
- NEVER apply wax or buffing compound to a gelcoat surface in direct sunlight.

Chalking, stains and minor scratches can be removed in most cases with careful rubbing and polishing with appropriate compounds or chemicals and is best done by a professional - see your dealer.

If the fiberglass should become damaged and need repair, contact your dealer or Crevalle Customer Service for assistance in finding an authorized repair person to make the repairs.

⚠ CAUTION ⚠

DO NOT WAX NONSKID AREAS AS THIS COULD MAKE THEM SLIPPERY AND CONSEQUENTLY INCREASE THE POSSIBILITY OF INJURY.

Stainless Steel Hardware

When using the boat in saltwater, the hardware should be washed with soap and water after each use. When your boat is used in a corrosive environment such as saltwater, water with a high sulfur content or polluted water, the stainless steel will periodically develop surface rust stains. This is perfectly normal under these conditions.

The following guidelines will help keep stainless steel looking good for many years:

- Clean stainless steel frequently (daily in salt or polluted environments) with mild soap and plenty of water. Any cleaner safe for use on glass is usually safe for stainless.
- Remove rust spots (especially around welds) immediately with a brass, silver or chrome cleaner. Irreversible pitting will develop under rust allowed to remain on stainless for any period of time.
- Remove rust stains on gelcoat. See dealer for recommended product.

- Stainless Steel can normally be cleaned and protected by using a high quality boat or automotive wax or a commercial metal cleaner and protectant.

Never do the following on stainless steel:

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

⚠ CAUTION ⚠

UNDER NO CIRCUMSTANCES SHOULD ANY ABRASIVE MATERIALS SUCH AS SANDPAPER, BRONZE WOOL, OR STEEL WOOL BE USED ON STAINLESS STEEL. DAMAGE TO THE HARDWARE WILL RESULT.

Anodized Aluminum Surfaces

Anodized aluminum should be washed periodically with soap and water to keep it clean. If the boat is used in saltwater or polluted water, the aluminum should be washed with soap and water after each use. Saltwater allowed to remain on anodized aluminum will penetrate the anodized coating and attack the aluminum.

Hardtops, bimini tops or T-tops with canvas and/or fiberglass tops require special attention to the anodized aluminum just below the top. This area is subject to salt build up from salty condensation and sea spray. It is also frequently overlooked when the boat is washed and will not be rinsed by the rain. Consequently, the aluminum just below the top is more likely to become pitted than the exposed aluminum on the structure. Make sure the aluminum in this area is washed frequently with soap and water and rinsed thoroughly. Pay particular attention to places where the top material or lacing contact the frame. Once a month coat the entire frame with a metal protector made for anodized aluminum to protect against pitting and corrosion caused by the harsh effects of saltwater. Do not use automotive or boat wax designed for paint or gel coat on anodized aluminum. The wax can contaminate the aluminum and damage the anodized surface.

⚠ CAUTION ⚠

ONE DRAWBACK TO METAL PROTECTORS IS THAT THEY CAN MAKE THE METAL SLIPPERY. THEREFORE, THEY SHOULD BE NOT BE USED ON TOWER LADDERS, STEERING WHEELS AND OTHER AREAS WHERE A GOOD GRIP AND SURE FOOTING IS IMPORTANT.

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

Powder Coated Aluminum

Powder coated aluminum should be washed periodically with soap and water to keep it clean. If the boat is used in saltwater or polluted water, the aluminum should be washed with soap and water after each use. Saltwater allowed to remain on powder coated aluminum will penetrate the coating and attack the aluminum, usually around fasteners and hardware mounted to the aluminum.

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

Once a month check the entire frame for damaged powder coating and corrosion around fasteners and hardware. Nicked or badly scratched powder coating can be sanded and touched up with enamel paint. Corrosion around fasteners will have to be sanded, then touched up with paint. The fasteners will require fiber washers and sealing with caulk or Tef Gel to isolate the fastener from the aluminum and prevent damage to the paint or powder

coating when the fastener is installed. Periodically applying automotive or boat wax to the powder coating with will provide additional protection from the harsh effects of saltwater.

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

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

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

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

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

Acrylic Plastic Glass
Acrylic glass scratches easily. Never use a dry cloth or glass cleaning solutions on acrylic. Use a soft cloth and mild soap and water for routine cleaning. Solvents and products containing ammonia can permanently damage acrylic plastic glass.

Fine scratches can be removed with a fine automotive clear coat polishing compound. A coat of automotive or boat wax is beneficial to protect the surface.

Do not use the following on acrylic glass:

Abrasive cleaners	Acetone
Solvents	Alcohol
Cleaners containing ammonia	Glass cleaners

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

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

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

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

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

12.2 Upholstery, Canvas & Enclosures
Vinyl Upholstery
The vinyl upholstery used on the seats, cushions, bolsters and for the headliner in some cabins, should be cleaned periodically with mild soap and water. Any stain, spill or soiling should be cleaned up promptly to prevent the possibility of permanent staining. When cleaning, always rub gently. Avoid using products containing ammonia, powdered abrasive cleaners, steel wool, ink,

strong solvents, acetone and lacquer solvents or other harsh chemicals as they can cause permanent damage or shorten the life of vinyl. Never use steam heat, heat guns or hair dryers on vinyl.

Stronger cleaners, detergents and solvents may be effective in stain removal, but can cause either immediate damage or slow deterioration. Lotions, sun tan oil, waxes and polishes, etc., contain oils and dyes that can cause stiffening and staining of vinyls.

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

Acrylic Canvas (Sunbrella)

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

Acrylic canvas can be cleaned by using Ivory Flakes, Ivory Liquid or another mild soap and water. Scrub lightly and rinse thoroughly to remove the soap. Do not use detergents, as they will deteriorate the waterproofing in the fabric. The underside can be brushed with a soft brush and sprayed with a disinfectant to prevent the accumulation of dirt and mildew. The top or accessories should never be folded or stored wet.

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

In saltwater areas, the top and curtains should be rinsed with fresh water after each use and at least weekly if it is stored outside. Saltwater attracts moisture and dirt can shorten the life of fabric tops and enclosures. The salt is also abrasive and can cause premature wear in the fabric and stitching.

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

Notice:
Some leakage at the seams is normal and unavoidable with acrylic enclosures.

Laminated Vinyl Tops

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

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

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

In saltwater areas, the top and curtains should be rinsed with fresh water after each use and at least weekly if it is stored outside. Saltwater attracts moisture and dirt can shorten the life of fabric tops and enclosures. The salt is also abrasive and can cause premature wear in the stitching.

Clear Curtains And Connectors

Side curtains and clear connectors can be cleaned with mild soap and water. They should not be allowed to become badly soiled. Dirt, oil, mildew and cleaning agents containing ammonia, will shorten the life of the vinyl that is used for clear curtains. After cleaning the curtains and allowing them to dry, apply a non-lemon furniture polish or an acrylic glass and clear plastic protector to extend the life of the curtains.

Vinyl curtains should be stored either rolled or flat, without folds or creases. Folding the curtains will make permanent creases that could cause the vinyl to crack.

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

Snaps should be lubricated periodically with Teflon or silicone grease or a lubricant designed for snaps. Zippers should be lubricated with silicone spray, paraffin or silicone stick.

Strataglass

Strataglass® is a special coated vinyl that could be used in the curtains for the hardtop enclosure. The coating protects the vinyl glass and resists scratching. Waxes and Plexiglas polishing compounds should not be used on strataglass as the protective coating prevents them from penetrating into the vinyl and they will build up on the surface. These products will create a hazy, greasy appearance that will affect the clarity of the strataglass. Products that repel water, like Rainex®, should not be used as they will not take well to the surface and could appear spotty and may also yellow or dull the Strataglass over time.

Strataglass can be cleaned by rinsing off dirt or salt deposits with fresh water, then washing with a clean cloth and mild soap. Chamois dry to remove water spots and improve clarity. If a polish is accidentally used, use Windex® or its equivalent to remove it. While window cleaners will destroy the standard vinyl normally used in side curtains and clear connectors, it will not harm strataglass. Always roll down the curtains and snap in place at the end of each day so the curtains will maintain their shape and to minimize fold distortions.

Depending upon usage, it is recommended that an occasional application of Aquatech Strataglass Cleaner be done. Treat this like a polish, as opposed to a cleaner - wash and dry curtains first, then apply Aquatech Strataglass Cleaner, actually buffing the surface to a beautiful sheen. This is not just a wipe on/ wipe off product…it needs to be buffed to perform.

Remember, the coating on strataglass is scratch resistant and not scratch proof. Always handle the curtains with care and never roll up curtains that are salty or dirty. If you have any questions about the clear curtains used on your boat, please contact the Crevalle Customer Service Department.

