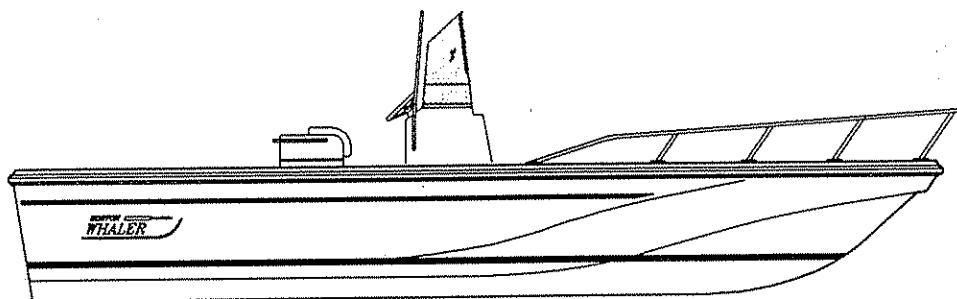


Boston Whaler[®] Center Console Series



OWNER'S MANUAL



T A B L E O F C O N T

C E N T E R C O N S O L E S E R I E

GENERAL INFORMATION

1. INTRODUCTION
2. ABOUT THIS MANUAL
3. COMMISSIONING CHECKLIST
4. OWNER'S RESPONSIBILITIES
5. SAFETY EQUIPMENT
6. WARRANTY

SYSTEMS AND OPERATION

7. ENGINE CONTROLS
8. STEERING SYSTEM
9. FUEL SYSTEM
10. ELECTRICAL SYSTEM
11. OUTBOARD ENGINES

THINGS YOU SHOULD KNOW ABOUT

12. LIFTING YOUR BOAT
13. TRAILERING
14. ENGINE INSTALLATION
15. ATTACHMENTS TO THE HULL
16. HULL TRIM
17. DRAINS AND BILGE PUMP
18. PRIOR TO GETTING UNDERWAY
19. SAFE OPERATING HABITS
20. SECURING THE BOAT
21. RIGGING FOR SKIING
22. ELECTRONICS
23. KEEPING SHIPSHAPE - MAINTENANCE

Boston Whaler, Inc.
1149 Hingham Street
Rockland, MA 02370

I N T R O D U C T I O N

Congratulations on the purchase of your new Boston Whaler. We are pleased to welcome you to the family of Boston Whaler owners who are known for their commitment to the highest quality and best engineering possible.

Boston Whaler began building boats in 1958. In the ensuing years our products have become legendary because of their unique foam core construction which makes Boston Whalers unsinkable, and extremely durable. Your new Whaler was designed using the experience and dedication to craftsmanship that only our over 30 years of boat building expertise can provide. Every Boston Whaler that we have ever built, including your boat, is the best in its class.

This manual provides important information on operating and caring for your new boat. We strongly suggest that you read it in detail prior to using the boat, so that you can familiarize yourself with its systems and operating procedures. Following these guidelines will protect your warranty and ensure your full enjoyment of your boat.

Boston Whaler has built its reputation on safety. We strongly encourage you to review the sections in the manual about boating safety, and the safety systems we have incorporated into your boat.

Thank you for purchasing a Boston Whaler. We wish you many years of safe, enjoyable boating. If you should need assistance, first talk with your dealer. Beyond that, please feel free to contact the Boston Whaler Customer Service Department.

Sincerely,
Boston Whaler

ABOUT THIS MANUAL

This manual is intended as a guideline for becoming familiar with your Boston Whaler and its operation. Safety has always been a primary consideration in the design and construction of all Boston Whalers, and this manual stresses the importance of safe operation.

The manual describes the systems of the boat in terms of purpose, operation and maintenance. At times reference is made to certain systems which may be installed by your dealer (for example engine and control systems). You should consult your dealer and the manuals provided by the manufacturers of those systems for detailed instructions on their operation and maintenance.

We know this manual will provide you with knowledge to help make your time on board your Boston Whaler enjoyable and safe. In an effort to continually improve our products and provide better service, we invite your constructive comments on our boats and on the format and content of this owner's manual.

MODEL

- 17' Montauk
- 17' Montauk SE
- 17' Outrage
- 19' Outrage II
- 21' Outrage
- 24' Outrage

IDENTIFICATION NUMBERS

BW Hull No. _____

Hull Ident. No. _____

Engine Ser. No. _____

HAZARD WARNINGS (Continued)

⚠ WARNING: TO AVOID EXCESSIVE STEERING LOADS, AND TO GET THE BEST STEERING PERFORMANCE FROM BOSTON WHALERS EQUIPPED WITH NO FEEDBACK STEERING SYSTEMS, THE OUTBOARD MOTOR OR OUTDRIVE TRIM TABS AND TILT POSITION MUST BE ADJUSTED AS INSTRUCTED IN THE MOTOR MANUFACTURER'S OPERATION MANUAL. FAILURE TO DO SO CAN AFFECT THE PERFORMANCE OF YOUR BOSTON WHALER AND ITS SAFE OPERATION.

⚠ WARNING: DO NOT COVER CRACKS IN THE STEERING CABLE OR FITTINGS WITH TAPE OR OTHER SEALANTS. THIS WILL CREATE A HAZARD IN WHICH THE CABLE CAN FAIL SUDDENLY WITHOUT WARNING.

⚠ WARNING: ON NO FEEDBACK STEERING SYSTEMS, IT IS POSSIBLE TO OVERTRIM THE ENGINE AND INCREASE THE STEERING TORQUE TO THE POINT THAT THE STEERING CANNOT BE TURNED, EVEN THOUGH THE TORQUE IS NOT FELT AT THE WHEEL. THIS MAY GIVE THE IMPRESSION THAT THE STEERING IS "LOCKED".

⚠ CAUTION: IF ANY CHANGE IN STEERING LOADS OR PERFORMANCE OCCUR, CHECK WITH YOUR DEALER IMMEDIATELY.

⚠ CAUTION: REMEMBER, STEERING IS CRITICAL TO THE SAFE OPERATION OF YOUR BOAT AT ANY SPEED.

⚠ WARNING: FILLING OF THE FUEL TANK SHOULD BE DONE WITH GREAT CARE TO AVOID THE RISKS OF FIRE AND/OR EXPLOSION.

⚠ CAUTION: OIL AND FUEL SPILLS CAN BE DANGEROUS AND CAN SUBJECT OFFENDERS TO SEVERE PENALTIES

⚠ DANGER: IF FUEL ODORS ARE PRESENT, OBSERVE "NO SMOKING", AVOID ANY SPARKS AND DO NOT START ENGINES OR ENERGIZE ANY ELECTRICAL EQUIPMENT.

CHECK FOR LEAKS IN TUBING, CONNECTIONS AND HOSES. CORRECT THE CAUSE OF THE LEAKS, AND VENTILATE THE AREA TO ASSURE THAT NO FUMES REMAIN, PRIOR TO ENERGIZING ANY ELECTRICAL EQUIPMENT AND/OR STARTING ENGINES.

HAZARD WARNINGS (Continued)

⚠ WARNING: TO AVOID EXCESSIVE STEERING LOADS, AND TO GET THE BEST STEERING PERFORMANCE FROM BOSTON WHALERS EQUIPPED WITH NO FEEDBACK STEERING SYSTEMS, THE OUTBOARD MOTOR OR OUTDRIVE TRIM TABS AND TILT POSITION MUST BE ADJUSTED AS INSTRUCTED IN THE MOTOR MANUFACTURER'S OPERATION MANUAL. FAILURE TO DO SO CAN AFFECT THE PERFORMANCE OF YOUR BOSTON WHALER AND ITS SAFE OPERATION.

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HAZARD WARNINGS (Continued)

⚠ WARNING: WHEN ADJUSTING BOAT TRIM, RELEASE YOUR GRIP ON THE WHEEL CAREFULLY AND BE READY TO IMMEDIATELY GRASP IT AGAIN. AN INCORRECTLY ADJUSTED TRIM TAB MAY CAUSE THE BOAT TO TURN VIOLENTLY.

⚠ CAUTION: IT IS THE OWNER'S RESPONSIBILITY TO MAINTAIN THE BILGE PUMPS, TO CLEAN THE SCREENS, CHECK THE PROPER OPERATION OF THE FLOAT SWITCH AND KEEP THE AFT SCUPPERS FREE OF DEBRIS TO ALLOW PROPER DRAINAGE.

⚠ CAUTION: NEVER USE ACETONE, GASOLINE OR HOUSEHOLD CLEANERS ON THE ACRYLIC WINDSHIELD. THESE WILL CAUSE DAMAGE.

⚠ CAUTION: NEVER USE STEEL OR BRONZE WOOL FOR ANY CLEANING APPLICATIONS. TINY PARTICLES WILL FALL OFF, GETTING INTO THE GELCOAT, CAUSING RUST STAINS.

⚠ CAUTION: FOLLOW THE TWO IMPORTANT CONSIDERATIONS IN SECTION 23 REGARDING VARNISHING AND SANDING.

BOSTON WHALER, INC.
COMMISSIONING CHECKLIST

Prior to taking delivery of your new Boston Whaler, we strongly encourage you to review the items in this checklist with your dealer to ensure the safe and efficient operation of your boat.

Identification

Owner: Name _____ Tel. no. () _____
Address _____
Dealer: Name _____ Tel. no. () _____
Address _____
Dealer rep. _____
Boat: Model _____ Hull no. _____ Year _____
Hull ident. no. _____ Capacity _____ persons

Options installed as ordered

Deliverables

- Title & registration papers
- Ignition keys
- Owner's Manual
- Equipment manuals

Owner's responsibilities

- Knowledge & skills
- Safe operation
- Proper equipment
- Proper maintenance

Safety equipment

- Fire extinguisher
- Personal flotation devices
- Sound signalling device
- Visual signalling device

Electrical system

- Batteries & maintenance
- Switch Panel
- Navigation & anchor lights
- Compass light

Fuel system

- Tank capacity
- Filling procedures & precautions
- Engine filter
- Vent
- Fuel gauge

Steering system

- Principles of operation
- Maintenance

Controls & Instrument Panel

- Ignition (Start/stop)
- Throttle
- Shift
- Engine tilt/trim

Things to know

- Lifting
- Trailering
- Engine installation
- Attachments to hull
- Battery installation
- Hull trim
- Drainage
- Prior to getting underway
- Safe operating habits
- Securing the boat
- Rigging for skiing
- Installing electronics

Keeping shipshape

- Fiberglass parts
- Metal & wood trim
- Windshield
- Upholstery
- Canvas
- Bottom paint & waterlines
- Winter storage

OWNER'S RESPONSIBILITIES

OWNING A BOAT INVOLVES RESPONSIBILITIES to both the general public and to your passengers. These responsibilities are intended to assure the safety and enjoyment of boating for everyone.

Although this manual is not intended to teach you all you should know about boating, we list below some of the more important responsibilities which must be considered before beginning your first cruise in your new Boston Whaler. The U.S. Coast Guard Auxiliary is a good local source to expand your knowledge about boating.

KNOWLEDGE OF OPERATING PROCEDURES:

- Rules of the Road
- Navigation procedures and skills
- Boat handling and maneuvering
- Location and use of safety equipment
- Emergency procedures for:
 - Fire and/or explosion
 - Collision with another boat or floating object
 - Going aground
 - Swamping or capsizing
 - Man overboard
 - Medical emergencies
- Basic first aid
- How to approach a person in the water
- Anchoring and mooring
- Signalling and radio communications
- Predicting weather and sea conditions

SAFE OPERATION OF THE BOAT

- Proper lookout
- Awareness of other boats & swimmers nearby
- Attention to navigational hazards - shoals & obstructions
- Safe speed for existing conditions
- Regard for your boat's wake
- Operation of the boat in a sober, responsible manner

A PROPERLY EQUIPPED BOAT

- Proper and sufficient safety equipment
- Adequate fuel
- Proper anchor and mooring equipment

PROPER MAINTENANCE OF THE BOAT AND ITS EQUIPMENT

- Prevent breakdowns and dangerous conditions

COURTESY ON THE WATER

- Proper speed
- Proper trash & garbage disposal
- Don't anchor too near others
- Keep the noise down
- Help others in need

Be a responsible member of the boating community. **BOSTON WHALER OWNERS ARE RESPECTED FOR MORE THAN JUST THE QUALITY OF THEIR BOATS!**

SAFETY EQUIPMENT

GENERAL: Your Boston Whaler has been designed with safety in mind with our unsinkable foam core hull making us an industry leader in boating safety. However, there will be times when your actions will be important in ensuring the safety of you and your guests.

Learn the location and proper use of all safety equipment on your boat. Your guests should be given demonstrations and practical instruction in this regard, prior to getting underway. They will appreciate knowing that you care enough about their safety to take the time to conduct safety drills. Prior to departure, make sure that all safety equipment is properly stowed in assigned locations, ready for immediate use.

THE U.S. COAST GUARD REQUIRES THE FOLLOWING SAFETY EQUIPMENT:

1. USCG Approved fire extinguisher (USCG type B-1) (See your dealer)
2. USCG Approved Person Flotation Devices (Life vests or PFDs)

Boats 16 feet and larger must be equipped with one Type I, II, III or V for each person aboard plus one Type IV.

Discuss with your dealer the PFD types you should carry on board your Boston Whaler.

3. Visual distress signals

Boats 16 feet in length and larger must carry U.S. Coast Guard approved distress signals for use both during the day and at night.

Discuss with your dealer the types recommended for your boat.

4. Navigation lights

Your Boston Whaler is equipped with the appropriate USCG approved navigation lights for use while underway at night. These must be used while underway from sunset to sunrise and in any periods of reduced visibility.

5. A sound signalling device

A hand, mouth or power operated horn or whistle is required on board boats in the size range covered by this manual. If an electric horn is not provided on your boat, discuss the requirements with your dealer.

Exact specifications for safety equipment are included in the booklet "Boating Basics, Blueprint for Safety", published by the National Marine Manufacturer's Association, which is included in your owner's package.

LIMITED WARRANTY

For the protection of its customers, Boston Whaler, Inc. offers:

- (1) A Limited Ten-year Warranty for the Hull and Whaler Drive Structure;
- (2) A Limited Two-year Warranty for Accessories supplied by Boston Whaler, Inc., other than engines;
- (3) A Limited One-year Warranty for Cosmetic Finishes.

1. Boston Whaler, Inc. provides each new boat with a warranty registration card which must be filled out and mailed to Boston Whaler, Inc. promptly after purchase, to help us fulfill our service obligations to our customers, and our legal obligations under the Federal Boat Safety Act. FAILURE TO COMPLETE AND RETURN THE WARRANTY REGISTRATION CARD WITHIN 30 DAYS OF DELIVERY OF YOUR BOAT TO YOU WILL VOID THE WARRANTY.
2. Boston Whaler, Inc. warrants each Boston Whaler Hull and Whaler Drive manufactured by Boston Whaler, Inc. to be free from STRUCTURAL defects due to substandard material and workmanship, under conditions of normal consumer use and service, for a period of TEN YEARS from date of manufacture.
3. ACCESSORIES supplied by Boston Whaler, Inc., whether or not manufactured by Boston Whaler, Inc. (other than the engine assemblies, which are warranted by the engine manufacturers and not by Boston Whaler, Inc.) are warranted against defective workmanship or materials for a period of TWO YEARS from date of delivery to the original purchaser. (Built-in fuel tanks are accessory components).
4. Boston Whaler, Inc. warrants each hull and Whaler Drive supplied by Boston Whaler, Inc. to be free from COSMETIC defects (including bottom blistering) due to substandard materials or workmanship, under conditions of normal use and service, for a period of ONE YEAR from date of delivery to the original purchaser.
5. None of the foregoing hull and accessory warranties applies to any Boston Whaler boat which has been structurally altered, subjected to unreasonable use, negligence or accident, or used for racing purposes. These warranties are also void if the manufacturer's maximum recommended horsepower is exceeded. The recommended horsepower is shown on the certificate plate affixed to the hull.
6. The obligation of Boston Whaler, Inc. under these warranties is limited to the repair, replacement or making reimbursement within a reasonable time, for such boat or part which shall, within the warranty period, be determined to have been defective in material or workmanship. The decision to repair, replace or make reimbursement for a particular boat or parts shall be at the election of Boston Whaler, Inc.

