

TWO OCEANS MARINE MANUFACTURING
CAPE TOWN
SOUTH AFRICA

www.2oceans.co.za

General Introduction of the Owners Manual

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

This Owners manual is not a course on boating safety or seamanship. If this is your first craft, or if you are changing to a type of craft that you are not familiar with, for your own safety and comfort, please ensure that you obtain handling and operating experience before assuming command of the craft.

Ensure that the anticipated wind and sea conditions will correspond to the design category of your craft, and that you and your crew are able to handle the craft in these conditions.

Even when your craft is categorized for them, the sea and wind conditions corresponding to design categories A, B and C range from severe storm conditions for category A, to strong conditions for the top of category C, and you are open to the hazards of a freak wave or gust. These can be dangerous conditions where only a competent, fit and trained crew using a well maintained craft can satisfactorily operate.

This Owners manual is not a detailed maintenance or troubleshooting guide. In the case of difficulty, refer to the individual equipment manuals or contact your nearest dealer. Always use trained and competent personnel for maintenance or modifications. All modifications that may affect the safety or performance characteristics of the craft must be assessed, executed and documented by competent personnel. The boat builder cannot be held responsible for modifications that he has not approved.

Always maintain your craft properly and make allowance for the deterioration that will occur over time and as a result of excessive or heavy use. Any craft, no matter how strong it may be, can be severely damaged if not used properly. This is not compatible with safe boating. Always adjust the speed and direction of the craft to accommodate the sea conditions experienced at the time of use.

If your craft is fitted with a life raft, (mandatory in the absence of positive buoyancy), carefully read its operating manual. Your craft must have on board the mandatory safety equipment, be sure to maintain this in peak operating condition, and ensure that you and your crew are familiar with its operation, use and location in the craft.

All persons should wear a suitable buoyancy aid (life jacket/personal floatation device) when on deck. In certain areas this is a legal requirement.

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

GENERAL INFORMATION AND CRAFT DATA

Craft name _____
Serial Number ZA-TOM
Name of Manufacturer Two Oceans Marine Manufacturing
Name of Model _____
Boat design category _____
Maximum recommended load _____ Kg
Maximum number of persons that can be carried _____
Unladen weight of this craft _____
Fully loaded clearance height _____ m
Maximum rated engine power _____
Maximum capacity fuel tanks _____
Maximum capacity water tanks _____
Holding tank capacity x Black water @ litres each - Total litres
x Grey water @ litres each - Total litres
Main propulsion _____
Main sail _____ sqm
Genoa _____ sqm
Screecher _____ sqm
Symmetrical spinnaker _____ sqm
Asymmetrical spinnaker _____ sqm
Hull length _____ m
Hull beam individual _____ m
Hull length max – incl. Bowsprit _____ m
Beam max _____ m
Maximum height, light craft _____ m
Maximum draft fully laden _____ m
Minimum engine running time _____ hrs
Flow of cooling water _____
Date of Completion _____
Craft call sign _____

PROPULSION

Engine Port Serial no: _____
Engine Starboard Serial no: _____

Gear box Port _____ Serial no: _____
Gear box Starboard _____ Serial no: _____

ELECTRONIC EQUIPMENT

GPS no1 _____ Serial no: _____
GPS no 2 _____ Serial no: _____
Duplicate screen _____ Serial no: _____
Radar _____ Serial no: _____
Sonar _____ Serial no: _____
Transducer no 1 _____
Transducer no 2 _____
SSB Radio _____ Serial no: _____
VHF Radio _____ Serial no: _____
Autopilot _____ Serial no: _____
Wind instruments _____ Serial no: _____

NOTE

Category A: This craft is designed to operate in winds that may exceed wind force 8 (Beaufort scale) and in significant wave heights of 4m and above. (See note 1 below), and is largely self sufficient. Abnormal conditions such as hurricanes are excluded. Such conditions may be encountered on extended voyages, across oceans, or inshore when unsheltered from the wind and waves for several hundred nautical miles.

Category B: This craft is designed to operate in winds up to Beaufort Force 8 and the associated wave heights (significant wave height up to 4m, see note 1 below).Such conditions may be encountered on offshore voyages of sufficient length, or on coastal waters when unsheltered from the wind and waves for several dozens of nautical miles. These conditions may also be experienced on inland seas/lakes of sufficient size for the wave height to be generated.

Category C: This craft is designed to operate in winds up to Beaufort 6 and the associated wave heights (significant wave height up to 2m, see note 1 below). Such conditions may be encountered in exposed inland waters, in estuaries, and in coastal waters in moderate weather conditions.

Category D: This craft is designed to operate in winds up to Beaufort force 4 and the associated wave heights (occasional maximum waves of 0,5m height). Such conditions may be encountered in sheltered inland waters, and in coastal waters in fine weather.

NOTE 1

The significant wave height is the mean height of the highest one third of the waves, which approximately corresponds to the wave height estimated by an experienced observer. Some waves will be double this height.

