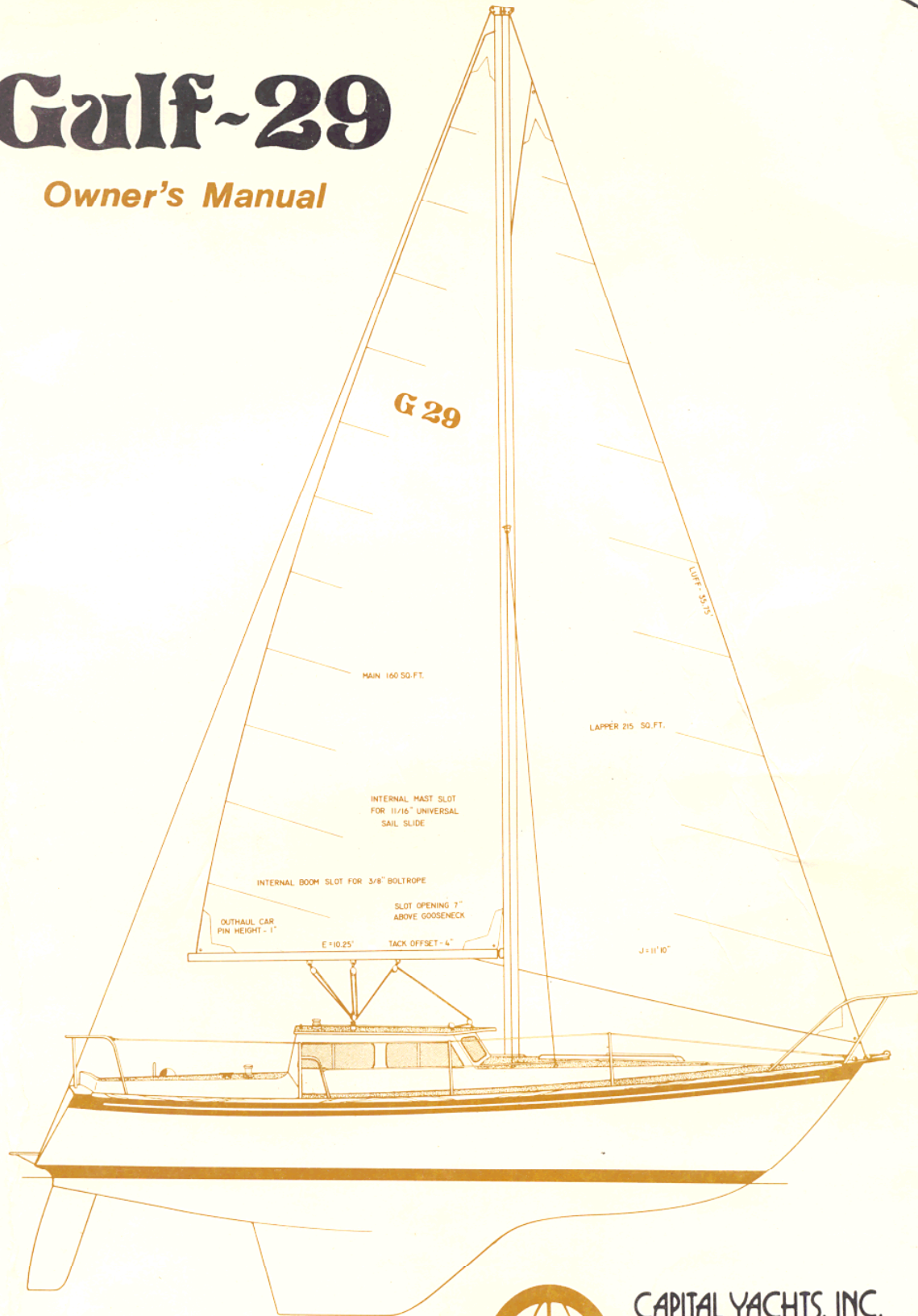


Gulf-29

Owner's Manual



Hull No. 12



CAPITAL YACHTS, INC.
NEWPORT • NEPTUNE • GULF
25914 PRESIDENT AVENUE
HARBOR CITY, CALIF. 90710
(213) 530-1311

Gulf

Dear Gulf Owner:

Welcome to the Gulf Fleet!

Owners of the Capital built yachts comprise one of the fastest growing groups of racing and cruising fleets in the nation, and we wish to welcome you as members of this group.

We at Capital Yachts have attempted to build into our boats the greatest possible value in terms of any sailing yacht on the market.

The purpose of this owner's manual is to insure that you obtain the maximum use and pleasure from your Gulf Sailboat. Any questions that have been left unanswered will gladly be answered by your dealer, or in response to a letter directed to Capital Yachts, 25914 President Ave., Harbor City, California 90710.

Welcome to the Gulf Fleet. We wish you many years of happy sailing.

Capital Yachts, Inc.

Dear Gulf Owner:

Your new Gulf yacht is a well designed, engineered and constructed production sailboat. It is not perfect and subject to minor defects. It has been thoroughly factory inspected and tested for water leaks at the deck-to-hull joint, windows, hatches, handrails, and all deck fittings, and has been found to be tight.

It has been noted, however, that - in some instances - after truck shipment and /or after sailing a new yacht a few times, some of the various fastenings, fittings, windows, etc., require resealing and/or retightening.

Because of these climatic and use conditions beyond our control, Capital Yachts cannot guarantee these windows, stanchions, or metal toe rails, etc., from leaking on a new boat. Boat Sealant is available at most marine hardware stores, should it be necessary. If leaks still persist consult your dealer or Capital Yachts.

We wish you many years of happy sailing.

Capital Yachts, Inc.

JW/rgd

TABLE OF CONTENTS

(Please note that only the sections checked will be included in this manual or pertain to your boat.)

Welcome to the Gulf Fleet

History of Capital Yachts

1-0 Commissioning and Warranty, Gulf Yachts

- 1-1 Launching & Commissioning Record
- 1-2 Warranty (Inside Back Cover)
- 1-3 Warranty Claim Procedure
- 1-4 Limited Sailboat Warranty
- 1-5 Warranty Claim Report

2-0 Specifications

- 2-1 Sail Plan and General Dimensions
- 2-2 Standard and Shoal Draft Keels
 - 2-2.1 Keel Installation & Bottom Paint
- 2-3 Hull and Deck Construction

3-0 Spars, Rigging and Hardware

- 3-1 Mast Tune
- 3-2 Backstays
- 3-3 Genoa Gear
- 3-4 Spinnaker Gear
- 3-5 Reefing Gear
 - 3.5.1 Jib Roller Reefing
- 3-6 Self-tending Jib
- 3-7 Boom Vang & Mast Head Fly
- 3-8 Pedestal Steering - Interior Steering
- 3-9 Rigging Specifications
- 3-10 Mast and Boom Assembly
- 3-11 Deck Hardware Layout & Specifications
- 3-12 Cringle Reef System
- 3-13 Folding Mast & Hinged Mast Step
- 3-14 Optional Tall or Short Rig
- 3-15 Hydraulic Backstay Adjuster
- 3-16 Spinnaker Gear List
- 3-17 Spinnaker Gear Layout

4-0 Electrical Systems

- 4-1 Basic Electrical System
 - 4-1.1 Battery Condition Indicator
 - 4-1.2 Use of Two Batteries
 - 4-1.3 Operation of Electrical System
- 4-2 Optional Electrical Accessories
 - 4-2.1 Lightning Ground
 - 4-2.2 Masthead Light
 - 4-2.3 110 Volt A.C. Shore Power

4-2.4 Spreader Lights

4-2.5 Combination Spreader Light

4-3 Deck Wiring Diagram

4-4 Hull Wiring Diagram

5-0 Engine Operations

- 5-1 Safe Fueling Practices
- 5-2 Outboard Motor Instructions
- 5-3 Inboard Engines - General Information
 - 5-3.1 Propeller Shaft Alignment
 - 5-3.2 Propeller Shaft Packing Gland
 - 5-3.3 Fuel Tanks & Electrical Gauge
 - 5-3.4 Starting the Engine
 - 5-3.5 Running the Engine
 - 5-3.6 Securing the Engine
 - 5-3.7 Winterization
 - 5-3.8 Galvanic Corrosion (Electrolysis)
- 5-4 Universal Diesel 32 H.P.
- 5-5 Universal Diesel 11 H.P.
- 5-6 Universal Diesel 16 H.P.
- 5-7 Yanmar Diesel
- 5-8 Engine Service Centers

6-0 Plumbing System

- 6-1 Thru-Hulls and Thru-Hull Valves
- 6-2 Fresh Water Tanks
- 6-3 Galley
 - 6-3.1 Fresh Water Hand Pump & Sink
 - 6-3.2 Salt Water Hand Pump
 - 6-3.3 Ice Box
- 6-4 Head
 - 6-4.1 Marine Toilet
 - 6-4.2 Holding Tank Toilet (Handi Head)
 - 6-4.3 Discharge Instructions
- 6-5 Bilge Pumps
- 6-6 Pressure Water System with Shower
- 6-7 Plumbing Diagram
- 6-8 Supplemental Marine Toilet Instructions
 - 6-8.1 Normal Care and Maintenance
 - 6-8.2 Haul-Out
 - 6-8.3 Commissioning Instructions

7-0 Interior Appointments

- 7-1 Interior Arrangement
- 7-2 Alcohol Stove
- 7-3 LPG Stove
- 7-4 Mechanical Refrigeration & Freezer
- 7-5 Electric Refrigeration
- 7-6 Cushion Diagram

8-0 Additional Maintenance Tips

- 8-1 Rudders, Keels, & Bottom Paints
- 8-2 Spars, Riggings, and Hardware
- 8-3 Fiberglass Surfaces
- 8-4 Sails
- 8-5 Woodwork
- 8-6

9-0 Sailing Tips

- 9-1 Federal Requirements for Pleasure Craft
 - 9-1.1 "Coast Guard Auxiliary Courtesy Exam"
 - 9-1.2 "Forget to Bring This Guy Along And Your Boat May Never Forgive You"
 - 9-1.3 "Personal Flotation Devices"

- 9-2 Navigation and Piloting
 - 9-2.1 Rules of the Road"
 - 9-2.2 Charts and Publications
 - 9-2.3 "Marine Aids to Navigation"
- 9-3 Coast Guard Assistance
 - 9-3.1 Emergency Repairs Afloat
- 9-4 Underway - AT LAST!
 - 9-4.1 Preparation and Casting Off
 - 9-4.2 Bending on and Hoisting Sails
 - 9-4.3 Reaching and Steering
 - 9-4.4 Tacking and Gybing
 - 9-4.5 Beating
 - 9-4.6 Running
 - 9-4.7 Docking and Securing

History of Capital Yachts Corporation

Capital Yachts Corporation had its origin in 1971, when its current owners Jon Williams and Bill Smith formed a new and updated fleet of Newport sailboats which are presently manufactured at their privately owned plant in Harbor City, California.

Prior to this, Bill and Jon had an excellent foundation for manufacturing sailboats; both had been selling sailboats as retail dealers for the past nine years in the Greater Santa Monica Bay area. They were well versed in their field. Each did his own racing, commissioning, and warranty repair as a retail dealer. They were both sailing and selling sailboats.

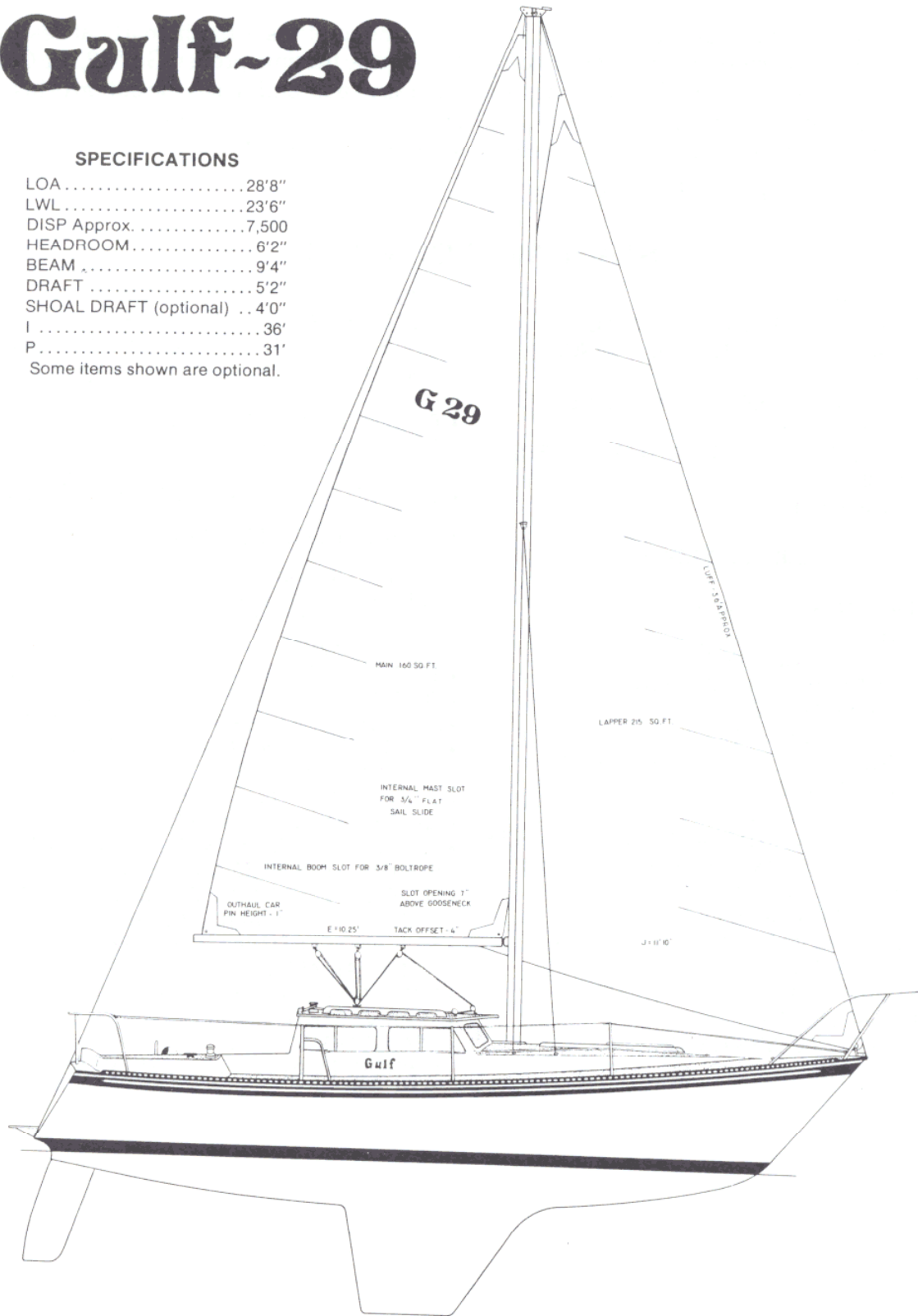
"It is easy to build an expensive boat but few people are willing to pay the price." And those that do are often times misled by the fancy ad or brochure they have read. Jon and Bill saw a real need for a quality line of sailboats with hand laid hulls and decks, heavy duty rigging and hardware, and interior designs for extended blue water sailing at low, fair-market price. (It is a known fact that many Newport owners have sold their boats for more than they originally paid for them — new and used.) All of their production is presold, with a steady backlog.

The Newport Fleet's impressive record of race wins and its sizeable list of enthusiastic owners reflect Capital Yacht's success. Then, Jon and Bill saw a trend toward extending the sailing season through accommodations like inside steering and additional shelters. Out of this, as the 80s began, came the Gulf fleet with its immediate popularity. And today the Gulf fleet is growing rapidly throughout North America.

Gulf-29

SPECIFICATIONS

LOA28'8"
LWL23'6"
DISP Approx.7,500
HEADROOM6'2"
BEAM9'4"
DRAFT5'2"
SHOAL DRAFT (optional) ..4'0"
I36'
P31'
Some items shown are optional.



GULF-29 CLASSIC PILOT-HOUSE CRUISER

The Gulf-29 was designed by Capital for the person desiring the comforts of traditional boat design and the sailing characteristics of modern sailboat technology. Inspired by the time-proven Gulf-32, the Gulf-29 has a pilot-house deck configuration which provides a light and airy cabin and allows the option of inside wheel steering. The hull and deck are 100% hand laid-up. The deck is reinforced with core sections and plywood. The hull to deck joint is bonded and thru-bolted with anodized toe rails P & S.

The Gulf-29 is delivered with the following:

STANDARD EQUIPMENT

- WINCH PACKAGE:
 - 2 PRIMARY WINCHES (COCKPIT - 2 SPEED)
 - JIB HALYARD AND MAIN HALYARD WINCH ON MAST
 - MAIN SHEET WINCH AND 2 WINCH HANDLES (NON LOCKING)
- MOLDED FIBERGLASS RUDDER WITH STAINLESS STEEL RUDDER POST
- BOW PULPIT W/MID RAIL
- BOW ROLLER
- MOLDED IN FOREPEAK CHAINLOCKER W/DRAIN
- STERN PULPIT
- DOUBLE LIFELINES & STANCHIONS
- 2 PELICAN HOOKS
- FWD. OPENING HATCH OVER V-BERTH
- SPECIAL MAST & BOOM W/OVERSIZED ANODIZED HARDWARE
- DOUBLE LOWER SHROUDS
- PEDESTAL STEERING W/ENGINE CONTROLS AND SKIPPER'S SEAT
- 8 DELUXE TURNBUCKLES
- DELUXE MID BOOM CENTER MAINSHEET TRAVELER
- 3 CYL. DIESEL ENGINE INBOARD APPROX. 20 H.P. FRESH WATER COOLED.
- PROP. SHAFT, ZINC COLLAR
- MANUAL BILGE PUMP W/VALVE TO ICE BOX
- OVERSIZED, HEAVY DUTY CHAINPLATES
- PORT & STARBOARD COCKPIT HATCHES
- NAVIGATIONAL LIGHTS
- COCKPIT ENGINE ACCESS HATCH
- MASTHEAD LIGHT
- SINGLE REEF SET-UP ON BOOM
- TRANSOM LADDER, STAINLESS STEEL
- HINGED COCKPIT COMPANIONWAY DOORS
- FIBERGLASS SLIDE HATCH W/SEA HOOD
- TRANSOM SWIM STEP
- THRU HULL W/ANTI CORROSIVE VALVES
- FUEL TANK APPROX. 20 GAL.
- FRESH WATER TANK APPROX. 25 GAL.
- INBOARD GENOA TRACKS WITH 2 SLIDE BLOCKS

STANDARD INTERIOR

- CHOICE OF PORT AFT OR STBD AFT GALLEY
- DEEP SINK, W/FOOT PUMP IN GALLEY
- INSULATED ICE BOX W/DRAIN CONNECTED TO BILGE PUMP
- TWO BURNER STOVE (ALCOHOL) FLUSH MOUNT
- FOLDAWAY DINETTE TABLE STORES ON BLKHD.
- DRY STORAGE COMPARTMENTS UNDER BERTHS
- OVERSTUFFED DESIGNER CUSHIONS - CHOICE OF COLOR
- SOFT PADDED HEADLINER
- LARGE HANGING LOCKER
- SEA RAIL TRIM ON WOOD CABINETS & DRAWERS
- BERTHS: 2 DOUBLES AND 2 SINGLES
- HEAD COMPARTMENT W/TOP & BOTTOM STORAGE LOCKERS AND SKY LIGHT
- SINK AND COLD WATER SHOWER IN HEAD AREA W/FOOT PUMP
- NAVIGATORS STATION, FOLDS DOWN
- TEAK V - BERTH DOOR
- TEAK & HOLLY SOLE
- OWNER'S MANUAL AND SAFETY TOOL BOX



CAPITAL YACHTS, INC.

1-5 WARRANTY CLAIM REPORT

(to be executed by the Authorized Gulf Dealer)

DEALER _____ OWNER _____
 Address _____ Address _____
 YACHT CLASS _____ YACHT NUMBER _____
 YACHT NAME _____ LOCATION _____
 DATE YACHT SOLD _____ Address _____
 ENGINE NUMBER _____ Slip Number _____

CLAIMS COVERED BY WARRANTY:

ESTIMATED COST OF REPAIRS:

	MATERIAL	LABOR	TOTAL
1. _____	\$ _____	_____	_____
2. _____	\$ _____	_____	_____
3. _____	\$ _____	_____	_____
4. _____	\$ _____	_____	_____
5. _____	\$ _____	_____	_____
6. _____	\$ _____	_____	_____

CLAIMS AUTHORIZED BY MANUFACTURER:

1. _____ 2. _____ 3. _____ 4. _____
 5. _____ 6. _____ TOTAL DOLLARS AUTHORIZED \$ _____

WARRANTY REGISTRATION CERTIFICATE RECORDED AT FACTORY - YES NO

No warranty claims shall be honored unless warranty registration is on record at the factory.