Replacement or reimbursement for such boat or part will be prorated for use according to the portion of the warranty period elapsed when the claim is made. [For example, if you have had your boat for six years and a structural defect appears, you would be entitled (at Boston Whaler's election and assuming Boston Whaler has not elected to repair) to reimbursement equal to 40% of your hull's purchase price or an equal credit towards the purchase of a new hull.] Boston Whaler, Inc. may require such boat or part to be returned to an authorized dealer or the factory for examination, transportation charges prepaid. Boston Whaler, Inc. will reimburse these charges upon disclosure of a bona fide warranty claim.

BOSTON WHALER, INC. MAKES NO OTHER EXPRESS WARRANTIES, AND INTENDS NO IMPLIED WARRANTIES. IF ANY IMPLIED WARRANTIES BE FOUND TO EXIST, SUCH IMPLIED WARRANTIES WILL BE SUBJECT TO THE TIME LIMITS APPEARING AT THE TOP OF THIS WARRANTY. SOME STATES DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU. BOSTON WHALER, INC. WILL NOT BE LIABLE FOR CONSEQUENTIAL DAMAGES OF ANY KIND RESULTING FROM A BREACH OF ANY WARRANTY EXPRESSED OR IMPLIED. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

7. Boston Whaler, Inc. reserves the right to improve its products through changes in design or material without obligation to incorporate such changes on boats of prior manufacture.
8. To initiate a warranty claim, it is the responsibility of the purchaser to contact an authorized Boston Whaler dealer or the Customer Service Department at Boston Whaler, Inc., 1149 Hingham Street, Rockland, MA 02370 within a reasonable time after discovery of the defect, giving details as to the nature of the problem, hull serial number, date of purchase and from whom, and circumstances of the defect, and delivering to such dealer the boat with respect to which the warranty claim is made.
9. This warranty is not limited to the original purchaser. It is transferrable to all future owners of the boat. Any transfer of the boat to a new owner shall not extend the period of any warranty made by Boston Whaler, Inc.
10. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

Boston Whaler, Inc., 1149 Hingham Street, Rockland, MA 02370

ENGINE CONTROLS

DESCRIPTION: The controls for operating outboard engines consist of the following:

- Ignition control (Start/stop)
- Throttle control (Engine speed)
- Shift control (Forward, neutral, reverse)
- Tilt & trim controls (Engine tilt & boat trim)

The configuration on your Boston Whaler will depend on the engine package you have chosen. Be sure to read the engine manual provided by the engine manufacturer, for specific instructions on operation and maintenance of the engine and its controls.

IGNITION CONTROL: Engines are started with an electric starter motor activated by a key switch on the helm control panel. The key switch will have three positions - "Off", "Start" and "Run". Some ignition panels include start and stop buttons which are separate from the key switch. All control consoles with key switches are equipped with an emergency stop switch lanyard. We recommend that this lanyard be attached to the operator. Also, a neutral start safety switch is incorporated in the shift control system or in the engine, which prevents the engine from being started while in gear.

⚠ DANGER: IF FUEL ODORS ARE PRESENT, OBSERVE "NO SMOKING", AVOID ANY SPARKS AND DO NOT START ENGINE OR ENERGIZE ANY ELECTRICAL EQUIPMENT.

CORRECT THE CAUSE OF FUEL LEAKS AND ASSURE THAT NO FUMES REMAIN PRIOR TO STARTING THE ENGINE OR ENERGIZING ELECTRICAL EQUIPMENT.

THROTTLE & SHIFT CONTROLS: All Center Console models are equipped with a single lever binnacle mounted control which provides both throttle and shift functions. This is mounted on the boat's helm control panel. The lever is placed in the center or "neutral" position when starting the engine, and to disengage the propeller.

Generally, engine speed is increased by moving the lever toward the direction of travel (ahead or astern) and decreased by moving the lever toward the neutral position. Cold starting usually involves moving the lever away from the housing in order to advance the throttle with the propeller disengaged. Refer to the engine and/or control manufacturer's instructions for proper operation of these controls and for cold starting procedures (warm-up levers).

TILT/TRIM CONTROL: Larger engines usually have this control to facilitate tilting the engine lower unit out of the water when not in use, and for tilting it back into operating position. The trim function allows the angle of the engine to be changed while underway in order to improve the boat trim as speed is increased or decreased. It also is used to compensate for weight distribution in the boat. The control is usually located on the throttle/shift

lever, but may be separately mounted on the dash panel. It moves the engine "in" toward the transom to lower the bow, or "out" away from the transom to raise the bow. See the separate section of this manual dealing with "Hull Trim" for more information on this subject.

MAINTENANCE: Follow the manufacturer's instructions on inspection, testing and lubrication of the engine controls. These instructions are usually included in the engine owner's manual or as a separate instruction in your owner's package.

⚠ WARNING: IT IS THE OWNER'S RESPONSIBILITY TO TEST OPERATE THE NEUTRAL START SAFETY SWITCH TO ASSURE PROPER OPERATION. IF IT IS NOT OPERATING PROPERLY, HAVE IT CORRECTED IMMEDIATELY TO PREVENT ACCIDENTAL STARTING WHILE THE ENGINE IS IN GEAR.

IT IS THE OWNER'S RESPONSIBILITY TO ASSURE THAT THE EMERGENCY STOP SWITCH LANYARD IS ATTACHED TO THE OPERATOR. THIS WILL AUTOMATICALLY STOP THE ENGINE IF THE OPERATOR IS NOT AT THE CONTROL STATION.

STEERING SYSTEM

DESCRIPTION: The steering system installed in your Boston Whaler will be one of the following:

1. Single cable mechanical steering (17' Outrage & 17' Montauk prior to 1992)
2. Single cable mechanical steering (no feedback) (All models 1992 and after)
3. Dual cable mechanical steering (19' Outrage prior to 1992, 20' Outrage, 22 Outrage prior to 1992)
4. Hydraulic steering (Optional on 19' Outrage and 21' Outrage)

Mechanical Cable steering systems, including "No feedback" steering, consist of the following:

- a. Steering wheel and single or dual rotary helm unit
- b. Helical wound flexible cable

In most cases your Boston Whaler dealer will have connected the mechanical steering system to the engine tilt tube in accordance with the steering system manufacturer's instructions. For further information on installation, refer to the manufacturer's instructions provided with your owner's package.

Hydraulic steering systems consist of the following:

- a. Steering wheel and helm pump unit
- b. Engine hydraulic cylinder
- c. Hydraulic hoses

Hydraulic steering is optional or standard equipment, depending on the model you have chosen.

Transom mounted outboard models use a front mounted cylinder. All Whaler Drive models use side mounted cylinders.

On models equipped with non-counter-rotating engines over 300 horsepower, decrease of steering pressure and increased ease of steering can be obtained by increasing the size of the helm pump unit and by providing a separate cylinder for each engine.

OPERATION:

Mechanical Cable steering system: When the steering wheel is turned, its shaft activates a series of gears in the rotary helm unit which acts to push or pull the flexible cable. The movement of this cable causes a connecting rod at the engine to move left or right, thus turning the engine to port or starboard.

No feedback steering system: The operation of this helm is the same as that of the Mechanical Cable steering system. The helm in this system contains a clutch mechanism which prevents the engine torque from being felt at the steering wheel. This reduces driver

fatigue by eliminating the constant need to fight the wheel. IT DOES NOT ELIMINATE ENGINE TORQUE. This can only be reduced by proper trim and tilt settings and by trial and error when running the boat.

⚠ WARNING: TO AVOID EXCESSIVE STEERING LOADS, AND TO GET THE BEST STEERING PERFORMANCE FROM BOSTON WHALERS EQUIPPED WITH NO FEEDBACK STEERING SYSTEMS, THE OUTBOARD MOTOR OR OUTDRIVE TRIM TABS AND TILT POSITION MUST BE ADJUSTED AS INSTRUCTED IN THE MOTOR MANUFACTURER'S OPERATION MANUAL. FAILURE TO DO SO CAN AFFECT THE PERFORMANCE OF YOUR BOSTON WHALER AND ITS SAFE OPERATION.

Hydraulic steering system: when turning the steering wheel either clockwise or counterclockwise, the helm pump unit forces hydraulic fluid through hoses to and from the engine cylinder which is connected to the engine tiller arm. The engine cylinder moves the engine tiller arm to port or starboard, depending upon the direction the steering wheel is turned. On dual engine installations, the engine cylinder is attached to the starboard engine, and a tie bar between the two engines moves both engines simultaneously as the steering wheel is turned, thus turning the boat.

MAINTENANCE:

Mechanical steering system maintenance: Mechanical steering cables are a vinyl jacketed steel core material. Any cracks or abrasion in the vinyl jacket will cause corrosion of the steel with resultant swelling and hard steering. The cable should be inspected regularly. If any cracks or abrasions are noted, the cable should be replaced.

Keep all moving parts of the steering system free of salt build-up or other foreign matter which might affect their operation. Lubrication of the engine tilt tubes should be performed annually to prevent binding of the steering system.

No feedback steering system maintenance:

1. After a few hours of operation and at frequent intervals thereafter, check all fasteners and the complete steering system for security and integrity.
2. Keep all moving parts free from build-up of salt and other foreign material. Such build-up will affect their operation and create steering problems. Pay particular attention to the hinge tube of outboard motors. Periodically remove the cable, clean the hinge tube thoroughly, and lubricate with a waterproof grease.

3. Inspect periodically for corrosion. Any parts affected by corrosion must be replaced. When replacing hardware, self-locking hardware MUST be used.
4. Inspect steering cable periodically for cracks or other damage. If any are found, the cable must be replaced.

⚠ WARNING: DO NOT COVER CRACKS WITH TAPE OR OTHER SEALANTS. THIS WILL CREATE A HAZARD IN WHICH THE CABLE CAN FAIL SUDDENLY WITHOUT WARNING.

⚠ WARNING: ON NO FEEDBACK STEERING SYSTEMS, IT IS POSSIBLE TO OVERTRIM THE ENGINE AND INCREASE THE STEERING TORQUE TO THE POINT THAT THE STEERING CANNOT BE TURNED, EVEN THOUGH THE TORQUE IS NOT FELT AT THE WHEEL. THIS MAY GIVE THE IMPRESSION THAT THE STEERING IS "LOCKED".

THIS CONDITION CAN OCCUR MORE WHEN JACK PLATES ARE USED TO RAISE THE ENGINE ON THE TRANSOM, AND CAN ONLY BE OVERCOME BY REDUCING THE ENGINE TRIM OUT POSITION. UNTIL YOU ARE COMPLETELY FAMILIAR WITH YOUR BOSTON WHALER AND THE EFFECTS OF POWER TRIM, MAKE ALL ADJUSTMENTS OF TRIM WITH EXTREME CARE.

Hydraulic steering system maintenance:

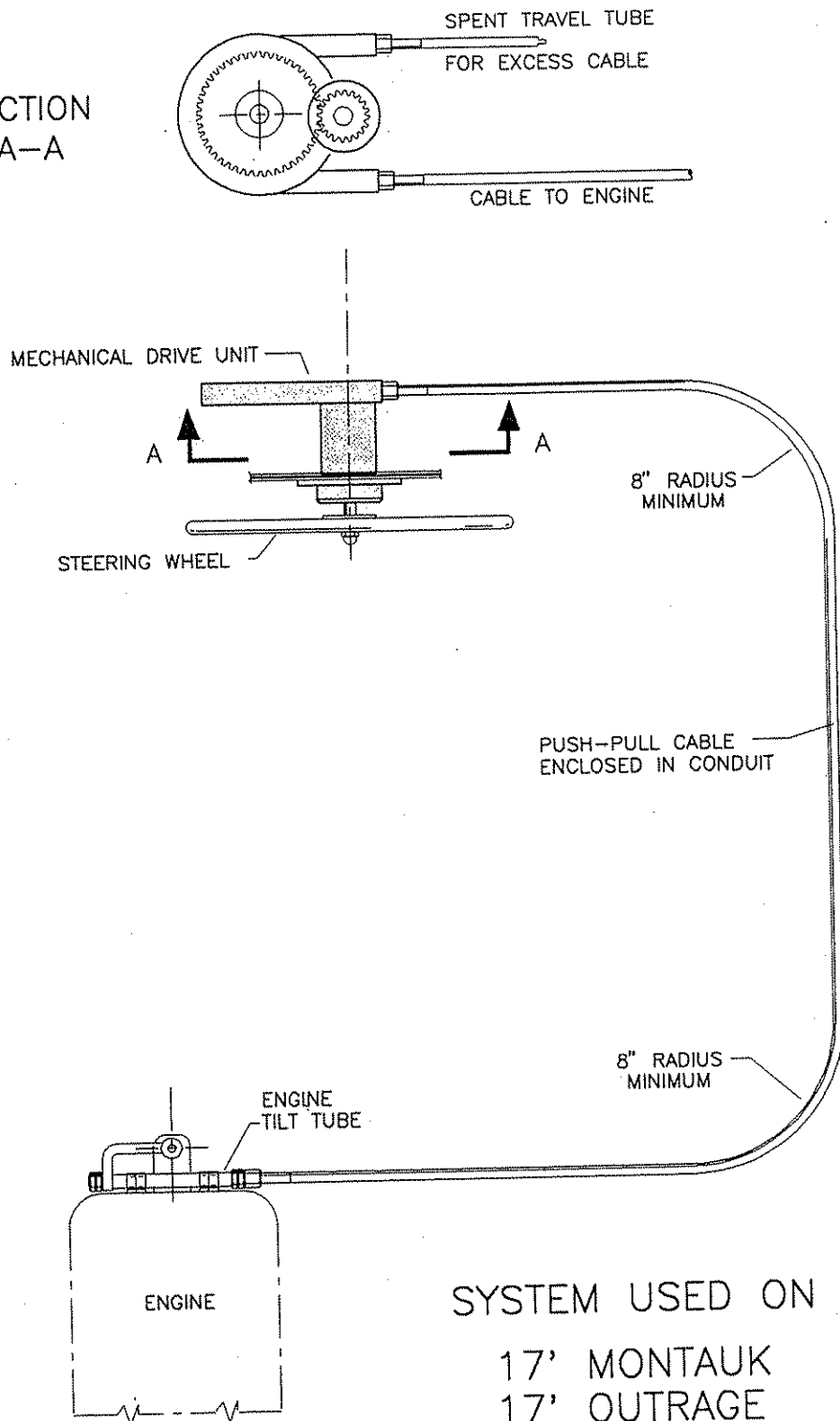
1. Check fluid level in helm pump unit
2. Lubricate slides on the engine cylinder
3. Check for hydraulic leaks. Correct leaks, purge and refill system as necessary
4. Check mechanical connections. Tighten loose parts and replace badly worn part. (See steering system manual.)
5. Check hoses/tubing for chafing and rubbing. Replace as necessary.
6. Check outboard engine tilt tube for salt deposits and corrosion. Clean and re-lubricate as required. (Recommended every 8-12 months)

ALL STEERING SYSTEMS, whether mechanical cable or hydraulic type, require regular inspection, periodic adjustment and occasional replacement of parts in order to avoid unexpected loss of steering.

⚠ CAUTION: IF ANY CHANGE IN STEERING LOADS OR PERFORMANCE OCCUR, CHECK WITH YOUR DEALER IMMEDIATELY.