BUILDER'S PLATE DATA

Note. This information is recorded on the builder's plate affixed to the craft.

Hull Number _____
Maximum Permissible Load _____
Max number of persons per category of operation _____
Maximum Permissible Horsepower _____
Design Category _____

Model _____

Note: For outboard engine craft, the mass calculations are inclusive of the mass of the heaviest recommended outboard engines.

CONTENTS

<u>Page Number</u>	<u>Heading</u>
1	Warning labels
2	Fire
3	Safety equipment, safety equipment recommendations
4	Buoyancy and stability
4 - 5	Obligation of the skipper, responsible person
5	Max no of persons
5	Loading
5	Flooding, swamping, capsizing
6	Controls
6	Steering
6	Engines
7 -	Electrical System
8	Battery Installation
7 - 8	Switch Panel
9	Bilge Pumps
9 - 10	Fuel system – fuelling
10	Gas system
11	Fresh Water System
11	Raw water system
11	Heads
12	Lights
12	Anchoring
12 - 13	Craft Trim and Performance.
13	Operation from Fly Bridge.
13 - 14	Maintenance

LIST OF OPERATOR MANUALS ACCOMPANYING THIS MANUAL

VHF Radio
GPS
Sonar
Autopilot

SSB Radio
Radar
Transducers
Wind Sailing instruments

Battery monitoring equipment
Windlass
Engine Operators Manual
Steering System
Switch Panel
Freezer
Electrics
Water heater

CD-player
Winches
Control Box
Pumps
Fridge
Stove
Ice maker
Compressor

DRAWINGS

Electrical/Battery layout
Thru -Hull fittings
Location of buoyancy
Fresh water system
Black/ Grey/ and Raw Water system
Gas system
Fuel System
Bilge system

Page 1

WARNING LABELS

The following symbols are used in the manual and on the boat to caution you against potentially dangerous situations.

DANGER	Warns of conditions, which will cause severe personal injury or death if the warning is ignored.
WARNING	Warns of conditions or practices, which could lead to severe personal injury or death if the warning is ignored.
CAUTION	Warns of conditions or practices, which could lead to minor personal injury, or cause product or property damage if ignored.
NOTICE	Calls attention to installation, operation or maintenance information, which is important to safe operation, but not hazard related.

The warning labels on your craft provide important safety and equipment information.
Know the location and meaning of all labels.
Never remove a warning label.
Do not obscure a warning label.
Immediately replace a damaged or illegible label.

DANGER	Rotating propellor can cause severe injury or death. Engines must be switched off when embarking or disembarking.
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- DANGER Do not occupy bridge whilst craft is underway unless control of craft is from the bridge.
DANGER Batteries - 12v dc Ensure that terminals are clean and that engines are switched off before attempting to tighten or loosen terminals.
- WARNING Read operators manual thoroughly before operating this craft. Never operate this craft whilst under the influence of drugs or alcohol.
- WARNING Whilst fuelling stop engine. Fuel tank may be pressurised open cap slowly, do not overfill, fill only in a well ventilated area.
- WARNING Close sea cocks when leaving craft unattended at moorings.
- CAUTION Only qualified people should perform maintenance on, or in any way modify the steering, fuel, electrical, propulsion or propulsion control systems.
- CAUTION A qualified operator must be in control of the vessel at all times.
- CAUTION Navigate at reduced speed when operating at night, or under conditions of limited visibility. Ensure that all navigation lights are functional under such conditions.

FIRE

Page 2

The local legal requirements for fire extinguishers and fire blankets are the minimum required. We advise you to install additional fire extinguishers and/or fire blankets wherever you feel they could be required.

Keep fire extinguishers and fire blankets properly maintained at all times.

Keep fire extinguishers and fire blankets readily available at all times.

Always be conscious of any fire hazards that could arise as a result of:

- Fuel spillage
- Electrical short-circuits
- Equipment overheating
- Incorrect or unsafe operation of onboard cooking apparatus

Should a fire hazard arise, make certain that every effort is made to prevent the occurrence of a fire from such a hazard. Switch off all machinery and electrical apparatus. Close fuel supply valves. Extinguish all naked flames. Ensure that the fire extinguishers are readily available and ready for use. It is critical to fight a fire at the start and therefore you should always be best prepared to do so.

If a fire has started, it is vital that the craft be manoeuvred to place the area on fire, downwind from the rest of the craft. This will help to contain the flames and limit their spread to the rest of the craft whilst attempts are made to extinguish them.

Make certain that the correct type of fire extinguisher is used to fight the fire.

Train fire extinguishers at the base of the fire, and keep hatches closed where possible, to reduce or at least limit the supply of oxygen to the fire.

The existing fire hazard and its cause must be eliminated before proceeding any further. If you decide to abandon ship, make certain to wear or take a PFD (Personal Flotation Device) with you and all other persons involved.

Maintain a constant attention to any open flames. Store flammable materials in approved containers. Use only marine approved cooking and heating systems.