DEALER _____ SIGNED _____ DATE _____

MANUFACTURER _____ SIGNED _____ DATE _____

Three copies of this warranty claim request must be forwarded to the manufacturer whereby one shall be returned to the dealer indicating those claims wherein the manufacturer is responsible and also indicating total dollars authorized.

1-0 Commissioning and Warranty Capital Yachts

Every Capital Built Yacht, and the equipment which accompanies it, has been carefully inspected before departure from the factory. Precautions have been taken to make sure that your boat and the equipment reach you in good condition. Spars and booms have been wrapped with cushioning materials and encased in protective polyethelene. Movable parts have been securely lashed to safeguard them in the over-the-road trip to the launching site, and items to be attached and assembled at destination have been tagged or taped for easy identification.

Your new Capital Yacht has also been thoroughly factory tested for water leaks at the deck to hull joint, windows, hatches, handrails, and all deck fittings, and was found to be water tight. It is possible that after truck shipment some of the various fastenings, fittings, and windows will require resealing by your commissioning dealer. It is also possible that after a few hard sails, along with the constant exposure to the elements, your boat will develop minor, irritating leaks that can easily be repaired by the owner.

It is the joint responsibility of the commissioning dealer and the new owner to review the boat invoice and to ascertain that all new items listed are delivered and are in the same condition and of the same quality as specified. Have your dealer "walk you through" all systems on your boat and explain their component parts and functioning.

The Launching and Commissioning Record is a point-by-point check-off sheet of the steps required to commission your boat and will be found on the next page. It facilitates any backordering necessary and assures that all pre-delivery warranty work has been accomplished. After going over all points of this check-off sheet with your dealer, please sign it beside your dealer's signature and make sure that it is returned to Capital Yachts.

Capital's warranty covering all new boats is explained in section 1-4 of this manual. Please study the terms of this warranty, then fill out the Warranty Registration Card, sign and return it to Capital Yachts. It is also important that you read and understand section 1-3, Warranty Claim Procedure, as all warranty work must go through your local dealer.

1-1 Gulf Sailboats Launching and Commissioning Record

1-3 Warranty Claim Procedure

It is important that the procedures listed below be completed step by step by the dealer before Capital Yachts will reimburse the dealer for warranty claims.

1. The dealer must fill out the Warranty Claim Request and send it in to Capital Yachts. This must be done before any warranty work on the boat is started.
2. In case of an emergency the dealer can call the California plant (area code 213-530-1311) and talk to the Quality Control Department concerning the problem. They may authorize a specific dollar amount to settle that particular warranty claim and will then follow up the phone conversation with a written approval.
3. If, during commissioning, a problem arises that the dealer considers to be a warranty matter he may call the Quality Control Department at the plant from which he received the boat for advice, and verbal approval if it is required, which will be followed up with written approval.
4. Capital Yachts will not pay a dealer's warranty claim unless the work and the amount has been previously authorized. It is, therefore, the dealer's responsibility to secure written or oral authorization prior to submitting the warranty claim for payment.
5. The Warranty Registration Certificate and Launching and Commissioning Report must be on file in California before any claim will be paid.
6. All claims on all boats, will be handled by the California office, except as noted in Paragraph no. 3.
7. Capital Yachts will not accept nor pay any warranty claim submitted by anyone other than an authorized Gulf dealer.
8. All warranty claims must be submitted by the dealer in writing on Capital's Warranty Claim Report within 30 days of the incident that precipitated such claim.
9. All authorized warranty claims will be paid within a reasonable time by check or credit memo from the California plant only.

1-4 Limited Sailboat Warranty

In order to expand on the exclusions which are listed on the Limited Sailboat Warranty, we have listed the following explanations.

1. As stated on the Warranty Card, Capital Yachts is not authorized to warranty any products supplied by other companies. Standard and optional equipment such as engines, pumps, marine heads, batteries, etc. are warrantied by the companies manufacturing them. Any questions or correspondence regarding repair or replacements of such equipment should be directed to your dealer's attention.

Fixtures and components such as wood hatches, fuel tanks, engine control panels, hardware, masts and rigging, exhaust systems, lights and gate

valves are also warranted by the company supplying them to Capital.

2. Due to the lack of 100% consistency of the pigmentation used in the gel-coating that we are supplied with, we cannot warranty the permanence of gel-coat colors or our ability to match colors when warranty work is performed.
3. In order to determine the cause and extent of a problem precipitating a warranty claim, a Gulf dealer or Capital representative must be able to appraise the problem before it is repaired. Therefore, a claim cannot be made for a defect which has already been repaired. If a needed repair is of a minor nature or needs to be made at a time or place that would make it inconvenient for a dealer or factory representative to be present, an exception may be made if the factory is contacted by telephone before the work is done to request the exception. The warranty will not apply to a boat which has been altered in such a way as to affect the original structural integrity of the boat. This would include but not be limited to cutting away of the hull liner or bulkheads. Another alteration to which the warranty does not apply is replacing rigging or hardware with something other than that which was supplied with the boat.

4. A boat which is used for any commercial use such as charters, rentals or sailing schools is not covered under the Limited Warranty.

Any damage incurred while a boat is experiencing abnormal use will not be covered by the warranty. Abnormal use would include but not limited to beaching (with fixed keel models), striking rocks, buoys or other floating obstacles, unreasonable overloading or towing more than the boat's own weight resulting in hardware damage.

5. The one year warranty period begins on the day the boat is first launched. This date must be indicated on the designated line of the Warranty Registration Card or the warranty is void. If a boat is used as a demonstrator or is kept in water before it is sold, the warranty is in effect from the day boat was first launched.

It is not the intention of Capital Yachts to avoid the responsibility or obligations of its warranty. Recent laws require that the specific limits of our warranty be clearly defined for the purchaser so that he may be aware of the conditions of the warranty and his responsibility as a boat owner before a problem arises. If you have any questions regarding the warranty, please contact the factory by mail or telephone and we will be happy to discuss your questions with you.

2-2 Standard and Shoal Draft Keels

(See Drawing 7-1)

The **STANDARD KEEL** is designed for maximum performance and comfort and is recommended for this purpose. With this keel, the boat has the lowest possible center of gravity and minimum form drag. Maximum stability is also obtained with the least amount of weight.

The **SHOAL DRAFT KEEL** offers the minimum draft which is necessary for cruising in many shoal areas. A slight bit of weight has been added to compensate for the higher center of gravity and thus gives the boat approximately the same stability as the standard keel model.

After careful analysis and in-the-water testing, we have determined that the shoal draft boat's performance is superior to that of a centerboard. It is also less expensive, has no mechanical complications, eliminates the leaking and rattling of the board, while still offering a good answer to the shallow draft need.

2-2.1 Keel Installation

The ballast on some Gulf boats is external and on others it may be internal and then glassed over or sealed in place. Both are acceptable if done correctly. All Capital built boats have heavily constructed underbodies and keel configurations.

We recommend the use of a hard vinyl based bottom paint, such as "Bottomkote," "Vinyl-Lux," or a Woolsey hard vinyl based bottom paint.

2-3 Hull and Deck Construction

Before production, the molds are polished to a high luster and mold wax is applied. Then the boot stripe and sheer stripe areas are masked off and are color gelcoated. The masking is then removed and the hull color gelcoat applied. A gray back-up gelcoat is applied next to make the laminate opaque and improve the impact resistance of the color coat. Next a layer of multi-directional mat is applied. This layer is hand rolled to a constant thickness and a smooth seamless finish. After this layer of mat is laid a layer of woven roving is applied and hand rolled and squeegeed to a smooth air free finish. Depending upon the size of the boat, several successive layers of mat and woven roving are applied in this manner.

The interiors are built as a unitized one-piece molded structure. Before production starts, the mold is polished and mold wax is applied. The interior color is applied followed by a gray back-up gelcoat. Next a series of continuous layers of multi-directional mat are applied to the entire interior and hand rolled to a constant thickness similar to the hull lay-up. A layer of woven

roving is then applied to all high stress areas including water and fuel tank areas, motor mounts, etc. Plywood is then bonded to all horizontal surfaces such as cabin soles, counter tops, etc. to produce the required stiffness. The interior is then placed in the hull, located accurately with a fixture and bonded with mat and woven roving to the hull at all bulkheads and certain other high stress locations, an expensive process but it makes a better boat, especially from a resale point of view.

The deck mold is polished and mold wax is applied. The deck non-skid areas are masked off and non-skid color gelcoat is applied. Then the masking is removed, the deck color gelcoat is applied, followed by a coat of gray back-up gelcoat. Next a series of layers of multi-directional mat are applied to the entire interior. When the appropriate number of layers for the particular deck are developed, a layer of stiffening material is fitted and bonded to the deck. Then plywood is placed at all locations requiring both sheer and compressive strength.

Capital utilizes a stage-by-stage assembly technique. This technique produces high efficiency and high quality by bringing the material to be assembled on the hull to the station when needed so the assembly personnel can efficiently perform the required assembly. Kits are delivered to the assembly line that include the parts to be assembled and all hardware, sealants, etc. that are required to perform each assembly operation. Shortages are handled by the line foreman. All assembly operations that are practical such as engine installation, plumbing and electrical systems, and prefabricated wood work are assembled into the hull prior to assembling the deck on the hull.

In parallel with the hull assembly operation, the deck has all wood parts, deck hardware, electrical systems, and engine controls that are practical assembled to fit on a stage-by-stage basis. The hull and the deck are then assembled utilizing a proprietary hull-to-deck joint. This hull-to-deck joint utilizes both fasteners and a resin and fiberglass mat which provides an extremely strong and ductile joint as well as an extremely efficient bumper rail.

In the last two assembly stages, the specialists in wiring, plumbing, joiner work, electrical systems, etc. complete the interior and exterior assembly operations. Prior to shipment, a final inspection is made which includes an engine operation test, an electrical system test, a water system test, a bilge pump test, and many other detailed inspections such as door and drawer fits, cleanliness of bilge and locker areas, etc.

3-0 Spars, Rigging, and Hardware

One of the most rewarding activities connected with sailing is tinkering with your boat's rigging and hardware. The best skippers always seem to be looking aloft at the sails and then thinking about new fittings, or new ways of improving old ones. In this way a person acquires a thorough understanding of how and why every piece of sailing equipment works, plus how to repair and maintain it. As sailors, we too are constantly trying to achieve better and easier boat performance, thus the gear that we install is constantly being improved. What we hope to accomplish in this section is to give you the background information for setting up your boat in the beginning for normal sailing conditions.

When you need more help and information, please consult your local dealer. He is prepared to assist you in obtaining the best type of sailing hardware for your needs in your local area. One may also refer to local Equipment Guides.

- CAUTION -

When placing hardware in any position other than that specified on the Deck Hardware Layout Drawing 3-11, **ALWAYS** consult the Deck Wiring Diagram 4-3 to avoid cutting any wires or striking electrical fixtures.

3-1 Mast Tune

Under no circumstances should any of the rigging be set up "bar tight". For all sailing conditions we recommend that the mast be vertical and in column with the rigging "firm". It is very important that a knowledgeable person who understands this concept oversees the initial tuning of the mast and rigging.

You should be able to stand facing the mast, reach out and pull on any stay and see the mast move in that direction. With a light pull or push by hand at chest height, this dockside starting point will have both stays of equal tension with about 1" to 2" of play in the uppers and 2" to 3" of play in the lowers.

The backstay and jib stay should be of equal tension and have about 1" of play. If the mast is stepped on deck the rigging will be tighter than a mast stepped on the keel. With double lowers the forward lowers will be looser than the after lowers by about 1" of play. Some of the newer tall rigs have intermediate shrouds, the tension of which should be between that of the uppers and lowers.

The final tuning of the mast should take place while sailing to windward in a medium breeze of 8 to 10 knots. Sighting along the backside of the mast from deck level will indicate what further turn buckle adjustment needs to be made to the windward side of the mast. The

top of the mast should not "hook" to windward. In a medium breeze the mast should be straight and this is normally accomplished by taking up on the lower shrouds. Always tack, and then make the turnbuckle adjustments on the now windward side, for further corrections. After a few tacks, the mast should be straight. Secure the rigging by inserting cotter keys into the turnbuckles, spread them open and cover with tape to prevent any snags.

Special attention should be given to the initial stretch of the rigging especially after the first sail in a strong breeze. In windy conditions it is actually desirable to have the mast head "fall-off" slightly to leeward, giving the mast a smooth, even curve from head to deck. In a tall rig the intermediates play an important part in controlling the upper mast section and this will be especially noticeable in stronger wind conditions. After a few more sails in strong breezes, the rigging should be checked again for tune as additional stretch will occur.

Please pay special attention to the fact that barrel bolt and latches, etc. may change positions once the boat is in the water and sailed. Their readjustment is the responsibility of the dealer and the owner during commissioning after the mast is stepped, tuned, and the boat has been sailed a few times.

3-2 Backstays

When racing, the backstay may be tightened to compensate for the extra forward loading applied by the Genoa. At the conclusion of the race it is very important to "slack-off" the amount you "took-up" on the backstay turnbuckle, as this avoids setting up unnecessary strains on the hull and rig. Since you want to keep the mast straight while racing, you will probably tighten up on the jib stay first so when the backstay is slacked off the mast head will hook slightly forward. When the backstay is tightened up, this "hook" will disappear and the mast will be straight.

Too much tension on the backstay is probably the prime reason for mast and rigging failures. It has been found that tension in the backstay can increase 150% to 200% due to the wind load on the headsail and dynamic loading due to heavy seas. With the optional hydraulic type adjusters tension can easily be applied far beyond that which is necessary or safe. The tension on a shroud or stay should not exceed 25% to 30% of the cable's breaking strength at the outside limit. Following are the breaking strengths, in pounds, for 1 x 19 stainless steel wire cable as supplied by the factory:

3/32" = 1,200	3/16" = 4,700	9/32" = 10,300
1/8" = 2,100	7/32" = 6,300	5/16" = 12,500
5/32" = 3,300	1/4" = 8,200	3/8" = 17,500

On insulated backstays, unless otherwise specified, the upper insulator is located 18" down from the top swage eye, while the lower insulator is 10' up from the transom chain plate.

3-3 Genoa Gear

The trend in modern yacht design has been to smaller main sails and larger jibs or "Genoas". Usually any sail that overlaps the mast is considered a Genoa and is identified by the amount of this overlap. Thus, if the distance from the face of the mast to the bow ("J" on the Sail plan) is 10 feet and a line 15 feet distant (LP) was drawn parallel to the headstay, then any Genoa with a CLEW on that line would be a "150% Genoa". What is extremely important to realize is that these large sails can concentrate very high loads over a very small area, hence the gear must have high safe working loads. For example: in 25 knots of wind, a Genoa is subjected to a pressure of about 4 pounds per square foot, or one ton for a 500 square foot Genoa.

Since the above load could easily be transmitted to one spot at any given time, all of the Genoa Gear has been designed and prepared to accept these extreme loads. The track is thru bolted and all blocks are oversize. All other fittings are of the best possible design and strength for the job intended. Most fitting failures occur from improper usage, usually by trying to use a light or cheap fitting instead of the proper factory recommended one. If loads are expected to come close to the safe working load of the block, then the next size larger must be used. Please remember that if a line turns back on itself, like all halyards, spinnaker sheets, guys, and jib top sheets, then the load on that block is almost doubled.

3-4 Spinnaker Gear

With larger Genoas, the spinnakers also get larger and need larger and stronger gear to handle them. As with the Genoa Gear, our Spinnaker Gear has been designed and fabricated to meet the extreme loads that this beautiful, but sometimes frustrating sail can produce. While not included in the Spinnaker Gear, the optional Reach Strut is a necessity on the boats over 30' and could well be used on smaller ones. In beam reaching conditions when the pole is up against the headstay, an unnatural load is put on the mast, stay, and pole. The reaching strut allows for a better angle of pull for the after guy, pulling the pole off the headstay and thus reducing the loads to a safer point. This also eliminates chafe of the after guy on the upper shroud. To save wear and tear, read up on spinnakers and then have a couple of experienced friends join you for the first couple of spinnaker drills.

3-5 Reefing Gear

Two methods of mainsail reefing, roller and cringle (Jiffy reefing) see Drawing 3-12, are in common use and their pros and cons could be discussed forever. On the boats that have their mainsheet on the end of the boom, there may be a roller reefing mechanism contained in the gooseneck fitting. An optional GEARED ROLLER REEFING GOOSENECK may be installed in which a handle cranks the boom around and the sail is rolled down around the boom.

With mid-boom sheeting, most people will use the optional "Cringle Reef System". This system is quite fast, provides better "sail shape control" than does roller reefing and is definitely recommended for the racing and cruising skipper.

3-5.1 Jib Roller Furling

This optional item has been included here to draw your attention to the fact that the Dealer installed Jib Roller Furling IS NOT DESIGNED FOR REEFING THE JIB. Experience has shown that the jib will have a poor shape and can be badly stretched out of shape and torn if an attempt is made to use it partially furled. What we have here is a convenient way to quickly furl ANY HEADSAIL from the cockpit. It is extremely important that when the jib is hoisted IT SHOULD NOT BE HANKED ONTO THE STAY. Only the roller or strap on the crane attached to the proper swivel should be around the headstay. This prevents the halyard from twisting and also give a fair lead into the jib halyard block.

3-6 Self-Tending Jib

Two types of optional, dealer installed, arrangements may be used. The simplest, and more common on smaller boats, has the club boom lashed directly to the foot of the jib. A becket block is mounted in the middle while blocks are placed at the base of the forward stanchions. The jib sheet is then led from the becket block to the port stanchion block, back through the becket block to the starboard stanchion, and aft to the starboard cockpit winch.

A second method, which is used on larger boats, calls for the club boom to be attached to a special longer headstay turnbuckle with a gooseneck. This means that the headstay will be shorter than normal to accommodate this fitting. A boom topping lift block is also attached to the mast at the spreaders while deck blocks will be mounted port and starboard in line with the double block on the boom end. The sheet is led from the starboard becket deck block to the boom, to the port deck block, back to the boom, the starboard deck block, and through a deck fairlead to the starboard cockpit winch.

With this rig it will be necessary for the lower jib hanks to be on a lacing line to allow the jib to be lowered without the boom being topped up or the outhaul being slacked.

3-7 Boom Vang and Mast Head Fly

These two dissimilar but extremely important optional items should be on every sailboat. It's pretty hard to sail if you don't know the wind direction and a mast head fly will always be pointing in the direction the wind is coming FROM. A quick glance aloft will instantly tell you the proper trim for your sails or course change, especially when going downwind when you don't want to gybe.

This brings up the boom vang which will hold the boom horizontal when off the wind, thus keeping the mainsail flat and from bouncing around in light winds and/or a chop. The Dealer installed boom vang would most likely be rigged from the boom to a bail at the base of the mast so it does not have to be down rigged when gybing. This is an added safety feature, since if an accidental gybe were to take place the boom would swing over without lifting up and allowing the leech of the mainsail to catch on the old, leeward spreader. Keep the boom vang slack when going to weather and, when off the wind, set it up tight enough to flatten the main sail without allowing the leech to "cup" or "hook" inwards.

3-8 Pedestal Steering - Interior Steering

The pedestal on the optional factory installed pedestal steering unit is cast from a corrosion resistant aluminum which is then anodized, primed, and painted with a gloss white polyurethane enamel. All other parts are stainless steel or manganese bronze (exterior ones have a marine chrome finish), thus removing any magnetic attraction from around the binnacle mounted compass, which should be adjusted by a professional. Know which are the adjusting screws and then **DON'T** move them after they have been set.

Aluminum steering wheels are coated with white nylon, while the larger stainless steel steering wheels are

polished and may be partially coated with white nylon.

The unit is virtually maintenance free, but prior to your first sail, climb down below and check out the entire installation. With someone turning the wheel from stop to stop, make sure the cables are leading properly and **EVERYTHING** is tightened down. Next, sea trials are in order. Now look for freedom of travel in the system and the cable tension. A **MODERATE** amount, enough to eliminate "backlash" or "play," is recommended, as excessive tension creates added friction and makes for harder steering.