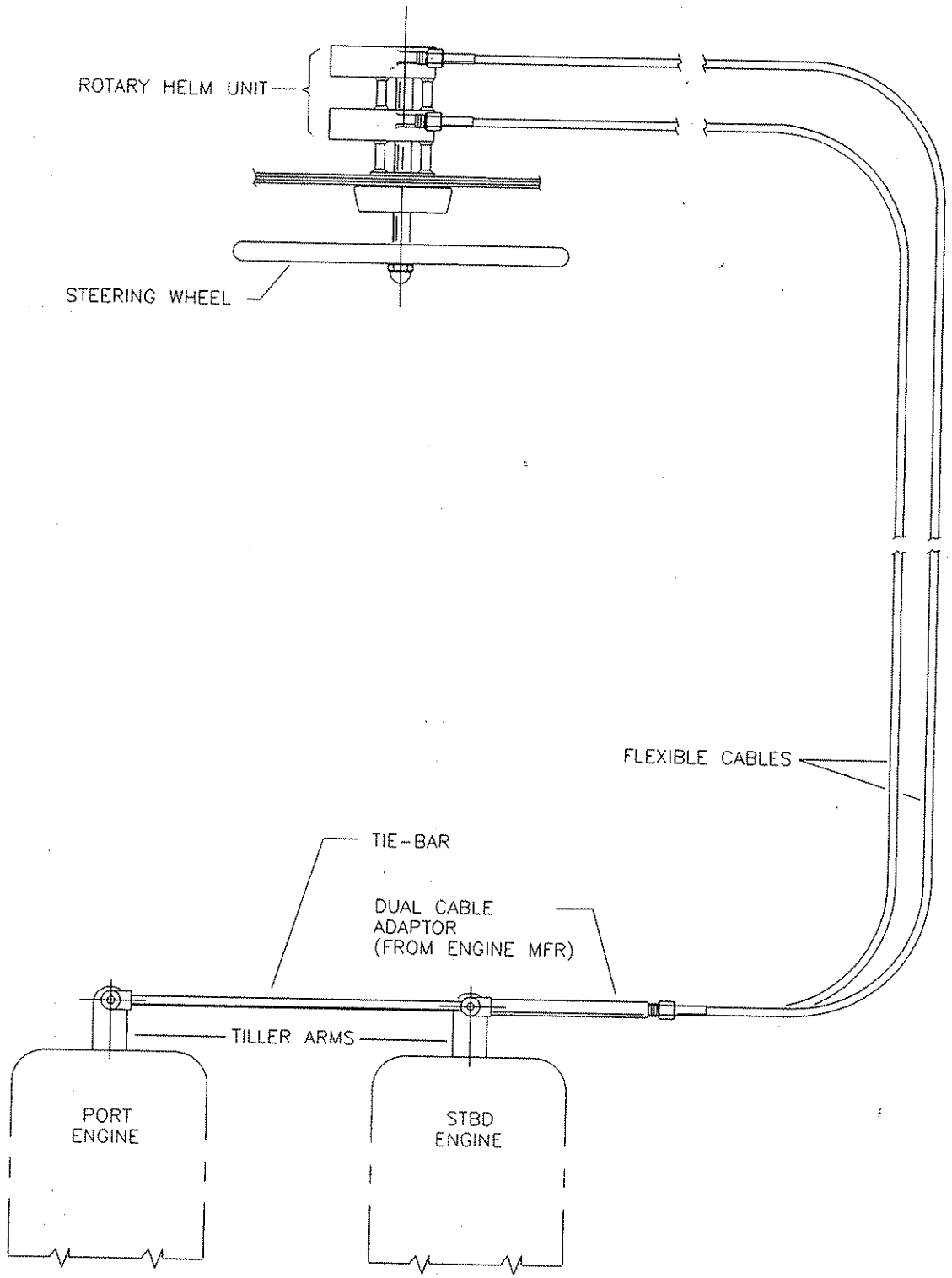
⚠ CAUTION: REMEMBER, STEERING IS CRITICAL TO THE SAFE OPERATION OF YOUR BOAT AT ANY SPEED.

SECTION
A-A



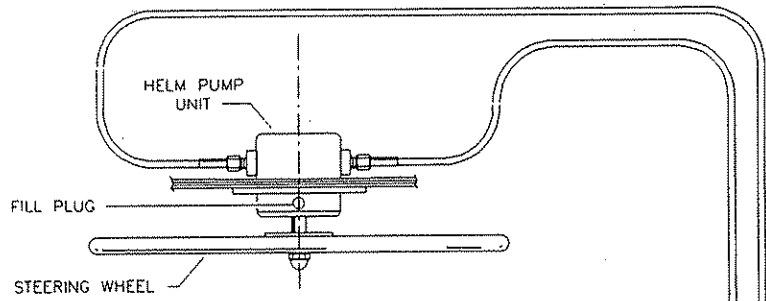
SYSTEM USED ON
17' MONTAUK
17' OUTRAGE
19' OUTRAGE II
21' OUTRAGE

SINGLE CABLE MECHANICAL STEERING SYSTEM

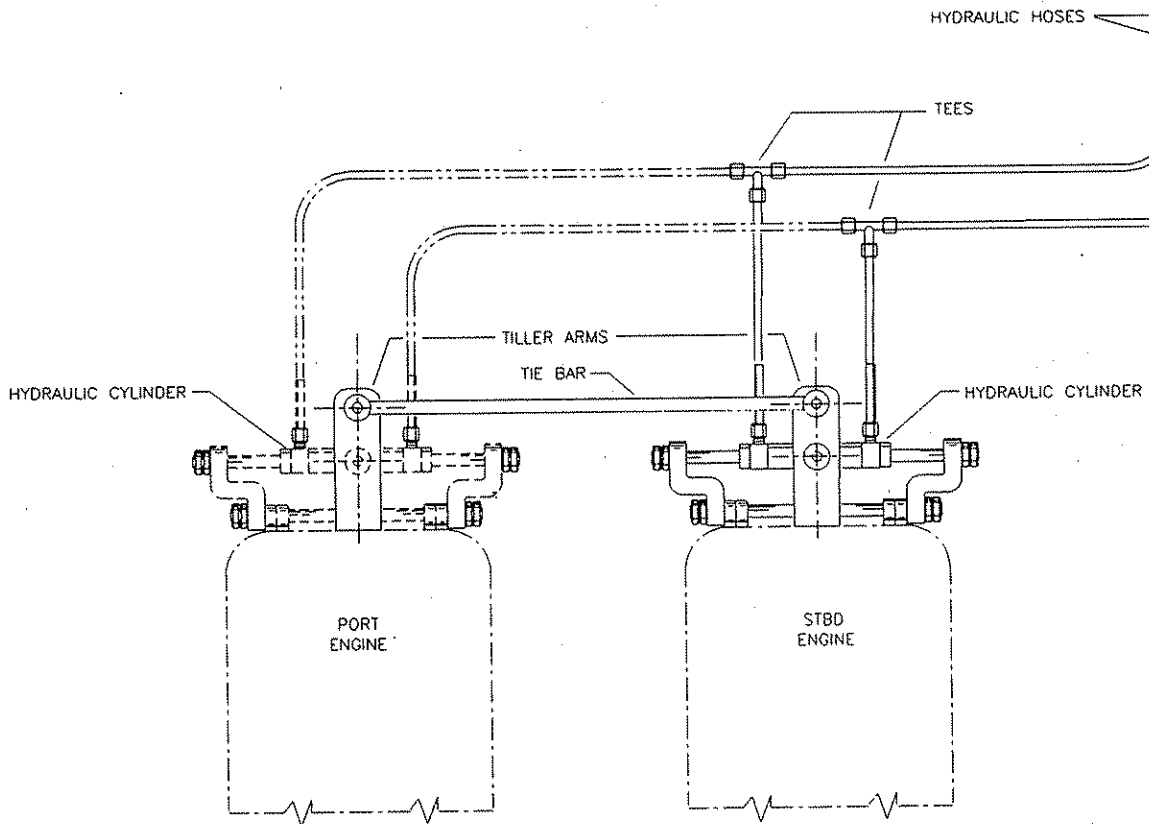


USED ON OLDER
OUTRAGE MODELS

DUAL CABLE MECHANICAL STEERING SYSTEM



NOTE: ON MODELS EQUIPPED WITH NON-COUNTER-ROTATING ENGINES OVER 300 HORSEPOWER, DECREASE OF STEERING PRESSURE AND INCREASED EASE OF STEERING CAN BE OBTAINED BY INCREASING THE SIZE OF THE HELM PUMP UNIT AND BY PROVIDING A SEPARATE CYLINDER FOR EACH ENGINE. CONSULT YOUR DEALER ABOUT EXPANDING YOUR STEERING SYSTEM.



TYPICAL
DUAL ENGINE

TYPICAL
SINGLE ENGINE

OPTIONAL HYDRAULIC STEERING SYSTEM

FUEL SYSTEM

DESCRIPTION: The fuel system installed in your Boston Whaler has a single tank with the following capacity:

17' Montauk	Portable tank with capacity depending on tank purchased
17' Outrage	Built-in tank with 34 gallon capacity
19' Outrage II	Built-in tank with 73 gallon capacity
21' Outrage	Built-in tank with 122 gallon capacity
24' Outrage	Built-in tank with 195 gallon capacity

The drawing contained in this section shows a typical single tank configuration with its corresponding fill, vent and supply piping.

Portable tanks on the 17' Montauk are best positioned below the pilot seat. Portable tanks should rest on one of our fuel tank mats which have a grooved bottom to reduce slipping on the gel-coat surface. Placing the tank on the mat will prevent the tank from moving around, marring the deck and staining the deck with rust. An elastic shock cord, secured with clips to the deck and passed snugly over the fuel tank, will help to keep it in place.

The built-in fuel tank on other models is located below the cockpit in its own fiberglass compartment and is securely fastened in place with bolted brackets and foam to prevent it from shifting.

Boston Whaler built-in fuel tanks are NMMA certified and are of heavy gauge welded aluminum construction. Fuel pickup tubes are located at the aft end of the tank, vent piping at the forward end, and the fill pipe enters the tank at the aft end or amidship. The fuel tank and deck fill fitting are bonded by 10 gauge bonding cables to a ground plate on the transom.

A fuel level indicator is installed on the top of each tank. The fuel level data is transmitted electrically to a remote gauge at the helm instrument panel which can be read when the ignition switch is in the "running" position. The boat must be level to get an accurate reading.

Hoses and fittings for built-in tanks are of marine type and are installed using industry accepted procedures and components which are designed to prevent leaks. Supply lines are fitted with flexible hoses to reduce the effects of vibration on the connections. Vent and fill hoses are tightly secured to their fittings with stainless steel hose clamps. On the 17' Montauk, use withdrawal hoses which are compatible with the engine fuel connection fittings, and compatible in size with your engine.

The fuel fill deck plate for built-in tanks is located as follows:

17' Outrage	On the Port gunwale
19' Outrage II	On the aft splashwell bulkhead
21' Outrage	On the Starboard gunwale
24' Outrage	On the Starboard gunwale

It is connected by a hose to the tank fill fitting. A special key is provided to open and close the deck plate. The fill cap on portable tanks is located on the top surface of the tank.

The fuel vent, (on the outside of the hull) for built-in tanks is located as follows:

17' Outrage	Port side aft
19' Outrage II	Starboard side amidships
21' Outrage	Starboard side amidships
24' Outrage	Starboard side amidships

It has a cleanable flame arrestor screen, and is connected by a special hose to the vent fitting on the tank.

The vent on portable tanks is normally located on the fill cap.

The fuel filter is standard on the 19' Outrage II, 21' Outrage, and 24' Outrage, and is of the "spin off" cartridge type. It is located under the starboard aft quarter seat on the 19' Outrage. A fuel filter is not installed on the 17' Outrage, but it may be desirable to add one.

The filter's function is to filter out any fine particles of solid contaminants and to remove gummy substances which may be present in the fuel. It also helps to separate water which may have gotten into the fuel by condensation or otherwise.

Fuel tank fittings for built-in tanks on all center console models (except the 17' Montauk, which has portable tanks) are accessed as follows:

Fuel gauge sender unit:

All built-in models Through the Pi-Hi on deck amidships

Fuel fill hose connection:

17' Outrage Below the Port gunwale
19' Outrage II Through the splash well bulkhead inspection plate aft on the port side
21' Outrage Under the Pi-Hi inside the console
24' Outrage Under the Pi-Hi forward on the tank cover

Thru-hull vent fitting hose connection:

17' Outrage Below the gunwale on the port side aft
19' Outrage II Through the access plate on the starboard side interior amidships
21' Outrage Under the Pi-Hi inside the console
24' Outrage Under the Pi-Hi forward on the tank cover

Fuel pickup:

17' Outrage Under the aft PiHi cover on the cockpit floor
19' Outrage II Through the splash well bulkhead inspection plate aft (starboard side)
21' Outrage Through the splash well bulkhead inspection plate aft (starboard side)
24' Outrage Under the Pi-Hi cover aft on the tank cover

OPERATION

⚠ WARNING: FILLING OF THE FUEL TANK SHOULD BE DONE WITH GREAT CARE TO AVOID THE RISKS OF FIRE AND/OR EXPLOSION.

The following procedures should be followed:

1. Properly secure the boat at the fuel dock with mooring lines and fenders.
2. Extinguish all cigarettes, cigars, pipes and all other flames including stoves and lanterns. OBSERVE NO SMOKING!
3. Stop the engines.
4. Turn "Off" the battery switches. Disconnect shore power.
5. Have a fire extinguisher close at hand, along with some rags to mop up any spills.

6. Determine the approximate amount of fuel remaining in the tank and calculate the amount required to fill the tank, before filling, to ensure that you do not overfill.
7. Open the deck fill plate with the special key provided.
8. Monitor the filling process carefully to avoid overfilling and thereby spilling on deck, into the bilges or into the water.

⚠ CAUTION: OIL AND FUEL SPILLS CAN BE DANGEROUS AND CAN SUBJECT OFFENDERS TO SEVERE PENALTIES

9. When complete, recap the deck fill plate, clean up any minor spills and check the bilge for gasoline fumes.
10. Discard oil or gas soaked rags in a suitable container ashore. Do not leave these on board.
11. Be courteous. Leave the fuel dock as soon as possible to allow other boats to fill their tanks.

Empty tanks can cause problems by stalling an engine due to lack of fuel and by allowing excessive sediment, dirt and water to enter the fuel supply lines. Therefore, it is important not to run the tank dry and to refill before it is drained completely. Monitor the fuel gauge frequently to prevent this occurrence.

MAINTENANCE

The following items require periodic maintenance as indicated:

Filters installed in the fuel supply lines should be replaced periodically. The frequency of this period will depend upon the amount of dirt and water in the filter, and on the season of the year. Winter operation will require more frequent replacements due to condensation. The disposable filter element will require replacement annually and perhaps more often, depending upon usage and quality of fuel used.

Engine fuel filters (installed on the engines) should be maintained in a similar manner. Check the engine manual for further information on this.

⚠ DANGER: IF FUEL ODORS ARE PRESENT, OBSERVE "NO SMOKING", AVOID ANY SPARKS AND DO NOT START ENGINES OR ENERGIZE ANY ELECTRICAL EQUIPMENT.

CHECK FOR LEAKS IN TUBING, CONNECTIONS AND HOSES. CORRECT THE CAUSE OF THE LEAKS, AND VENTILATE THE AREA TO ASSURE THAT NO FUMES REMAIN, PRIOR TO ENERGIZING ANY ELECTRICAL EQUIPMENT AND/OR STARTING ENGINES.

Inspect hoses and fittings for cracks, abrasion, deterioration and loose mounting clips, at least every 100 hours of operation.

Tighten loose fittings using proper size open-end or adjustable wrenches. After starting engines, recheck that no leaks occur.

Tighten loose mounting clips.

Replace damaged or deteriorated hoses and fittings which might restrict the flow of fuel or which might eventually break and cause serious leaks. If a leak cannot be stopped by tightening a fitting, the fitting should be replaced. This may require replacement of an adjacent hose. Use only replacement fuel hoses that have been certified to meet U.S. Coast Guard requirements.

Tank cleaning may be required if serious contamination occurs. Consult a professional tank cleaning contractor regarding procedure and disposal of residue.

(Note: In the unlikely event that the entire fuel tank must be removed, on the 19' Outrage II, the entire floor section must be cut within the depressed channel on the cockpit sole. You are best advised to contact your dealer or have such work performed by a qualified fiberglass repair facility, which should in turn contact Boston Whaler Customer Service for the purchase of a fuel tank removal and reinstallation kit - Part no. 15G54900. On the 17' Outrage, the cockpit floor must be removed to remove the tank.) The 21' Outrage has a removable center deck section.

⚠ CAUTION: PERIODICALLY CHECK FOR PROPER ATTACHMENT OF GROUND WIRES.