WARNING

- Reduce the possibility of fire by securing all combustible materials away from the stove before using the stove.
- Check all cleaning and maintenance products for flammability.
- Always ventilate an area before painting, cleaning or using lubricant sprays.
- Never store rags that have been soaked with fuel, oil, or any other flammable materials.
- Allow ample ventilation around batteries.
- Replace broken fuses with fuses of the same amperage.
- Ensure that all electrical connections and wiring are maintained in good condition.

DANGER

Never install knife switches or other arcing devices in fuel compartments.

Never substitute automotive parts for marine use.

Only qualified personnel should modify or maintain the electrical, battery, or shore power systems

Qualified personnel must inspect the fuel system on at least an annual basis.

Page 3

SAFETY EQUIPMENT

Minimum requirements vary according to the area of operation. The operator of the craft is responsible for ensuring that all the necessary safety equipment is on board and in proper order.

At least one personal flotation device is required for each person aboard. PFD'S must be sized correctly for each person. One approved throwable flotation device is required. PFD'S and throwable devices must be readily accessible at all times. Always ensure that children and non-swimmers wear PFD'S at all times when on board the craft.

Ensure that you have an adequate anchor and sufficient chain and anchor line

Your craft is provided with a VHF radio. This will provide you with ship to ship / shore communication.

SAFETY EQUIPMENT RECOMMENDATIONS

Each area of operation is likely to have its own specific safety equipment requirements. The following items should form part of those requirements and are intended as guide to you in the preparation and compilation of your specific safety kit. (These are recommendations only. Check with the authorities in your area for the exact safety requirements.)

- 1 PFD. (correct number and type for maximum no of crew allowed aboard, located for easy access)
- 2 FIRE EXTINGUISHERS AND FIRE BLANKETS .(Correct number and type, located for easy access)

- 3 FLARES. (Night and day with un-expired dates)
- 4 CHARTS. (of your intended cruising area)
- 5 FIRST AID KIT.
- 6 ANCHOR. (with sufficient chain and anchor line for your area and type of operation)
- 7 BILGE PUMPS. (Manually operated)
- 8 FLASH LIGHT. (With spare batteries)
- 9 FENDERS. (Mooring line, and boat hook)
- 10 VHF Radios . (fixed and portable)
- 11 SSB radio.
- 12 EPIRB.
- 13 LIFE RAFT. (to carry maximum no of crew allowed aboard)

TOOL KIT RECOMMENDATIONS - (Minimum)

Assorted screw drivers .(flat and Phillips)
 Pliers. (Channel lock, vice grip, regular)
 Wrenches. (Box, open end, Allen and adjustable.)
 Propellor nut wrench.
 Socket set. (Metric, 8 – 17mm)
 Hammer.
 Spare electrical wire.
 Electrical self vulcanising tape .
 Spare engine oil.
 Spare gear case oil.
 Spare fuel filters.
 Spare oil filters.
 Spare air filters .
 Spare watermaker pre filters.
 Spare fuses.
 Replacement light bulbs.
 Spare ignition keys.
 Heavy duty battery jumper cables.

Portable fuel cans.
 Spare fuel hose.
 Clean rags.
 Liquid soap.

BUOYANCY AND STABILITY

The buoyancy calculations for your craft are as per the supplement attached to this manual.

Any change in the disposition of the masses aboard (for example the addition of a fishing tower, a radar, a stowing mast, change of engine, etc.) may significantly affect the stability, trim and performance of the craft; Any such changes made to the original craft must be accounted for by a professional person prior to the craft being re-allocated a buoyancy/stability certificate.

- b) Bilge water should be kept to a minimum;
- c) Stability is reduced by any weight added high up;
- d) In rough weather, hatches, lockers and doorways should be closed to minimize the risk of flooding;
- e) Stability may be reduced when towing or lifting heavy weights using a davit or boom;
- f) Buoyancy compartments shall not be punctured;
- g) Breaking waves are a serious stability hazard.

OBLIGATION OF THE SKIPPER (RESPONSIBLE PERSON)

Before departing on an outing or a passage, be sure to advise a responsible person or authority of your intentions – i.e. area of operation, number of persons on board and your expected time of arrival at the planned destination, or back at your home base. Be sure to update this data with the above persons if and when you change your plans.

It is very important that all crew on board be briefed as to the planned trip ahead, made aware of the safety gear and its location on board, detail Man Overboard Procedures, launching of the Life Raft, and that a second in command be appointed for the duration of the trip so that should the skipper become incapacitated there will be an established chain of command.

Ensure that all persons on board are able to close and secure port holes and hatches. It is particularly important to explain and check the operation of the emergency escape hatches.
Ensure that all persons on board, including children, are able to don a lifejacket in the correct manner.

On reaching your destination, or returning to base, be sure to confirm this status to the responsible person or authority that had been advised about your departure, so as to prevent any false alarms concerning your whereabouts and safety.

Obtain a weather forecast for the area of operation.