Hardtop enclosures must be removed when trailering. Canvas enclosures are not designed to withstand the extreme wind pressure encountered while trailering and will be damaged. Always remove and properly store the enclosure before trailering your boat.

12.3 Interior

The cabin or console interior can be cleaned just like you would clean a home interior. To preserve woodwork, use teak oil. To maintain carpeting, use a vacuum cleaner. Because air and sunlight are very good cleansers, periodically put cushions, sleeping bags, etc. on deck, in the sun and fresh air, to dry and air out. If cushions or equipment get wet with saltwater, remove and use clean, fresh water to rinse off the salt crystals. Salt retains moisture and will cause damage. Dry thoroughly and reinstall.

If you leave the boat for a long period of time, put all cushions on their sides, open all interior cabin and locker doors and hang a commercially available mildew protector in the cabin.

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

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

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

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

12.4 Bilge, Pumps & Components

To keep the bilge clean and fresh, it is recommended that you use a commercial bilge cleaner on a regular basis. Follow the directions carefully. All exposed pumps and metal components in the bilge should be sprayed periodically with a protector to reduce the corrosive effects of the high humidity always present in these areas.

Periodically check the bilge pumps for proper operation and clean debris from the strainers and float switches. Inspect all hoses, clamps and thru-hulls for leaks and tightness on a regular basis. Operate all thru-hull valves at least once a month to keep them operating properly.

Frequently test the automatic switches for the bilge pumps for proper operation. This is accomplished by lifting the float switch until the pump is activated. You can also use a garden hose to flood the bilge until the water level is high enough to activate the pump.

12.5 Drainage System

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

- Clean the cockpit drains with a hose to remove debris that can block water drainage.
- Clean the hardtop or tower leg drain holes. This is especially important just before winter lay-up.
- Flush all gravity drains with fresh water to keep them clean and free flowing.
- Operate the thru-hull valves once a month and service as required.
- Run all overboard pumps briefly at least once a month to keep them operating properly.

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

NOTES

Chapter 13:

SEASONAL MAINTENANCE

13.1 Storage & Lay-up

Before Hauling

- Empty or pump out the portable head holding tank. Flush the holding tank using clean water, soap and a deodorizer.

- The fuel tank should be left nearly full to reduce condensation that can accumulate in the tank. Allow enough room in the tank for the fuel to expand without leaking out the vent. Moisture from condensation in the fuel tank can reach such concentrations that it becomes heavy enough to settle out of the fuel to the bottom of the tank. Since fuel pickup tubes are located near the bottom of the tank, this accumulated moisture can cause the engines to run poorly or not at all after extended storage.

  Chemical changes also occur as the gasoline ages that can cause deposits and varnish in the fuel system as well as reduce the octane rating of the fuel. Severely degraded fuel can damage the engine and boat fuel tank and lines. Therefore, if your boat is not being run enough to require at least one full tank of fresh fuel a month or during winter storage, a fuel stabilizer should be added to the gasoline to help protect the fuel system from these problems. Operate the boat for at least 15 minutes after adding the stabilizer to allow the treated fuel to reach the engine. Yamaha recommends using Yamaha Fuel Conditioner and Stabilizer for their engines.

  Your dealer or the engine manufacturer can provide additional information on fuel degradation and fuel stabilizers recommended for your engine. For more recommendations for your specific area, check with your local Crevalle dealer.

- Drain water from the fresh water system.

- Consult the engine owner's manual for detailed information on preparing the engine for storage.

Lifting

It is essential that care be used when lifting your boat. Make sure the spreader bar at each sling is at least as long as the distance across the widest point of the boat that the sling will surround. Once the slings are in position, the fore and aft slings should be tied together to prevent the slings from sliding on the hull.

⚠ CAUTION ⚠

BOATS CAN BE DAMAGED FROM IMPROPER LIFTING AND TRANSPORTING WITH FORK LIFTS. CARE AND CAUTION MUST BE EXERCISED WHEN TRANSPORTING A BOAT WITH A FORK LIFT. NEVER HOIST THE BOAT WITH A SUBSTANTIAL AMOUNT OF WATER IN THE BILGE.

SEVERE GEL COAT CRACKING OR MORE SERIOUS HULL DAMAGE CAN OCCUR DURING HAULING AND LAUNCHING IF PRESSURE IS CREATED ON THE GUNWALES (SHEER) BY THE SLINGS. FLAT, WIDE BELTING SLINGS AND SPREADERS LONG ENOUGH TO KEEP PRESSURE FROM THE GUNWALES ARE ESSENTIAL. DO NOT ALLOW ANYONE TO HAUL YOUR BOAT WHEN THE SPREADERS ON THE LIFT ARE NOT WIDE ENOUGH TO TAKE THE PRESSURE OFF THE GUNWALES.

Supporting The Boat For Storage

A trailer, elevating lift, well-made cradle or proper blocking is the best support for your boat during storage.

When storing the boat on a trailer for a long period:

- Make sure the trailer is large enough to properly support your boat and that it is rated to support the weight.

- Make sure the trailer is on a level surface and the bow is high enough so that water will drain from the bilge and cockpit.

- Make sure the engine is in the down position.

- The trailer must properly support the hull. The bunks and rollers should match the bottom of the hull and should not be putting pressure on the lifting strakes.

- Make sure the hitch is properly supported.

- Check the tires once each season. Add enough air for the correct amount of inflation for the tires as necessary.

Notice:
Read the owner's manual for the trailer for the correct amount of inflation for the tires.

When storing the boat on a lift or cradle:

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

CAUTION

BOATS HAVE BEEN DAMAGED BY TRAILERS, LIFTS AND CRADLES THAT DON'T PROPERLY SUPPORT THE HULL. ALWAYS MAKE SURE THE BUNKS AND ROLLERS ARE ADJUSTED SO THEY ARE NOT PUTTING PRESSURE ON THE LIFTING STRAKES AND ARE PROVIDING ENOUGH SUPPORT FOR THE HULL. HULL DAMAGE RESULTING FROM IMPROPER CRADLE OR TRAILER SUPPORT IS NOT COVERED BY THE CREVALLE WARRANTY.

When supporting the boat with blocking:

- Make sure the boat is blocked on a level surface and the bow is high enough so that water will drain from the bilge and cockpit.
- Make sure the keel is supported with large, solid wood blocks in at least three points.
- Use at least two heavy duty jacks on each side of the hull and make sure the boat is level from side to side. The jacks must be on a solid surface like packed gravel, concrete or pavement. All of the supports must be set up properly to prevent the boat from shifting while it is in storage.

Preparing The Boat For Storage

- Remove the bilge drain plug, if installed.
- Thoroughly wash the fiberglass exterior, especially the antifouling portion of the bottom. Remove as much marine growth as possible. Lightly wax the exterior fiberglass components.
- Remove all oxidation from the exterior hardware and apply a light film of moisture displacing lubricant, wax or a metal protector.
- Remove the propeller and grease the propeller shaft using light waterproof grease.
- Remove the batteries and store in a cool place. Clean using clear, clean water. Be sure the batteries have sufficient water and clean terminals. Keep the batteries charged and safe from freezing throughout the storage period.

Notice:
Refer to the Electrical System chapter for information on the maintenance of the electrical systems.

- Coat all faucets and exposed electrical components in the console and cockpit with a protecting oil.
- Clean out, totally drain and completely dry the fish boxes, coolers, sinks and baitwells.
- Thoroughly clean the interior of the boat. Vacuum all carpets and dry clean drapes and upholstery.
- Remove cushions and open as many locker doors as possible. Leaving as many of these areas open as possible will improve the boat's ventilation during the storage period.

Notice:
It is recommended that a mildew preventer be hung in the head compartment before it is closed for storage.

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

13.2 Winterizing

Fresh Water System

The entire fresh water system must be completely drained. Disconnect all hoses, check valves, etc. and blow all the water from the system. Make sure the strainer and fresh water tank are completely drained. Use only very low air pressure when doing this to prevent possible system damage. Because of the check valve mechanism built in the pump, blowing the lines will not remove the water from the fresh water pump. Remove the inlet and outlet hoses on the pump. Turn the pump on and allow it to pump out any remaining water....about a cupful. A recommended alternative to the above-mentioned procedure is the use of commercially available non toxic, fresh water system antifreeze. After draining the fresh water tank, lines and filters, pour the antifreeze mixture into the fresh water tank, prime and operate the pump until the mixture flows from all fresh water faucets. Be sure to open all water faucets, including the fresh water washdown hose. Make sure antifreeze has flowed through all of the fresh water drains.

For additional information refer to the Fresh Water System and Drainage System chapters.