VARIABLE RATIO OIL SYSTEM (V.R.O.): This system consists of a reservoir tank or tanks and hose which contains and meters lubricating oil to the engine. The tank, if not integral with the engine, can be located as follows:

17' Montauk	In a container on the floor of the stern quarter
17' Outrage	Under the starboard stern quarter seat
19' Outrage II	Under the starboard stern quarter seat
21' Outrage	Under the splash well access cover (The fill is on top of the splash well bulkhead)
24' Outrage	Under the gunwale board above the access hatch to the rigging tunnel

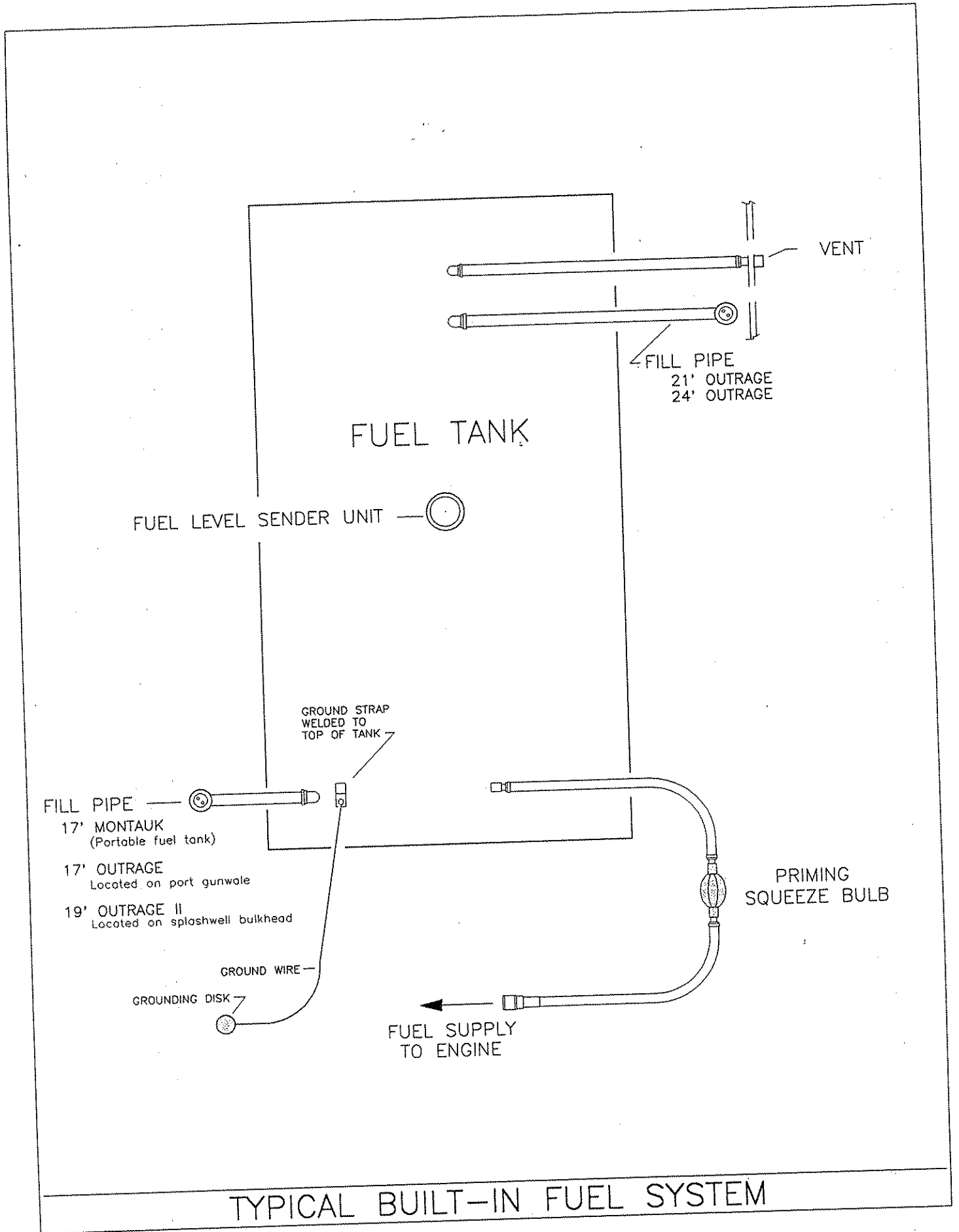
Some elect to install the tank within the console. If so mounted and the console has a floor, the console floor should be cut to allow the tank to sit directly on the deck of the boat below the console floor.

V.R.O Tanks should be protected from ultraviolet light, rain and seawater. They should be securely fastened to prevent movement.

Fill tanks with care to avoid spills. Assure the cap is secure to prevent spills and to prevent the intrusion of water and dirt.

⚠ CAUTION: OIL AND FUEL SPILLS CAN BE DANGEROUS AND CAN SUBJECT OFFENDERS TO SEVERE PENALTIES

V.R.O System Maintenance: Little or no maintenance is required for this system. Check hoses for abrasion and cracks. Assure that the hose clamps are tight.



ELECTRICAL SYSTEM

GENERAL DESCRIPTION: Your Boston Whaler is equipped with a 12 volt DC electrical system which provides electrical power for the following:

- Engine ignition
- Engine tilt trim system
- Helm switch panel and helm instrument panel
- Bilge pump
- Lighting system
- Raw water washdown, baitwell aerator (if so equipped)
- Add-on accessories and electronics

The system consists of the following components:

- Battery
- Battery selector switch (21' and 24' Outrage)
- Main circuit breaker
- Circuit breaker panel
- Helm switch panel and helm instrument panel
- Ignition panel

Each of these components is described in detail below. An electrical wiring schematic is provided to indicate the relationship of the components.

12V DC BATTERY: The dealer installed 12 volt marine battery provides electrical power for starting the engine and for operating those systems which require DC (Direct Current) electricity. With proper care it should give years of dependable service.

Battery installation: The battery should always be enclosed in the covered battery box provided with your Boston Whaler. This box is intended to contain any spilled acid, as well as to protect the battery and its terminals from damage or inadvertent shorting by metal objects. The box is vented to allow the escape of hydrogen gas. Do not block the vent openings as the hydrogen gas can be explosive under certain conditions if contained, and can also shorten the life of cable connectors.

The box is properly secured by a heavy duty toggled hold-down strap fastened in place by the hold-down clamps. This will prevent the battery and box from moving and possibly injuring someone, damaging the battery cables, or parts of the boat, including gelcoat surface.

Battery maintenance: Battery maintenance is important to assure that your boat will be ready for operation when needed. Maintenance procedures are divided into five categories:

1. Inspection
2. Testing
3. Cleaning
4. Electrolyte level maintenance
5. Charging

Inspection: Conduct a monthly inspection of the battery to determine the following:

1. Electrolyte level is above the plates but not by more than 1/4". (This is not a requirement for sealed batteries.)
2. Terminals are clean and free of corrosion.
3. The battery is properly secured to prevent movement.
4. No acid spills have occurred.

Testing: Battery voltage checks should be performed periodically with a DC voltmeter. (Discuss the installation of a permanent voltmeter with your dealer.) The voltmeter will register 12 volts or more if the battery is in good condition, and will register less than 12 volts if the battery is weak. Weakened batteries should be recharged by running the engine or by using a battery charger ashore. Also, a monthly test of the electrolyte condition should be performed with a hydrometer. (This cannot be accomplished on sealed batteries.) Hydrometer specific gravity readings should be taken in accordance with instructions provided with the instrument.

⚠ DANGER: BATTERIES CONTAIN SULFURIC ACID WHICH IS DANGEROUS AND CAN CAUSE SERIOUS INJURY. AVOID CONTACT WITH SKIN, EYES AND CLOTHING.

IF CONTACT OCCURS, FLUSH IMMEDIATELY WITH LARGE QUANTITIES OF WATER AND CALL IMMEDIATELY FOR EMERGENCY MEDICAL ASSISTANCE.

Cleaning: At least annually and whenever the battery appears to have dirt or corrosion on the terminals, disconnect the cable at the battery and scrub both the battery terminals and the cable fittings with a solution of baking soda and water with a wire brush. (Ask your dealer about a special tool designed for this purpose.) Be sure to keep the solution from entering the battery cells. When all corrosion and dirt have been removed, wipe the terminals, cable fittings and the top of the battery with a clean cloth. After reconnecting the cables to the terminals, coat them with electrical jelly or vasoline to prevent further corrosion.

Electrolyte level: The electrolyte level may fall below the top of the battery cell plates by either spillage or evaporation. If this occurs, carefully refill the cells with distilled water to within approximately 1/4" above the plates.

Charging: The batteries are charged by the alternator on the engine during normal operation. However, certain circumstances may require additional charging with a battery charger. Follow the battery and charger manufacturers' instructions when performing this operation.

After recharging, re-test the electrolyte condition with a hydrometer. If the condition has not been improved by recharging, the battery should be replaced.

⚠ DANGER: BATTERIES RELEASE HIGHLY FLAMMABLE HYDROGEN GAS WHILE CHARGING (EXCEPT SEALED BATTERIES). ENSURE THAT VENTILATION IS ADEQUATE. DO NOT SEAL VENT OPENINGS OF BATTERY BOXES.

BATTERY SELECTOR SWITCH (21' and 24' Outrage models): This switch is located in the console of these two models and controls which battery is used to provide power to the engine and to the electrical accessories in the boat. The battery selector switch has four positions - "Off", "Battery 1", "All", and "Battery 2". With the switch in the "All" position, two batteries may be paralleled.

MAIN CIRCUIT BREAKER: This circuit breaker is located aft and near the battery on 17' and 19' models, and inside the control console on the 21' and 24' Outrage models. The circuit breaker protects the battery and primary wiring from overload and short circuits which might occur in the remainder of the system. If a bilge pump is installed, it will have its own circuit breaker and will be wired directly to the battery, bypassing this main breaker.

If the main circuit breaker trips, it should be reset only after determining and correcting the cause of the trip. The breaker will "pop" up if a major overload or short circuit occurs. The normal operating position of the breaker button is down. Reset the breaker by pushing the button down.

⚠ CAUTION: NEVER RESET A BREAKER WITHOUT FIRST DETERMINING AND CORRECTING THE CAUSE OF THE TRIP. SHOULD A CIRCUIT REPEATEDLY TRIP ITS BREAKER, HAVE A QUALIFIED MARINE ELECTRICIAN DETERMINE AND CORRECT THE CAUSE.

HELM SWITCH PANEL: This panel is located on the control console. See drawing. Switches on the 19' Outrage II, 21' and 24' Outrage panels are operated by depressing the upper part to energize the circuit ("ON" position), while depressing the lower part de-energizes the circuit ("OFF" position). The exceptions to this are the Navigation Light Switch and the Bilge Pump Switch.

Navigation Light Switch: - Depress upper part for running lights
- Depress lower part for anchor light
- Center position for "OFF"

Bilge Pump Switch: - Depress lower part for "Manual" mode
- Switch will return to "Auto" mode when released

Switches on the 17' Outrage and Montauk models are of the push-pull type. This panel also contains fuses, discussed below.

HELM INSTRUMENT PANEL: This panel will include fuel gauge, and engine monitoring instruments, depending on the engine package you chose. Normal engine instrument packages include a battery volt meter, tachometer, ammeter, engine oil pressure and water temperature gauges.

IGNITION PANEL: This panel contains the key switch and the emergency ignition stop switch and lanyard. Their use is discussed in detail in the "Engine Controls" section of this manual.

CIRCUIT BREAKER or FUSE PANELS: To protect the battery and wiring on distribution circuits from short circuits and overloads, in addition to the main circuit breaker, all boats are provided either with fuses or circuit breakers.

⚠ CAUTION: NEVER RESET A BREAKER WITHOUT FIRST DETERMINING AND CORRECTING THE CAUSE OF THE TRIP. SHOULD A CIRCUIT REPEATEDLY TRIP ITS BREAKER, HAVE A QUALIFIED MARINE ELECTRICIAN DETERMINE AND CORRECT THE CAUSE.

On the 17' Montauk and 17' Outrage, these fuses are located on the helm switch panel and are of the twist out type. To remove them, twist the fuse cap counterclockwise and remove the fuse by pulling it out of the cap. Renew the fuse by inserting it into the cap. Replace the cap and fuse into the socket and tighten by turning clockwise.

On the 19' Outrage II, 21' and 24' Outrage, circuit breakers are provided on a separate panel inside the control console. If a breaker trips, the button on the breaker pops out. It is reset by pushing it back in.

MAINTENANCE OF THE ELECTRICAL SYSTEM: The Electrical System requires little maintenance by the owner. Periodic checks should be made to determine that connections are tight and that wiring and components have not been damaged in any way.

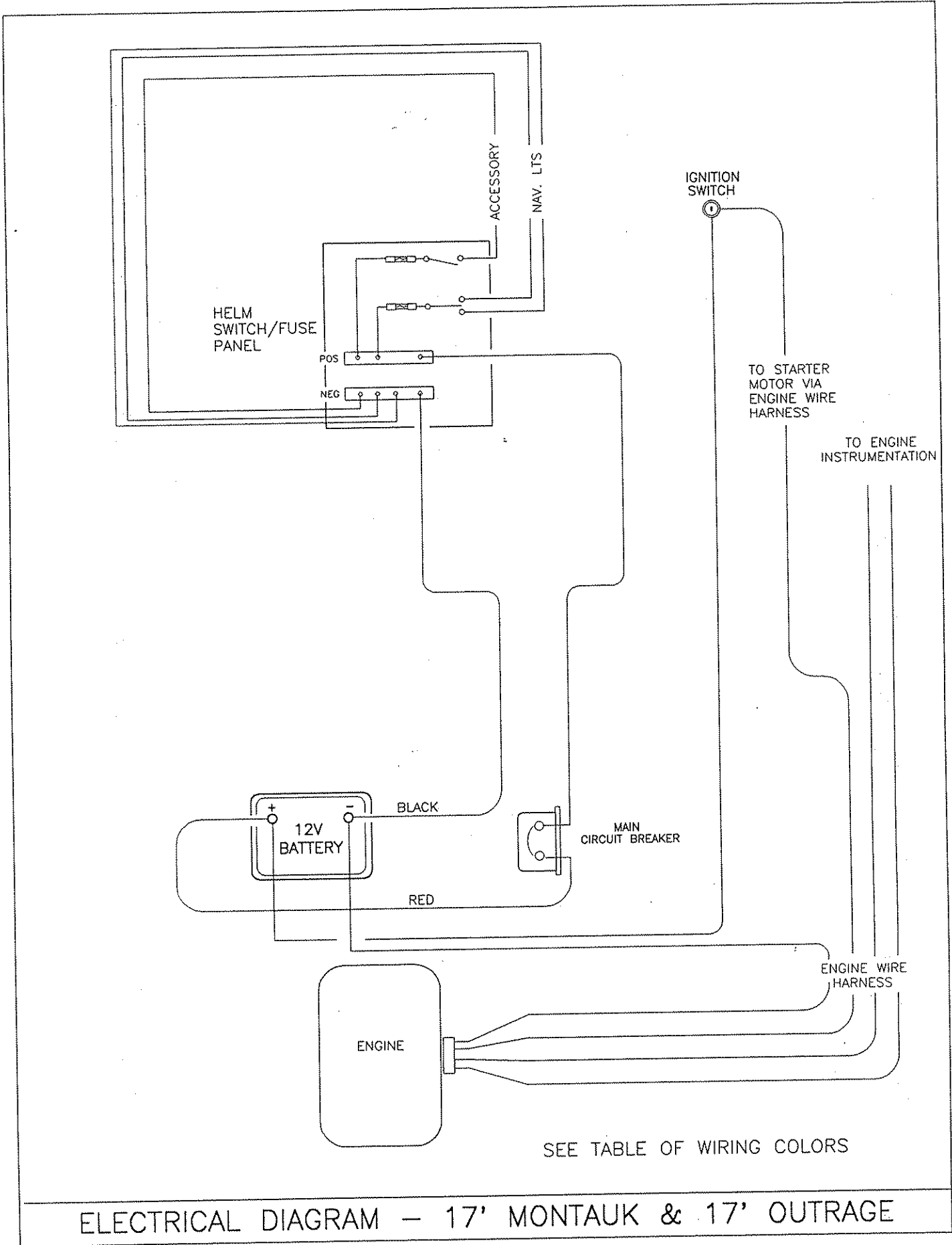
⚠ WARNING: BATTERY SHOULD BE DISCONNECTED BEFORE DOING ANY WORK OR MAINTENANCE ON THE ELECTRICAL SYSTEM.