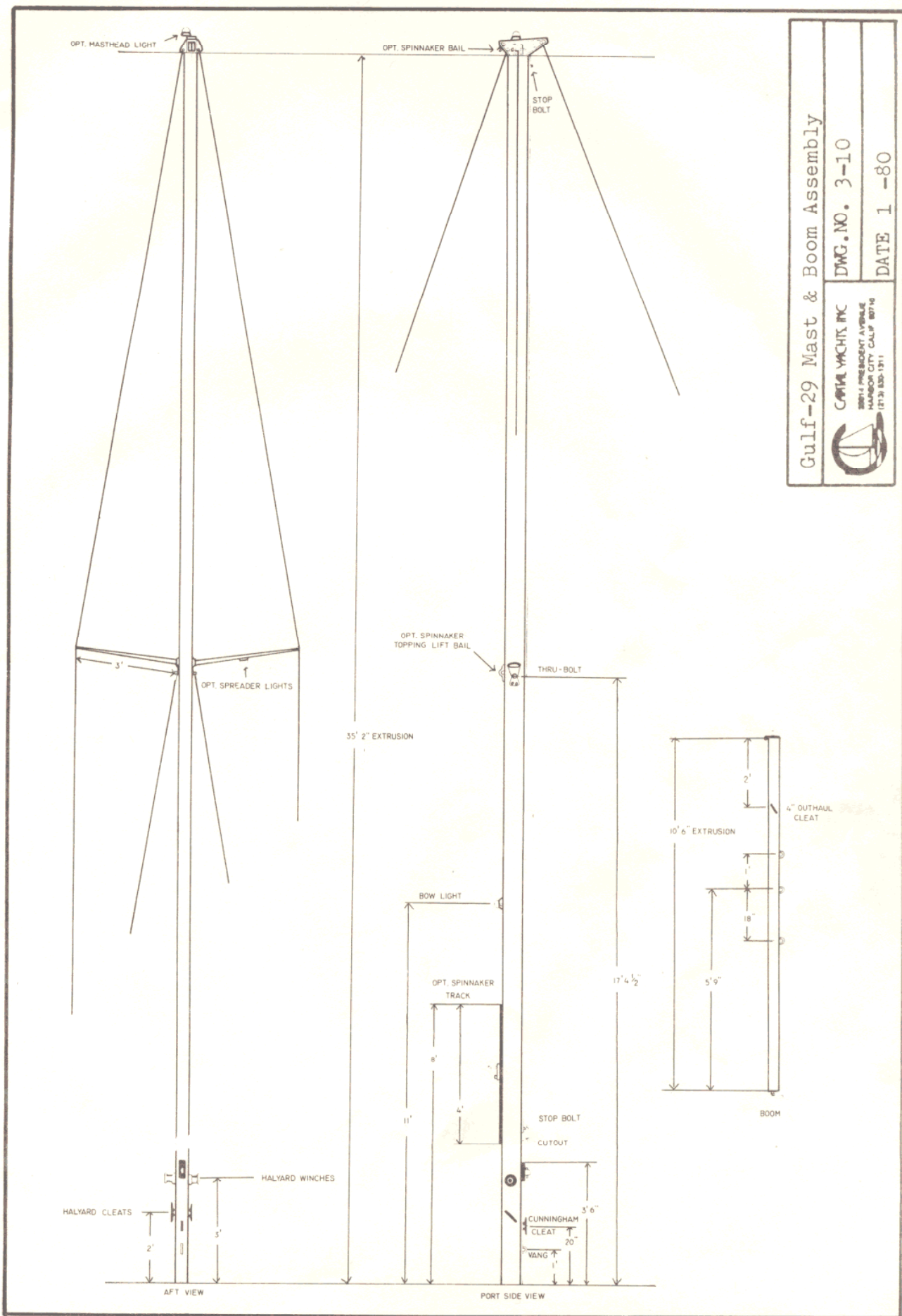
Periodically check for loosened bolts and cable tension, especially after the first few sails. They usually need tightening as the roller chain seats in. Look for signs of wear or "fish" hooks on the cable and replace as necessary. Three or four times a year, depending upon the frequency of use of the boat, lightly oil the chain, pedestal shaft bearings, and sheave bearings with 3-in-one oil to complete your maintenance routine.


The steering station exchanger makes it possible to disengage either station of a dual-station steering system.

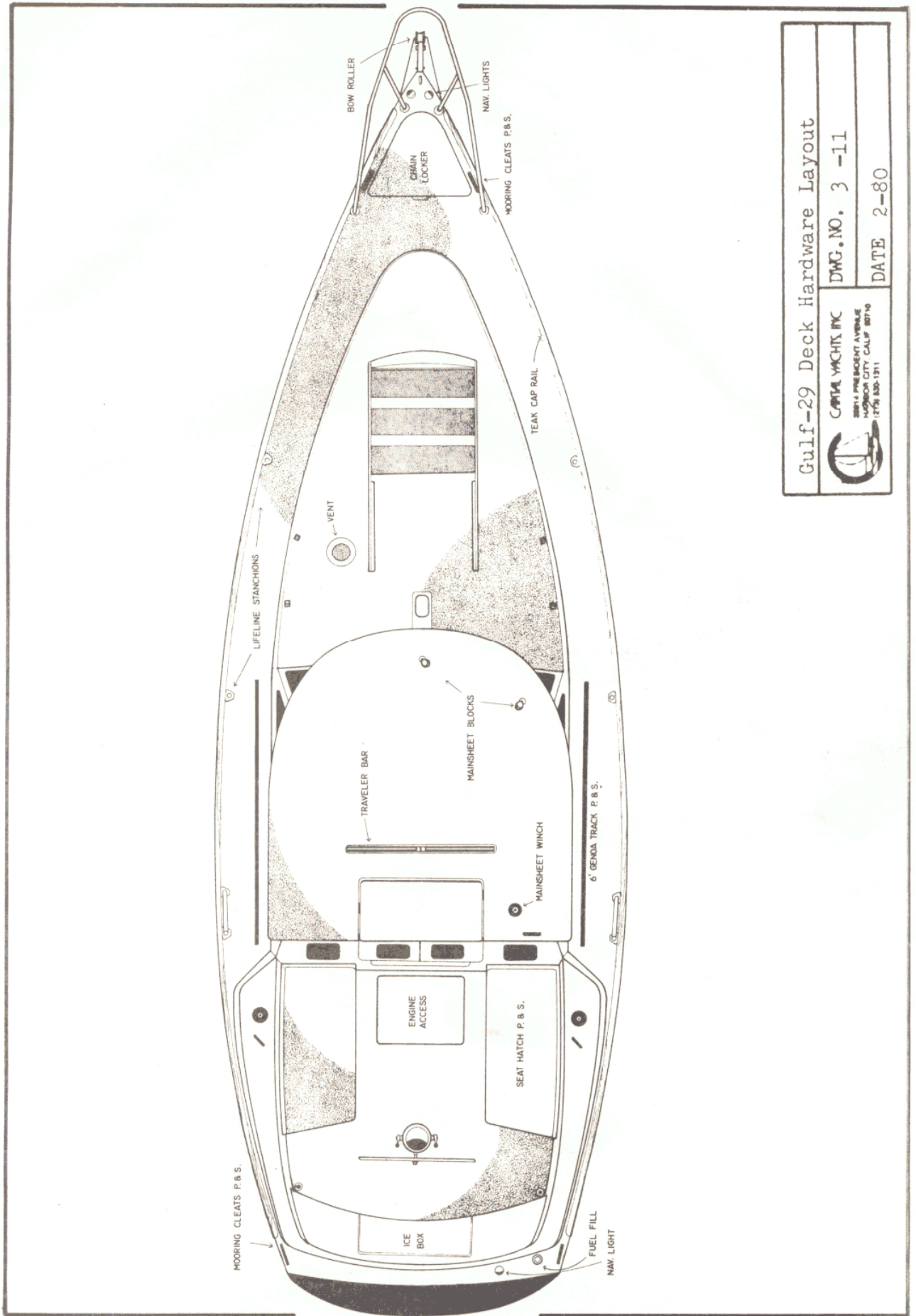
The exchanger can be operated at any time, whether the boat is under way or not. To change stations, pull out and turn the handle of the exchanger to its other position. When the wheel at the selected station is turned, a spring-loaded key engages the station. (The engaging action is quicker if both wheels are near center when the exchanger is operated.)


For satisfactory performance, the exchanger mechanism must be kept clean and well lubricated with a good grade of waterproof grease or oil. Failure to perform the necessary maintenance can result in erratic performance or complete failure of the unit.

After two hours of running, check all nuts, bolts, and screws, and tighten them as necessary. Then periodically, check all nuts, bolts, and screws for tightness.

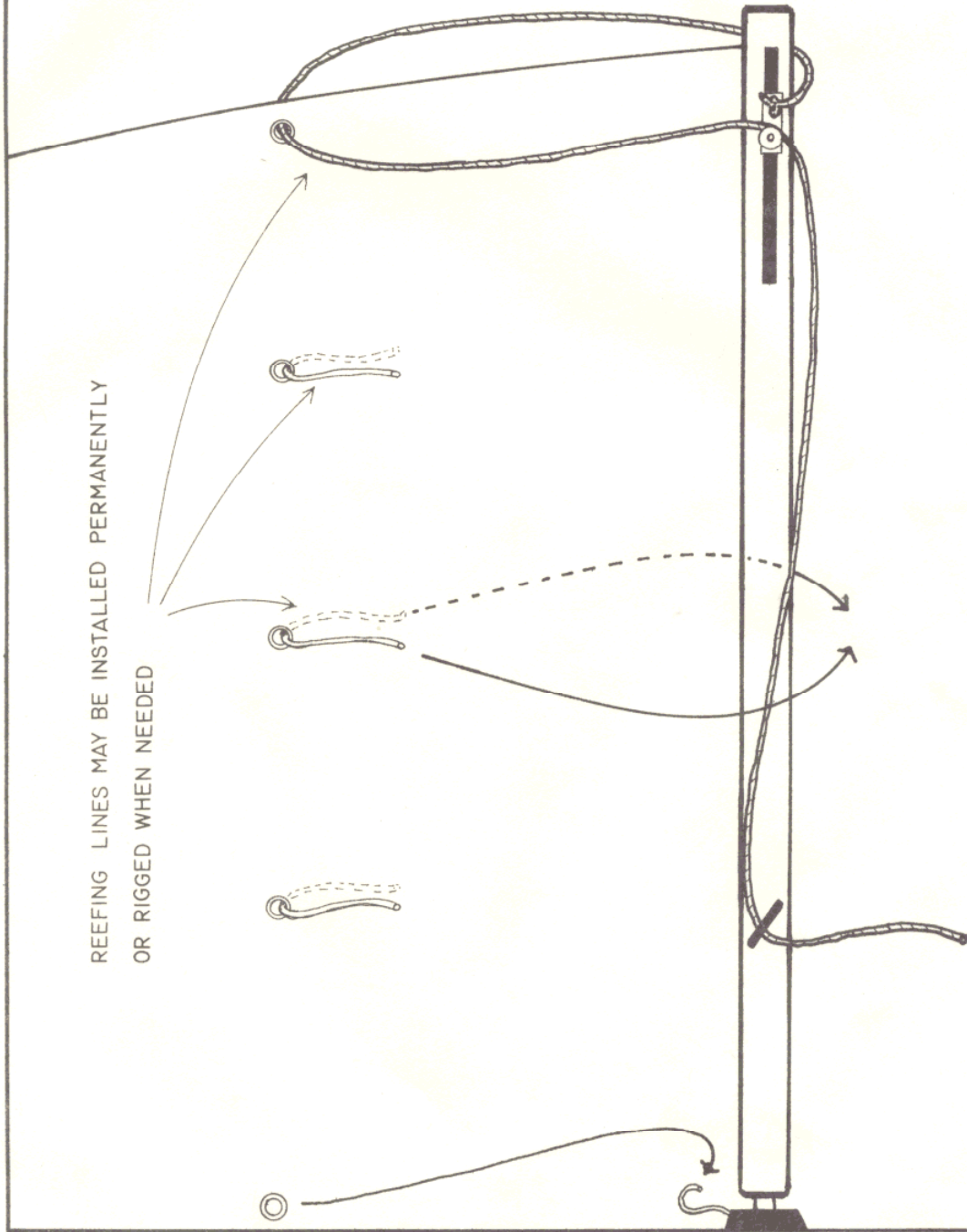


Gulf-29 Mast & Boom Assembly	
DWG. NO. 3-10	
DATE 1 -80	
 CAPITAL YACHTS INC. 2874 FREEMONT AVENUE HUNTER CITY CALIF 95714 (714) 830-1311	



Gulf-29 Deck Hardware Layout	
DWG. NO. 3 -11	
DATE 2-80	
	
CAPITAL YACHTS, INC. 2814 PRESIDENT AVENUE HUDSON CITY, CALIF. 90710 (714) 830-1311	


REEFING LINES MAY BE INSTALLED PERMANENTLY
OR RIGGED WHEN NEEDED



Jiffy Reef System


DWG. NO. 3-12.

DATE

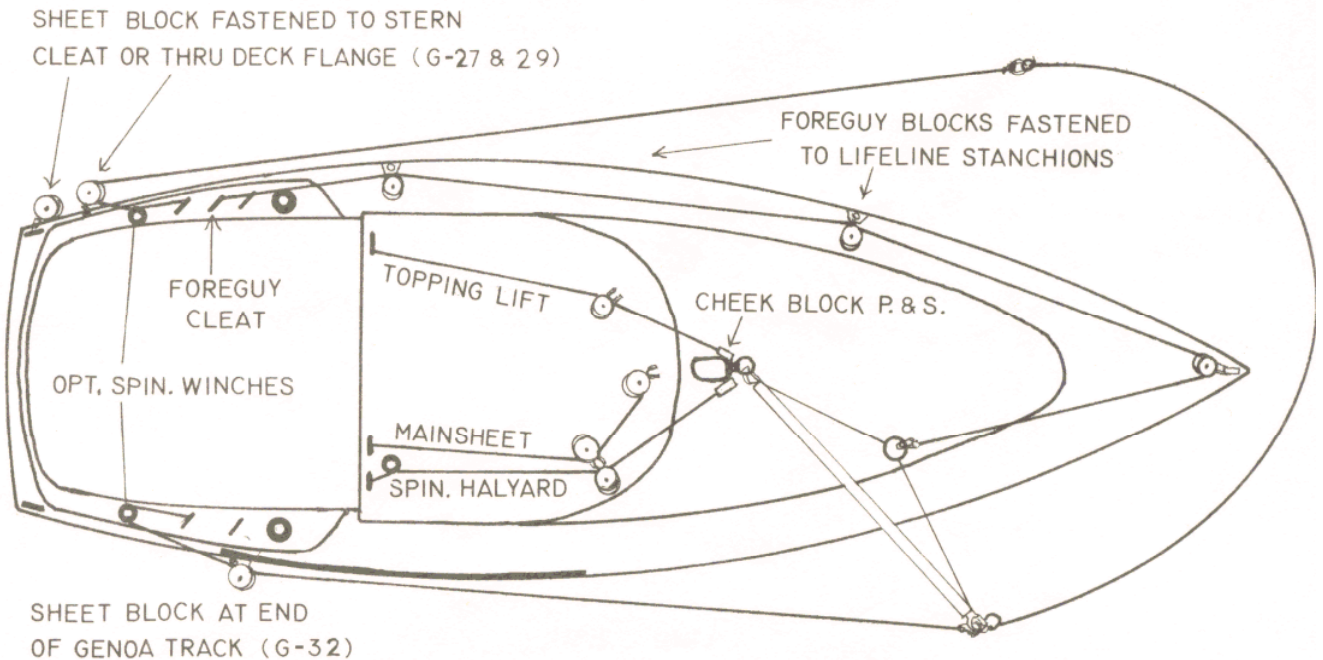
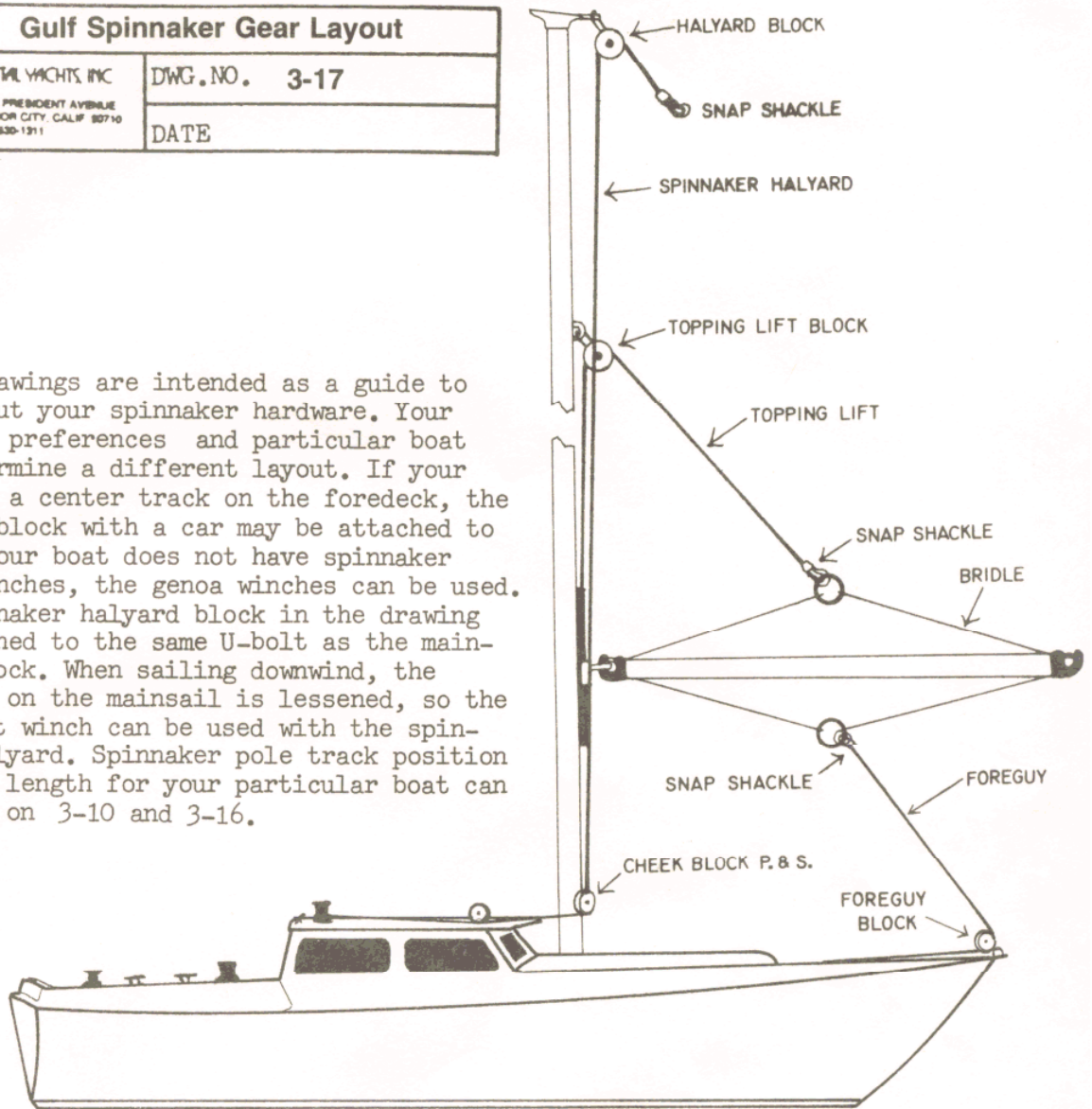

CAPITAL YACHTS, INC.
2874 PRESIDENT AVENUE
SAN FRANCISCO, CALIF. 94110
(415) 330-1311

3-16 GULF 29 SPINNAKER GEAR LIST

- 2 SPINNAKER SHEETS 3/8" LINE X 55' YACHT BRAID
- 1 SPINNAKER HALYARD 3/8" LINE X 80' YACHT BRAID
- 1 TOPPING LIFT LINE 5/16" LINE X 45' YACHT BRAID
- 1 FORE GUY LINE 5/16" LINE X 35' YACHT BRAID
- 5 SNAP SCHACKLES (2) SMALL (3) LARGE
- 1 SPINNAKER BALE TOP OF MAST
- 3 BLOCKS (TOPPING LIFT, SPINN. HALYARD, FORE GUY)
- 1 SPINNAKER POLE 12'0"
- 1 TRACK ON MAST 1" X 4' WITH SPINN. CAR (8' TOP OF TRACK TO BASE OF MAST EXTRUSION)
- 2 SHEET BLOCKS (TOERAIL AFT END BOLTED THRU)
- 2 CHEEK BLOCKS (FOR MAST) (OPTIONAL)
- 5 6" 2 HOLE CLEATS

Gulf Spinnaker Gear Layout	
 CAPITAL YACHTS INC 33014 PRESIDENT AVENUE HARBOR CITY, CALIF 90710 (213) 530-1311	DWG. NO. 3-17
	DATE

These drawings are intended as a guide to laying out your spinnaker hardware. Your personal preferences and particular boat may determine a different layout. If your boat has a center track on the foredeck, the foreguy block with a car may be attached to it. If your boat does not have spinnaker sheet winches, the genoa winches can be used. The spinnaker halyard in the drawing is attached to the same U-bolt as the mainsheet block. When sailing downwind, the pressure on the mainsail is lessened, so the mainsheet winch can be used with the spinnaker halyard. Spinnaker pole track position and pole length for your particular boat can be found on 3-10 and 3-16.