Check the operation of - Bilge pumps and verify that the pump intake screens are clear.
Navigation lights
Navigation equipment
Radio
Wipers

Ensure that you have sufficient fuel, food and fresh drinking water for your journey.
Any spare fuel carried, must be secured aboard in approved fuel storage containers.
Ensure that the toilet holding-tank has been emptied.(where fitted)
Have up to date area charts on board.

WARNING

It is the skipper's obligation to understand and follow all navigational markers and to navigate within safe depth zones. Never moor to, or obstruct a navigation buoy.
Your engines must be shut down and the ignition keys removed from the ignition before anybody either embarks or disembarks from the transom platform.

Page 5

Eliminate tripping hazards on board. Ensure that persons wear suitable foot-ware so as to prevent falls and possible injury

DANGER

Rotating propellers can cause serious injury or death. Your craft's engine or engines must be switched off and the ignition keys removed from the ignition switches when people are swimming anywhere near your craft.

WARNING

Do not exceed the maximum number of persons. Regardless of the number of persons on board, the total weight of persons and equipment must never exceed the maximum recommended load.

WARNING

When loading the craft, **never exceed the maximum recommended load.** Always load the craft carefully and distribute loads appropriately to maintain design trim (approximately level). Avoid placing heavy weights high up.”

FLOODING, SWAMPING, CAPSIZING

This can arise from

Operation in extreme weather conditions

Improper loading or overloading

Ensure that you never exceed the loading indicated on the maximum capacities label.

Keep all heavy loads as low as possible.

Load the vessel to ensure an even keel.

Ensure that loads other than persons are secured in position.

Ensure that all hatches and port holes are closed in rough weather.

Anchoring: If using one anchor, anchor from the bow only. Never tie a fouled anchor to the stern and attempt to power the anchor off the sea bed, using the forward thrust of the engines, as this generally will lead to swamping.

Grounding This may cause serious hull damage which can result in flooding, swamping and subsequent capsizing. Operate in recognized navigable areas and maintain a proper look out at all times.

IF FLOODING OR SWAMPING OCCURS

Slowly head the craft into the sea and maintain this heading whilst swamped or flooded.

- Attempt to drain the deck water by operating the craft at a low speed ahead, allowing the deck drains to drain the excess water off the deck. Ensure that deck drains are free of any foreign objects.
- Make sure that the bilge pumps, electrical and manual, are operating. Use buckets, pots or any item that holds water to assist in draining the water if the bilge pumps are incapable of draining the craft.
- A flooded craft may become unstable if flooding is caused by a hole below the water line – attempt to plug this hole with anything available. Use wooden plugs, rags or even clothing to help reduce the flow of water into the craft.
- If the craft ever capsizes, you must do everything possible to stay with the inverted craft. This will certainly increase your chance of survival. Escape hatches are provided to allow you to survive inside the inverted hull, and to be able exit the hull when help arrives.

CONTROLS

The engine operating and maintenance manual describes the required procedures for starting – shifting and stopping, please observe these procedures.

Engine Controls The binnacle mount engine controls are single lever operation for gear and throttle response. The control is fitted with start in-gear protection, which will ensure that the engines are in neutral gear before start up. This will prevent accidental uncontrolled movement of the craft, should the same be started in gear.

Control actuators In certain installations i.e. Electronic controls, the throttle/gear actuators are located as close to the engines as possible, so as to keep the cable lengths to a minimum. There is a manual override on these actuators which will allow you to operate the throttle/gear mechanism in an emergency. Please ensure that you are familiar with the control actuator instructions.

Trim controls For craft fitted with outboard engines, the engine-trim, up or down, control buttons are fitted as an integral part of the engine control binnacle mount. Be sure not to accidentally activate these buttons when moving the control levers. Where electronic controls are fitted the trim buttons are mounted separately on the dash board.

STEERING

The craft is equipped with a hydraulic steering system. The steering cylinder is mounted to the transom step located above the tunnel. Each engine is attached to the steering cylinder, by a mechanical tie-bar, with rose joints, that allow individual trim and movement of the engines. Each steering station has a hydraulic helm pump. Steering of the vessel can be accomplished from either station - top or bottom without having to select a steering station.

The steering helms are linked to the Auto – Pilot pump, where fitted, via hydraulic lines. The steering system is filled with hydraulic oil, with the top station being the highest point. The entire system is filled with oil and purged of all air. The system level can be topped up via the top station. **Please see the steering operators manual for details.**

Alternative Steering

In the event of failure of the hydraulic steering system the engines or rudders may be controlled manually by using the steel bar which may be inserted into the alternate steering socket. This socket is fitted directly to the engine tiller

or on to the rudder tie bar. The craft may be steered at low speed using this system. Alternative steering is for use in an emergency only, and the main steering system must be repaired at the earliest opportunity.

WARNING

All maintenance and modifications made to the steering, must be carried out by qualified personnel

ENGINES

Please make certain to read the engine manufacturers manual before operating the engines.

NOTICE

Make certain that only qualified technicians are allowed to service or alter any settings on the engines.

Page 7

ELECTRICAL SYSTEMS

The craft is fitted with a 12 volt dc electrical system.