USE ONLY THE APPROPRIATE TOOL FOR THE JOB, ACCORDING TO THE TYPE OF CONNECTION.

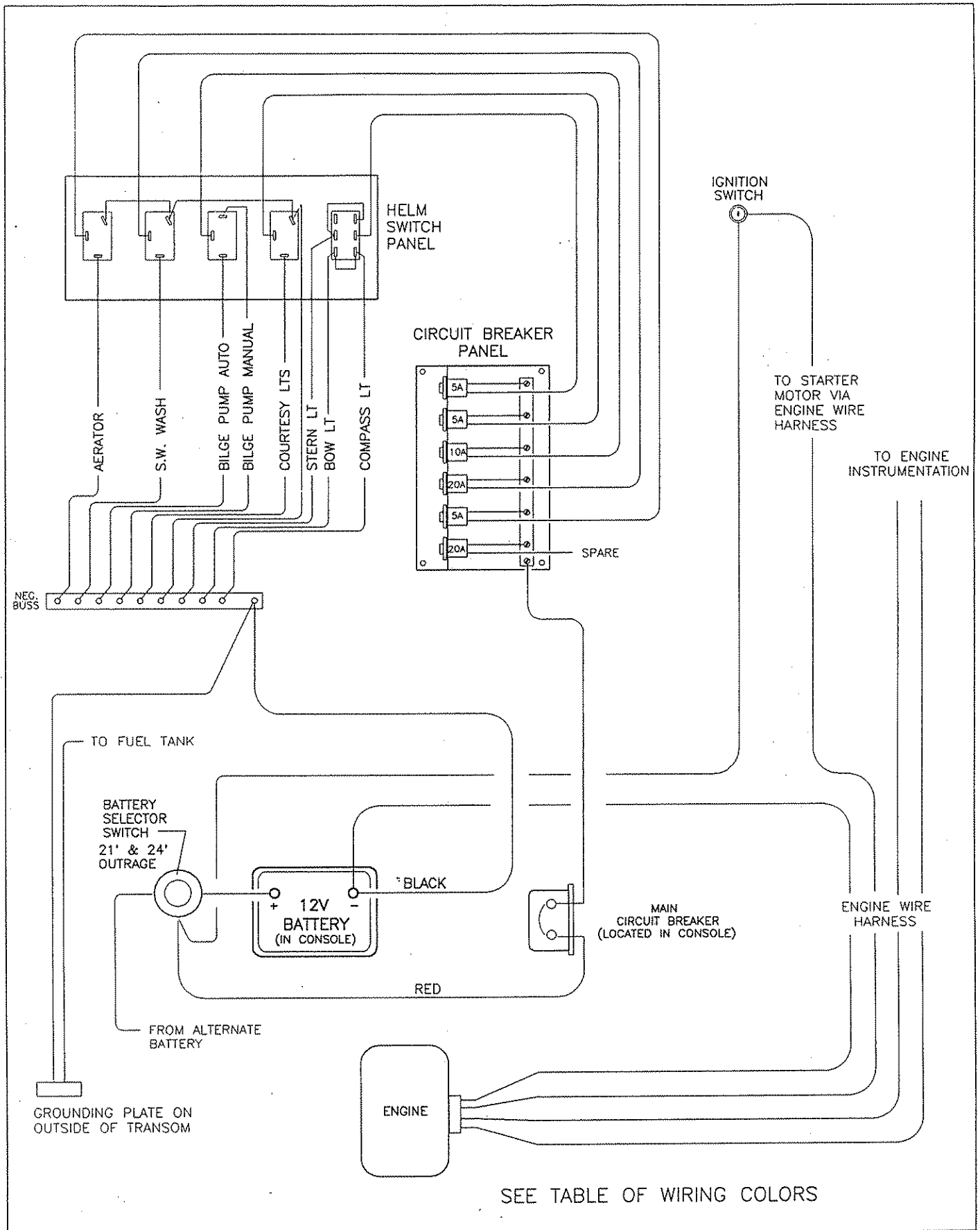
IF WIRING OR COMPONENTS BECOME DAMAGED, CONSULT A QUALIFIED MARINE ELECTRICIAN.

TABLE OF ACCESSORY WIRING COLOR CODES

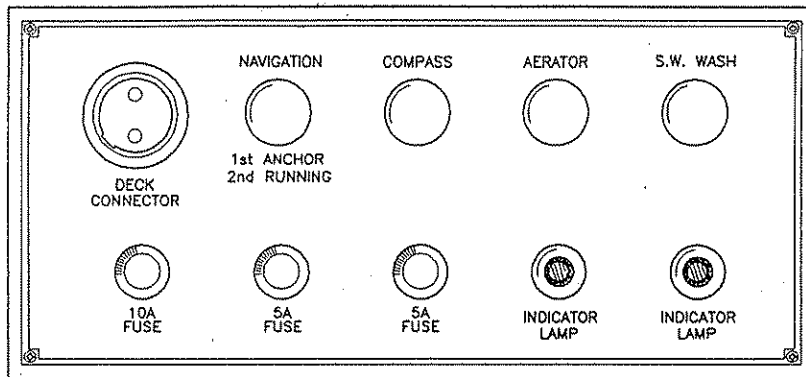
ACCESSORY	WIRE COLOR
Accessories - general.....	orange
cooler, windlass control	
Accessories, miscellaneous.....	red/violet
main feed, remote battery	
voltage, windlass	
Battery parallel solenoid.....	black/white
Battery feeds.....	red
Bilge blowers.....	yellow
Bonding systems.....	green
Fuel level sender.....	pink
General alarm usage, Yamaha emergency stop switch..	white
Grounds - general.....	black
Ignition.....	violet
generator or engine	
Navigation equipment.....	orange/gray
Light, anchor	gray/white
Lights, cabin - center, salon, aft.....	blue/black
Lights, courtesy, boarding, stepwell.....	blue/violet
Lights instrument & general.....	blue
Light, mast.....	gray/black
	gray/brown
	gray
Lights, navigation (running).....	
tachometer sender	
Light, spotlight.....	gray/red
Lights, spreader, flood lights.....	gray/blue
Pump, baitwell or aerator.....	brown/yellow
Pumps - bilge or sump.....	brown/red
automatically switched	
Pumpout, fishwell.....	brown/black
Pump, fresh water.....	brown/green
Pumps - general.....	brown
bilge or sump manually switched	
Pump, head - vacuum, discharge.....	brown/blue
or re-circulating	
Pump, washdown.....	brown/violet
Sanitation - electric head system.....	orange/brown
Start solenoid, neutral safety.....	yellow/red
switch	
Wiper (port), trim (port up).....	orange/red
hatch (port up)	
Wiper (stbd), trim (stbd up).....	orange/green
hatch (stbd up)	
Wiper center/hatch feed.....	orange/white
Windshield washer.....	brown/gray
Windlass.....	gray/violet



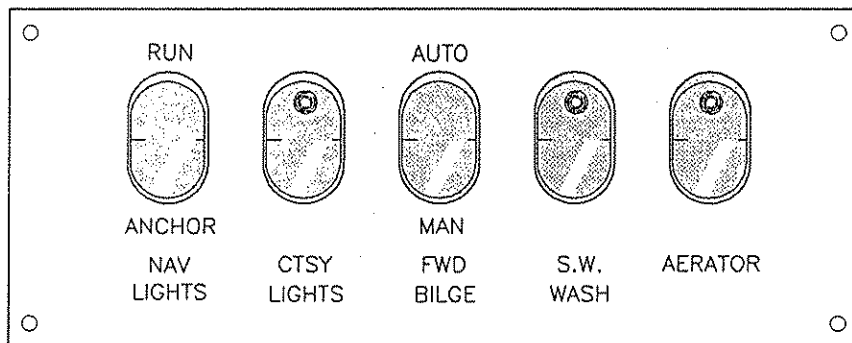
ELECTRICAL DIAGRAM - 17' MONTAUK & 17' OUTRAGE



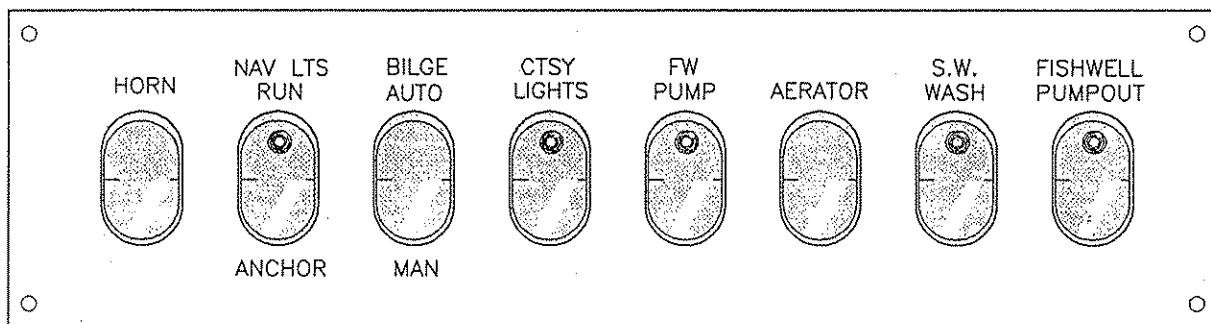
ELECTRICAL DIAGRAM FOR 19' OUTRAGE, 21' & 24' OUTRAGE MODELS



17' MONTAUK & 17' OUTRAGE



19' OUTRAGE II



21' and 24' OUTRAGE

TYPICAL HELM SWITCH PANELS

OUTBOARD ENGINES

DESCRIPTION: Your Boston Whaler may be equipped with one of several available outboard power packages, each of which is supplied with its own warranty and instruction manual giving specific details for operation and maintenance. It is important that you read the manufacturer's instruction manual carefully prior to operating the engine, and that you register your outboard engine warranty with the manufacturer.

See the separate section in this manual on "Engine Installation".

A few key points common to all outboard engines are included here for emphasis.

OPERATION: (SEE ENGINE MANUAL FOR COMPLETE OPERATING INSTRUCTIONS)
The following precautions are listed here as a brief reminder:

1. Prior to starting engine
 - a. Check that no gasoline fumes are present.

⚠ DANGER: IF FUEL ODORS ARE PRESENT, OBSERVE "NO SMOKING", AVOID ANY SPARKS AND DO NOT START ENGINES OR ENERGIZE ANY ELECTRICAL EQUIPMENT.

CHECK FOR LEAKS IN TUBING, CONNECTIONS AND HOSES. CORRECT THE CAUSE OF THE LEAKS, AND VENTILATE THE AREA TO ASSURE THAT NO FUMES REMAIN, PRIOR TO ENERGIZING ANY ELECTRICAL EQUIPMENT AND/OR STARTING ENGINES.

- b. Be sure shift lever is in neutral position
 - c. Place throttle in start position
 - d. Place ignition switch to start position for NOT MORE THAN 15 SECONDS
2. Keep cold engines below recommended rpm until engine has warmed up to normal operating temperature. (See engine manual for temperature "operating range")
3. During first 20 hours of operation, observe "break-in" procedures given in engine manual.
4. Immediately shut down engine if any of the following occur:
 - a. Audible alarm sounds (if installed) at helm control station.
 - b. Engine cooling water ceases to flow or engine appears to be overheating.
 - c. Engine or lower unit emits abnormal sounds.
5. Refer to engine manual troubleshooting chart for symptoms of operating problems.

IF ENGINE DOES NOT START

If no starter motor response, check:

1. Battery condition
2. Battery cable connections
3. Main circuit breaker
4. Shift lever in neutral position
5. Starter motor and solenoid electrical connections
6. Engine fuse
7. Ignition switch electrical connections
8. Neutral safety switch electrical connection (on engine control)

If starter motor response, but no ignition, check:

1. Fuel tank sufficiently full
2. Engine fuel priming
3. Engine fuel filter for clean condition
4. Electrical connections on engine harness and ignition wiring
5. Ignition cut-out safety lanyard attachment

See engine manual for further troubleshooting procedures.

MAINTENANCE: (SEE ENGINE MANUAL FOR COMPLETE MAINTENANCE INSTRUCTIONS AND SCHEDULE, AS WELL AS RECOMMENDED SPECIFICATIONS FOR FUEL, LUBRICATING OIL AND LOWER UNIT GEAR OIL)

The following maintenance items are listed here as a brief reminder:

1. Regular inspection of the engine, engine well and bilge, to detect leaks from fuel, loose wiring, loose engine mounts and other mechanical parts which may be worn, broken or loose
2. Regular cleaning of fuel filters
3. Batteries kept in good condition
4. Steering and control linkages lubricated regularly
5. Annual replacement of engine fuel filter element (more frequently if required by operating conditions)
6. Annual changing of lower unit gear oil (more frequently if required by severe operating conditions)

LIFTING YOUR BOAT

GENERAL: Lifting your Boston Whaler should be done with careful planning and concern for the safety of persons involved, as well as for the boat. When selecting davits or lifting equipment, be sure the supplier and installer know where the lifting positions are on your particular Boston Whaler. Consult your dealer about proper lifting equipment and procedures.

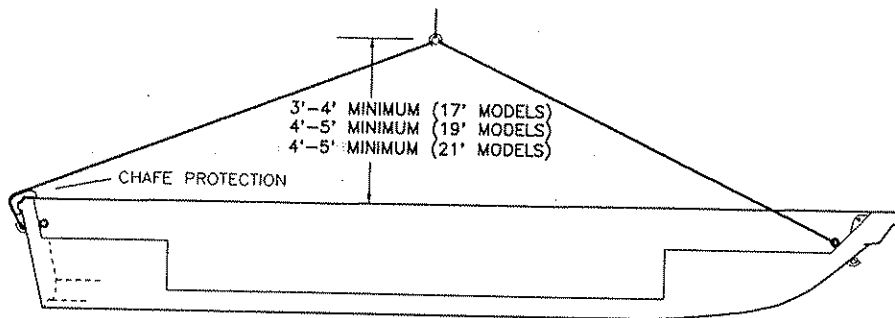
The drawing included in this section shows various lifting arrangements, along with important dimensions useful in making lifting bridles.

⚠ DANGER: LIFTING YOUR BOAT CAN BE DANGEROUS. CONSIDERATIONS FOR THIS OPERATION SHOULD INCLUDE:

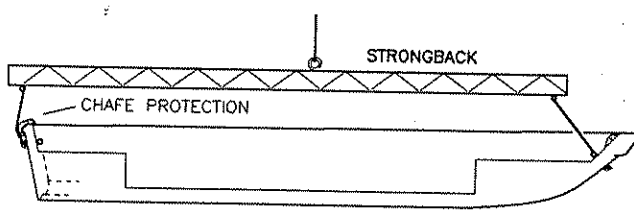
1. The lifting points on the boat
2. The load rating of the lifting equipment
3. The experience of those performing the lifting operation
4. Overhead and lateral clearances (Obstructions such as other boats, powerlines, buildings)
5. Keeping people out from under the boat during lifting
6. Sufficiently high bridle apex in single point lifting systems to prevent distortion of lifting eyes and stainless steel shanks. (See drawing) The apex should be:
 - 17' models - 3 to 4 feet above the gunwale
 - 19' models - 4 to 5 feet above the gunwale
 - 21' models - 4 to 5 feet above the gunwale
 - 24' models - 5 to 7 feet above the gunwale
7. Use of hooks which swivel freely and are properly sized for the lifting eyes
8. Use of shackles if necessary when hooks are too large for eyes
9. Bow slightly elevated and drain plugs removed
10. Proper cradle, trailer or berth to receive the boat

LIFTING POINTS: All models in this group have a single interior bow lifting eye as well as two exterior transom lifting eyes. (The 17' Montauk has interior transom lifting eyes. The bow lifting eye on the 21' Outrage is located inside the bow anchor locker.) A three point lifting bridle may be attached to these eyes. In some cases a spreader bar will be necessary between the two rear lifting wires. Padding or chafe protection at the top of the transom is necessary for exterior transom lift eyes. (See drawing)

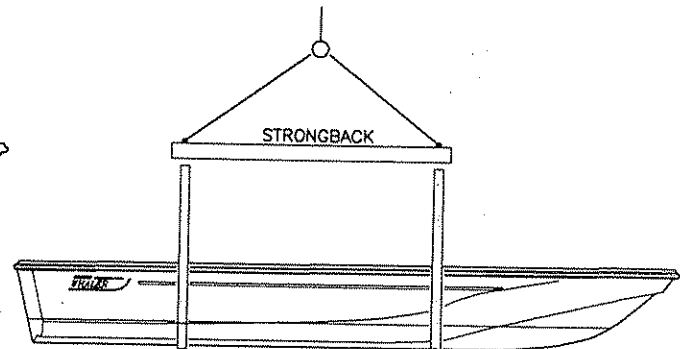
All models may be lifted with single point, strong back, single or dual davit lifting systems.