Raw Water System

Completely drain the raw water systems including the sea strainer near the washdown pump in the stern bilge. Disconnect all hoses and blow the water from the system. Use only very low air pressure when doing this to prevent possible system damage. Because of the check valve mechanism built in the raw water washdown pump, blowing the lines will not remove the water from the raw water pump. Remove the inlet and outlet hoses on the pump. Turn the pump on and allow it to pump out any remaining water....about a cupful.

A recommended alternative to the above-mentioned procedure is the use of commercially available nontoxic, potable water system antifreeze. If potable water antifreeze is used, pour the mixture into a pail and put the raw water intake lines into the solution. Run the pumps one at a time until the antifreeze solution is visible at all raw water faucets and discharge fittings and drains. Be sure antifreeze has flowed through all of the raw water drains.

Make sure all water is removed from the release and baitwells and that the drains are clear and free flowing. If your boat is equipped with recirculation pumps, install the stand pipe or drain plug, pour potable water antifreeze into the well and activate the recirculation pump until antifreeze is visible at the discharge fitting. Remove the drain plug and wipe down the inside of the well.

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

Portable Marine Toilet

The portable head must be properly winterized by following the manufacturer's winterizing instructions in the portable head owner's manual.

Notice:
Make sure you follow the marine toilet manufacturer's winterizing instructions exactly.

Bilge

Coat all metal components, wire busses and connector plugs in the bilge with a protecting oil. It is also important to protect all strainers, seacocks and steering components. The bilge pumps and bilge pump lines must be completely free of water and dried out when the boat is laid-up for the winter in climates where freezing occurs. Compartments in the bilge that will not drain completely should be pumped out and then sponged until completely free of water. Dry the hull bilge and self-bailing cockpit troughs. Water freezing in these areas could cause damage.

Outboard Engine

The engine should be flushed with fresh water for at least 15 minutes prior to winter storage. This will remove salt, sand and other contaminates that can damage the engine. It is also important to "Fog" the cylinders, change the gear oil and change the oil in 4-cycle engines. Coat each engine with a protector, wax the exterior and properly store and charge the batteries. You should refer to the engine owner's manual or contact your dealer for specific instructions on winterizing your engine.

Notice:
Properly winterize the engine and fuel system by following the engine manufacturer's winterizing procedures located in your engine owner's manuals or contact a Crevalle dealer.

Hardtop

It is imperative that all drain holes in the legs are open and that the legs are completely free of water. Remove canvas and thoroughly clean and store in a safe, dry place. Remove all electronics. Coat all wire connectors and bus bars in the helm compartment with a protecting oil.

Clean the aluminum frame with soap and water and dry thoroughly. Apply an aluminum metal protector to the entire frame on anodized aluminum to reduce corrosion and pitting. Apply an automotive or boat wax to powder coated aluminum to protect it during storage periods.

Special Notes Prior To Winter Storage

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

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

CAUTION

PLACING AN ELECTRIC OR FUEL BURNING HEATING UNIT IN THE BILGE AREA CAN BE POTENTIALLY HAZARDOUS AND IS NOT RECOMMENDED.

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

Notice:

If the boat is to be stored indoors or outdoors, open all interior drawers, clothes lockers, cabinets and doors a little. If possible, remove the upholstery, mattresses, clothing and rugs. Then hang a commercially available mildew protector in the interior compartments.

13.3 Recommissioning

WARNING

DO NOT OPERATE THE BOAT UNLESS IT IS COMPLETELY ASSEMBLED. KEEP ALL FASTENERS TIGHT. KEEP ADJUSTMENTS ACCORDING TO SPECIFICATIONS.

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

CAUTION

BEFORE LAUNCHING THE BOAT, MAKE SURE THE HULL DRAIN PLUG IS INSTALLED.

Reactivating The Boat After Storage

- Charge and install the batteries.
- Install the drain plug in the hull.
- Check the engine for damage and follow the manufacturer's instructions for recommissioning.
- Check the mounting bolts for the engine to make sure they are tight.

Notice:
Jack Plate engine and transom mounting bolt torque should be checked once each season or every 100 hours.

- Perform all routine maintenance.
- Check all hose clamps for tightness.
- Pump the antifreeze from the fresh and raw water systems and flush several times with fresh water.
- Check and lubricate the steering system.
- Clean and wash the boat.
- Install all upholstery, cushions and canvas.

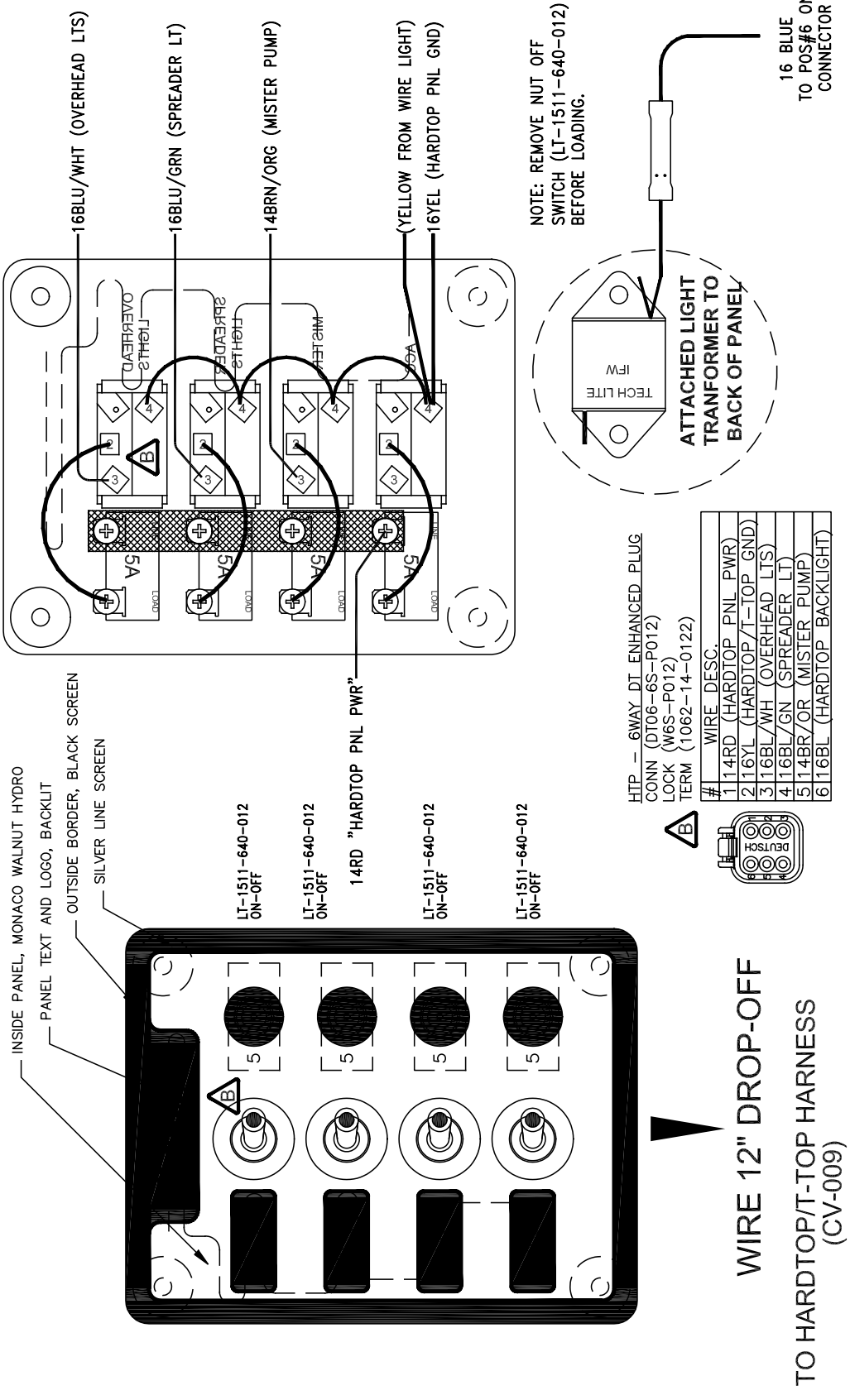
After Launching

- Carefully check all water systems and the engine bolts for leaks. Operate each system one at a time checking for leaks and proper operation.
- Check the bilge pump manual and automatic switches.
- When the engine starts, check the cooling system port below the engine cowling for a strong stream of water. This ensures that the cooling pump is operating.
- Carefully monitor the gauges and check for leakage and abnormal noises.
- Operate the boat at slow speeds until the engine temperature stabilizes and all systems are operating normally.