- Each engine is equipped with a dedicated engine start battery.
- The electrical accessories and electronic instruments on the craft are powered by the house batteries. These batteries are charged by the engine alternators, but can not supply power to the engine starter motors, unless a system of jumper cables is used. This has been specifically done in order to protect the engine start batteries from accidental discharge through the house batteries.
- Power from the batteries is available to the engines, electrical accessories, and electronic instruments via battery isolator switches. The diagram of the switch layout and function is part of the supplementary information, specific to your craft, attached to this manual.
- If the battery isolator switches are in the off position, then no power will be available between these switches and either the engines or the accessories and electronic instruments.
- Battery isolator switches must always be left in the off position when the craft is left unattended.
- NOTE: If the craft is fitted with an Inverter, a battery charger and/or shore power system, then the house battery isolator switch will need to be in the on position to allow the function of the accessories.
- NOTE: The electrical bilge pumps fitted to the craft have their automatic float switches wired directly to the house batteries (where fitted). Therefore should these pumps be activated, and the engines not run to charge the batteries, there could be a possibility of the house batteries, or start batteries, being run down, without seemingly having been used. Should you ever find that the batteries are run down, be sure to check on the bilge pumping system, and for any possible water leaks, that could cause this system to operate.
- Batteries are located in a dedicated battery storage compartment or compartments. These compartments are vented to the outside to prevent the possible accumulation of flammable battery fumes. It is important to ensure that these ventilation ducts or openings are not blocked.
- When disconnecting, or re-connecting batteries, it is important to ensure, that the battery selector switches are in the off position, and that the positive and negative terminals of any of the batteries, do not become accidentally connected during this operation.
-

SWITCH PANELS

Switch panels are installed for 12volt dc current and in the case of the installation of an inverter for mains voltage, 220 volts. The switch panels are identified as Dc or Ac.

The Dc switch panels are powered from the house batteries via a positive and a negative buss bar.

The Ac switch panel is powered via the shore power connection, and is operative if the inverter is switched on.

The inverter will convert 12 volts to 220 volts allowing you to use the house battery bank to power 220 volt appliances fitted to the craft.

Switches, for 12 volt accessories and electronics, and 220 volt appliances, will be on different switch panels and are identified separately.

Each switch is controlled via a fuse or circuit breaker. It is important that the correct size of fuse or circuit breaker is used for each application. Should you ever be required to replace a fuse or circuit breaker, be sure to retain the original amperage - See the individual instruction books for fuse/circuit breaker amperage rating

Page 8

The standard dc panel layout is as follows

ANCHOR LIGHTS	_____
NAVIGATION LIGHTS	_____
FLOOD LIGHTS	_____
CABIN LIGHTS	_____
COCKPIT LIGHTS	_____
BILGE pump Stbd. Aft	_____
BILGE pump Port aft	_____
BILGE pump Stbd mid	_____
BILGE pump Stbd fwd	_____
DEPTH SOUNDER	_____
FRESH WATER PUMP	_____
DECK WASH PUMP	_____

Additional dc panels are installed if there are insufficient switches for all the equipment on board. The layout and location of these panels is shown in the supplementary data, which is specific to your craft.

Where fitted,the standard ac panel layout is as follows

AC mains
Reverse polarity

NOTE: Once the AC mains switch is lit up then all 220 volt sockets are live and may be used independently.

WARNING — Do not work on an energized AC system

Shore- supply

The shore power supply cable, which connects your craft to the shore based mains electricity, is wired to the standard international code for mains electricity. However it should be noted that owing to the variation in origin of craft using shore power facilities, the shore power plugs can be wired as opposite poles.

Reverse polarity.

This situation will be indicated on your battery monitoring equipment, and needs to be rectified, so as to prevent accidental electric shocks, possible damage to your electrical equipment, and excessive corrosion to the craft's hardware.

Whenever connecting or disconnecting the shore power cable make sure that the shore power supply plug switch is in the off position and that the inverter is switched off.

WARNING

With shore power connected it is not safe to swim in close proximity to the boat. Stray currents, as a result of earthing breakdown could be detrimental to human health.

Changing fuses

Fuses should only be changed when the power supply is switched off. This will prevent sparking and the inherent risk of fire.

Page 9

BILGE PUMPS

The electrical bilge pumps, located in the bilges, may be operated manually or automatically via their individual float switches. These pumps are connected to the switch panel for manual operation, and via fused hot wires direct to the batteries to allow for automatic operation when the float switches detect water.

Note: Whilst the vessel is moored, and the battery isolator switches are switched off, the bilge pumps will be able to operate via signals from the float switches.

The manual bilge pumps are fitted as an emergency back up system in the event of failure of the electrical bilge pumps. Ensure that the manual pump handles are always readily accessible and that the crew are capable of their operation. Periodically it will be necessary to ensure that the manual bilge pump hoses are clear. The pumps should be operated on a regular basis to ensure their operation.