SINGLE POINT BRIDLE

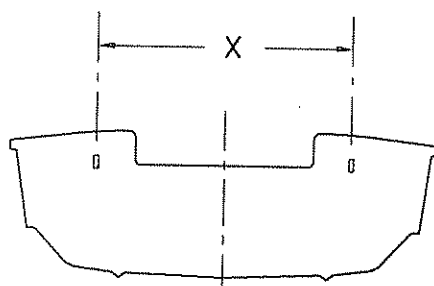


SINGLE POINT LIFT WITH STRONGBACK

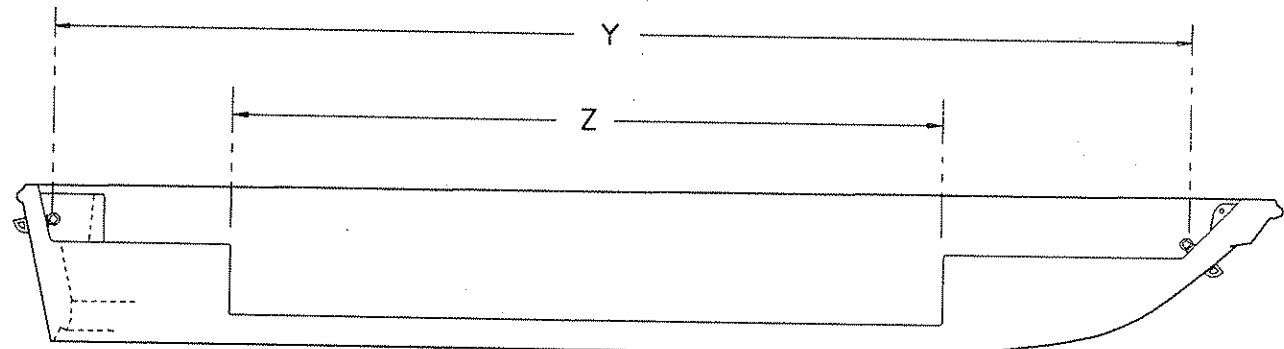


STRONGBACK & SLING

LIFTING POINT DISTANCES



HULL	X	Y	Z
17' MONTAUK	38-1/2"	174-3/4"	130-1/2"
17' OUTRAGE	40-1/2"	190-1/2"	—
19' OUTRAGE II	24-3/4"	199"	—
21' OUTRAGE	62-1/2"	225"	—



DIMENSIONS FOR LIFTING

TRAILERING

TRAILER SELECTION: Your Boston Whaler dealer can be of assistance in trailer selection and in explaining the features and benefits of various trailers. Also consult him regarding safe trailering procedures, required equipment and licensing.

Match the trailer to your boat: Avoid over-rating or under-rating the trailer for your boat. The capacity rating should be matched to the weight and length of your boat.

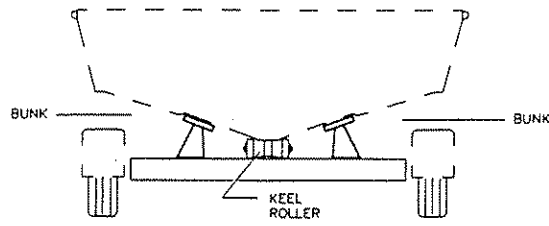
PROPER SUPPORT OF THE BOAT IS EXTREMELY IMPORTANT: As the keel of your Boston Whaler is designed to support the weight of the boat, you should select a trailer which contains center keel rollers. Adjust keel rollers so that they all support the keel. Trailers equipped with side rollers instead of side "bunks" should never be used, as the side rollers can cause a ripple effect on the fiberglass. This could disrupt the bond between the fiberglass and the foam core, causing potential hull problems. Also, side rollers can put excessive pressure on molded spray rails when the boat is being launched or retrieved. Therefore, the trailer should be equipped with padded side bunks.

SIDE BUNKS should be located so as not to interfere with bottom spray rails, transducers, etc. The bunks need only provide lateral stability and should not be weight bearing. Some slight rocking is desirable to assure that the weight is on the center keel rollers. Tie-down straps, when secured, will eliminate the rocking. A properly adjusted trailer will simplify launching and retrieving. The drawing shows the proper trailer arrangement for your Boston Whaler.

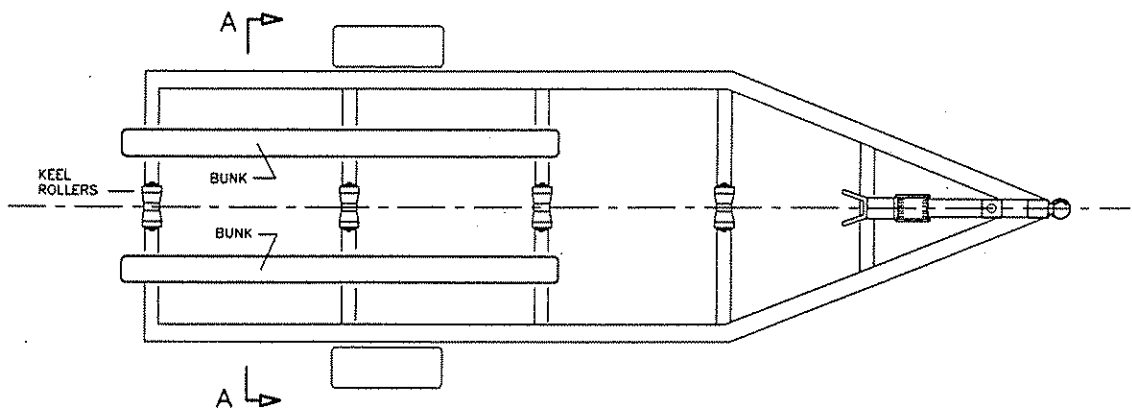
Float-on trailers are of the all bunk style. These are suitable for use as long as the bunks conform to the shape of the hull, give support near the center keel, and provide good fore and aft support to spread the total weight.

IMPORTANT CONSIDERATIONS WHEN TRAILERING: Discuss the following items with your dealer so that you are well aware of the proper procedures:

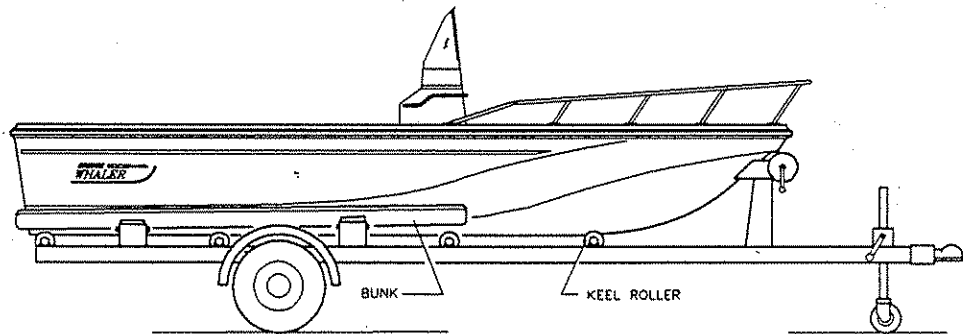
1. Loading and unloading the boat on land and in the water
2. Securing the boat on the trailer
3. Hitch mechanism - operation and maintenance
4. Tongue weight
5. Proper lighting
6. Tire pressure
7. Wheel bearing inspection and maintenance
8. Accelerating and braking while on the road
9. Wide turns
10. Backing the trailer
11. Launch ramp procedures



DETAIL A-A



TOP VIEW OF TRAILER



SIDE VIEW WITH BOAT ON TRAILER

TRAILER ARRANGEMENT

ENGINE INSTALLATION

GENERAL: Your dealer will most likely install the engine on your boat. However, it is important that you are aware of certain aspects of the installation in order to make regular safety inspections, or in case you decide to install another engine yourself at a later date. The following information provides guidelines for installation, but specific mounting instructions for each engine package are provided by the engine manufacturer, and these should be carefully followed.

ENGINE MOUNTING: On all models, outboard engines should be mounted directly on the transom. The transom core is solid plywood with multiple layers of fiberglass inside and out. Engines, when bolted to the transom, will bite into this fiberglass, providing good holding power.

Follow the engine manufacturer's specifications for bolting and clamping, and discuss your particular installation with your dealer.

Engine transom thru-bolts should be sealed with compound and checked and retightened frequently during the first several hours of operation.

CONTROL CABLES, BATTERY & FUEL CONNECTIONS: Specific instructions for these connections to the engine will be included in the manual provided by the engine manufacturer, and should also be discussed in detail with your dealer.

It is important to periodically check that all connections are tight. Throttle and shift cable connections may require occasional adjustment for proper operation. Assuring correct battery connection is important for proper starting, engine operation and battery charging functions. The fuel hose connection should be regularly inspected for leaks and to assure proper fuel flow to the engine.

PROPELLER SELECTION: When selecting the correct propeller for your engine, tell your dealer what type of boating you will be doing. (Water skiing, carrying heavy loads, top speed with light loads) These are important factors in determining the type, diameter and pitch of the propeller.

The correct propeller diameter and pitch (See diagram) should permit the engine to attain maximum rated RPM with the anticipated load. It will also allow the best performance, save fuel and help to reduce engine wear. The engine manual will indicate the minimum and maximum operating RPM. Do not select a propeller which will allow the engine to exceed the maximum RPM, or one that will overload the engine.

To judge performance of your boat and engine combination, a tachometer is necessary. These are available from the engine manufacturer or are available as part of the optional Boston Whaler "Pre-rig" instrument panel. Some dealers are equipped with portable units. All dealers should "tach out" a new engine installation to assure that the engine and boat are performing satisfactorily.

ATTACHMENTS TO THE HULL

GENERAL: Prior to installing custom accessories to your boat, check with your Boston Whaler dealer. It is important that accessories be located in a safe position and installed so they will remain securely in place. Your safety and the safety of passengers could be affected by improper installations.

Accessories subject to stress, such as seats, consoles, etc., should be attached only in areas that have wood inserts in the hull to which these items may be securely fastened. Check with your dealer for location of wood inserts in your boat. (See the wood locating diagram contained in your "Owner's Package".)

FASTENERS: Check with your dealer and the manufacturer of the accessory you install, about the type, size and quantity of fasteners to use in the installation. Thru-bolting with backing plates is often the most secure way to install equipment, but blind lag screws or self tapping screws may be sufficient if the accessory will not be subject to high stresses. Avoid putting screws into areas where there is no wood backing, as they will most likely strip out.

SEALANTS: In order to prevent water from seeping under or behind a newly installed accessory, it is important to coat the contact surface with a sealant or bedding compound. This will help to prevent corrosion. Some bedding compounds allow easy removal of an accessory while others will make removal extremely difficult. Check with your dealer for his recommendation on the material to use.

HULL TRIM

GENERAL: Proper hull trim is important for the safe, comfortable and efficient operation of your Boston Whaler. Hull trim is affected by several factors which are discussed in detail below. They include:

- Amount of weight in the boat
- Weight distribution
- Engine & Boat speed
- Engine trim
- Engine steering trim tab adjustment

AMOUNT OF WEIGHT IN THE BOAT: Always observe the Boston Whaler recommended maximum weight (persons, motor & gear) for your particular model, as well as the maximum engine horsepower indicated. You can also expect that the closer you approach the maximum weight, the greater will be the reduction in boat performance.

WEIGHT DISTRIBUTION: Most models ride best with the weight positioned from mid-ship aft. Sitting on the bow locker while underway or when the boat is on plane is not recommended and will cause the boat to "plow". When planing, the bow area is the roughest riding position on any boat.

⚠ WARNING: DO NOT INSTALL OPTIONAL BOW DECK CUSHION ON ANY BOAT WHICH IS NOT EQUIPPED WITH A BOW RAIL.

All larger Boston Whalers have a sharp bow entry resulting in a softer ride in chop conditions. Weight should be aft or in the middle of the boat with the bow light and high for the best ride at higher speeds. Moving passengers to the seats forward of the console will result in better performance than having everyone aft. This trim also will produce faster and more efficient engine speeds.

⚠ WARNING: BOSTON WHALERS IN THIS SIZE RANGE ARE HIGH PERFORMANCE BOATS WHEN EQUIPPED WITH THE MAXIMUM RECOMMENDED HORSEPOWER ENGINES. ANY OPERATOR SHOULD BE PROPERLY TRAINED FOR THE USE OF HIGH PERFORMANCE BOATS. NEVER TAKE YOUR BOAT TO THE POINT WHERE YOU DO NOT FEEL IN CONTROL, AND APPROACH MAXIMUM RPM SLOWLY AND WITH CAUTION.

ENGINE AND BOAT SPEED: These factors will change the hull trim. Generally, the faster the engine speed (below planing speed) the higher the bow will rise out of the water. This can be compensated for by moving weight forward.

ENGINE TRIM: This is a key factor in establishing good performance. On engines with a power trim feature found on the throttle control or console, you can "fine tune" the engine angle with this system while underway. You will have to make adjustments on a "trial and error" basis at different speeds and weight loads in order to determine the best position for the various conditions. Tilting the engine lower unit "out" away from the transom tends to

raise the bow, while tilting it "in" tends to lower the bow.

Engine tilt/trim controls: Outboard engines are provided with appropriate engine trim/tilt controls. Consult the instruction manual provided with the engines for use and maintenance of these controls prior to operating the engines.

Engine trim can affect hull trim and loads on the steering system in a manner similar to that of trim planes.

Trimming "in" will depress the bow and lift the boat on plane more quickly.

Undertrimming (in) may result in bow steering conditions

Trimming "out" will lighten the bow.

Overtrimming (out) may result in bow oscillation or propeller ventilation.

Depending upon the engine configuration, you may not be able to use the full engine trim range.

On all models, when running alone at high speed or in a chop or head wind, it is advisable to move the engine "in" slightly closer to the transom to keep the bow down. This is done to avoid bow "feathering", "chine walking", and allows the boat to run on the sharper bow "V" bottom.

ENGINE STEERING TAB ADJUSTMENT: On larger outboard engines there is a steering trim tab located on the bottom of the cavitation plate, just aft of the propeller. It is adjustable and has been installed on the engine to compensate for propeller torque.

The boat should be operated with a normal load on board, and following a straight line course. Incorrect trim tab adjustment will cause the boat to turn to the left or to the right when your hands are momentarily removed from the steering wheel.

⚠ WARNING: RELEASE YOUR GRIP ON THE WHEEL CAREFULLY AND BE READY TO IMMEDIATELY GRASP IT AGAIN. AN INCORRECTLY ADJUSTED TRIM TAB MAY CAUSE THE BOAT TO TURN VIOLENTLY.

To adjust the trim tab, loosen the securing bolt per engine manufacturer's instructions, and move the trim tab trailing edge in the direction the boat pulls. For example, if the boat pulls to starboard, move the trailing edge of the tab to starboard. Make these adjustments in small increments and test the results. The object is to create a "hands off - straight line" steering condition for the normal operating speed. It is not possible to eliminate steering pull throughout the entire speed range. Tilt adjustment may affect steering torque as much as the steering trim tab. This is particularly important on engines with power trim. No feedback steering does not eliminate the engine torque. This can only be reduced by proper trim and tilt settings by trial and error when running the boat.