NOTES

Appendix A:

SCHEMATICS



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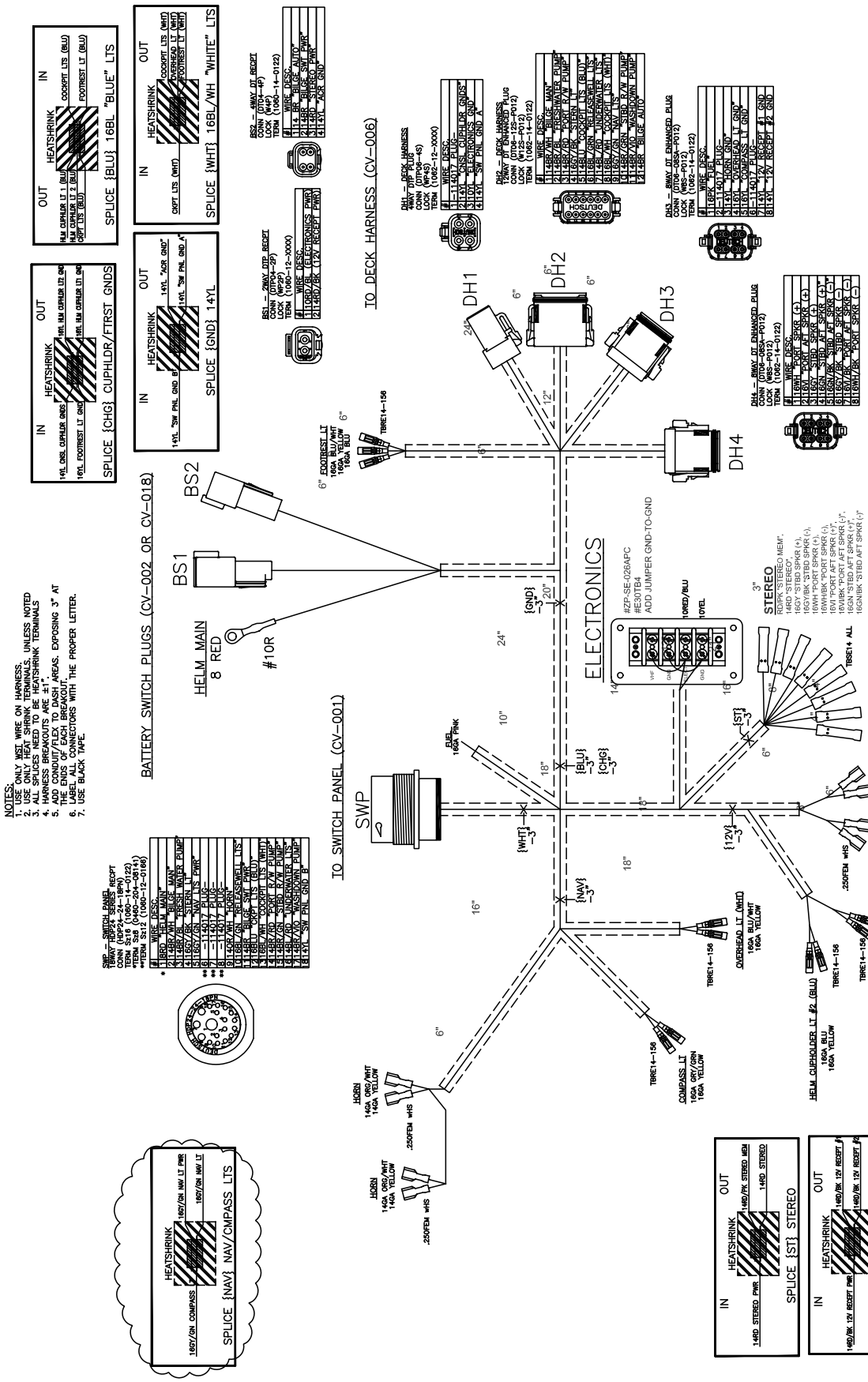