CAUTION

Always have an alternative means of bailing equipment on board, i.e. a bucket, in the event of failure of both the electrical and the manual bilge pumping systems.

FUEL SYSTEM

The craft is fitted with built in fuel tanks which are constructed of marine grade aluminium plate. These tanks are pressure tested at the time of manufacture and the relevant tank details are recorded on a data plate that is affixed to the tank. The size of the tanks fitted to your craft is recorded on the supplement drawing attached to this manual.

NOTE: It is necessary to allow a 20% reserve of your fuel supply at all times. All trip planning must therefore take this reserve into account. Furthermore you need to accept that owing to craft trim, the volume of useable fuel need not necessarily be that calculated as fuel tank volume.

Each fuel tank is fitted with an inspection plate which allows internal swabbing of the tank base and walls should this ever be necessary as a result of contamination. Located in the centre of the inspection plate is a threaded plug, which when removed allows direct access to the base of the tank for a suction thief (drain) line. Such a suction line, up to 20mm. diameter, may be used to drain off the lowest contents of the tank that could be contaminated. This eliminates the need to remove the tank from the craft for draining.

The flexible fill and vent lines are attached between the deck fittings and the tank.

The fuel supply line is connected from the tank direct to the fuel/water separator/filter. It is important that you monitor the clear bowl of this separator/filter, to limit the build up of water (generally resulting from condensation in the tank).

FUELING PROCEDURES

WARNING

Fuel vapours are explosive and being heavier than air can become trapped in the bilges of a craft. During re-fuelling, make certain that all accommodation hatches are closed.

- If the craft is afloat, make sure that it is securely moored to the fuelling dock before starting the re-fuelling procedure.
- Turn off the engines and all electrical equipment.
- Make certain that the galley stove is not operational.
- Extinguish all cigarettes or cigars and ensure that no smoking takes place aboard or in the close proximity of the craft whilst moored to the fuelling dock.
- Deck fittings – marked fuel, gas, or diesel, are provided for fuel tank filling. Remove the fuel cap and insert the fuel nozzle, making sure to make and maintain contact between the nozzle and the metal side of the deck fitting. This contact provides an electrical bonding, which will reduce the possibility of static electricity build up. The

Page 10

crafts fuel system is earthed, and therefore the risk of sparking from static build up during the refuelling process is reduced.

WARNING

A qualified technician must inspect the fuel system on an annual basis.

- After approximately 10 litres have been pumped into each tank, you must inspect the area for possible leaks or fume build up. If any spillage occurs, this must be totally removed before proceeding with the refuelling.
- It is often not possible to fill the tanks to the rated capacity, owing to craft trim or residual fuel in the tank. If fuel flows out of the vent, then cease re-fuelling immediately.
- Once refuelling is complete, remove the fuel nozzle, replace the fuel cap and clean off any spillage.

CAUTION

You must regularly inspect the fuel / water separator for water. Drain off any water present by opening the bottom drain valve until pure fuel is drained. Make certain not to allow the drainings to leak to the surrounding waterway. All drainings must be collected and disposed of in a responsible manner. On the completion of the refuelling operation, make certain that there are no leaks of fume build up prior to activating any electrical circuits.

WARNING

Do not store equipment containing flammable liquids, (i.e. auxiliary outboard engines, generator sets, resin, cleaning solvents etc.) in compartments that are not designed for this purpose.

GAS SYSTEM

- Please ensure that you are thoroughly familiar with the operating instructions which pertain to the gas appliances which are fitted to your craft. The appliances are installed according to marine codes for gas appliances; however, it is absolutely essential that these appliances are operated, according to the instructions that are provided with the appliance.
- The gas system must be inspected every time that it is used. This inspection must allow for a thorough visual check of the gas cylinder storage area, the regulator valve, the gas piping and the connection to the appliance. Ensure that all connections are tight, free of corrosion, hose clamps are in position and secure and that there is no evidence of leaks. Make certain that there is no smell of gas in any of the lockers, hatches or around the appliance before igniting the appliance.
- The gas cylinder must be stored in its dedicated area, as indicated on the drawing, which is attached to this manual. The gas cylinder must be secured against excessive movement.
- In order to change an empty gas cylinder for a replacement full cylinder. First ensure that the gas appliances are switched off, and that there are no naked flames in the area of the gas cylinder storage compartment. Ensure that the gas cylinder valve is securely closed, and then loosen the regulator/hose fitting which is attached directly to the cylinder.
- Remove the gas cylinder from the storage compartment and replace the same with a full cylinder. Replace the regulator/hose fitting to the full gas cylinder, ensure that the connection is secure, and then open the valve on the cylinder. Check for leaks before using any of the gas appliances.
- **WARNING.** At all times make sure that there are no naked flames in the area of the gas cylinder, gas piping and the area surrounding the gas appliance.
- When a gas appliance is in use, the same should never be left unattended, so as to ensure that the flame is not accidentally extinguished.
- Gas leaks - If a gas leak is ever detected be sure to close the gas cylinder valve immediately.
- Once a gas leak has been detected it is important to ventilate the area so as to ensure that asphyxiation does not occur.
- The crew on your craft must be thoroughly briefed on the operation of the gas appliances, and about the potential dangers of the failure of the gas system.
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Page 11

FRESH WATER SYSTEM (where fitted)

The fresh water tank is located according to the drawings forming part of this manual.