4-0 Electrical Systems

It is important to remember that your BASIC CIRCUIT BREAKER ELECTRICAL SYSTEM may be altered to conform to the electrical requirements of your engine and additional optional accessories. The description of any special optional electrical accessory (i.e. electric bilge pump) will be found in another, more appropriate section (plumbing) yet may appear in this section's wiring diagram or the engine wiring diagram. In the event you make any electrical modifications to your boat be sure that you follow the WIRING DIAGRAM or consult a competent MARINE ELECTRICIAN. Boat wiring is considerably different from house wiring due to the marine environment and other conditions not associated with houses.

4-1 Basic Circuit Breaker Electrical System

The Master Power Control Panel features integrated, simplified controls and circuit breaker protection to permit safe and efficient operation of your boat's electrical equipment. All panel components have been carefully selected for their proven performance in marine applications. The basic panel is of a fiberglass material which is inherently corrosion resistant and is doubly protected to optimize resistance to the effects of the marine environment.

Electrical current is directed from a 12 volt, battery or batteries through the Master Power Control Panel for engine starting, battery charging, and accessory loads.

While the standard installation is one battery, many owners do considerable cruising and "living aboard" so a second battery may be added to meet these additional electrical requirements. Panel selection of "BAT 1" or "BAT 2" determines which of the two batteries will be utilized for the electrical system, use the optional Battery Condition Indicator to ascertain the condition of your batteries.

4-1.1 Battery Condition Indicator

This type of "indicator" or "meter" is technically referred to as a "Suppressed Zero Voltmeter". Note that calibrations do not start at zero but provide a full scale reading from 8 or 10 to 16 volts, depending on the meter. Below 8 or 10 volts the battery charge is so low that terminal voltage readings are meaningless. Approximate voltage range interpretations are given here.

Engine Not Running or at Idle	Below 11	... Very low battery charge
	11 - 12	... Low battery charge
	12 - 13	... Well charged battery

Engine	13 - 13½	... Low charge rate
Running	13½ - 15½	... Alternator & Voltage Regulator OK
Above Idle	15½ or above	... Voltage Regulator Out of Adjustment

It is important for you to understand that the reading on the Battery Condition Indicator Dial is indexed from the **Toggle Test Switch Position Regardless of the Master Switch Position** unless it is the "BOTH" position. When the Master Switch is in the "BOTH" position then the Battery Condition Indicator Dial will indicate **both battery conditions no matter which way the toggle test switch is indexed**. When the Master Switch is in either the "OFF", "BAT 1" or "BAT 2" positions, the meter will read the condition of the battery toward which you index the toggle test switch.

4-1.2 Use of Two Batteries

Before activating the electrical system, check the condition of both batteries and then select the strongest battery for engine starting. Index the Master Switch to the strong battery, then start your engine. It will usually require about 15 to 30 minutes of engine running time to bring the starting battery back up to charge. Check the AMP-Meter to assure that charging is normal and when the selected starting battery has been restored it is placed on reserve by switching to the other battery so subsequent charging and accessory loads will be confined to this second battery. It is a good practice to bring the first selected battery up to full charge before putting it on reserve and changing to the second battery.

Use the Master Switch in "BOTH" position **only** for emergency starting when both batteries are low, or for "top off" charging when both batteries are near full charge. When both batteries are completely charged, transfer to either battery, keeping one battery always in reserve.

Never move the master switch to "OFF" while the engine is running or the alternator diodes may be burned out!

4-1.3 Operation of Fused Switch Panel Electrical System

The RUNNING LIGHTS switch activates the recessed red and green lensed lights forward and the white, 12 point stern light aft. The COMPASS LIGHT connection for the cockpit is also on this switch. When under sail at night, these are the only lights that should be shown, except for the shining of a white light on the sails if you feel there is a real need for greater recognition.

The White Stern Light takes a GE-68 type bulb while a GE-90 bulb should be used for the Red Port Light and a GE-94 bulb for the Green Starboard Light. It is important that a stronger bulb be used with the darker lenses or visibility of the lights will be considerably less than the law requires.

The BOW LIGHT switch is for the 20 point white light on the mast and is to be used in conjunction with the running lights **when under power or when motor sailing**. It also serves as a quick way of illuminating the jib at night to check its trim and in emergency cases when recognition is important. This light will use a GE-68 bulb if replacement is necessary.

The cabin lights have their own individual switches, but must be activated by the CABIN LIGHT switch on the Master Power Control Panel. The bulb for these round dome lights is a W-1141. If the cabin lights start getting dim, this is fair warning that the battery needs a charge or is getting old. Remember that you have a marine type battery whose charge and water level must be checked at least once a month. If your boat is to be unused or stored for extended periods of time it is advisable to remove the battery(s) and store in a warm, dry location.

Periodically check all wires, connections, and terminals for loose connections which may cause sparks or power loss. This is especially important with the engine wires. When leaving the boat, **first turn off the engine, then index the Master Switch to OFF.**

4-2 Optional Electrical Accessories

4-2.1 Lightning Ground

If optional lightning protection has been provided it will consist of a bare copper wire connecting the backstay chainplate to a common point on one of the keel bolts, or to be placed in the water from the chainplate while under sail or moored.

4-2.2 Mast Head Light

This white light meets the international and inland rules for a light to be used when at anchor. It has a GE bulb and would be activated by the masthead light switch.

4-2.3 110 Volt Shore Power see drawing no. 6-6

When the optional shore power cord is plugged in, a Circuit Breaker Switch brings 110 volt AC current to the AC outlets and is located on the Accessory Control Panel. If there is any short or improper connection in the system the Circuit Breaker Switch will "trip", i.e., the breaker will automatically open the circuit and its handle will flip to the "OFF" position. After correction of the fault, the breaker may be manually indexed "ON" and your 110 volt A.C. appliances will work again. Be sure that all 110 volt A.C. appliances, other than lamps, have adequate grounds or the moist atmosphere and wet feet can really increase the shock potential.

4-2.4 Spreader Lights

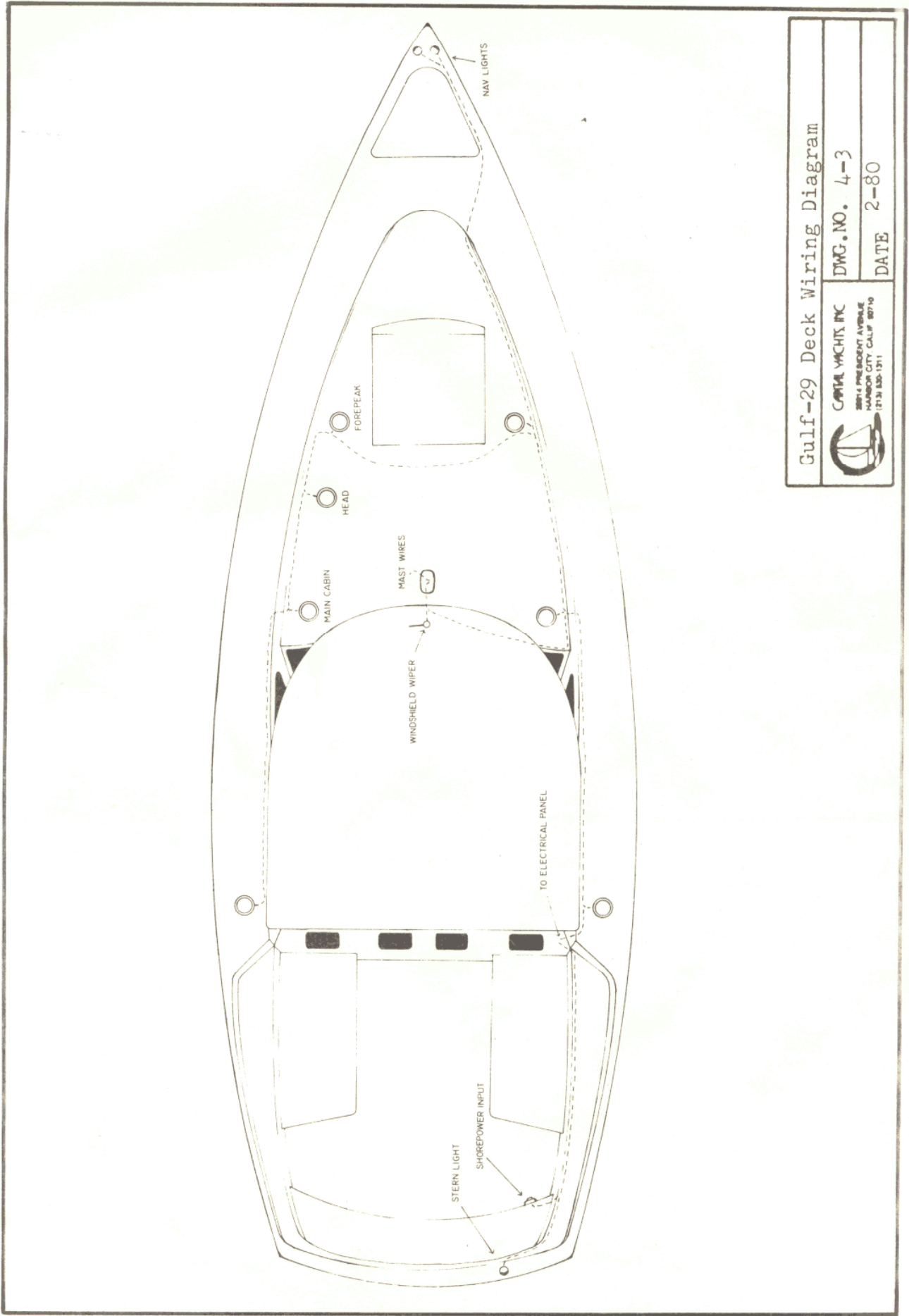
When optional spreader lights are installed at the factory, they are mounted on tubular aluminum spreaders, approximately $\frac{1}{2}$ of the spreader length away from the mast. The light is activated by the SPREADER LIGHT switch on the Master Control Panel.

4-2.5 Combination Spreader Light

A second type of "Spreader Light" may also be mounted that is really a single FOREDECK LIGHT and is mounted on the forward side of the mast with the BOW LIGHT on top and the single Foredeck Light shining downward and forward. In many respects this is a better way of illuminating the foredeck without getting light into the skipper's eyes, is cleaner than lights hanging down from the spreaders and is one less fitting aloft to mess with! The light is activated by the Spreader Light Switch on the Master Control Panel.

*Running light wires from control box are white.
At box it is, one white and one blue*


Stern light is white and black in a gray cable.



Gulf-29 Deck Wiring Diagram

DWG. NO. 4-3

DATE 2-80


CAPITAL YACHTS INC.
 2814 PRESIDENT AVENUE
 HARBOR CITY, CALIF 94702
 (415) 885-1311

5-0 Engine Operations

5-1 Safe Fueling Practices for Gas Engines

1. Avoid fueling a boat at night or in rough water except in an emergency.
2. Calculate the desired amount of fuel reaching the fuel dock and order only that amount. Fuel tanks should not be filled to more than 90% of capacity to permit thermal expansion without overflow from vent.
3. Before opening the fuel filling pipe inlet:
 - A. Extinguish all open flames aboard, including galley equipment.
 - B. Forbid all smoking on board or on the fuel dock. Drown all butts.
 - C. Turn OFF the main switch and all branch circuit switches to be sure there is no live electrical circuit on board during refueling. (Do not turn OFF the main switch until the engine is stopped, to avoid damage to the alternator).
 - D. Tightly close all hatches, windows, doors, and ports.
4. Watch the fueling closely. Be sure that only a nonautomatic, latch-open type of nozzle is used, compelling the operator's continuous hand pressure to keep fuel flowing, and that only the ordered quantity of fuel is put aboard. Insure that the operator maintains constant contact of nozzle to fill pipe.
5. When the desired quantity of fuel has been put aboard, make sure that the cap closing the inlet is tightly closed. Wash down any spills. Check vent opening to be sure that no fuel is being discharged at this point.
6. Open wide all hatches, doors, windows, and ports.
7. If the boat is equipped with electrically operated bilge blower (or gas detector), turn ON the branch circuit switches which control the circuits to these devices and then turn ON the main switch. Permit blower to operate for at least five minutes and check the ventilation cowls for odor or gasoline vapors being discharged.
8. If the boat is not blower equipped, wait at least ten minutes and check for gasoline odors in all low spaces of the boat. Remember to open cockpit hatches before starting.
9. When your personal inspection and observation assure you that there are no gasoline fumes remaining in the boat the engine may be started and full electric services restored as desired.

IF IN DOUBT, WAIT!

5-2 Outboard Motor Instructions

1. Secure motor to nearest mooring cleat.
2. Keep engine in fore and aft position at all times when steering boat with rudder. Remove rudder or keep

rudder in fore and aft position at all times when steering boat with out-board motor.

3. Store outboard in cockpit locker with head of engine higher than prop. Store fuel tank on level surface and secure with straps.

5-3 Inboard Engines, General Information

After you read this section please be cognizant of the contents of your specific engine manual and the final part of Section 5 relating to your specific engine. What we want to cover here are some general operational instructions that pertain to the actual engine installation in your boat.

5-3.1 Propeller Shaft Alignment

It is most important that shaft alignment be carefully checked at the time of launching by the selling dealer. The shaft and engine were carefully aligned at the factory but loading, trucking, and off loading can spoil this work, as well as the different set the hull may take in the water. This misalignment may also occur later and the following method is used to check and realign an engine and its propeller shaft.

1. Remove bolts holding the shaft coupling flange to the engine transmission flange and any flexible couplings.
2. Press coupling flanges together and check all around with feeler gauges for gaps between them. Zero to five thousandths (0.05) of an inch is tolerable.
3. If a greater gap exists between the top or bottom of the couplings, adjustment can be made by raising or lowering the front or back end of the engine using the adjustable motor mounts.
4. If a greater gap exists between the sides of the couplings, adjustment must be made by slacking off the engine mount lag bolts and prying the engine to one side or the other to close the gap.
5. When tolerance is satisfactory, re-tighten anything that has been slacked off and recheck for excessive gap, if it is still satisfactory, replace bolts in shaft coupling and tighten.

5-3.2 Propeller Shaft Packing Gland

The Propeller Shaft Packing Gland Nut has been left loose at the factory so that water could thoroughly soak the packing at the time of launching. The Packing Nut was tightened by your dealer during launching to eliminate any excessive dripping and the Lock Nut tightened. When the engine is running and in gear there should be some drops of water coming out of the gland or else the packing nut is too tight and will burn up. If the packing needs to be replaced, be sure you get **Square Cut Wax Impregnated Flax Packing** and that it is **not wound around the shaft** but cut to form three single rings which are "stacked" on the shaft so that the cuts are staggered.

5-3.3 Fuel Tanks and Electric Gauge

Our fuel tanks are mounted in their supports with their fill caps and vents on deck. All fuel tanks bear an attached label which states the following:

1. Manufacturer's name or trademark.
2. Date of manufacture - month and year.
3. Approximate capacity in gallons. *19 GALLONS*
4. Material of construction and thickness.
5. Fuel for which tank is approved and manufactured.
6. Maximum hydrostatic test pressure.

Each fuel tank has one FUEL CUT-OFF VALVE, located directly on the fuel tank. When the valve handle is at RIGHT ANGLES it is CLOSED. When not operating the engine this valve should remain closed.

If you have DUAL FUEL TANKS, follow the instructions below, which are the same as those on a metal plate mounted near your Master Control Panel.

Dual Fuel Tank Control Procedures

1. Use main fuel tank first, before auxiliary tank, by opening lever valve marked "MAIN" and CLOSING lever valve marked "AUXILIARY".
2. Diesel fuel return line connects to the main tank only so, when using the auxiliary tank, fuel return line empties into main tank, providing a small emergency fuel supply after auxiliary tank is empty.
3. When switching from main to auxiliary tank while underway, open auxiliary lever valve for three minutes before closing main tank lever valve.
4. When a diesel engine is allowed to run out of fuel air gets into the lines and injectors, which makes it impossible to restart without bleeding. To restart, switch from empty tank to full tank and bleed pump and injectors in accordance with the manufacturer's instructions. Then restart the engine. If it runs rough after a few minutes stop engine and bleed again.
5. **It is recommended that you close lever valves on both tanks when leaving your boat.**

The Electric Fuel Tank Gauge has been adjusted to read EMPTY with THREE gallons of fuel in the tank. This has been done by bending the float arm on the sensor so that the float sits on top of the fuel when the electric fuel gauge is at the empty mark. You should never let a tank get this low for the obvious safety reasons. Also, a partially filled gas tank can result in water condensation, which is a major cause of sticky valves in a gasoline engine.

5-3.4 Starting the Engine

Refer to special engine manual for starting procedures.

5-3.5 Running the Engine

When shifting into forward or reverse run the engine at idle. If you are equipped with the optional Martec Folding Prop, please follow these instructions:

Boat Stopped: Engage at Idling RPM's Only. Damage could result if engaged at much over 800 RPM.

Shifting Forward: Boat Moving Forward: Engage at RPM corresponding to boat's forward speed. If the blades still remain folded, or if only one flips out and vibrates, try shifting into reverse and then shift **directly into forward but not over 800 RPM.**

Shifting Forward: Boat Moving Aft: Engage at IDLE and gradually increase throttle to stop the boat or move forward. Since the boat is moving aft the water pressure will easily open out the blades.

Shifting Reverse: Regardless of the boat's movement the blades Into will open at idle and/or the increased throttle used to slow headway.

To insure that the blades remain open when shifting, lower the RPM to idle and shift directly through neutral to the desired gear.

You will find your best cruising speed between half and three-quarters throttle. In smooth water, higher speeds can be obtained with higher RPM's but fuel consumption will increase accordingly.

For diesel engines black smoke out of the exhaust thru-hull will indicate too much throttle. Back off on throttle until the exhaust fumes are clear. This will be your best fuel consumption at maximum throttle. If at this point your hull speed is below normal then check your prop size and pitch and verify with dealer or factory as to its correctness.

5-3.6 Securing the Engine

1. Reduce RPM to IDLE and shift into NEUTRAL and turn OFF the ignition switch.
2. CLOSE the fuel shut-off valves and water intake valve.
3. To reduce the drag of a propeller while sailing, the standard, two blade solid prop should have its blades vertical while the folding prop will have its blades horizontal. You should mark and align the propeller shaft for its proper sailing position and then shift into forward to lock.
4. On a diesel engine with a hydraulic shift an optional shaft lock should be installed to keep the shaft from rotating. The engine and shaft must be stopped before

engaging the propeller lock. Any additional information should be obtained from the manufacturer of the stop.

5-3.7 Winterization

In all boats with inboard engines that are shipped to areas that have below freezing temperatures, the cooling system should be winterized by utilizing an approved anti-freeze. There have been some cases of the water pump impellers being damaged by certain coolants so we recommend you check with engine manufacturer or rep. for proper coolants.

Also, remember that the water tanks, head, and water lines must be drained of water if below freezing temperatures are anticipated.