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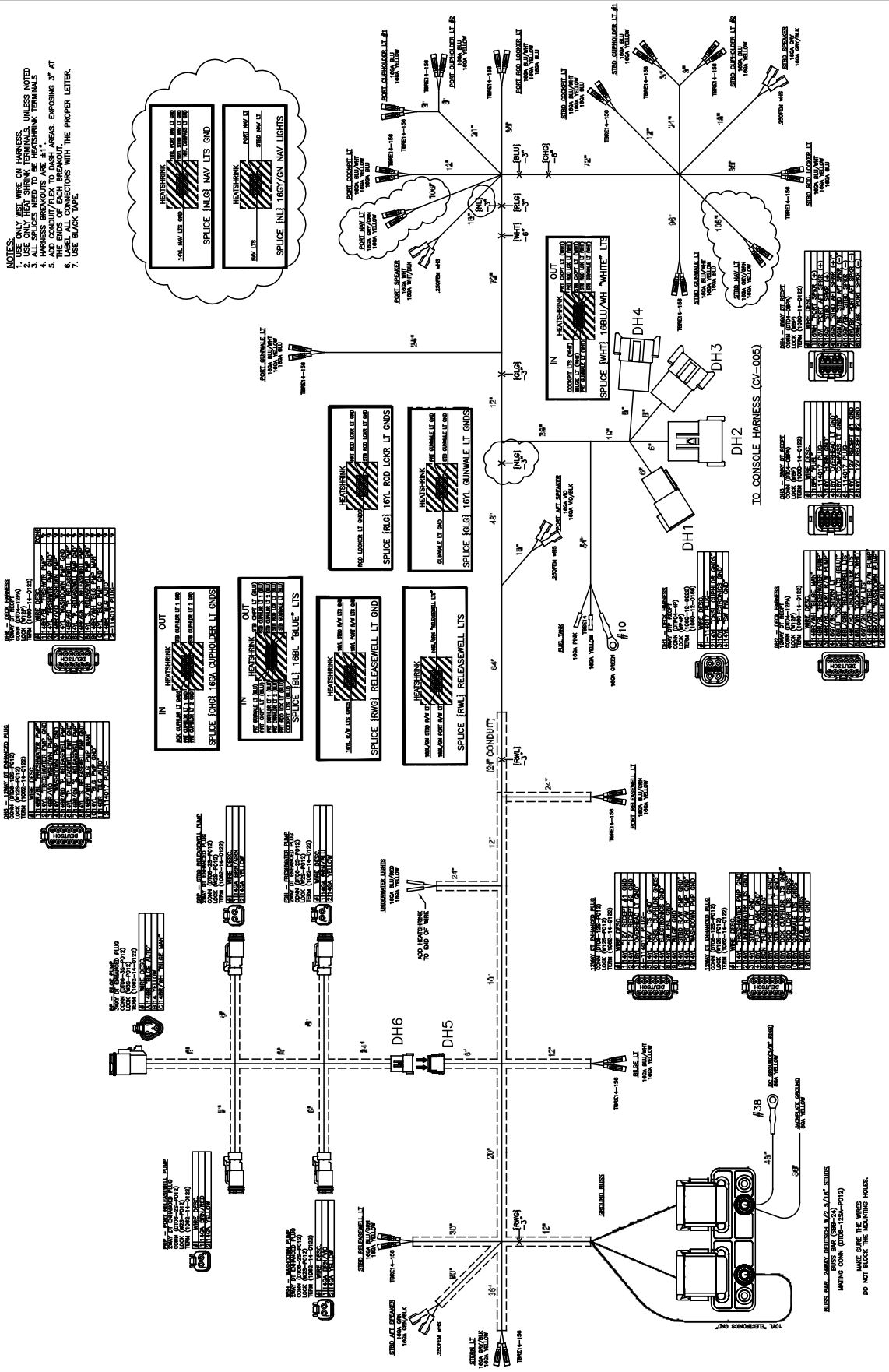
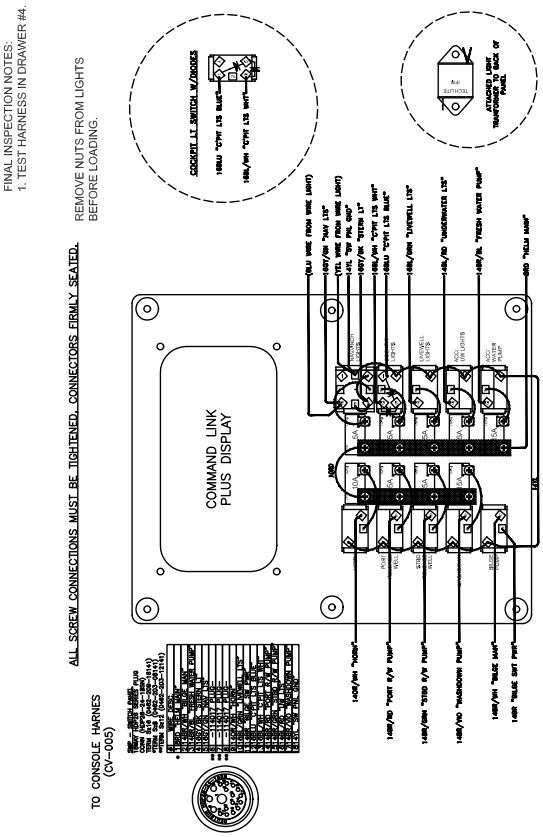
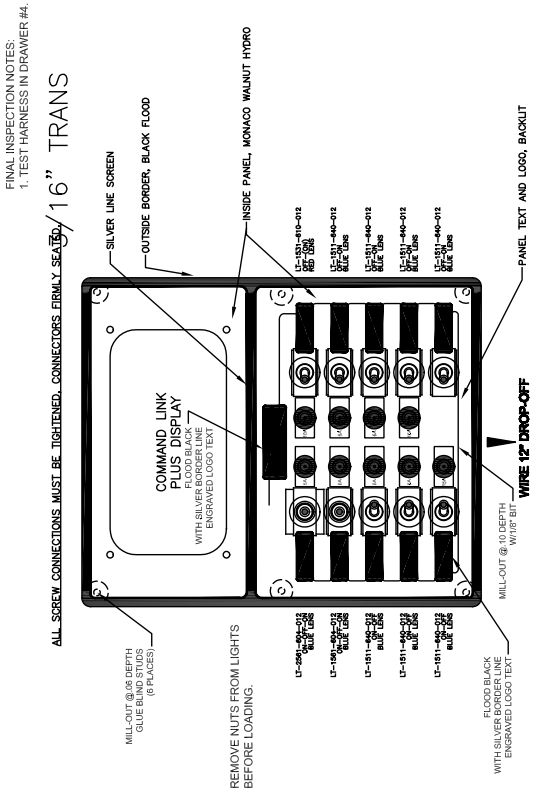
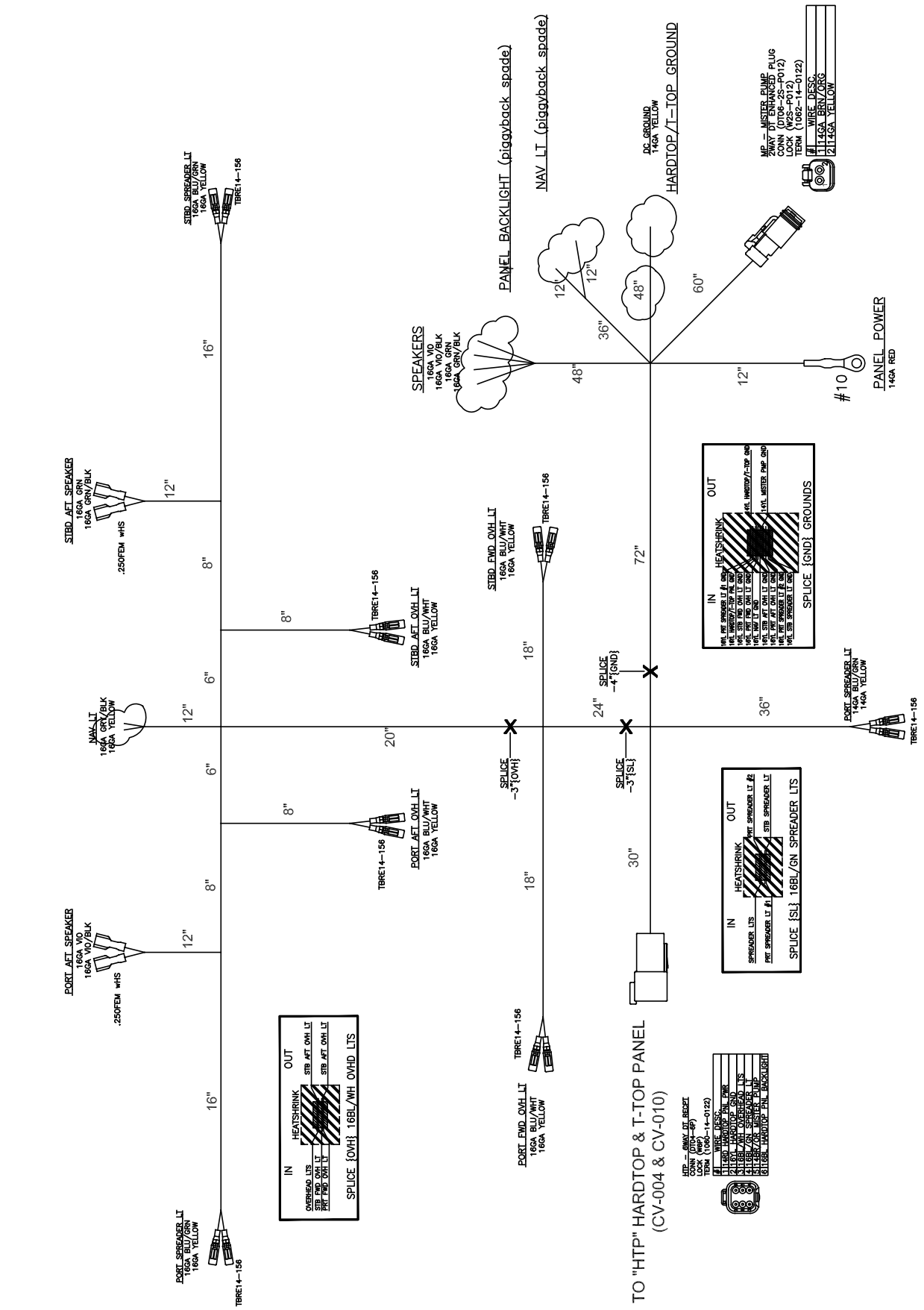