DRAINAGE, BILGE PUMP, BAITWELL/FISHWELL AND RAW WATER WASHDOWN

COCKPIT & SUMP DRAINS & BILGE PUMP

DESCRIPTION: Center Console models (except the 17' Montauk) have gravity drainage of the cockpit and splash well through aft scuppers which pass through the transom. Bilge water and water drained into the sump can be removed by an optional automatic bilge pump located as follows:

17' Montauk	in the aft bilge sump below the cover plate
17' Outrage	in the aft bilge sump below the bait well
19' Outrage II	in the forward console sump below the console forward seat
21' Outrage	under the aft splash well center access cover
24' Outrage	(2 pumps) one aft - under the aft splash well center access cover one fwd - in the fwd sump below the console

The optional bilge pump is protected either by a 10 amp circuit breaker or by a fuse. The circuit breaker on the 19' Outrage II, 21' Outrage and 24' Outrage is located on the Circuit Breaker Panel below the control console. The fuse or circuit breaker on the 17' Montauk and 17' Outrage, is located on a separate panel on the Control Console.

Additionally, the bilge pump (in all models) is controlled by a switch located on the Control Console. This switch allows the pump to operate in either "Auto" or "Manual" mode. An automatic float switch located at or within the pump energizes the pump when the helm control switch is in the "Auto" position.

When in "Auto", the pump operates when the level of water in the bilge sump raises the float high enough to activate the switch.

When in "Manual", the pump operates regardless of the position of the float switch.

NOTE: BILGE PUMPS LEFT IN THE AUTOMATIC MODE WILL CONTINUE TO BE OPERABLE AND ARE CONTROLLED BY THEIR FLOAT SWITCHES. BE SURE TO KEEP THE FLOAT SWITCH CLEAR OF DEBRIS.

The pump discharges the water overboard via a thru-hull fitting as shown in the drawing contained in this section.

OPERATION: The bilge pump switch on the Control Console is in the "Auto" position at all times. Push the lower part of the appropriate switch to active the "Manual" mode. Upon completion of manual pumping, release the switch and it will automatically return to "Auto" mode to assure continuing protection.

MAINTENANCE: No maintenance is required on the optional pumps, as they are completely sealed units. Be sure to keep the sumps free of debris to protect the intake screens from being clogged. Periodically check that electrical connections and hose connections are tight.

⚠ CAUTION: IT IS THE OWNER'S RESPONSIBILITY TO MAINTAIN THE BILGE PUMPS, TO CLEAN THE SCREENS, CHECK THE PROPER OPERATION OF THE FLOAT SWITCH AND KEEP THE AFT SCUPPERS FREE OF DEBRIS TO ALLOW PROPER DRAINAGE.

BAITWELL/WASHDOWN SYSTEMS

DESCRIPTION: Your Boston Whaler may be equipped with a combined Baitwell and Raw Water Washdown System which contains the following components:

1. 12 volt baitwell/washdown pump
2. Pressure switch
3. Intake seacock
4. Washdown hose outlet
5. Baitwell with standpipe drain
6. Baitwell valve
7. Baitwell aerator pump and aerator pipe
8. Control switches for baitwell/washdown and aerator pumps

OPERATION

Baitwell fill and washdown:

Raw water is drawn through the seacock by the pump and is delivered to the baitwell and washdown outlet. The pump is located inside the console, and the seacock is located in the aft sump. The pump is controlled by a 20 amp breaker behind the control console, by a separate control switch near the baitwell, and by the pressure switch near the pump. When the control switch is in the "On" position, the pressure switch automatically activates the pump when either the outlet or baitwell valve is opened. The pressure switch shuts off the pump when the outlet or valve is closed again.

When the baitwell valve is open, water flows into the well and the overflow drains out through the standpipe, continually renewing the raw water in the baitwell. Remove the standpipe to drain the baitwell.

Aerator system: The aerator pipe, in the baitwell, is fed by the aerator pump mounted on the side of the baitwell.

When the aerator control switch (on or near the prep center/baitwell) are in the "On" position, water is drawn from the baitwell, through the aerator pump, and is discharged back into the baitwell through the aerator pipe, providing continuous aeration.

MAINTENANCE: Little maintenance is required of this system except to assure that hose connections and electrical connections are tight, and that the seacock strainer is kept clean (accomplished at annual hauling for the winter) and the seacock is properly lubricated. (See "Hull Maintenance Procedures")

FISH WELL SYSTEM

DESCRIPTION: The fish wells are located beneath the floor under the port and starboard fish well covers. The wells are equipped with the following:

1. Removable floor grates
2. Aft drains
3. Suction tubes with macerator/discharge pump
or
Bottom thru-hull drain fitting

On boats equipped with the pumpout system, the suction tubes are attached to the aft drains. These suction tubes are attached to the macerator pump by a "Y" fitting, and the pump discharges overboard via a thru-hull fitting on the transom. Access to the pump is through the access port on the splash well or other similar access to transom mounted equipment. Aft facing drain tubes will carry water to the aft bilge sump and should be left open when not using the wells for fish storage.

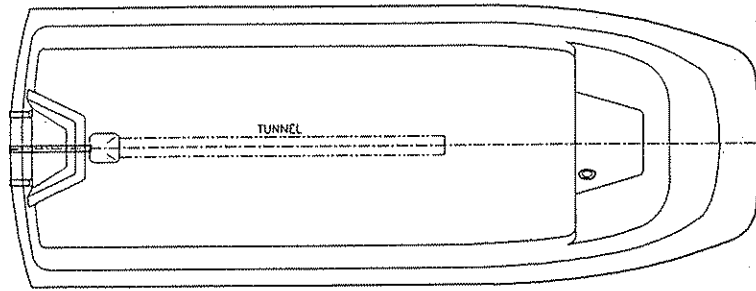
On boats equipped only with the bottom thru-hull drain fitting, clean water may be drained from the fish wells into the aft bilge sump, by the aft facing drain tubes. Water with fish debris may be diverted overboard through the bottom drain tube while underway. This will keep bilge pump screens clear of debris.

OPERATION: On boats equipped with the pumpout system, the pump is operated by a momentary switch. (Power to the pump is also controlled by a circuit breaker located behind the Control Console.) The macerator pump is designed to handle soft shreddable material only. Any large or hard objects which will not fit through the suction tubes should be removed from the fish wells prior to running the pump.

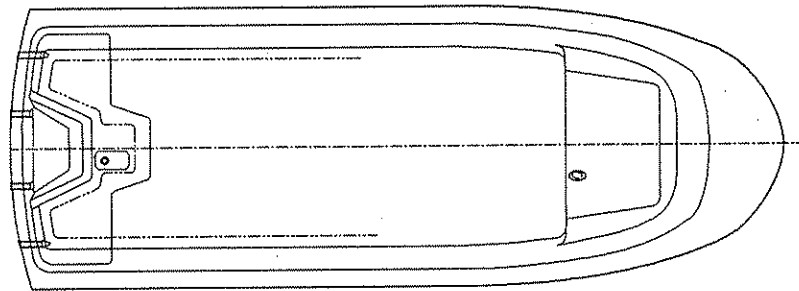
NEVER OPERATE THE PUMP IN A DRY CONDITION

On boats equipped with the bottom thru-hull drain fitting instead of the pumpout system, when using the fish wells for fish storage, plug the aft facing drains and open the bottom drain to allow fish debris to drain overboard, rather than into the aft bilge sump where it might clog the bilge pump.

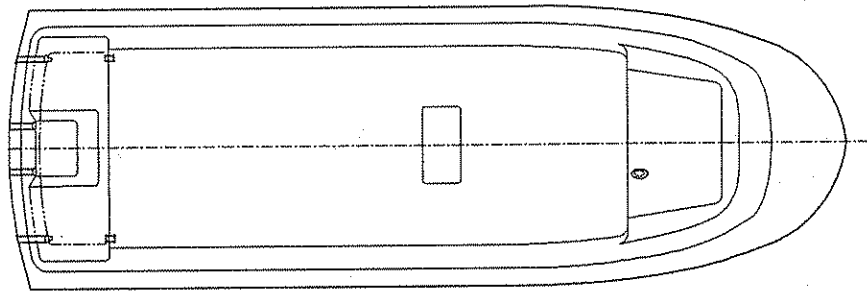
MAINTENANCE: Little maintenance is required. After long periods of non-use, the macerator pump may not turn freely. It may be necessary to prime the discharge line to free the impeller. (See pump manufacturer's instructions regarding pump repair kits.) Periodically inspect the system to assure that hose connections and electrical connections are tight.



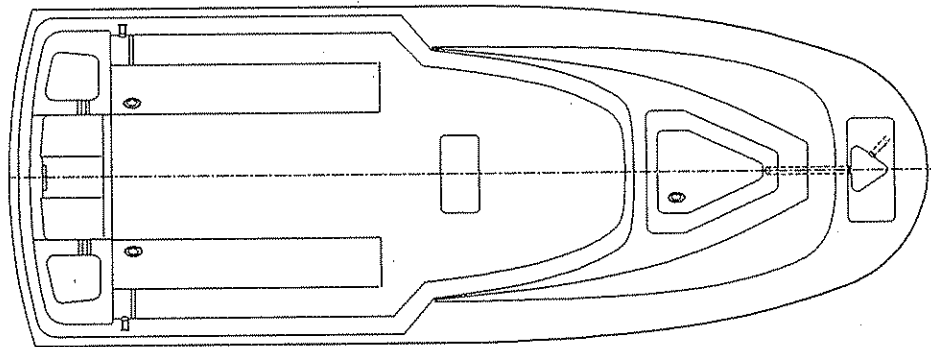
17' MONTAUK



17' OUTRAGE



19' OUTRAGE II



21' and 24' OUTRAGE

DRAIN ARRANGEMENT

PRIOR TO GETTING UNDERWAY

Below is a suggested list of items to consider prior to getting underway.

WHEN YOU FIRST COME ABOARD - CHECK:

1. Bilge for water - Discharge significant amounts overboard and install drain plugs
2. Fire extinguisher, flotation devices and signalling equipment
3. Fuel tank level
4. Battery voltage and water level
5. Engine mounts secure
6. Anchor, anchor rode and mooring lines
7. Spare parts & tool kit

PRIOR TO STARTING ENGINES - CHECK:

1. Bilge for fuel odor

⚠ WARNING: IF FUEL ODORS ARE PRESENT, OBSERVE "NO SMOKING", AVOID ANY SPARKS AND DO NOT START ENGINES OR ENERGIZE ANY ELECTRICAL EQUIPMENT.

CORRECT THE CAUSE OF THE LEAKS AND VENTILATE THE AREA TO ASSURE THAT NO FUMES REMAIN PRIOR TO ENERGIZING ELECTRICAL EQUIPMENT AND/OR STARTING ENGINES.

2. Shift lever in neutral position
3. Throttle lever in start position

AFTER STARTING ENGINES - CHECK:

1. Throttle returned to low idle (See engine manual)
2. Cooling water flowing freely
3. Battery being charged
4. Engine - no abnormal sounds
5. No excessive vibration or loose equipment in engine spaces
6. Fuel line connections tight - no obvious leaks
7. Engines warmed to recommended operating temperature (See engine manual)

PRIOR TO GETTING UNDERWAY - CHECK:

1. Throttle control test -with shift lever in neutral position
2. Shift control test - forward and reverse ONLY AT LOW IDLE
3. Steering system test - no excessive play
4. Lines, fenders and anchor - ready for immediate use
5. Navigation lights operable and "On" at night

WHILE UNDERWAY - CHECK:

1. Engine rpm and tilt angle
2. Engine gauges - monitor continually
3. Listen for abnormal noises
4. Engine vibration - may mean fouled or damaged propeller

WHEN MOORING, TYING UP OR ANCHORING - CHECK:

1. Crew members instructed in duties
2. Lines, fenders and anchor - ready for immediate use
3. Underway navigation lights extinguished when secured
4. Anchor light "On" when required by law

PRIOR TO LEAVING BOAT - CHECK:

1. Bilge pump breaker "On" (Test float switch operation)
2. Mooring lines or anchor secure

SAFE OPERATING HABITS

KNOW THE RULES:

- About safe speed
- About proper lookout
- About buoys and other aids to navigation
- About meeting, overtaking and crossing
- About when and how to signal
- About navigation lights
- About weather
- About fishing boats & other special vessels
- About safety on the water

KNOW YOUR BOAT:

- How to operate and maintain the systems
- How it behaves in various sea conditions
- The depth of water it requires
- How many people & how much weight it can carry
- How much horsepower it can use
- How fast can it safely go
- The best trim conditions

KNOW THE OPERATING AREA:

- The important landmarks
- The aids to navigation & their characteristics
- The channels and depths of water
- The rocks, shoals and obstructions
- Where and how to get help
- The tides and currents
- The location of fuel, water & repair facilities
- Do you have proper charts on board

KNOW YOUR LIMITATIONS:

- Be aware of your skill and knowledge limitations
- Know the skill and knowledge limitations of others on board
- How far can you go with the fuel on board
- Is it safe to go out in this weather
- How rough should it be before you turn back
- Do you have proper protection from the elements
- Do you have spare parts if something goes wrong
- Should you attempt to tow that boat

DO THE RIGHT THING:

- Be prepared for any eventuality
- Carry the right safety equipment, spare parts & tool kit
- Carry a first aid kit and know how to use it
- Maintain your boat in shipshape condition
- Operate the boat safely - practice good seamanship
- Obey the laws
- Keep the boat properly trimmed
- Stow things away when not in use
- Practice maneuvering in various sea conditions
- Practice approaches to moorings & piers
- If you drink, don't drive
- Be courteous
- Help others when you can

SECURING THE BOAT

GENERAL: The following guidelines are included to help keep your boat safely secured while on mooring, at anchor or alongside the pier. Read up on your marlinspike seamanship for several useful knots for mooring, anchoring and tying up to a pier.

MOORING: A proper mooring will be securely anchored to the bottom with a heavy weight such as a block of concrete with a heavy duty eye bolt, attached to galvanized chain, a mooring line, buoy and buoy pendant. Check with your local harbor master or dealer about the weight of the mooring block, and size & length of mooring chain and mooring line required for local conditions.

It is best to use the exterior bow eye for attachment of the mooring line, or, as an alternative, rig the mooring line through the bow chock to the interior bow eye. Do not use the bow norman pin on the 17' Montauk for mooring. On this model the exterior bow eye should be used for this purpose.

ANCHORING: A proper anchor rig will have an anchor chain attached to the anchor (to absorb most of the force as your boat rides at anchor, and to protect the anchor line from chafing on the bottom). Your dealer can recommend the proper type and size anchor for your particular model, as well as the size and length of chain and anchor line. The anchor line and chain on the 17' & 19' Outrage II models can be stored in the starboard bow locker. The line should be laid in the depression and led through the bow chock. The end of the anchor rode may be cleated off at the bow cleat. (Bow eye or norman pin on the 17' Montauk) In order to keep the anchor from shifting around while underway, it is important to have it secured in place on deck or in the bow stowage locker. On the 21' and 24' Outrage models, anchor securing clips are provided for installation by the dealer, depending on the anchor configuration chosen.

Stow the anchor neatly, always ready for immediate use.

Before using the anchor, secure the other end of the anchor line to the interior bow lifting eye.

When anchoring, be aware of the proximity of other boats which may be hit by your boat if the wind or current suddenly shifts. Leave enough room for your boat to swing on her anchor. Don't anchor too close to shoals or underwater obstructions.

Know what the effects of the tide will be.