5-3.8 Galvanic Corrosion (Electrolysis)

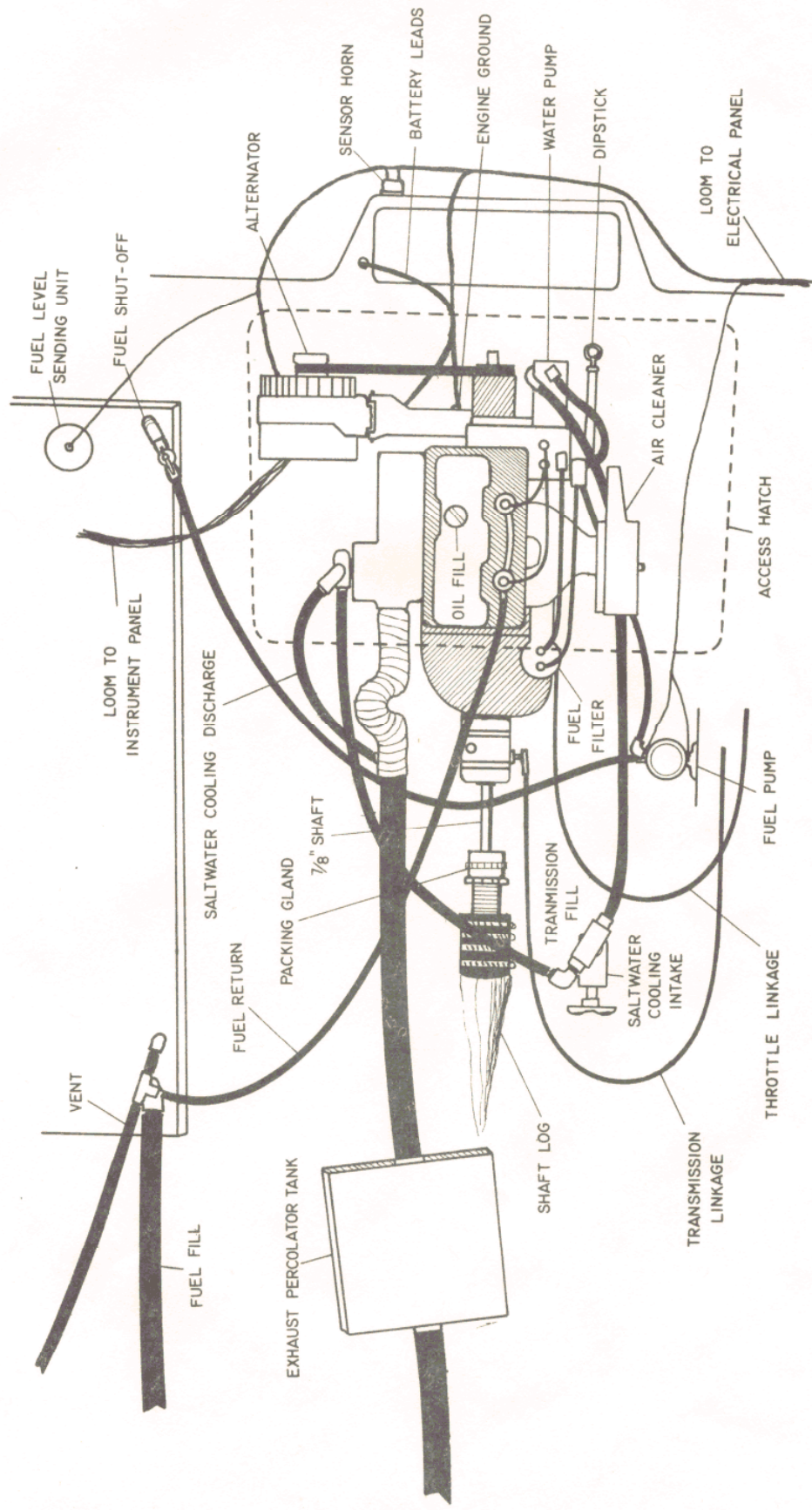
When two dissimilar metals are immersed in a conductive solution like sea water, condensation (with dissolved impurities), or the dampness that is often found on boats, an electric current may flow through the water from the metal that reacts more strongly with the solution to the metal that reacts less strongly. As this process continues, the more active metal is eaten away. The metal deterioration is called galvanic corrosion and the chemical reaction in the water is called electrolysis, though the latter term is often used loosely to refer to all aspects of the process.

Since aluminum reacts more strongly than most metals to conductive solutions, there is a potential for galvanic corrosion of the aluminum fuel tank on your boat, just as there is also a potential for galvanic corrosion of practically all of the metals on the boat if they are immersed. This is one reason why it is important to keep the tank exterior and other metal parts beneath the hull liner clean and dry. (And it is another reason for keeping water out of the fuel tank.)

On the outside of the boat below the water line, the key to combating galvanic corrosion is to provide a sacrificial metal (usually in the form of a zinc plate or shaft collar) that reacts more strongly with conductive solutions than any of the metals on the boat. With this arrangement, electrolysis harmlessly corrodes the zinc and the other metals are not affected.

But to protect the metals of importance which are in contact with moisture on your boat, you must make sure that a good supply of zinc is in constant contact with the water in moist areas.

On Capital boats, a zinc collar is fitted on the propeller shaft to control initial galvanic corrosion (electrolysis). Once the boat is launched, however, it is the owner's responsibility to protect the metals on his boat against galvanic corrosion and replace zincs as often as necessary.



UNIVERSAL DIESEL INSTALLATION	
CAPITAL YACHTS, INC. 2854 PRESIDENT AVENUE SAN FRANCISCO, CALIF. 94110 (415) 862-1911	DWG. NO. 5-5
DATE 7-79	

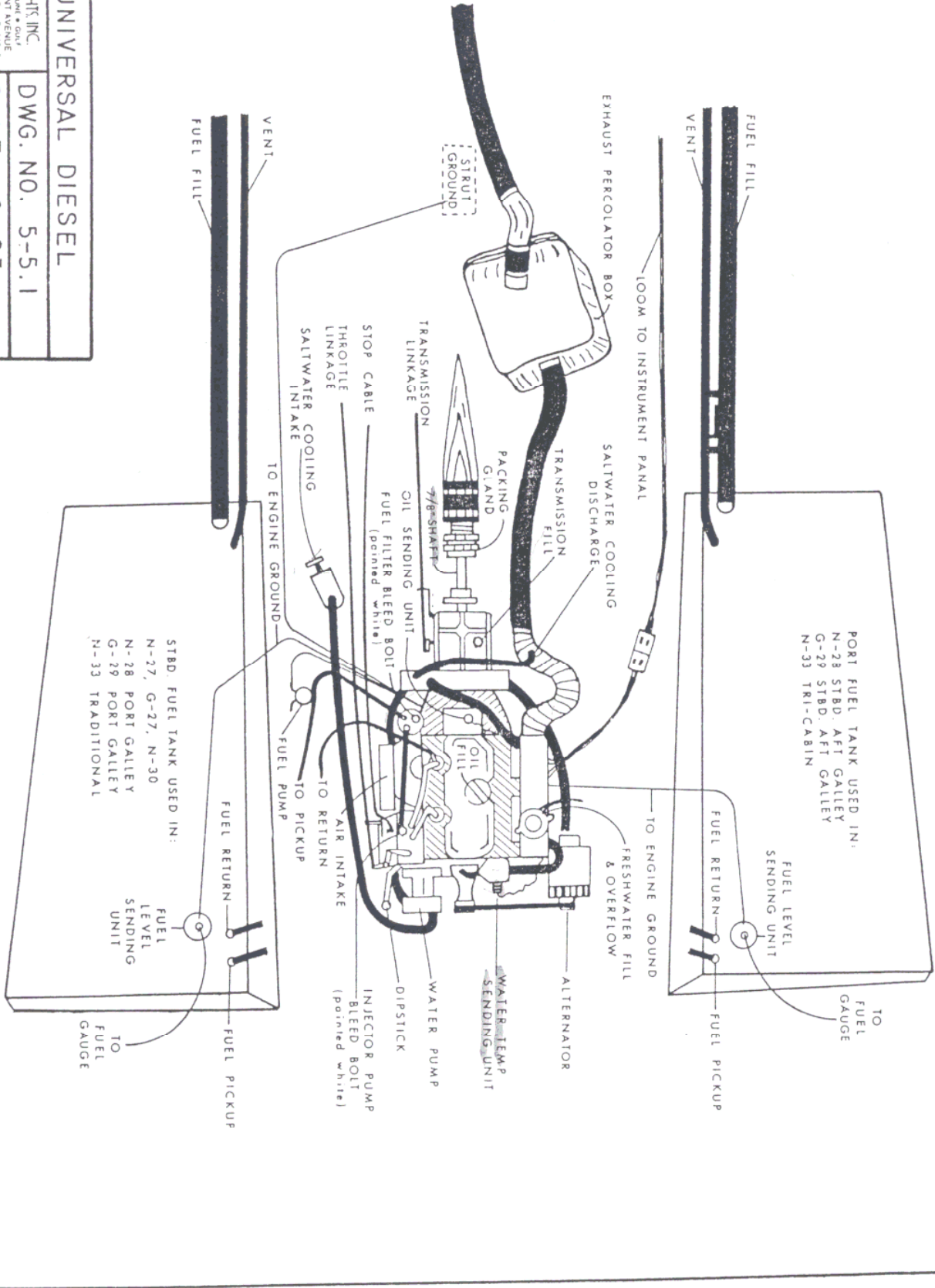


CAPITAL YACHTS, INC.
 NEWPORT • HERFORD • GULF
 25914 PRESIDENT AVENUE
 HERFORD, CALIF. 90110
 (213) 520-1211

18 H.P. UNIVERSAL DIESEL

DWG. NO. 5-5.1

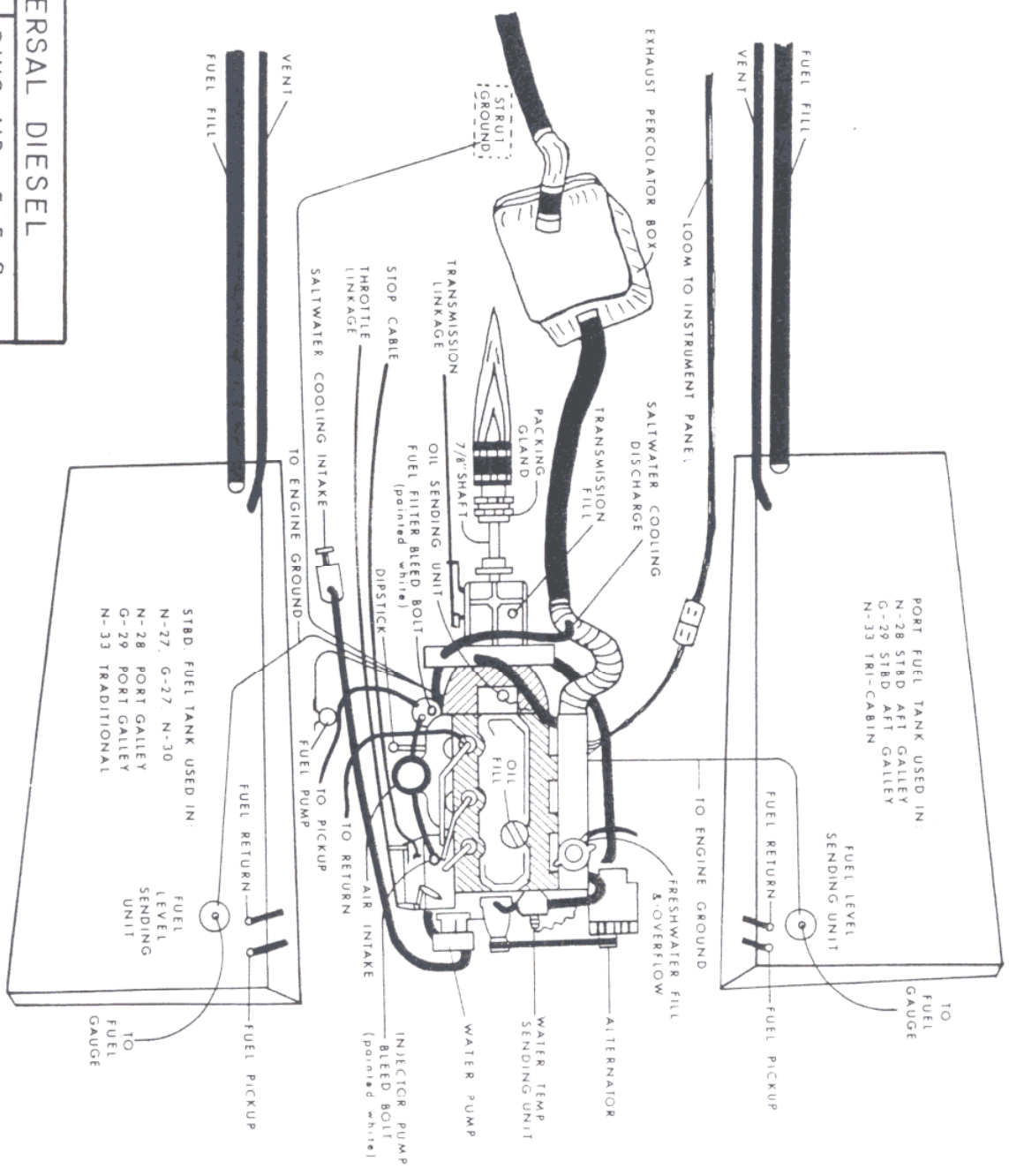
DATE 9-83

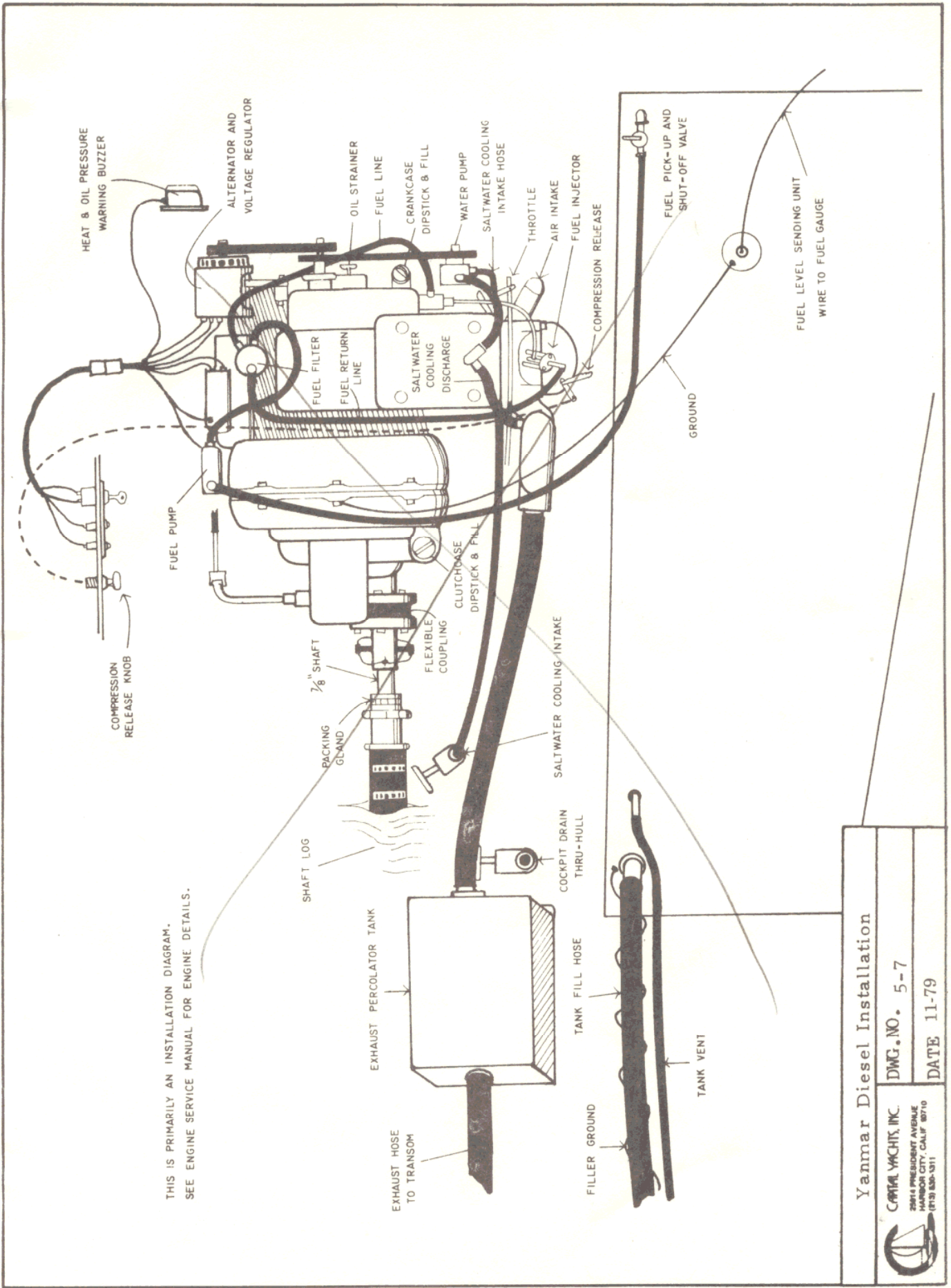


25H.P. UNIVERSAL DIESEL

DWG. NO. 5-5.2

DATE 9-83





THIS IS PRIMARILY AN INSTALLATION DIAGRAM.
SEE ENGINE SERVICE MANUAL FOR ENGINE DETAILS.

Yanmar Diesel Installation	
CAPITAL YACHTS, INC.	DWG. NO. 5-7
2814 PRESIDENT AVENUE HARBOR CITY, CALIF. 94710	
DATE 11-79	



5-8 Medalist Universal Atomic Marine Engine
Service Centers in the U.S. and Canada.

ALABAMA

JOHN C. GLOVER & COMPANY
U.S. 98 (Box 98 Montrose)
Fairhope 36532
Phone 714-642-6800

CALIFORNIA

BOATSWAIN'S LOCKER, INC.
2431 West Coast Highway
Newport Beach 92660
Phone 714-642-6800

BOATSWAIN'S LOCKER, INC.
10 Marina Drive
Seal Beach 90740
Phone 213-598-6611

MARINE PARTS COMPANY
1937 Embarcadero
Oakland 94606
Phone 415-534-1550

KETTENBURG MARINE
2910 Carlton
Pt. Loma Station
San Diego 92106
Phone 714-224-8211

MARINE ENGINEERING ASSOCIATES
269 Third Street
San Rafael 94901
Phone 415-456-7886

ALBATROSS SAILING CENTER
1500 Maple Street
Redwood City 94063
Phone 415-366-9546
(Service Only)

CANADA

H & H MARINE ENGINE SERVICE
124 West 8th Avenue
Vancouver, B.C.
Phone 604-874-4257

LUNENBURG FOUNDRY
AND ENGINEERING
Lunenburg, N.S.
Phone 902-634-8827

ST. LAWRENCE ENGINE
COMPANY, LTD.
St. Andrew Street
Brockville, Ontario
Phone 613-342-0055

A. R. OLIVER COMPANY
1989 Leslie Street
Don Mills, Ontario
Phone 416-447-6439

S & S MARINE SERVICE
168 Bathurst Street
Toronto, Ontario
Phone 416-368-2233
(Service Only)

VALLEYFIELD MARINE REG.
207 Grande Isle
Valleyfield, Quebec
Phone 514-373-2443

DISTRICT OF COLUMBIA
WASHINGTON MARINA COMPANY
1300 Marine Avenue
Washington, D.C. 20024
Phone 202-737-5995

FLORIDA

COCOA BEACH MARINE, INC.
307 Orange Avenue
Cocoa Beach 32931
Phone 305-783-2628

GRAHAM BOAT YARD
4451 Herschell Street
Jacksonville 32210
Phone 904-387-5538

R. B. GROVE, INC.
261 Southwest 6th Street
Miami 33130
Phone 305-854-5420

SNEAD ISLAND BOAT WORKS
P. O. Box 367
Palmetto 33561
Phone 813-722-4450

GEORGIA

WHITEHEAD BOAT COMPANY
1186 Dalon Road
Atlanta 30306
Phone 404-874-3646

ILLINOIS

BIKES & BOATS, INC.
7009-11 Stony Island
Chicago 60049
Phone 312-0363-8005

LOUISIANA

SINTES BOAT WORKS
7385 West Broadway
New Orleans 70124
Phone 504-288-7281

MAINE

CHASE LEAVITT & COMPANY
10 Dana Street
Portland 04112
Phone 207-772-3751

MARYLAND

CURTIS ENGINE & EQUIPMENT CO.
6120 Holabird
Baltimore 21224
Phone 301-633-5161

VOSBURY MARINE
Fourth & Severn Streets
Annapolis 21403

MASSACHUSETTS

J. H. WESTERBEKE CORPORATION
Avon Industrial Park
Avon 02322
Phone 617-588-7700

MICHIGAN

D. MELLIN MORAN MARINE
417 Eureka Avenue
Wyandotte 48192
Phone 313-282-3500

MISSISSIPPI

MISSISSIPPI COAST MARINE
P. O. Box 1026
Gulfport 39501
Phone 601-864-1492

NEW JERSEY

RIVERSIDE MARINA
P. O. Box 39
Norman Avenue
Riverside 08075
Phone 609-461-1077

NEW YORK

ROGERS TEXACO MARINA
14 Bethune Street
Alexandria Bay 13607
Phone 315-484-9461

J. H. WELCH COMPANY
107 Anderson Road
P. O. Box 248
Buffalo 14225
Phone 716-892-7100

FAIR HAVEN MARINE SERVICE
RASBECK MARINA
Off West Bay
Fair Haven 13064
Phone 315-947-5604

AQUA MARINE ASSOCIATES
55 Hudson Avenue
Freeport, L.I. 11520
Phone 516-868-1500

SHUMWAY MARINA
Drawer A, Charlotte Station
Rochester 14614
Phone 716-342-3030

OHIO

CONTINENTAL MARINE SERVICE
116 Forest Avenue
Eastlake 44094
Phone 216-946-5630

DAVID B. JEREMY & SON
403 Lakeshore Drive
Port Clinton 43452
Phone 419-732-3516

OREGON

COOK ENGINE COMPANY
10306 North Vancouver Way
Portland 97217
Phone 503-289-8466

SOUTH CAROLINA

CAROLINA MARINE SERVICE
West End Calhoun Street
Charleston 29401
Phone 803-577-7037