CV-006 Deck Harness Rev F





CV-007 Helm Switch Panel - Command Link Plus

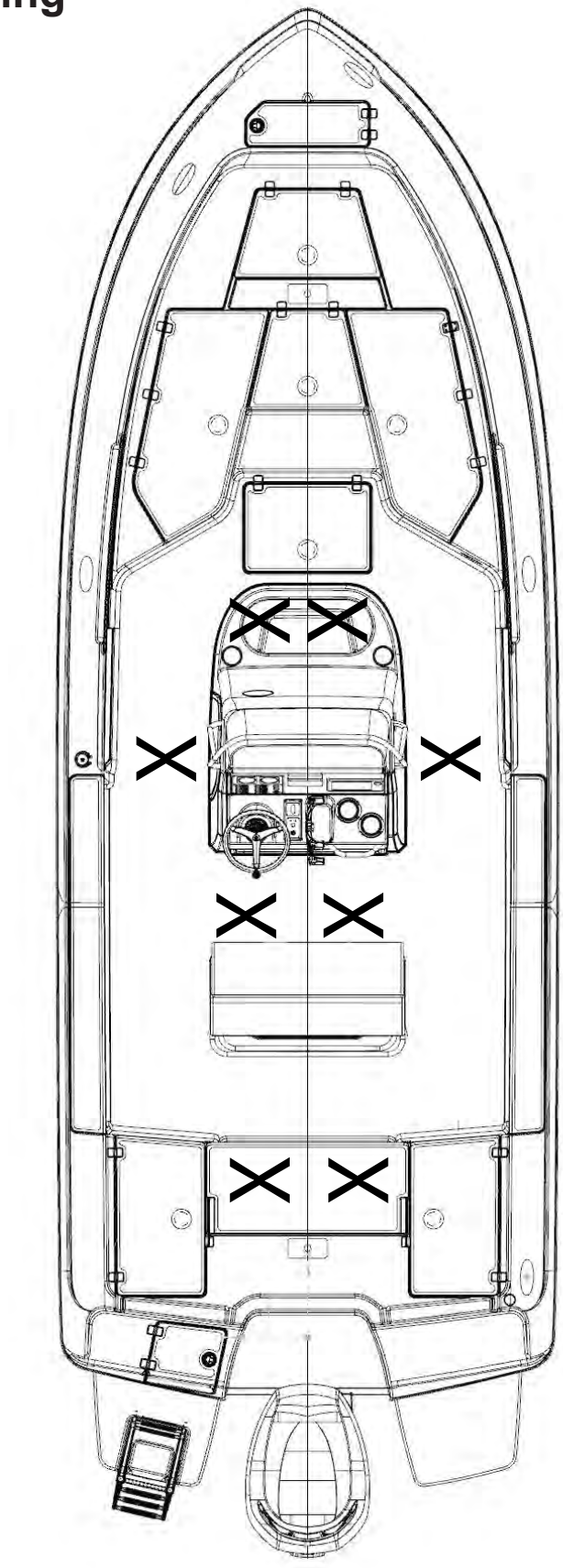


CV-009 Hardtop Rev C

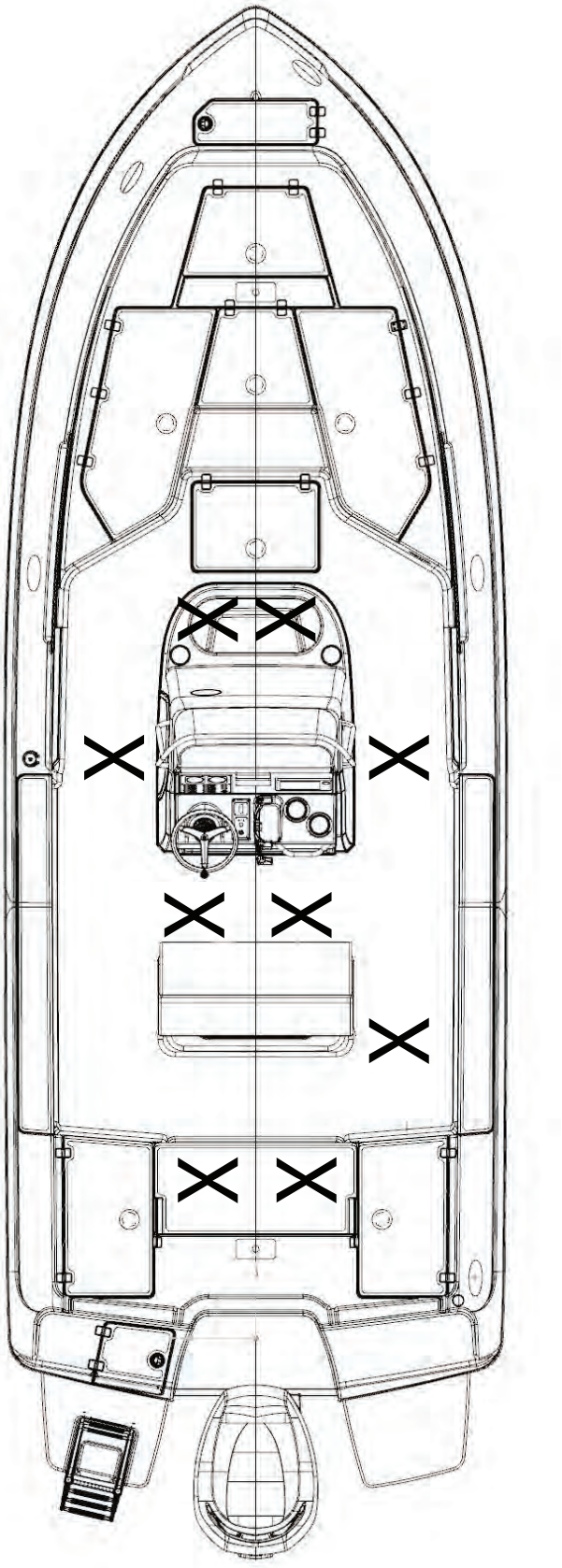
NOTES

Appendix B:

Occupant Seating



24 Bay Designated Occupant Positions



26 Bay/26 Open Designated Occupant Positions

Appendix C:

GLOSSARY OF TERMS

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

Aground: A boat stuck on the bottom.

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

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

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

Ashore: On shore.

Astern: Behind the boat, to move backwards.

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

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

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

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

Berth: A bunk or a bed on a boat.

Bilge: The bottom of the boat below the flooring.

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

Boarding: Entering or climbing into a boat.

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

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

Bow: The front end of a boat's hull

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

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

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

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

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

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

Cabin: Enclosed superstructure above the main deck level.

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

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

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

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

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

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

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

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

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

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

Glossary Of Terms

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

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

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

Dry Rot: A fungus attack on wood areas.

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

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

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

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

Even Keel: When a boat floats properly as designed.

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

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

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

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

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

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

Foundering: When a boat fills with water and sinks.

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

Galley: The kitchen of a boat.

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

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

Grounds: A boat touches the bottom.

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

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

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

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

Head: A toilet on a boat.

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

Helm: The steering and control area of a boat.

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

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

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

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

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

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

Leeward: The direction toward which the wind is blowing.

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

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

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

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

L.O.A.: Boat length overall.

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

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

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

Midships: The center of the boat.

Marina: A protected facility primarily for recreational small craft.

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

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

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

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

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

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

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

Pier: A structure which projects out from the shoreline.

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

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

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

P.F.D: Personal Flotation Device.

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

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

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

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

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

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

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

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

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

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

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

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

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

Glossary Of Terms

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

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

Shaft Log: Pipe through which the propeller shaft passes.

Sheer: The uppermost edge of the hull.

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

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

Sole: The deck of a cockpit or interior cabin.

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

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

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

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

Stern: The rear end of a boat.

Stow: To pack away neatly.

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

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

Strut Bearing: See "cutlass bearing."

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

Superstructure: Something built above the main deck level.

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

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

Taffrail: Rail around the rear of the cockpit.

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

Topsides: The side skin of a boat between the waterline or chine and deck.
Transom: A flat stern at right angles to the keel.

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

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

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

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

Underway: When a boat moves through the water.

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

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

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

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

Wharf: A structure generally parallel to the shore.

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

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

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

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

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

Appendix D:

MAINTENANCE LOG

Date	Hours	Dealer	Service/Repairs

Date	Hours	Dealer	Service/Repairs

Date	Hours	Dealer	Service/Repairs

Date	Hours	Dealer	Service/Repairs

Date	Hours	Dealer	Service/Repairs

Maintenance Log

Date	Hours	Dealer	Service/Repairs

Appendix E:

DEPARTMENT OF TRANSPORTATION **U.S. COAST GUARD** CG-3865 (Rev. 9/95)	**BOATING ACCIDENT REPORT** STATE ASSIGNED CASE NO._____	FORM APPROVED OMB NO. 2115-0010

THE OPERATOR/OWNER OF A VESSEL USED FOR RECREATIONAL PURPOSES IS REQUIRED TO FILE A REPORT IN WRITING WHENEVER AN ACCIDENT RESULTS IN: LOSS OF LIFE OR DISAPPEARANCE FROM A VESSEL; AN INJURY WHICH REQUIRES MEDICAL TREATMENT BEYOND FIRST AID; OR PROPERTY DAMAGE IN EXCESS OF $2000 OR COMPLETE LOSS OF THE VESSEL. REPORTS IN DEATH AND INJURY CASES MUST BE SUBMITTED WITHIN 48 HOURS. REPORTS IN OTHER CASES MUST BE SUBMITTED WITHIN 10 DAYS. REPORTS MUST BE SUBMITTED TO THE REPORTING AUTHORITY IN THE STATE WHERE THE ACCIDENT OCCURRED. THIS FORM IS PROVIDED TO ASSIST THE OPERATOR IN FILING THE REQUIRED WRITTEN REPORT.

COMPLETE ALL BLOCKS (INDICATE THOSE NOT APPLICABLE BY "NA")

ACCIDENT DATA

DATE OF ACCIDENT	TIME AM PM	NAME OF BODY OF WATER	LOCATION (GIVE LOCATION PRECISELY)

NUMBER OF VESSELS INVOLVED	NEAREST CITY OR TOWN	COUNTY	STATE	ZIP CODE

WEATHER (CHECK ALL APPLICABLE)	WATER CONDITIONS	TEMPERATURE (ESTIMATE)	WIND	VISIBILITY
[ ] CLEAR [ ] RAIN [ ] CLOUDY [ ] SNOW [ ] FOG [ ] HAZY	[ ] CALM (WAVES LESS THAN 6") [ ] CHOPPY (WAVES 6" TO 2') [ ] ROUGH (WAVES 2' TO 6') [ ] VERY ROUGH (GREATER THAN 6') [ ] STRONG CURRENT	AIR_____°F WATER_____°F	[ ] NONE [ ] LIGHT (0-6 MPH) [ ] MODERATE (7-14 MPH) [ ] STRONG (15-25 MPH) [ ] STORM (OVER 25 MPH)	DAY NIGHT [ ] GOOD [ ] [ ] FAIR [ ] [ ] POOR [ ]

NAME OF OPERATOR	OPERATOR ADDRESS

OPERATOR TELEPHONE NUMBER ( )	DATE OF BIRTH MO DAY YR	OPERATOR'S EXPERIENCE	INSTRUCTION IN BOATING SAFETY
[ ] MALE [ ] FEMALE		[ ] NONE [ ] UNDER 100 HOURS [ ] > 100 HOURS	[ ] STATE COURSE [ ] U.S. POWER SQUADRON [ ] USCG AUXILIARY [ ] AMERICAN RED CROSS [ ] NONE