The tank is filled through its individual deck fitting which is marked Water.

Fresh water is provided via a pump, fitted with a pressure switch, to the following sections of the boat.

Toilet basin.

Transom shower .

Galley basin.

In order to activate the system, the fresh water pump switch ,on the switch panel ,must first be switched on. Once the pump is operational, the system pressure will build up to the required setting. Providing that all the faucets are closed, the pressure switch will switch the pump off, leaving the system pressurised. As soon as one of the fresh water faucets are opened, water will flow and when the falling pressure reaches the minimum setting, the pump will activate to maintain water flow.

Once the craft is moored, you must remember to switch off the fresh water pump so as to prevent burn out in the event of the water tank being emptied.

If your craft is fitted with a hot water system then this system will be fed by the abovementioned pump. The hot water is obtained from the hot water cylinder which is heated via the engine cooling water, (inboard engines only) or an electrical shore power connection of 220volts.

NOTE: Owing to vessel trim it might not be possible to use the volume of water indicated as being contained by the fresh water tank.

RAW WATER SYSTEM

Raw water is provided via a bronze seacock, (keep closed when craft is moored) to the deck wash pump. The pump is activated by a switch labelled 'Deck wash', located on the switch panel.

The pump, controlled via a pressure switch as per the abovementioned fresh water pump feeds water to:

- Deck wash hose, located on the aft deck.
- Livewell system or Lunar tubes if fitted.

CAUTION

Close the raw water seacock when moored.

THE HEAD – ON BOARD TOILET SYSTEM

- The craft is equipped with an enclosed head or heads. The head is flushed using raw water.
- NOTE: It is strongly advised that the toilet is flushed with fresh water before any period of layup. This will prevent the smell of decaying bacteria which are prevalent in sea water left to stagnate.
- Details of the operation of the toilet are to be found in the toilet, operating manual. Once the toilet has been flushed, and the bowl drained, the waste is disposed, either, overboard, or to a holding tank (where fitted).
- Local laws differ from area to area, regarding the storage and/or disposal of sewage waste. (Black water.)
- If your craft is equipped with a holding tank, then the toilet outlet pipes will be connected to a Y valve which is connected to two separate pipes, one to the waste holding tank and the other directly overboard.
- In order to operate the toilet system the Y valve needs to be set to either Overboard or Waste Tank. If set to Waste Tank, then the level of waste in the tank needs to be monitored. Once the tank is full, either the tank must be drained via the waste outlet fitting, using a shore based pump, or the waste tank must be drained overboard via the hand operated waste pump.
- NOTE: Laws govern the dumping of waste, be sure to familiarise yourself with such laws.

Page 12

LIGHTS

Your craft is equipped with lights operated from the switch panel.

Navigation lights: Port and Starboard
 Tri colour, (Sailing Yacht)
 All round white light (Anchor light)
 Steaming light

Cabin Lights	Saloon
	Heads
	Cabins
	Deck courtesy lights
	Spot Lights
	Mast spreader lights (Sailing Yacht)

ANCHORING

Your craft is supplied with an anchor that is suitable for general use. Should you find it necessary to anchor in specific areas, with individual bottom structure, i.e. rocky reef, then you should consider adding other types of anchor to your craft to specifically cater for these bottoms.

Windlass

If your craft is equipped with an anchor windlass then please consult the instruction manual supplied with the windlass.

WARNING

Do not store any items in the anchor locker other than the designated rope and chain, as this could foul the operation of the anchor line, thereby endangering the safety of the craft. Always be prepared to cut the anchor line if this becomes snagged and the buoyancy of the hull is unable to dislodge the anchor.

WARNING

Never tie the anchor line to the stern of the craft, in order to use the engine power to dislodge a fouled anchor. This will surely lead to swamping and likely capsize of the craft. It is safer to lose an anchor chain and line, than to lose the craft.

CRAFT -TRIM / PERFORMANCE

Your craft is capable of high speeds when equipped with high horsepower engines, and is therefore sensitive to trim.

The engine - or trim plane activator buttons - are located on the control levers or on the dash board. Trimming Up will raise the bow and should be used when running with the sea. Trimming Down will lower the bow and should be used when heading into a chop. (See engine or trim-plane manufacturers instruction books for full details)

The craft should always be trimmed to ride as level as the load or sea conditions will permit.

Performance of the craft is directly related to many factors, one of which is the condition of the underside of the hull. It is most important to ensure that the underside of the hull is kept as smooth as possible and that marine growth is controlled. If the craft is permanently moored then the hull needs to be antifouled. However if the craft is not used frequently, in time, the anti foul will no longer be effective in preventing marine growth.

Propellor condition is vital to maintain performance of the craft. Take care to ensure that your propellor blades do not get chipped or bent.