SEA PINES COMPANY
Broad Creek
P. O. Box 5608
Hilton Head Island 29928
Phone 803-785-3333

BOTANY BAY BOATYARD
Maybank Highway
Wadmalaw Island 29487
Phone 803-559-0741

TEXAS

FRED COLLINS COMPANY
2409 Austin
Houston 77004
Phone 713-222-9141

VIRGINIA

NORFOLK MARINA
5221 Virginia Beach Boulevard
Norfolk 23502
Phone 804-855-3391

HALE MARINE & PARTS, INC.
Route 3
Warsaw 22572
Phone 703-333-2611

WASHINGTON

DOC FREEMAN'S SEATTLE MARINE
999 North Northlake
Seattle 98103
Phone 206-633-1500

WISCONSIN

GREAT LAKES MARINE
1955 South Hilbert Street
Milwaukee 53207
Phone 414-481-3370

LIBERT MOTOR SUPPLY
301 North Webster Street
Green Bay 54301
Phone 414-432-6461

MEDALIST UNIVERSAL MOTORS
1552 Harrison Street
Oshkosh 54901
Phone 414-231-4100

YANMAR DIESEL MARINE ENGINE SERVICE

5-8

CENTERS IN THE U.S. AND CANADA (PAGE 1)

CALIFORNIA

Huntington Harbor Marine Service	Sunset Aquatic Park Huntington Beach, Calif. 92647	(213)-592-2841
Cal Engines	1667 Cota Avenue Long Beach, Calif. 90813	(213)-436-2022
Marine Engines, Long Beach	6400 Marine Drive Long Beach, Calif. 90803	(213)-597-1881
Pacific Marine Repair	4042 Del Rey Marina Del Rey Calif. 90291	(213)-823-1044
Stacy's Marine Service	1173 Market Street Morro Bay, Calif. 93442	(805)-772-2128
Fleet Marine	2622 Newport Blvd. Newport Beach, Calif. 92663	(714)-675-7456
Miller Marine Sales	1591 Monrovia Avenue Newport Beach, Calif. 92660	(714)-646-4351
King Harbor Marine Center	837 N. Harbor Drive Redondo Beach, Calif. 90277	(213)-374-8923
Chapman's Diesel Sales & Service	1520 India Street San Diego, Calif. 92101	(714)-234-7247
Todd Marine	36 Santa Barbara Street Santa Barbara, Calif. 93100	(805)-965-3800
Oswald Machine & Equipment, Inc.	229 Harbor Way South San Francisco Calif. 94080	(415)-871-8734
Anchors Way Marine	1644 Anchors Way Ventura, Calif. 93000	(805)-642-6755

CANADA

McLennan, McFeely & Prior, Ltd.	3525 Cornett Road Vancouver 12, B. C Canada	433-2481
H. C. Paul Limited	945 King Edward Street Winnipeg, Manitoba R3H OP9 Canada	(204)-876-6951
Acklands Limited Consumer Products Div.	1850 Burlington Street East Hamilton, Ontario L8H 3L4 Canada	547-8826

YANMAR DIESEL MARINE ENGINE SERVICECENTERS IN THE U.S. AND CANADA (PAGE 2)FLORIDA

Mastery Marine & Industrial	2895 46th Avenue St. Petersburg Florida 33174	(813)-522-9471
Auto-Marine Engineers	3464 N.W. River Dr. Miami, Florida 33142	(305)-635-2401

LOUISIANA

Kellet Industries, Inc.	1216 Magnolia Street New Orleans, Louisiana 70136	(504)-524-3748
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HAWAII

Marine Sales & Service	1651 Ala Moana Blvd Honolulu, Hawaii 96815	(808)-949-2787
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NEW MEXICO

Phillip's Diesel (Sub-Distributor)	P. O. Box 447 Los Lunas, New Mexico 87031	(505)-865-7332
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NEW JERSEY

Mack Boring & Parts Co.	Route 22, Union New Jersey 07083	(201)-964-0700
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NEW YORK

Mack Boring & Parts Co.	91E. Merrick Road Freeport, L.I. New York 11520	(516)-623-0660
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TEXAS

Houston Seabrook Yacht Sales	Seabrook Shipyard Seabrook Texas 77586	(713)-474-2521
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WASHINGTON

Ranger Industries, Inc	12728 N. E. 15th Place Bellevue, Washington 98005	(206)454-9206
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6-0 Plumbing Systems

We have attempted to keep your plumbing system as simple as possible, especially where thru-hull fittings are concerned. Wherever possible water discharge is above the waterline and where two items can use a common below waterline thru-hull this is accomplished. What follows then is a general description of the plumbing system, followed by a detailed Plumbing Diagram of your boat. You should become quite familiar with this system and constantly check it over to keep fresh water in your tanks and sea water outside of your hull.

In areas where below freezing temperatures are anticipated, the **entire plumbing system must be drained**. It is extremely important to circulate a quart of a "permanent type" anti-freeze through the system until it starts to run out the thru-hull opening. The thru-hull is now closed, the intake hose reattached and your marine toilet has been "winterized" until a recommissioning. The addition of anti-freeze would be a good practice with other accessories where water may sit or collect during a freeze.

6-1 Thru-Hulls and Thru-Hull Valves

All below the waterline thru-hull fittings are equipped with gate valves. These valves turn clockwise to close and counter clockwise to open. When leaving your boat for extended periods of time, safe practice dictates closing all of the valves except those for the cockpit scuppers. Periodically open and close these valves to make sure they are working properly. At this time also check all valves for seepage or leaks, tighten any hose clamps that might be getting loose and replace any defective hoses. It is a good idea to open any gate valve all the way and then close the valve a quarter turn. In this manner, anyone can immediately tell if a valve is open or not. Open valves are sometimes broken by people trying to pry them further open, thinking they are closed.

6-2 Fresh Water Tanks

A standard, fresh water tank is supplied with your boat. Care must be taken so that the air vent hole in the filler cap or the vent tube (whichever is fitted) is not plugged or it will be impossible to pump water from this tank.

When the optional additional fresh water tank is installed it will have the same type fill-cap as the standard tank and with its own vent. Where the discharge lines for the two tanks come together there will be a "T" with a labeled lever type cut-off valve for

each tank. Normally the secondary tank would be kept empty except when fitted for periods of extended living aboard. In this case, use the secondary tank **FIRST**, and then switch to the standard tank. Be sure to keep only the valve controlling the tank you are using **OPEN** and the other closed.

To assure complete sanitation of your plastic water system, it is recommended that the following procedures be used:

1. Prepare a solution of chlorine using one gallon of water and ¼ cup of Chlorox or Purex household bleach (5% sodium hypo-chlorite solution). With tank empty, pour chlorine solution into tank. Use one gallon of solution for each 15 gallons of tank capacity.
2. Complete filling of tank with fresh water. Open each faucet and drain cock until all air has been released and entire system is filled.
3. Allow to stand for three hours.
4. Drain and flush with potable water.
5. To remove excess chlorine taste or odor which might remain, prepare a solution of one quart vinegar to five gallons water and allow this solution to agitate in tank for several days by boat motion.
6. Drain tank and again flush with water.

6-3 Galley

6-3.1 Fresh Water Hand Pump and Sink

This high-out-put, lever-type pump has a ball check valve to hold the vacuum on the return stroke. If the pump fails to operate after three or four strokes, first check the water tank and the air vent hole in the filler cap. If difficulty is still experienced, disconnect the intake hose at the pump and blow through to the tank to clear any possible blockage. Also check the hose as it could be kinked or have some heavy object squashing it closed. If the hose is clear and the pump still does not deliver water, disassemble the pump and look for particles blocking the internal check valve.

The various sinks drain to a thru-hull and gate valve below. In hard sailing conditions, when the boat is well heeled over and the sink is on Lee Side, keep this valve closed or the sink may fill and water could be splashed into the interior.

6-3.2 Salt Water Hand Pump

This optional pump operates the same way as the fresh water pump except that it supplies salt water for washing purposes in order to conserve on fresh water use. It is teed into an existing thru-hull. Liquid Joy works very well with salt water for washing.

6-3.3 Ice Box

Your icebox is insulated with a foamed-in-place, layer of polyurethane foam and should retain low temperatures

over extended periods of time. Since the ice box drains into the bilge pump system, it is advisable to check the bilge pump before and after all outings.

In order to get the ice box as large as possible, the lower portion, and the drain are below the waterline. Thus it is not possible to drain to a thru hull. Please remember that when a 25 pound block of ice melts you may end up with about three gallons of water in the bilge if you do not have your bilge pump valve system closed.

6-4 Head (Marine Toilet)

6-4.1 Marine Toilet

Please be sure to read the "Head Operating Instructions" shipped in the rig box. For your convenience we will repeat these instructions here:

HEAD OPERATING INSTRUCTIONS

Before Using

Make sure the intake thru-hull is open. Raise lever forward of pump slowly to partly fill and wet inside of bowl.

After Using

Raise lever and pump until bowl is cleaned. Continue with at least 15 more full strokes to flush discharge anti-syphon loop. Depress lever and pump slowly until bowl is empty.

IMPORTANT

When not in use, lever on head forward of pump handle must be left in depressed position to prevent flooding of boat. When leaving boat for an extended period it is advisable to CLOSE both thru-hull valves. Do not put anything that hasn't been eaten or excessive toilet paper in the bowl as the valves can be easily plugged.

On Newport boats, the smaller valve is the water INTAKE while the large serves for discharge.

It is possible to leave the two gate valves open while sailing, provided the internal "Joker" rubber check valve is not held open by refuse, and does not have any water siphoning back into the bowl. In extremely heavy sailing conditions it would be prudent to keep these two valves closed.

Periodically add a small amount of liquid detergent and pump it through the system to lubricate the internal valve mechanism.

6-4.2 Holding Tank Toilet (Handihead)

If you have installed this optional Holding Tank Marine Toilet, please follow these instructions as presented by the manufacturer:

OPERATING INSTRUCTIONS

1. Pour 1 gallon fresh water into toilet thru bowl with trap open and lever on the right side depressed. Close trap and pour ½ gallon of water into bowl. The bowl

will then be about ¼ full of fresh water. To this water add one package of Monochem T-5. Depress the trap actuating lever and empty the bowl. Flush the toilet several times by actuating the plastic knob on the left side of the unit with an up and down motion. If the flushing action is weak or spatters, add a little more water. Your toilet is now ready for use.

2. The bowl trap is operated by the lever on the right side of the unit. To open, press down on lever release and it will close. Most people prefer to take advantage of this built in home-like feature by stroking the pump a few times before using. However, leave the bowl dry while under way.
3. When the fluid level is within ½ inch of the bottom of the bowl opening, the unit is full and should be emptied.

LEVEL INDICATOR: When the liquid level reaches the bottom of the rubber flapper in an open position, the toilet is ¼ full.

We offer one word of caution: Watch out for the blue dye—Don't just "Release the lever", you must let the lever down slowly so the flapper valve will close gently or you might get sprayed by the blue dye.

Any additional information should be obtained from the manufacturer: Monogram Industries, Inc. Los Angeles, Ca. 90045. Phone 213/776-6720.

6-4.3 Discharge Instructions

There are two basic methods of discharge for the holding tank sanitation system. These methods are:

Dockside Discharge Method

- a. Start dockside pump.
- b. When empty, rinse the toilet with fresh water thru the opening in the bowl.
- c. Shut off rinse water.
- d. When unit is empty of rinse water, turn off dockside pump.
- e. Recharge with fresh water.

Overboard Discharge Method (Utilizing Hand-O-Pump)

- a. Open seacock.
- b. Empty toilet by operating Hand-O-Pump.
- c. When empty, rinse the toilet thru the opening in the bowl and fill the toilet with fresh water.
- d. Empty the toilet by operating Hand-O-Pump.
- e. Close thru-hull seacock.
- f. Recharge with fresh water.

6-5 Bilge Pumps

Every boat should be equipped with at least one manual bilge pump, if for no other reason than to get rid of the melted ice water through a valve system that connects the ice box drain hose to the bilge pump.

The pump cover is opened for insertion of the pump handle. If offshore cruising and/or racing is planned, then a pump must be mounted that will meet the current requirements of the North American Yacht Racing Union's standards for offshore racing events. This pump is mounted "to be operable with all cockpit seats and hatches and all cabin hatches and companionways closed." The inference here is that the pump must be operable from the cockpit and this makes sense. With a boat load of water, and more expected at any moment, you don't want to be opening hatches or trying to get below to operate a bilge pump! Naturally the latter method is a more expensive installation, but really the only way to go, so this is how it would be mounted at the factory.

The factory installed optional electric bilge pump is connected to a switch on your Accessory Control Panel.

All factory installed bilge pumps have the pick-up hose placed in the bilge. There is an inspection hole above this pick-up for access, should it become clogged and need clearing. Also note that the pick-up line is reinforced hose to prevent collapsing caused by the suction action of the pump.

6-6 Pressure Water System with Shower

When filling the system for the first time or refilling an empty system, you will have to bleed the air out of all water lines. This is accomplished in the following manner:

1. Fill water tanks and turn on ship's electrical system.
2. Turn on the pressure pump by activating the switch on the Accessory Control Panel.
3. Starting at the galley sink, turn on the water faucet. Expect nothing but air for the first few minutes as the water tank must be filled before water will flow from the faucet.
4. As the water tank fills water will start to pop and spurt from the faucet. Turn the faucet off.
5. Now turn the faucet on and off slowly, with one hand under the spout. This will keep water from splashing about while the last bit of air is being removed from the water line.
6. When a solid stream of water is flowing from the spout, turn the faucet off.
7. Now repeat this same procedure for the sink in the head, and the shower.
8. The system is now completely primed refill the water tanks to replace the water that is now in the system.

The pressure pump is a 12 volt D.C. unit that will start automatically when the pressure drops to 18 psi and will continue running until the pressure has been brought up to 25 psi. If the pump starts running wild, check for the following:

1. Out of water—fill the system or switch tanks.
2. Leak in lines—check the plumbing.
3. Air lock—bleed the system.

Note that the shower drains into the bilge and the automatic bilge pump will operate when the Master Switch and the accessory bilge pump switch are on. This will serve as the shower sump pump unless there is a special switch mounted adjacent to the shower for this purpose.

6-8 Supplemental Marine Toilet Instructions

6-8.1 Normal Care and Maintenance

If your marine toilet works hard, check to make sure that the sea cocks are wide open and that no kinks appear in the lines. Sometimes the sea cocks work shut with consequent restriction in the intake or discharge lines.

Some oil or grease on the piston rod and bearing pins in the pump handle assembly makes for easier pumping. To reduce wear and maintain easy pumping operation, do not tighten the piston rod packing nut any more than necessary to prevent leakage around the rod. A little waterproof grease applied once a season to the packing found under this nut will do the trick.

If a foreign object becomes lodged in the toilet, remove the screws which hold the tail piece to which the discharge pipe is attached and check the "Joker" valve. This is the spot where matches, bobby pins or similar items are likely to catch and cause trouble.

If pumping action becomes stiff and the above checks have been made, "Sea Lube," a special water soluble lubricant should be used. A few cups of "Sea Lube" put into a dry bowl and pumped out of the bowl into the cylinder, but not overboard, will keep the unit working freely. A stroke or two is enough. Try to allow the "Sea Lube" to stand for 24 hours.

6-8.2 Haul-Out

When you haul out for storage, certain steps should be taken to keep your Marine Toilet in first-class condition.

Fresh water should be allowed to stand in the pump for several days to dissolve the accumulation of salt in the cylinder and hose lines. Repeat this process, then pump dry. Remove the drain plug in the base to drain any water which might remain. Replace the drain plug and pour a few cupfuls of "Sea Lube" into the bowl and pump the "Sea Lube" out of the bowl into the bottom of the cylinder. A stroke or two is enough. Allow the "Sea Lube" to stand for 24 hours, pump dry, and remove the drain plug.

DO NOT put oil, kerosene, gasoline, or alcohol in the bowl or pump. They will ruin the valves. If anti-freeze is used, it must have a glycol base.

6-8.3 Commissioning Instructions

Replace the drain plug in the base and use "Sea Lube" as outlined in the Haul-Out instructions. Allow the "Sea Lube" to stand for 24 hours. If the Haul-Out instructions were followed, your marine toilet should be ready for use.

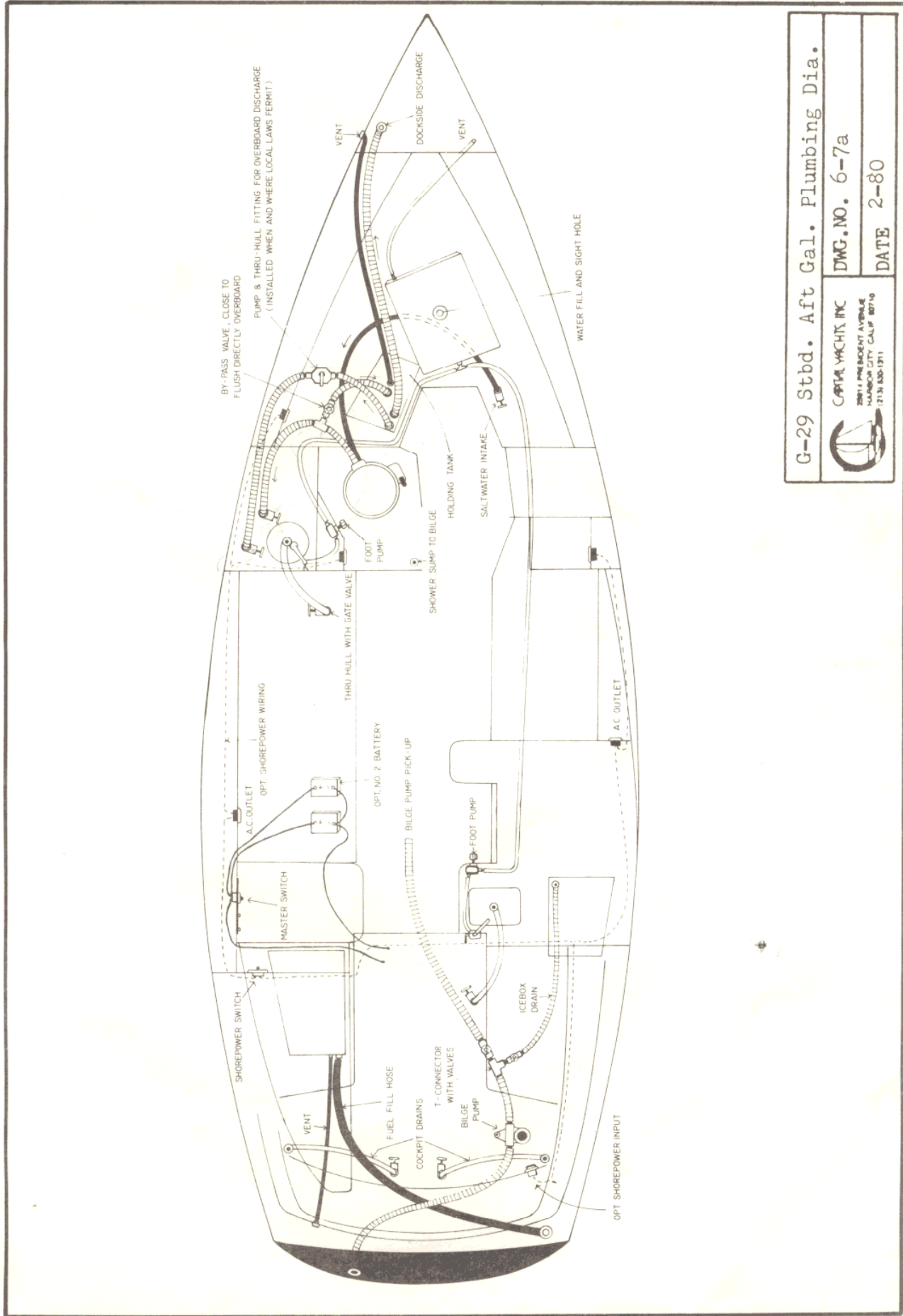
In the event your Marine Toilet is worn or has not had proper care, it is recommended that the pump unit be

disassembled, the required new parts installed, and the unit reassembled, with waterproof grease being applied to the piston leathers and the cylinder wall. This greasing should be done whenever disassembly is required.

Be sure to check the "Joker" valve. If it is stiff, it should be replaced.

Proper care will assure of a long-lasting, free-working unit.

After the boat is launched, it is good practice to make periodic checks on the waterlines, etc., to make certain that all connections are tight and that valves are functioning properly.