NAME OF OWNER	OWNER ADDRESS

OWNER TELEPHONE NUMBER ( )	NUMBER OF PEOPLE ON BOARD	NUMBER OF PEOPLE BEING TOWED	RENTED BOAT?
			[ ] YES [ ] NO

BOAT NO. 1 (THIS VESSEL)

BOAT REGISTRATION OR DOCUMENTATION NUMBER	STATE	HULL IDENTIFICATION NUMBER	BOAT NAME

BOAT MANUFACTURER	LENGTH	MODEL	YEAR BUILT

TYPE OF BOAT	HULL MATERIAL	ENGINE	PROPULSION	PERSONAL FLOTATION DEVICES (PFDS): WAS BOAT ADEQUATELY EQUIPPED WITH COAST GUARD APPROVED PFDS?
[ ] OPEN MOTORBOAT [ ] CABIN MOTORBOAT [ ] AUXILIARY SAIL [ ] SAIL (ONLY) [ ] ROWBOAT [ ] CANOE/KAYAK [ ] PERSONAL WATERCRAFT [ ] PONTOON BOAT [ ] HOUSEBOAT [ ] OTHER (SPECIFY)	[ ] WOOD [ ] ALUMINUM [ ] STEEL [ ] FIBERGLASS [ ] RUBBER/VINYL/CANVAS [ ] RIGID HULL INFLATABLE [ ] OTHER (SPECIFY)	[ ] OUTBOARD [ ] INBOARD [ ] INBOARD-STERNDRIVE (I/O) [ ] AIRBOAT	[ ] PROPELLER [ ] WATER JET [ ] AIR THRUST [ ] MANUAL [ ] SAIL	[ ] YES [ ] NO WERE PFDS ACCESSIBLE? [ ] YES [ ] NO

FUEL	NUMBER OF ENGINES	FIRE EXTINGUISHERS
[ ] GASOLINE [ ] DIESEL [ ] ELECTRIC	TOTAL HORSEPOWER	ON BOARD? [ ] YES [ ] NO USED? [ ] YES [ ] NO

OPERATION AT TIME OF ACCIDENT (CHECK ALL APPLICABLE)	ACTIVITY AT TIME OF ACCIDENT (CHECK ANY IF APPLICABLE)	TYPE OF ACCIDENT	WHAT CONTRIBUTED TO ACCIDENT? (CHECK ALL APPLICABLE)
[ ] CRUISING [ ] CHANGING DIRECTION [ ] CHANGING SPEED [ ] DRIFTING [ ] TOWING [ ] BEING TOWED [ ] ROWING/PADDLING [ ] SAILING [ ] LAUNCHING [ ] DOCKING/UNDOCKING [ ] AT ANCHOR [ ] TIED TO DOCK/MOORED [ ] OTHER (SPECIFY)	[ ] FISHING [ ] TOURNAMENT [ ] HUNTING [ ] SWIMMING/DIVING [ ] MAKING REPAIRS [ ] WATERSKIING/TUBING/ETC. [ ] RACING [ ] WHITEWATER SPORTS [ ] FUELING [ ] STARTING ENGINE [ ] NON-RECREATIONAL [ ] OTHER (SPECIFY)	[ ] GROUNDING [ ] CAPSIZING [ ] FLOODING/SWAMPING [ ] SINKING [ ] FIRE OR EXPLOSION (FUEL) [ ] FIRE OR EXPLOSION (OTHER) [ ] SKIER MISHAP [ ] COLLISION WITH VESSEL [ ] COLLISION WITH FIXED OBJECT [ ] COLLISION WITH FLOATING OBJ. [ ] FALLS OVERBOARD [ ] FALLS IN BOAT [ ] STRUCK BY BOAT [ ] STRUCK BY MOTOR/PROPELLER [ ] STRUCK SUBMERGED OBJECT [ ] OTHER (SPECIFY)	[ ] WEATHER [ ] EXCESSIVE SPEED [ ] IMPROPER LOOKOUT [ ] RESTRICTED VISION [ ] OVERLOADING [ ] IMPROPER LOADING [ ] HAZARDOUS WATERS [ ] ALCOHOL USE [ ] DRUG USE [ ] HULL FAILURE [ ] MACHINERY FAILURE [ ] EQUIPMENT FAILURE [ ] OPERATOR INEXPERIENCE [ ] OPERATOR INATTENTION [ ] CONGESTED WATERS [ ] PASSENGER/SKIER BEHAVIOR [ ] DAM/LOCK [ ] OTHER (SPECIFY)

ESTIMATED SPEED		
[ ] NONE	[ ] UNDER 10 MPH	[ ] 10 - 20 MPH
[ ] 21 - 40 MPH	[ ] OVER 40 MPH	

[ ] HIT AND RUN

Boating Accident Report

DECEASED (IF MORE THAN 2 FATALITIES, ATTACH ADDITIONAL FORMS)

NAME OF VICTIM	ADDRESS OF VICTIM	WAS PFD WORN? [ ] YES [ ] NO
DATE OF BIRTH [ ] MALE [ ] FEMALE	DEATH CAUSED BY [ ] DROWNING [ ] OTHER	[ ] DISAPPEARANCE
NAME OF VICTIM	ADDRESS OF VICTIM	WAS PFD WORN? [ ] YES [ ] NO
DATE OF BIRTH [ ] MALE [ ] FEMALE	DEATH CAUSED BY [ ] DROWNING [ ] OTHER	[ ] DISAPPEARANCE

INJURED (IF MORE THAN 2 INJURIES, ATTACH ADDITIONAL FORMS)

NAME OF VICTIM	ADDRESS OF VICTIM	
DATE OF BIRTH	MEDICAL TREATMENT BEYOND FIRST AID? [ ] YES [ ] NO ADMITTED TO HOSPITAL? [ ] YES [ ] NO	DESCRIBE INJURY
WAS PFD WORN? [ ] YES [ ] NO PRIOR TO ACCIDENT? [ ] YES [ ] NO AS A RESULT OF ACCIDENT? [ ] YES [ ] NO WAS IT INFLATABLE? [ ] YES [ ] NO		
NAME OF VICTIM	ADDRESS OF VICTIM	
DATE OF BIRTH	MEDICAL TREATMENT BEYOND FIRST AID? [ ] YES [ ] NO ADMITTED TO HOSPITAL? [ ] YES [ ] NO	DESCRIBE INJURY
WAS PFD WORN? [ ] YES [ ] NO PRIOR TO ACCIDENT? [ ] YES [ ] NO AS A RESULT OF ACCIDENT? [ ] YES [ ] NO WAS IT INFLATABLE? [ ] YES [ ] NO		

OTHER PEOPLE ABOARD THIS BOAT (IF MORE THAN 2 PEOPLE, ATTACH ADDITIONAL FORMS)

NAME	ADDRESS
DATE OF BIRTH	WAS PFD WORN? [ ] YES [ ] NO PRIOR TO ACCIDENT? [ ] YES [ ] NO AS A RESULT OF ACCIDENT [ ] YES [ ] NO WAS IT INFLATABLE? [ ] YES [ ] NO
NAME	ADDRESS
DATE OF BIRTH	WAS PFD WORN? [ ] YES [ ] NO PRIOR TO ACCIDENT? [ ] YES [ ] NO AS A RESULT OF ACCIDENT [ ] YES [ ] NO WAS IT INFLATABLE? [ ] YES [ ] NO

BOAT NO. 2 (IF MORE THAN 2 VESSELS, ATTACH ADDITIONALIDENTIFYING INFORMATION)

NAME OF OPERATOR	OPERATOR ADDRESS
OPERATOR TELEPHONE NUMBER ( )	BOAT REGISTRATION OR DOCUMENTATION NUMBER STATE
NAME OF OWNER	OWNER ADDRESS
OWNER TELEPHONE NUMBER ( )	

PROPERTY DAMAGE

ESTIMATED AMOUNT: THIS BOAT AND CONTENTS: $	OTHER BOAT(S) AND CONTENTS: $	OTHER PROPERTY: $
DESCRIBE PROPERTY DAMAGED		

WITNESSES NOT ON THIS VESSEL

NAME	ADDRESS	TELEPHONE NUMBER ( )
NAME	ADDRESS	TELEPHONE NUMBER ( )

PERSON COMPLETING REPORT

NAME	ADDRESS	TELEPHONE NUMBER ( )
SIGNATURE	QUALIFICATION [ ] OPERATOR [ ] OWNER [ ] INVESTIGATOR [ ] OTHER	DATE SUBMITTED

FOR AGENCY USE ONLY

CAUSES BASED ON (CHECK ONE): [ ]THIS REPORT [ ] INVESTIGATION [ ] INVESTIGATION AND THIS REPORT [ ] OTHER	
NAME OF REVIEWING OFFICE DATE RECEIVED	RECREATIONAL [ ] NON-REPORTABLE [ ] COMMERCIAL [ ]
PRIMARY CAUSE	SECONDARY CAUSE

Call the Coast Guard Infoline 1-800-368-5647 for information on **Federal Requirements for Recreational Boats**

ACCIDENT DESCRIPTION

DESCRIBE WHAT HAPPENED (SEQUENCE OF EVENTS. INCLUDE FAILURE OF EQUIPMENT. INCLUDE A DIAGRAM IF NEEDED. CONTINUE ON ADDITIONAL SHEETS IF NECESSARY. INCLUDE ANY INFORMATION REGARDING THE INVOLVEMENT OF ALCOHOL AN/OR DRUGS IN CAUSING OR CONTRIBUTING TO THE ACCIDENT. INCLUDE ANY DESCRIPTIVE INFORMATION ABOUT THE USE OF PFD'S.)