Page 13

OPERATION FROM FLYBRIDGE

DANGER

It is unsafe to allow persons to occupy the flybridge whilst the craft is underway, unless the craft is being controlled from the flybridge. It is not possible for the operator, when controlling the craft from the lower station to monitor the safety of persons located on the flybridge.

Extreme caution must be exercised to ensure that persons only climb the ladder, on to, or off, the flybridge when the craft is stationary.

WARNING

Limit the use of the radar whilst the flybridge is in use, as the output from the dome could be harmful to persons within close proximity.

The flybridge is intended for use during settled weather conditions and therefore should be used with responsibility.

MAINTENANCE

The glass reinforced components of your vessel are manufactured using the highest quality materials. The hull, below the waterline is constructed as a single skin laminate which is hand laid. The top deck, and liner are constructed as a "sandwich", comprising, glass reinforced, inner and outer skins, which are vacuum bonded to a balsa core. This method of lay-up ensures the strongest bond between layers and ensures the most effective strength to weight ratio.

All fittings attached to the areas of sandwich construction, are fixed to **hard points**. It is essential that any additional fittings be similarly located in areas that are suitably prepared as hard points.

Chipping of the gel coat can occur, but you should realise that whilst these chips should be repaired, they, in no way, affect the strength or performance of the vessel. It is recommended that you enlist the aid of a boat yard to repair gel chips. Any major repairs required to the glasswork, as a result of accident, or modification, should only be carried out by persons suitably qualified.

The glass, reinforced components should be washed with fresh water. Use a sponge and a mild soap / water solution to clean all exterior surfaces. Rinse with fresh clean water and apply a quality boat wax to protect the finish of the gel coat. **Bottom paint**, where applied, should be maintained by a qualified boat yard or dealer, familiar with the **Ecology Legislation** for your area.

ARMOUR GLASS – PERSPEX

The cabin windows, front and side, are manufactured from 5mm thick tinted armour glass. This glass, whilst offering superior strength and unimpeded vision, provides you with the least maintenance task of any material. Simply wash with fresh soapy water, and rinse with pure fresh water.

The hatches are manufactured using high quality Polycarbonate sheeting. These hatches should be washed using soapy water. Before drying with a soft dry cloth, be cautious not to scratch the Polycarbonate surface when using dry, dust-laden materials. Do not, under any circumstances use solvents or petrol to clean the Polycarbonate surfaces.

STAINLESS STEEL

All stainless steel rails used are manufactured from high-grade hand polished grade 316 stainless steel. Check bow rail, grab rail, flybridge and swim ladders for loose bolts or damage. Maintain all stainless steel by washing with fresh water and soap and removing any possible blemishes with a metal polish. (Autoshine)

Page 14

PLUMBING

Check and operate the head, basins, showers and sinks. Ensure that no leaks are evident around pipe joints and fittings. Repair leaks, or replace fittings as required. Ensure that all connections are tight. Operate all pumps and verify the operation of the bilge pump float switches. Operate the two emergency hand operated bilge pumps and verify that the rubber diaphragms are not perished. Check water and holding tanks (where fitted) for leaks. Any major repairs or replacements must be undertaken by personnel suitably qualified in marine plumbing systems.

ELECTRICAL

The wiring used is tinned wire, which will ensure corrosion free operation under marine conditions. Test operation of all electrical appliances. Check that all fuses are in place and free of corrosion. Check that batteries have sufficient electrolyte and that the terminals are tight and free of corrosion. Any equipment found to be faulty should be replaced by personnel suitably qualified in marine electrics.

With the craft out of the water, check for any corrosion to metal parts resulting from electrolysis, or stray current. Replace anodes where necessary and check earthing wires.

UPHOLSTRY

High quality marine grade, vinyl and cloth are used. Remove stains immediately and limit the build up of suntan oils and lotions on seat bases. Use soap and water to clean all surfaces. If a specific fabric cleaner is to be used, first limit this to a confined area, to ensure satisfactory results ,before treating the entire area. Ensure that the craft is well ventilated, as this will prevent mildew.

MECHANICAL SYSTEMS

Engines, steering, and electronic equipment – refer to manufactures manuals supplied with the craft.

STORAGE

Out of the water - It is important to ensure that the hulls are properly and evenly supported to prevent any point loads and or distortion. Obtain the services of a qualified boat yard. Ventilation is very important, and whether the vessel is stored inside, or outside, it is critical that proper air circulation is possible. Do not use tight, unventilated plastic covers.

Refer to the engine manufacturer's manual for engine storage instructions.

- Drain the fresh water tanks, hot water cylinders, and lines by opening all taps and operating the pumps until the systems are free of water. Drain the pump and any low areas to prevent freezing.
- Flush the head and pump dry.
- Drain the holding tank.
- Fill the fuel tanks to minimise condensation.
- Lightly coat all hardware with a rust inhibitor.
- Lift all cushions and leave all hatches open to ensure maximum ventilation and air circulation.

END