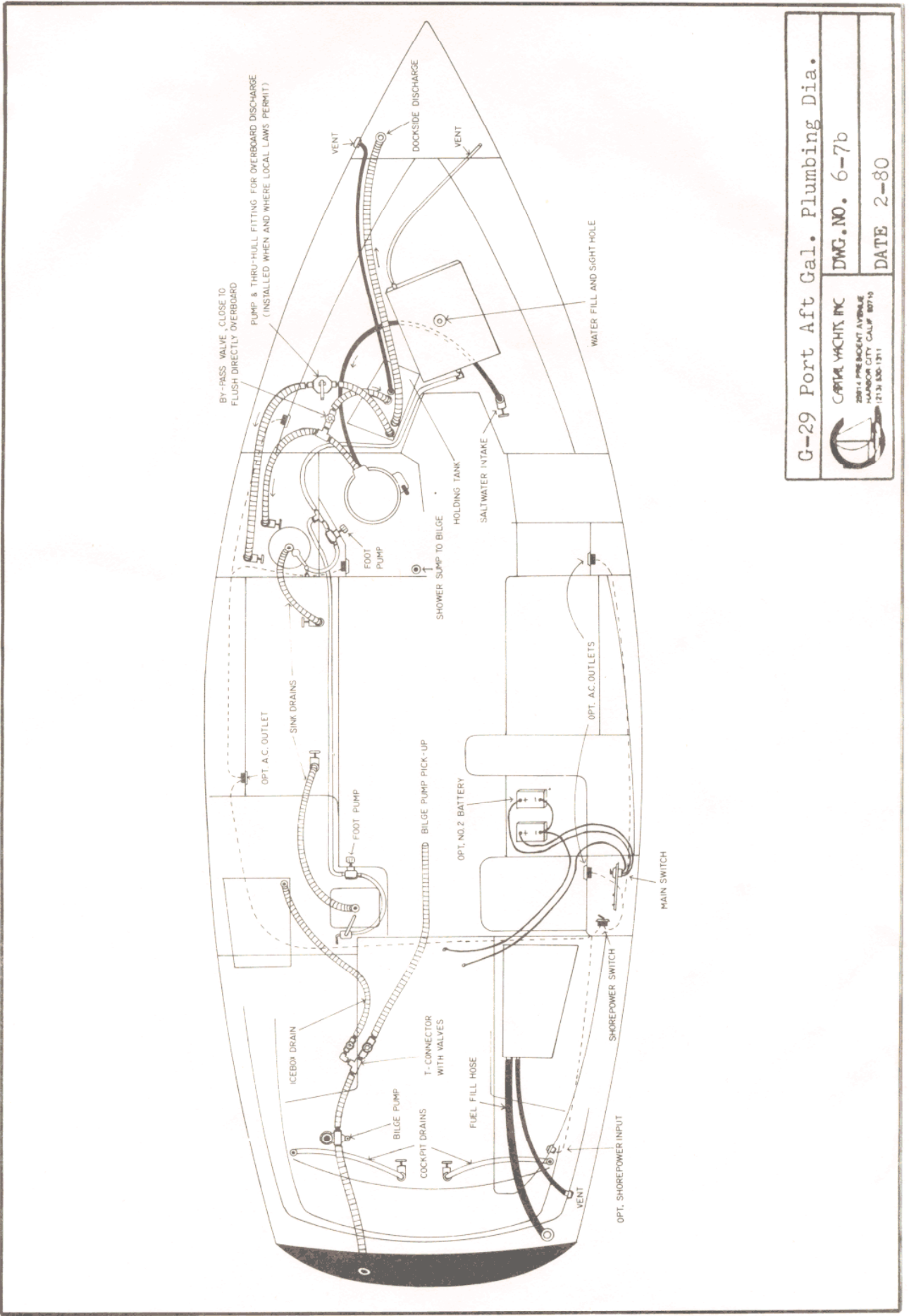


G-29 Stbd. Aft Gal. Plumbing Dia.

DWG. NO. 6-7a

DATE 2-80

CAPITA YACHTS, INC.
 20811 PRESCOTT AVENUE
 HARBOR CITY, CALIF. 94746
 (415) 880-1211

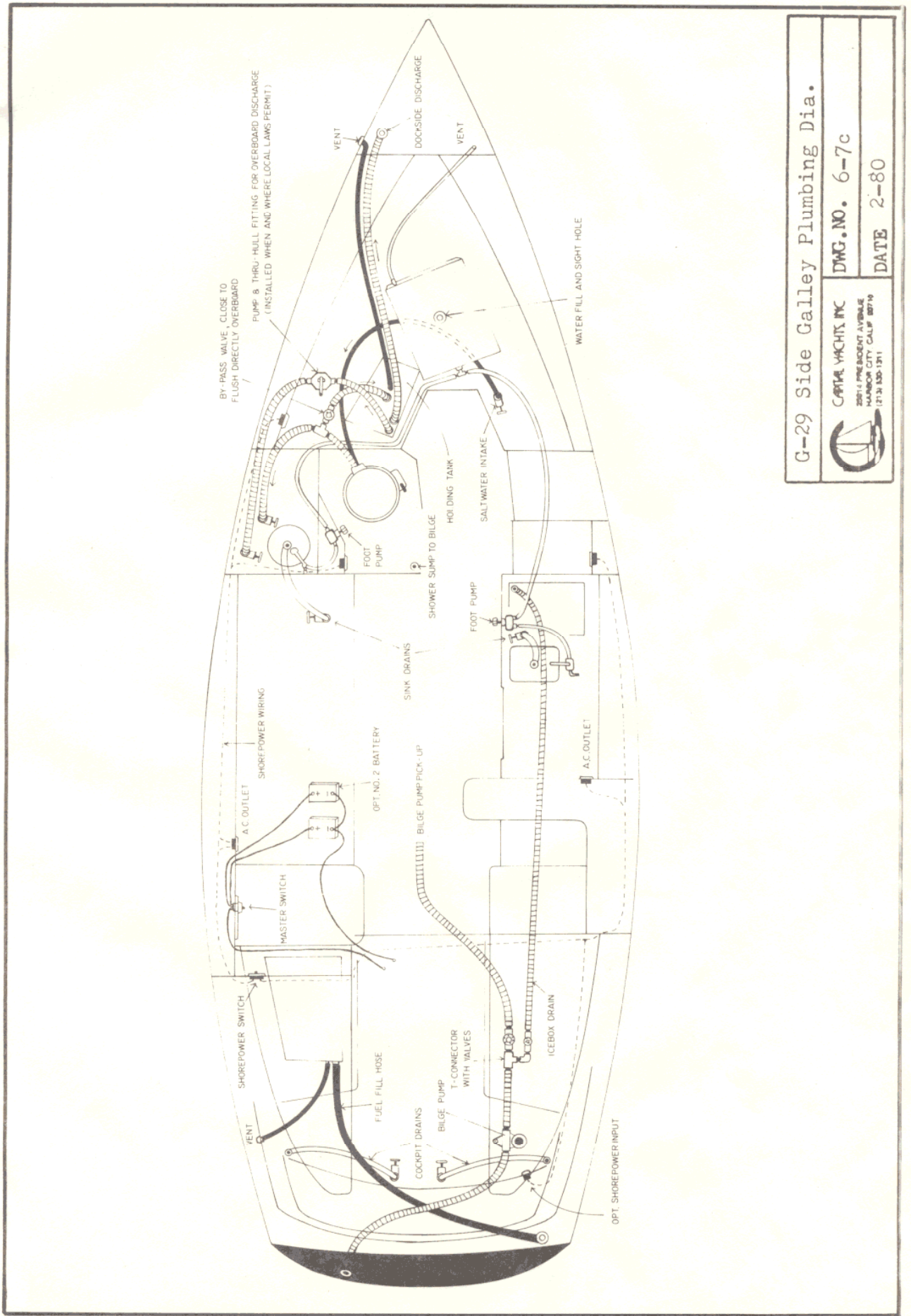


G-29 Port Aft Gal. Plumbing Dia.

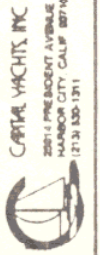
DWG. NO. 6-7b

CAPITA YACHTS INC
 2874 PRESCOTT AVENUE
 HAWAII CITY, CALIF. 96746
 (415) 530-1311

DATE 2-80



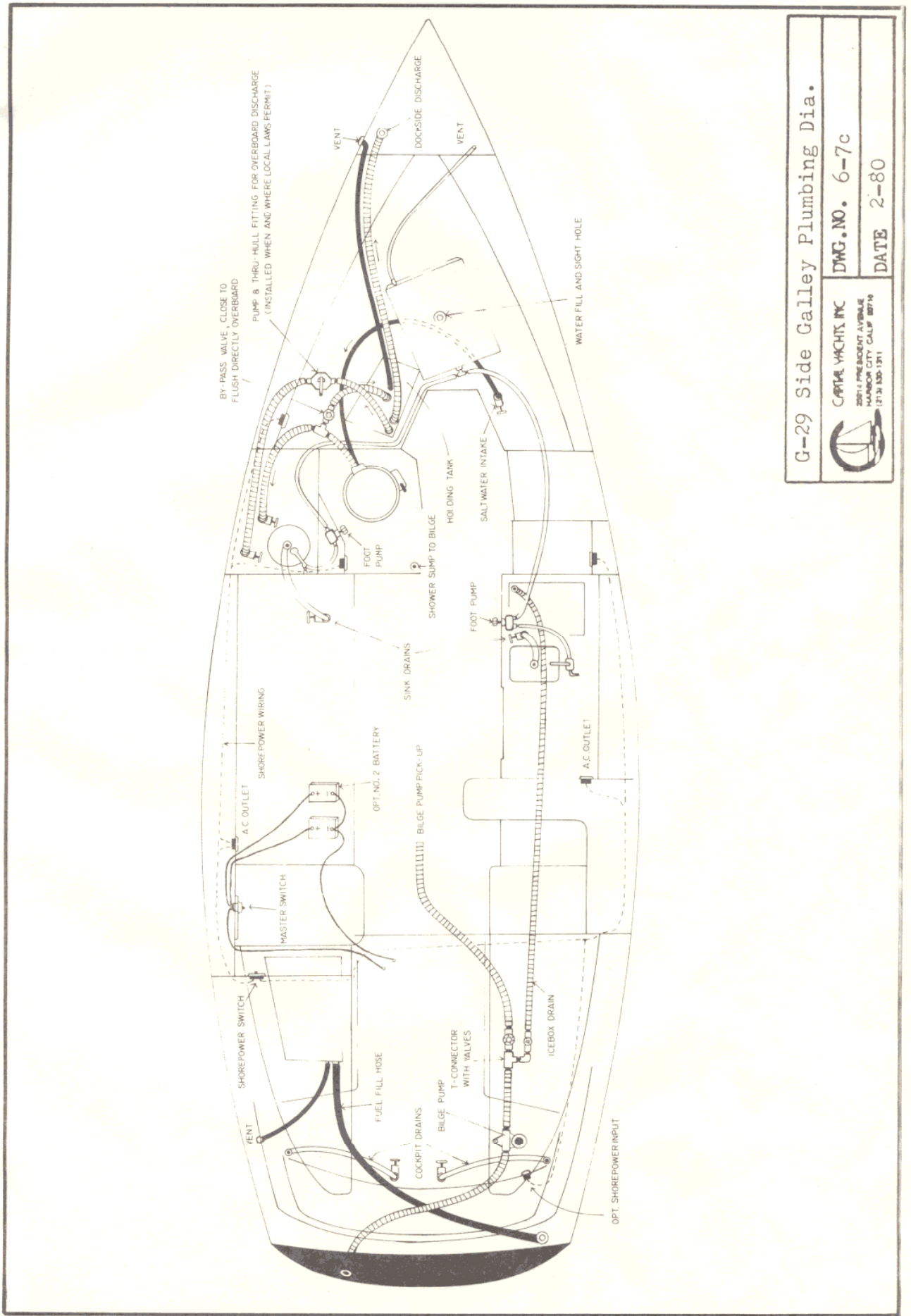
G-29 Side Galley Plumbing Dia.



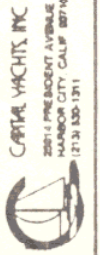
DWG. NO. 6-7c

CAPITAL YACHTS INC.
 2851 PRESCOTT AVENUE
 MARINA CITY GOLF BLDG
 (714) 830-1371

DATE 2-80



G-29 Side Galley Plumbing Dia.



DWG. NO. 6-7c

DATE 2-80

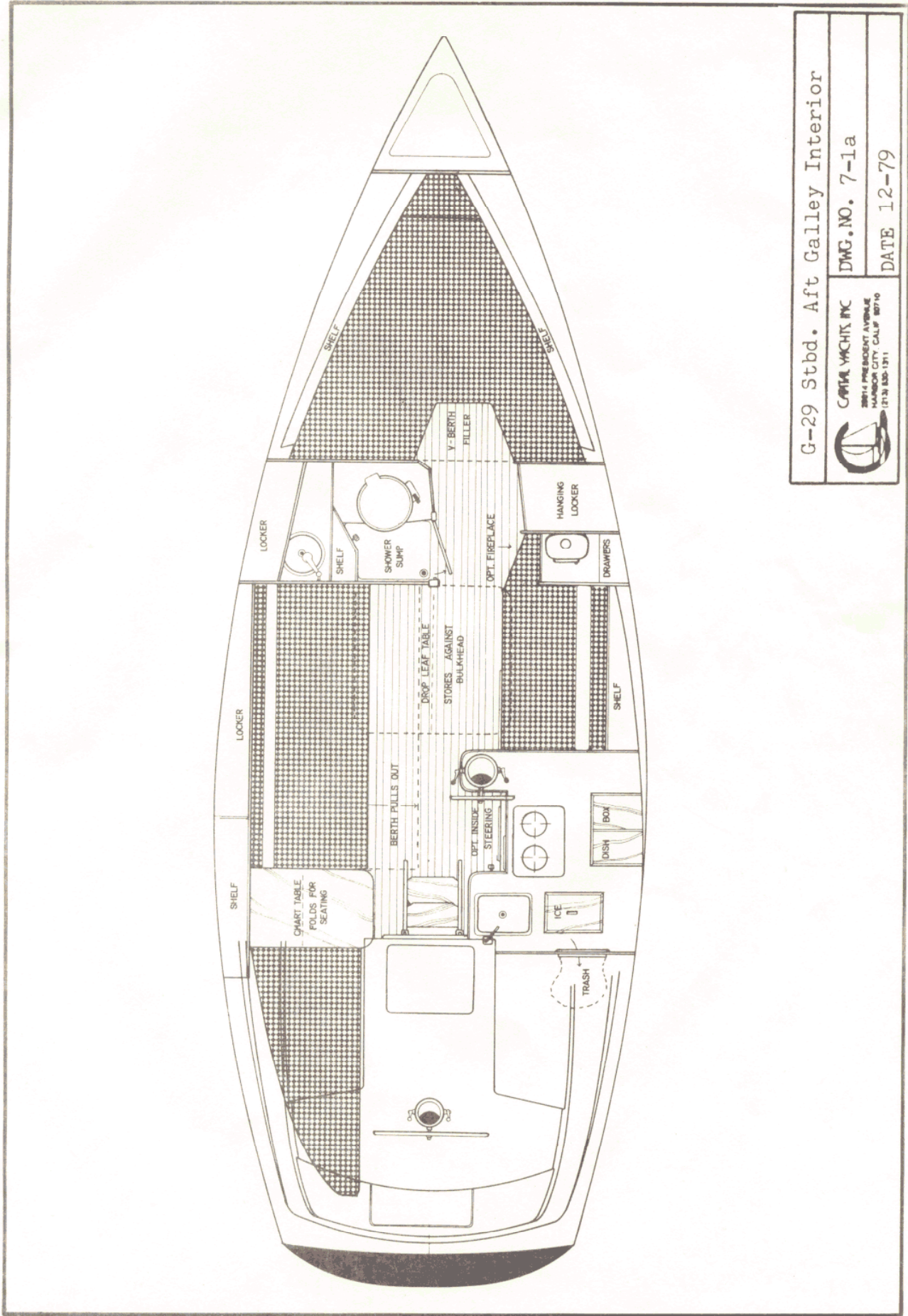
CAPRA YACHTS INC.
 2851 PRESCOTT AVENUE
 MARINA CITY GOLF BLDG
 (714) 830-1371

7-0 Interior Appointments

You can treat everything below decks just like a home interior. Your interior wood trim should be oiled occasionally with a quality wood oil to maintain its "yacht like" appearance. For a more permanent finish, the wood should be varnished with a semi-gloss or rubbed effect varnish. Keep the boat well ventilated, especially the bilges and lockers, and watch out for dampness. Leaving a 100 watt light bulb burning below will usually take care of any sweating and reduce that "clammy" feeling, especially during the winter months or during times of damp fog. It's a good idea to leave the bunk cushions on their sides and open up the lockers if you plan to be gone for awhile. It might not look very neat but it increases ventilation and allows everything

to air out. Any time things get wet with salt water, rinse off with fresh water as soon as possible and let dry thoroughly. The salt crystals retain moisture and the material will always remain damp until cleaned with fresh water. Air and sunlight are wonderful cleaners—bring the vacuum cleaner aboard and get the carpet, cushions, blankets, sleeping bags, etc., up on deck in the sunshine while the vacuum picks up below. Spring cleaning should take place periodically, not annually, to keep the interior clean and bright.


Most of the equipment below deck is covered in other sections of the manual, with the exception of stoves, refrigeration, and any other optional accessories that you have installed. We have included the Interior Arrangement drawings for your boat in Section 7-1 followed by any related information.