NOTES

Appendix F:

FLOAT PLAN

Crevalle recommends filling out a float plan each time you use your boat for an offshore day trip or a long cruise. Leave this information with a responsible person ashore, like a close friend or relative that you know well.

1. Name of person reporting and telephone number.

   _____

2. Description of boat.
   Type _____ Color _____ Trim _____
   Registration No. _____ Length _____
   Name _____ Make _____ Other Info _____

3. Engine type _____ H.P. _____
   No. of Engines _____ Fuel Capacity _____

4. Survival equipment: (Check as appropriate)

☐ PFDS	☐ Flares	☐ Mirror
☐ Smoke Signals	☐ Flashlight	☐ Food
☐ Paddles	☐ Water	☐ Others
☐ Anchor	☐ Raft or Dinghy	☐ EPIRB

5. Radio ☐ Yes ☐ No Type _____

6. Automobile license _____
   Type _____ Trailer License _____
   Color _____ and make of auto _____

7. Persons aboard _____
   Name _____ Age _____ Address & telephone No. _____

   _____

   _____

   _____

8. Do any of the persons aboard have a medical problem?
   ☐ Yes ☐ No If yes, what? _____

9. Trip Expectations: Leave at _____
   From _____ Going to _____
   Expect to return by _____ (time)
   and no later than _____

10. Any other pertinent info. _____

11. If not returned by _____ (time)
    call the COAST GUARD or (Local authority) _____

12. Telephone Numbers.

    _____ _____
    _____ _____
    _____ _____
    _____ _____

NOTES

Appendix G:

TROUBLESHOOTING GUIDE

PROBLEM	CAUSE AND SOLUTION
CONTROL SYSTEMS	
Hydraulic Steering is slow to respond & erratic.	• Steering system is low on fluid. Fill and bleed system. • Steering system has air in it. Fill and bleed system. • A component in the steering system is binding. Check and adjust or repair binding component. • Engine steering spindle is binding. Grease spindle.
The boat wanders and will not hold a course at cruise speeds.	• There could be air in the steering system. Fill & bleed the system. • The engine steering tab is corroded or out of adjustment. Replace or adjust steering tab. • Engine steering spindle is binding. Grease spindle.
The engine will not start with the shift control lever in neutral.	• The control cable is out of adjustment & not activating the neutral safety cut out switch. • The shift control lever is not in the neutral detent. Try moving the shift lever slightly. • There is a loose wire on the neutral safety switch on the control. Inspect wires and repair loose connections. • The starter or ignition switch is bad. • There is a problem with the electronic control system at the helm control, module or at the engine. Have the system serviced by a qualified marine technician.
PERFORMANCE PROBLEMS	
Boat is sluggish and has lost speed & RPM.	• The boat may be need to have marine growth cleaned from hull and running gear. • Propeller may be damaged & need repair. • Weeds or line around the propeller. Clean propeller. • Boat is overloaded. Reduce load. • Check for excessive water in the bilge. Pump out bilge & find & correct the problem. • The throttle adjustment has changed and the engine is not getting full throttle. Adjust the throttle cable. • The throttle is not responding properly and the engine is not getting full throttle. Have the throttle control checked by a qualified marine technician.
The boat vibrates at cruising speeds.	• Propeller may be damaged & need repair. • Propeller or propeller shaft is bent. Repair or replace damaged components. • The running gear is fouled by marine growth or rope. Clean running gear. • The engine is not trimmed properly. Trim engine.

PROBLEM	CAUSE AND SOLUTION
ENGINE PROBLEMS	
The engine is running too hot.	• The engine raw water pick up strainer is clogged with marine growth. Clean pick up. • The engine raw water pump impeller is worn or damaged. Repair the pump. • The engine thermostat is faulty and needs to be replaced.
The engine alternator is not charging properly.	• The battery cable is loose or corroded. Clean and tighten battery cables. • The alternator is not charging and must be replaced. • The battery is defective. Replace the battery.
The engine suddenly will not operate over 2000 RPM.	• The engine emergency system has been activated. The on board computer has sensed a problem and has limited the RPM to protect the engine. Find & correct the problem. • The tachometer is bad and needs to be replaced. • The throttle control is not responding properly. Have the throttle setting checked by a qualified technician.
The engine is loosing RPM. The boat is not overloaded and the hull bottom and running gear are clean and in good condition.	• The engine may be having a problem with a sticky anti-siphon valve, located in the fuel line near the fuel tank, that is restricting the fuel flow. Remove & clean or replace the anti-siphon valve. • The remote gasoline fuel filter could be dirty. Inspect and replace the fuel filter. • The primary fuel filter on the engine may be dirty. Inspect and replace the fuel filter. • The electronic engine control system on the engine is mal-functioning. Repair the engine control system. • The fuel injection system on the engine is malfunctioning . Repair the fuel injection system.

PROBLEM	CAUSE AND SOLUTION
ACCESSORY PROBLEMS	
The releasewell/baitwell pump runs, but does not pump water.	• The seawater intake fitting is clogged preventing the water from getting to the pump. Turn the pump off and put the boat in reverse to clean the intake fitting. • There is an air lock in the system. Prime the system. • The thru-hull valve is not open. Open valve.
The fresh water pump runs, but will not pump water.	• The water tank is empty. Fill the tank. • The intake hose is damaged and sucking air. Replace or repair the hose. • The pump is defective. Repair or replace the pump.
The raw water washdown pump runs, but the pump will not pump water.	• The thru-hull valve is not open. Open valve. • The in-line sea strainer for the pump is clogged. Clean the sea strainer. • The seawater intake fitting is clogged preventing the water from getting to the pump. Turn the pump off and put the boat in reverse to clean the intake fitting.
The washdown or fresh water pump fails to turn off after all outlets are closed.	• The intake hose is damaged and sucking air. Replace hose. • There is a leak in a pressure line or outlet. Repair the leak. • There is an air leak in the intake line. Repair the air leak. • The pressure switch is defective. Replace the pressure switch. • The strainer is clogged. Clean strainer. • The voltage to the pump is low. Check for corroded or loose wiring connections or low battery. • The pump is defective. Repair or replace the pump.
Reduction in water flow from the bilge pump.	• The strainer is clogged. Clean strainer. • The pump is defective. Repair or replace the pump. • Impeller screen plugged with debris. Clean screen at the base of the pump. • The discharge hose is pinched or clogged. Check discharge hose and clean or repair. • Low voltage to the pump. Check the battery and wire connections.

PROBLEM	CAUSE AND SOLUTION
ACCESSORY PROBLEMS	
The automatic float switch on the bilge pump raises but does not activate the pump .	• The circuit breaker or fuse for the automatic switch has tripped or blown. Reset the circuit breaker or replace the fuse. • The battery is dead. Charge or replace the battery. • The pump impeller is jammed by debris. Clean pump impeller housing. • The wire connections in the bilge have corroded. Replace connectors and secure above the bilge waterline. • The automatic switch is defective. Replace the switch. • The pump is defective. Replace pump.
The bilge pump will not run when the manual switch is activated.	• The circuit breaker supplying the switch has tripped. Reset the circuit breaker. Replace if defective. • The battery switch is off. Turn on the battery switch. • The pump impeller is jammed by debris. Clean pump impeller housing. • The wire connections in the bilge have corroded. Replace connectors and secure above the bilge waterline. • The switch is defective. Replace the switch. • The pump is defective. Replace pump.
Excessive odor from portable marine head.	• No deodorizer in the holding tank. Add deodorizer to the holding tank each time it is pumped out. • The waste in the tank is over two weeks old. Pump the holding tank if it has contained waste for two weeks or more.

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