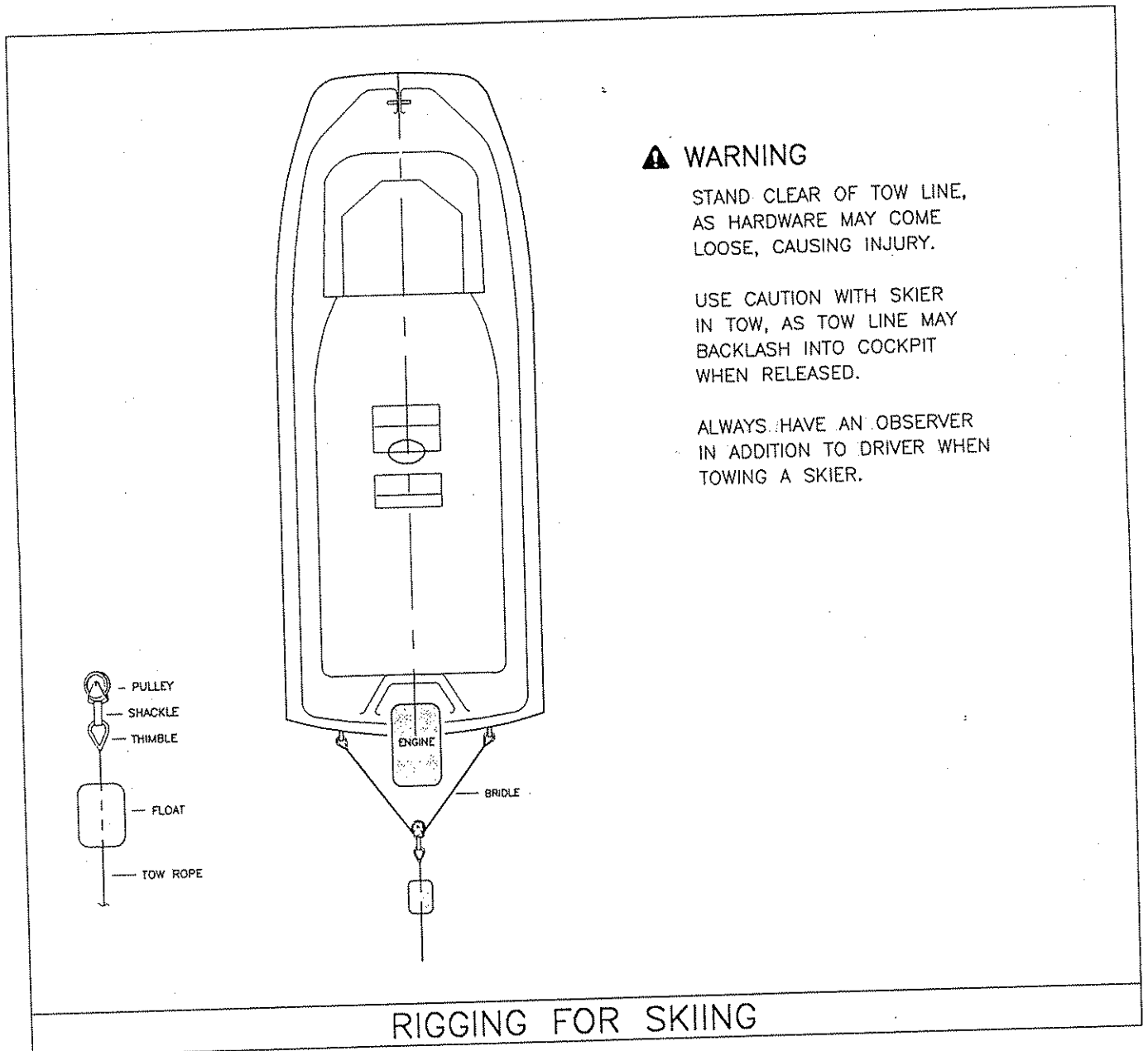
Be sure you do not become tangled in the line as you drop the anchor.

After the anchor has "dug in", make sure it is holding by taking a sighting on at least two natural ranges on shore

SECURING TO A PIER: Several methods of tying up to a pier or float are possible, depending on the pier configuration and location of cleats, bollards or pilings. It is important to consider how tide, wind and current will affect a boat secured to a pier. Also, be sure to rig fenders between the boat and the pier or float.

RIGGING FOR SKIING

GENERAL: All Boston Whalers in this series are equipped with ski-tow eyes thru-bolted on the exterior of the transom. A bridle may be attached to these eyes with a pulley and float as shown in the drawing. The pulley will allow the tow line to traverse from side to side as the skier crosses the wake, and the float prevents the bridle line from sinking and tangling in the propeller.



ELECTRONICS

All center console models are equipped with a buss bar or extra circuits on the breaker panel which provides power for additional accessories and electronics. Electronic components such as VHF, Loran, and depth indicators each have individual "On-Off" switch and circuit protection in the form of an in-line fuse which simplifies installation and protects the individual component. We recommend that the installation of electronics be performed by a qualified electronics technician.

All center console models (except the 17' Montauk) are equipped with an enclosed electronic compartment for the mounting of electronics. Space requirements and the placement of electronics in this compartment is always a factor for consideration when selecting electronics which must be kept out of the weather. On the 17' Montauk, it is preferable to mount electronics inside the console. Electronics can be mounted on brackets or on shelves built up from the console floor. It is also possible to dash mount some units such as VHF and Loran. Consult your electronics dealer to ensure that the component is sealed and can withstand exposure to weather and spray.

On Outrage models, antennas for VHF and Loran can be mounted on the gunwale. A molded-in channel is provided, both port and starboard, connecting the gunwale areas to the console. These channels are accessed on the interior sides through port and starboard access plates. (Note: On the 21' Outrage, removal of the port side mounted fire extinguisher pocket provides access.) On the 17' Montauk, antennas can be gunwale mounted or through bolted to the console. Because of interference with sun tops and other canvas items, gunwale mounting or the use of smaller "Gam" type antennas mounted on the console may be preferable.

Depth indicators can be mounted inside the electronics storage box on Outrage models. On the 17' Montauk they can be mounted on top of the console. Digital depth indicators can also be dash mounted. Transducers must be transom mounted. The transducer should be mounted in a clean flow of water. Check to make sure it is mounted away from spray strakes and so as not to interfere with trailering and trailer bunks. Most transducers will act as a small trim tab affecting hull trim. Transducers should be mounted on the port side, or on center to provide lift or have a neutral effect on trim. On the 21' and 24' Outrage models, the transducer can be transom mounted or thru-hull mounted on either side of the aft sump. (Access to this area is through the Pi-Hi covers.) This area is solid for thru-hull transducer installation. (Because of the need for fairing blocks and fiberglass work, most find transom mounted transducers easier to install. The area you select to mount the transducer on the transom may not contain wood inserts. The fiberglass skin is suitably strong for fastenings such as stainless steel sheet metal screws. The transducer bracket should

be bedded with marine compound and any space between the boat and transducer should be filled in to provide a smooth flow of water over the face of the transducer.

Electronics mounted in the center console can have an effect on magnetic compass readings. These should always be checked prior to and during operation of electronic equipment. Make a deviation table for further reference. CHECK COMPASS DEVIATION REGULARLY.

KEEPING SHIPSHAPE - MAINTENANCE

GENERAL: To keep your boat in good condition for the sake of appearance as well as for protection against the environment, it is recommended that you give regular attention to care and maintenance of the following:

- a. Fiberglass hull, decks and other parts
- b. Windshield
- c. Trim and fittings
 - Stainless steel
 - Aluminum
 - Wood
- d. Canvas and upholstery
- e. Bottom painting
- f. Winter storage

FIBERGLASS HULL, DECKS AND OTHER PARTS

General: Several steps should be taken, depending on conditions existing in the operating environment:

1. Washing
2. Waxing
3. Compounding
4. Repairs of damaged surfaces

Washing: Exterior and interior laminated fiberglass parts, as well as windshield and metal hardware should be washed frequently (depending on use) using fresh water, a mild liquid detergent, and a soft clean cloth or sponge. (Never use abrasive powders, gritty cloths, steel wool or strong alkaline cleaners.) After washing thoroughly and removing all dirt, salt deposits and film, rinse with clean, fresh water and dry the surface with a chamois to prevent water spots.

Waxing: The exterior and interior laminated fiberglass parts of the hull, deck and superstructure should be waxed at least twice a year to protect the gelcoat. (Outer surface) Use only a wax which has been formulated for use on fiberglass laminates. (See your dealer for recommendations). Follow the instructions provided with the wax, and never wax in direct sunlight.

Compounding: Occasionally, it may be necessary to remove chalking and stains with a rubbing compound after washing and prior to applying a coat of wax. Use a fine compound recommended by your dealer, and follow the manufacturer's instructions carefully.

Surface repairs: Minor scratches can often be compounded out after washing. Deeper gelcoat scratches may require light sanding with wet-or-dry sandpaper (working from 400 grit to 600 grit), followed by compounding. Scratches which go deeper than the gelcoat, and any other damage which involves delamination or structural repairs should be discussed with your dealer. Boston Whaler offers matching gel-coat & hull patch repair kits. See your dealer about these.

THE WINDSHIELD should be washed periodically using only fresh water and mild liquid detergent as described above. It may need occasional dusting, and this should be done with a soft, damp cloth or chamois - not a dry cloth which may cause scratches.

Protect the surface gloss by occasional waxing with a good auto paste wax. Apply a thin, even coat with a soft clean cloth and polish lightly with cotton flannel. Then wipe the windshield clean with a damp cloth to help eliminate electrostatic charges which can attract dust.

Fine scratches can be removed by hand polishing with a compound such as Simoniz cleaner and a soft flannel pad. Deep scratches should be first sanded lightly with 400 grit "wet or dry", using plenty of water and rinsing the sandpaper frequently. Follow by buffing with a clean muslin wheel and a good polishing compound.

▲ CAUTION: NEVER USE ACETONE, GASOLINE OR HOUSEHOLD CLEANERS ON THE ACRYLIC WINDSHIELD. THESE WILL CAUSE DAMAGE.

TRIM AND FITTINGS

Metal trim and fittings will stay brighter if coated with a good grade of metal polish or paste wax after washing. Ask your dealer about special products formulated for use on stainless steel and aluminum.

Stainless steel, although strong and corrosion resistant, does require periodic maintenance. Stainless steel surfaces must be kept clean and free of accumulated dirt and grit. Crevice corrosion, a brownish coloring, can occur on stainless components where one piece of stainless hardware joins another. This condition is usually caused by impurities in water and air and can be cleaned easily with any marine polish using a sponge, cloth or small bristled brush (useful for getting into nooks and crannies). See your dealer for cleaners designed to remove rust stains from gelcoat.

▲ CAUTION: NEVER USE STEEL OR BRONZE WOOL FOR ANY CLEANING APPLICATIONS. TINY PARTICLES WILL FALL OFF, GETTING INTO THE GELCOAT, CAUSING RUST STAINS.

Wood trim: Varnished wood should be flushed with fresh water to remove salt and dirt. Varnished surfaces may also require occasional touch up. We use a high grade urethane varnish, which is sprayed onto the wood. By thinning the first of three coats, the urethane penetrates deeply into the wood pores, providing good holding power for subsequent coats. This is a very durable coating, and it forms a good base for any other type of varnish. Ultra-violet light from constant exposure to the sun reduces the gloss and shortens the life of the varnish. Covering the boat when not in use with a mooring cover will extend the life of the varnish finish.

Automotive wax or spray wax, such as Lemon Pledge, will add gloss and lustre to the woodwork and add longevity to the finished

surface. However, when refinishing, great care will have to be taken to remove all the wax before sanding. If this precaution is not taken, you will sand the wax into the woodwork, and failure of new varnish will result.

Any good urethane varnish (with ultra-violet screening properties to protect the bond between the varnish and the wood) is acceptable and we suggest the use of one with which you or your acquaintances have had experience.

⚠ CAUTION: TWO IMPORTANT POINTS:

1. If you don't remove the woodwork from the boat, carefully mask all gelcoat surfaces with heavy paper prior to varnishing. A varnish drip will make a permanent black stain on the gelcoat which is impossible to remove.

2. Carefully sand all the surfaces prior to applying new coatings to remove most of the gloss. This will give "teeth" or holding power for the new material. (Use fine sandpaper - #360 grit) Use of coarse paper will cause scratches which will show after varnishing, and will make it necessary to apply multiple coats to obtain the original lustre. Sandpaper of the "open coat" type works well because the powdered varnish does not clog the grit. Most varnish removers will not penetrate the urethane finish; - sanding is the best method. The use of a vibrator sander will help. Do not use a circular sander as it will leave swirl marks in the finish.

For teak wood, your dealer can recommend a good brand of teak cleaner and teak oil to maintain this material in good condition. Follow the manufacturer's instructions on the containers. Use the cleaner as needed, and apply the protective oil at least twice a year; - more often if the operating environment calls for it.

CANVAS: Three primary considerations for cotton duck and acrylic canvas items such as forward shelters and mooring covers are:

1. Chafing
2. Fiber wear from dirt and grit
3. Fiber deterioration from ultraviolet light

Inspect the canvas installation periodically to assure that it is not in contact with parts of the boat or gear which may cause chafing. Minor adjustment of the canvas frame component may be necessary to prevent this.

Canvas items should be washed at least once a season with luke warm fresh water with a mild detergent to remove salt and grit which will cause wear of the fibers. A soft bristle brush may be used with plenty of water to remove dirt. When all dirt, salt and grit have been removed, rinse thoroughly with clean fresh water and allow to dry thoroughly, to prevent mildew, before rolling it up for winter storage.

The effects of ultraviolet light can sometimes be reduced by chemical treatment of canvas items. Discuss this with your dealer.

Periodically lubricate snaps with petroleum jelly. Zippers periodically should be lubricated with paraffin wax.

UPHOLSTERY: Vinyl upholstery can be periodically cleaned with any good vinyl upholstery cleaner to keep it clean and pliable. For other types of upholstery fabric, use a foam type upholstery cleaner. Keep the upholstery dry to prevent mildew. Be sure there is no moisture between cushions. Do not use solvents or bleaches on vinyl.

BOTTOM PAINTING: To protect the bottom from marine growth, any boat left in the water for an extended period of time should be painted annually with a good grade of anti-fouling paint. Because of pollutants in the water and their possible reaction with the gel-coat and laminate, we strongly recommend that an epoxy "barrier coat" be applied upon initial bottom painting. Consult your local marine dealer for recommended barrier and anti-fouling paints, and follow the paint manufacturer's instructions carefully. Do not use a copper-based paint as this may cause corrosion of underwater metallic fittings. **DO NOT PAINT THE FUEL TANK GROUND BUTTON!**

Waterlines: Use the following procedure to establish the waterline of your boat:

1. Place the boat in the water.
2. From outside the boat, mark the waterline points with a sharp pencil, at the bow and stern.
3. On a flat floor surface, level the boat fore and aft and side to side to get marks equally distant from the floor.
4. Cut a stick to the length equal to the distance between the floor and the marks.
5. Holding this stick plumb, go all around the hull and marking where the stick touches the hull. Keep the marks close together (every 6 inches - closer where they form a sharp curve).
6. Follow all the marks carefully with masking tape.

WINTER STORAGE: If your boat is out of use during winter months, or is to be laid up for an extended period of time, the following should be done:

1. Check your engine manual for important procedures required to protect the engine during lay-up.
2. Remove any marine growth from the bottom immediately after removing the boat from the water. This debris will harden,

making its removal very difficult unless it is done while still wet.

3. Clean and wax your boat before storage. This will be easier now than it will after dirt and grit have adhered for a long period of time. Also, it will help to prevent stubborn stains from forming.
4. The boat should be supported on the keel. If on a trailer, side bunks need only prevent lateral movement. (See "Trailerling")
5. Store the boat with the bow slightly elevated to promote draining. Remove drain plugs.
6. Fill fuel tanks and add dry gas and/or fuel stabilizer. Empty tanks collect condensation.
7. Remove the battery for storage. Clean the cable terminals and battery terminals. Charge the battery fully before storing it.
8. Provide the boat with safe, secure storage, out of the elements if possible. Otherwise protect it with a suitable cover which keeps out the weather, but provides some ventilation. (Poor ventilation will promote heat build-up due to the "greenhouse effect". Such heat build-up can be harmful to many components in the boat.) Remember to account for snow loads when considering winter covers. The use of a reinforced vinyl cover is better and usually less expensive in the long run, than using the mooring cover.