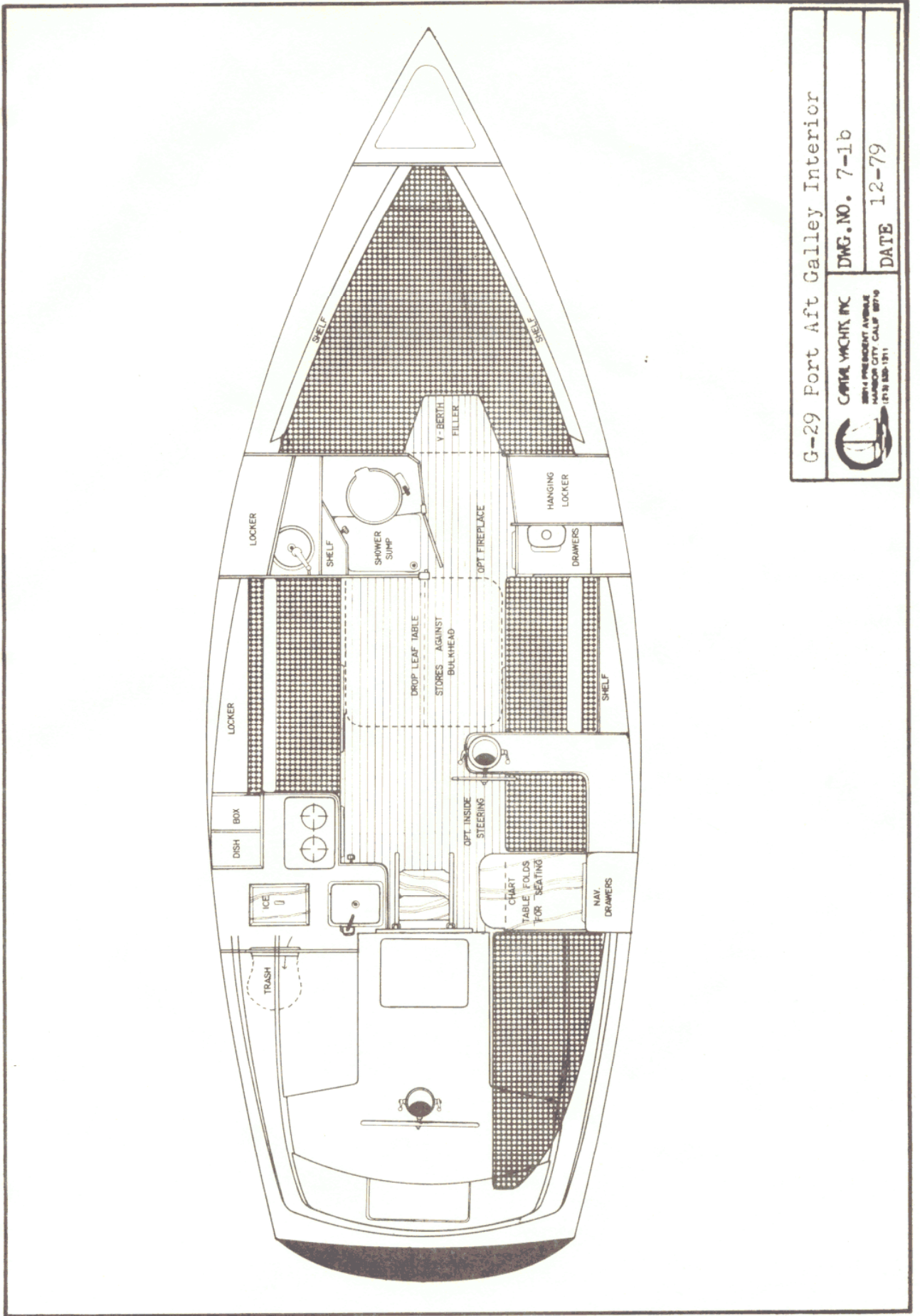
G-29 Stbd. Aft Galley Interior

DWG. NO. 7-1a

DATE 12-79


CAPITAL YACHTS INC.
 2814 PRESIDENT AVENUE
 SAN FRANCISCO, CALIF 94716
 (415) 835-1311

X

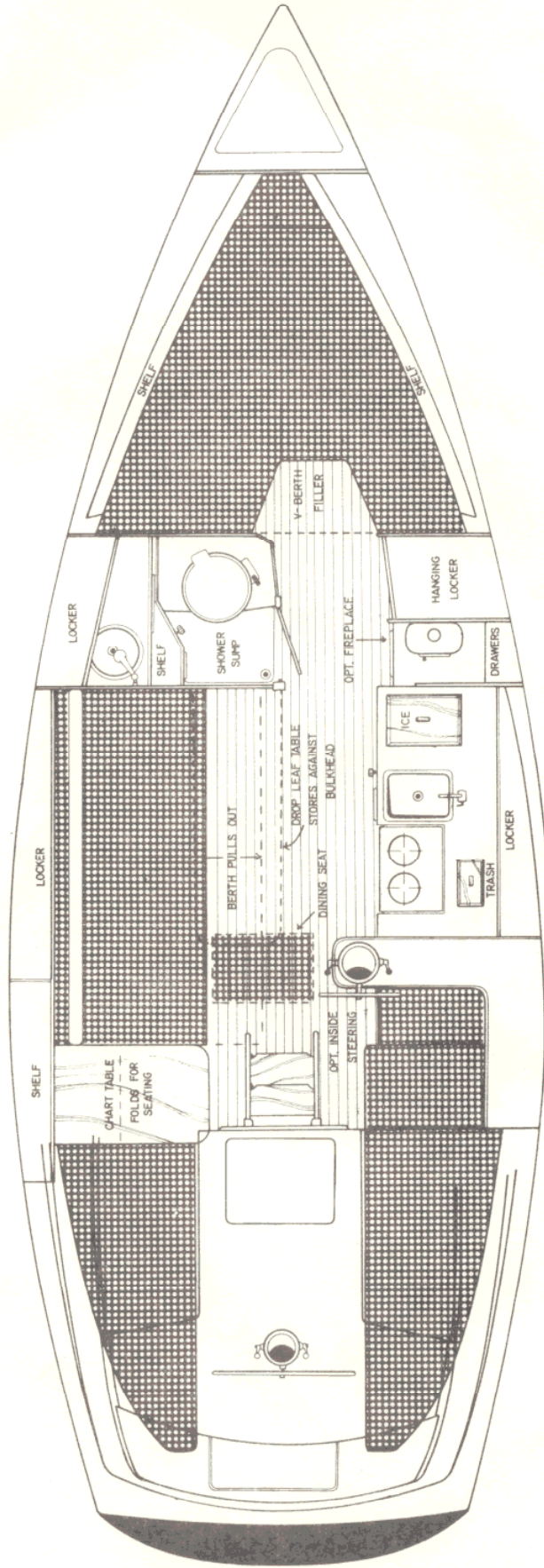



G-29 Port Aft Galley Interior

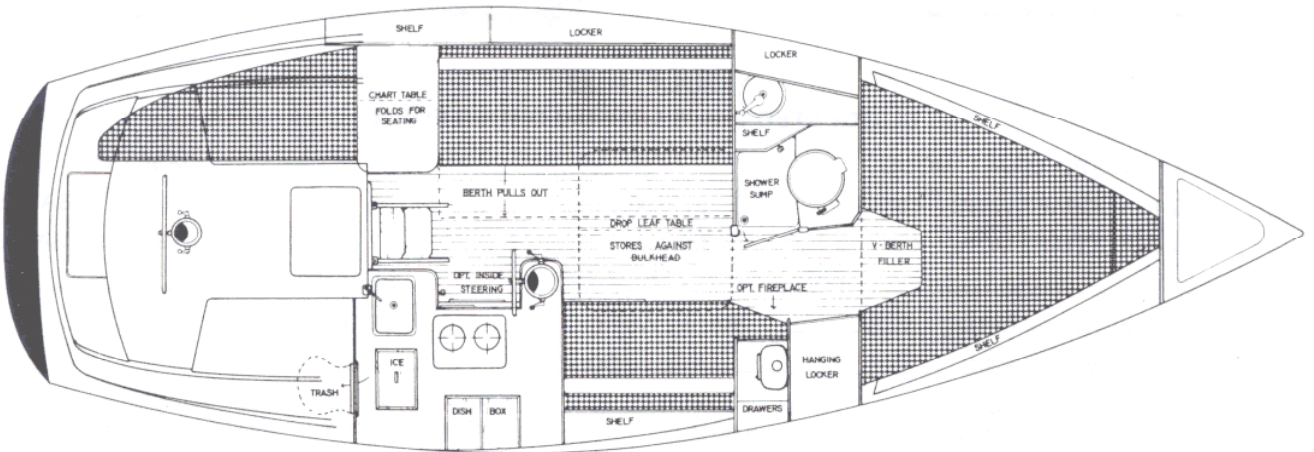
DWG. NO. 7-1b

DATE 12-79

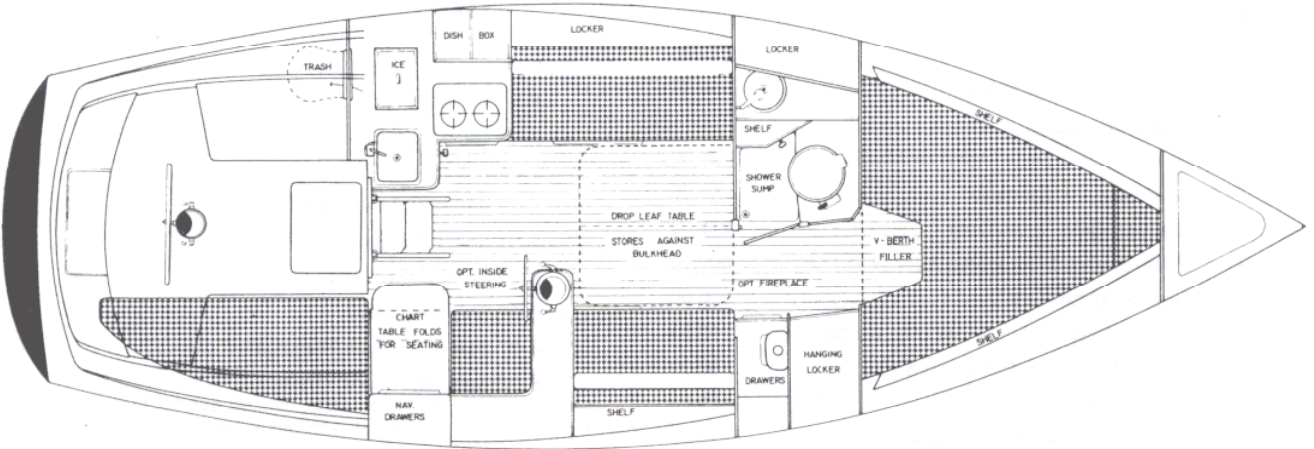
CAPITA YACHTS, INC.
 2874 FREEDOM AVENUE
 MARINA CITY CALIF 90710
 (415) 433-1311



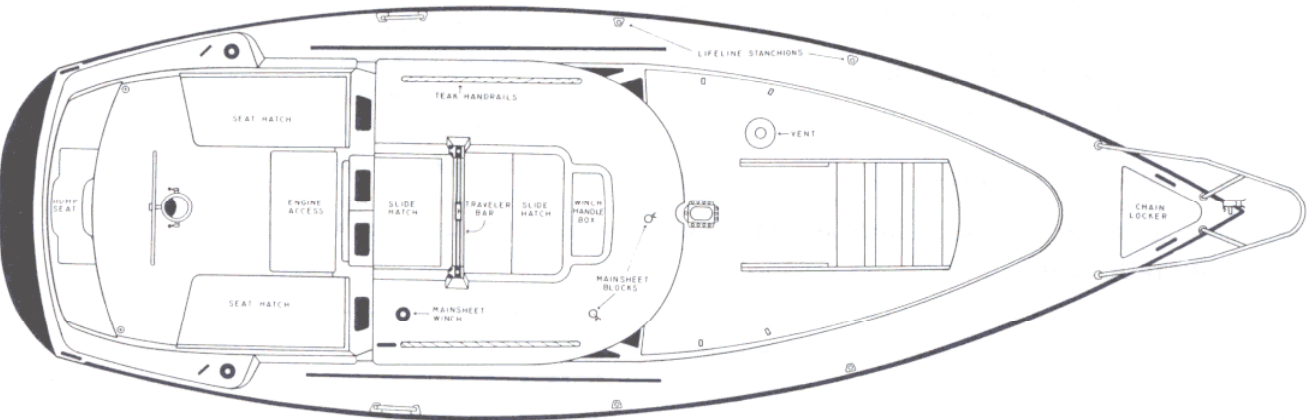
Gulf 29 Side Galley Interior	
 CAPA YACHTS INC. 2074 PRESIDENT AVENUE HANFORD CITY CALIF 97315 (509) 865-1911	DWG. NO. 7-1c
	DATE 12-79



Starboard Aft Galley



Port Aft Galley



Deck View

Some items shown are optional.

7-2 Alcohol Stove

An alcohol stove is the most common installation on boats because it burns clean, has minimal fumes, and an alcohol flame can be put out with water. The tag on your stove indicates that it has been factory tested prior to shipping in accordance with the Fire Protection Standards set down in the Boating Industry of America Manual. This type of stove is as safe as a gas stove but be sure to follow the instructions on the plaque mounted near the stove. For your convenience we will repeat those instructions here.

1. Close container valve immediately in any emergency.
2. Keep container valve closed whenever appliance is not in use and when leaving boat unattended.
3. Be certain that all appliance valves are closed before opening container valve.
4. To light burners: with fuel container valve closed and pressure at 15 lbs., make certain appliance valves are closed. Open container valve. Fill priming cup one-third full by opening one burner valve. Shut off burner. Light the priming alcohol and wait until consumed. Open the burner valve and light the burner. If burner will not burn like a gas burner repeat priming.
5. Do not leave burner with low flame unattended.
6. Test system for leakage at least twice a month and after any emergency in accordance with the following procedure:

With appliance valves closed and with container valve open, note pressure reading on gauge. Close container valve. The pressure should remain

constant for at least 10 minutes. If pressure drops locate leakage by application of liquid detergent or soapy water solution at all connections. Repeat test for each container system. **Never use flame to check for leaks!**

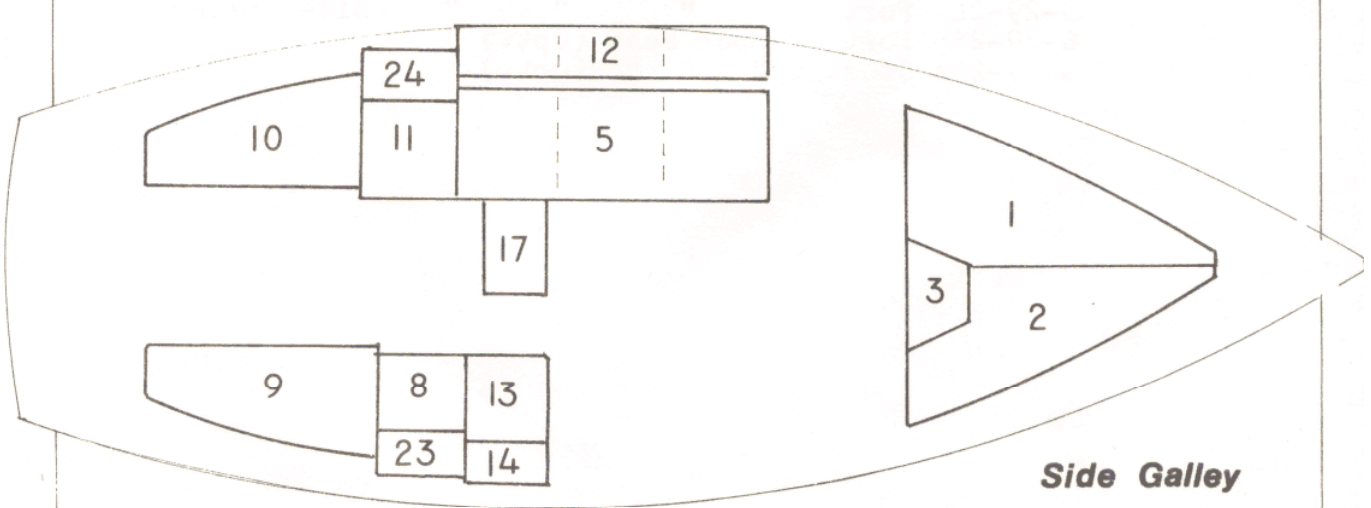
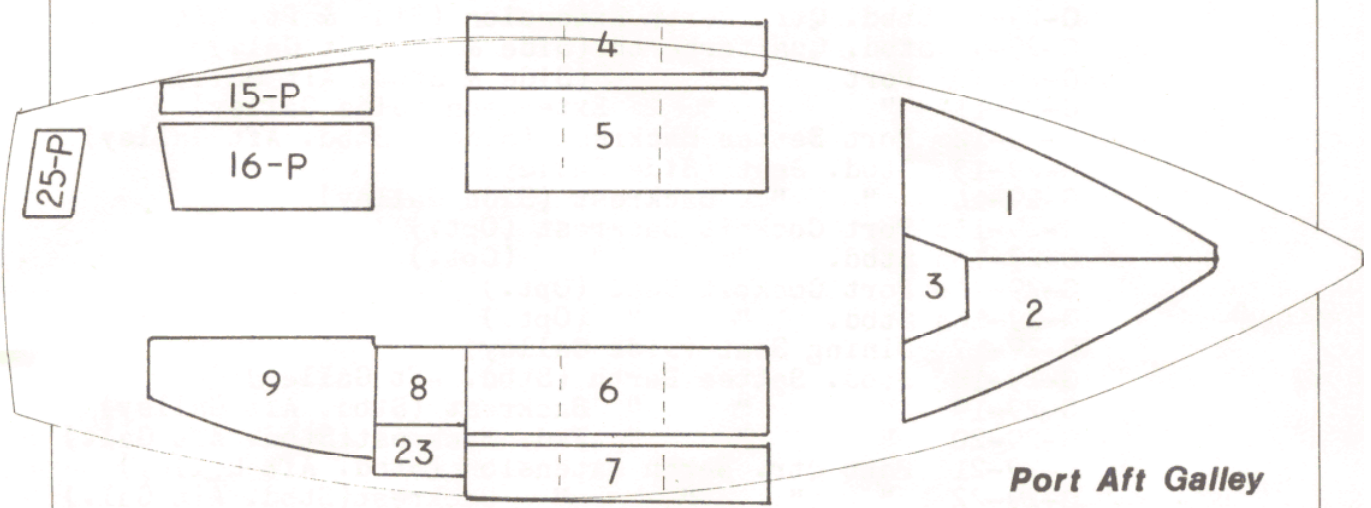
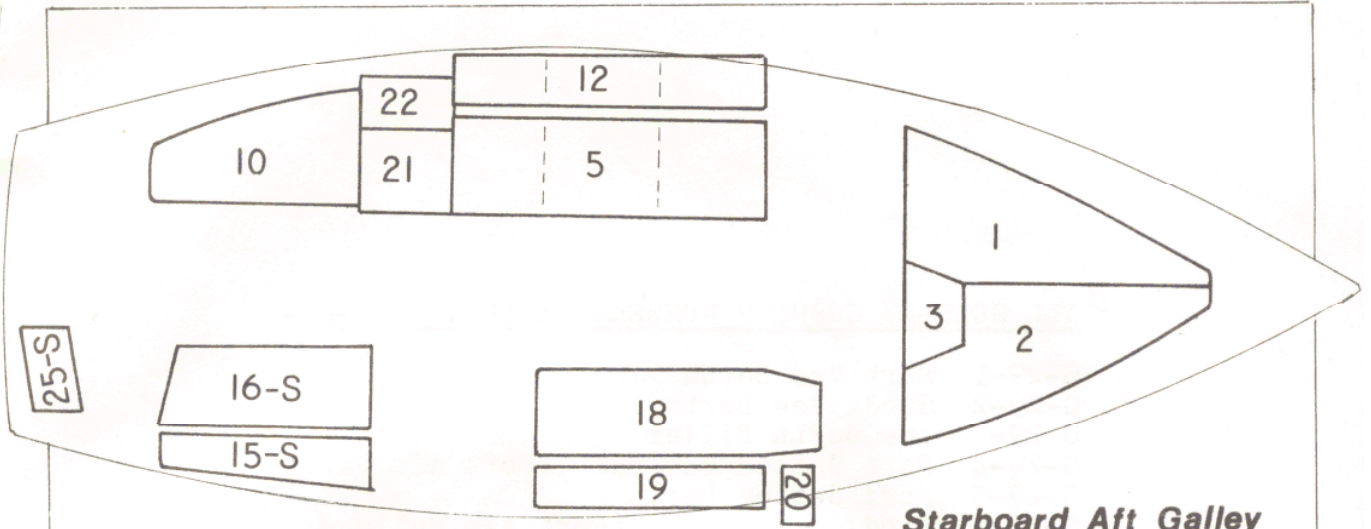
7. Burning alcohol is readily extinguished by water.

About 90% of all galley fires from alcohol stoves come from priming the stove. Fortunately alcohol is the only fuel whose flame can be put out with water! The trouble is that if the stove is over primed—too much fuel in the pan at the beginning or under primed—turning on the stove before it is fully primed—fires can result.


If you will drill yourself, and others, right from the beginning as to the proper sequence of steps and timing involved, most of the potential troubles will be eliminated. The remaining problems come about from improper maintenance of the stove. Regular checks, following the manufacturer's instructions, should take care of this.

Manufacturer's instructions are included in the back flap of this manual or from the commissioning dealer.

During commissioning of your boat or before using the alcohol stove for the first time, the instructions under point 6 of the previous list (testing for leaks) should be followed. During shipping of your boat, vibration may have caused some of the fittings in your stove's fuel system to work loose. For this reason the fuel container has not been pressureized at the factory. Under normal operating conditions the fuel container will need to be pressurized each time the burners are used.



SEE OTHER SIDE FOR
CUSHION NUMBER LIST

Cuff-29 Cushion Diagram	
 CAPITAL YACHTS, INC. 25014 PRESIDENT AVENUE HARBOR CITY, CALIF. 90710 (213) 530-1311	DWG. NO. 7-6
	DATE 2-80

ALL GULF-29 CUSHION NUMBERS BEGIN WITH G-29-

G-29-1 Port Vee Berth
G-29-2 Stbd. Vee Berth
G-29-3 Vee Berth Filler
G-29-4 Port Settee Backrest (Port Aft Galley)
G-29-5 Port Settee Berth
G-29-6 Stbd. " " (Port Aft Galley)
G-29-7 " " " Backrest (Port Aft Gal.)
G-29-8 Stbd. Qtr. Berth Extension (Side & Pt. Aft Gal.)
G-29-9 Stbd. Quarterberth (Side & Pt. Aft Gal.)
G-29-10 Port " " (Side & Stbd. Aft Gal.)
G-29-11 " " " Extension (Side Galley)
G-29-12 Port Settee Backrest (Side & Stbd. Aft Galley)
G-29-13 Stbd. Seat (Side Galley)
G-29-14 " " " Backrest (Side Galley)
G-29-15p Port Cockpit Backrest (Opt.)
G-29-15s Stbd. " " " (Opt.)
G-29-16p Port Cockpit Seat (Opt.)
G-29-16s Stbd. " " " (Opt.)
G-29-17 Dining Seat (Side Galley)
G-29-18 Stbd. Settee Berth (Stbd. Aft Galley)
G-29-19 " " " Backrest (Stbd. Aft Galley)
G-29-20 " " " Fwd. Backrest (Stbd. Aft Gal.)
G-29-21 Port Qtr. Berth Extension (Stbd. Aft Galley)
G-29-22 " " " " Backrest (Stbd. Aft Gal.)
G-29-23 Stbd. " " " " (Pt. Aft & Side Gal.)
G-29-24 Port " " " " (Side Galley)
G-29-25p Port Skipper Seat (Opt.)
G-29-25s Stbd. " " " (Opt.)

8-0 Additional Maintenance Tips

Maintenance of today's fiberglass sailboats is extremely simple when compared with the upkeep necessary to keep boats of other materials in "Shipshape and Bristol Fashion". Nevertheless, certain basic maintenance practices must be followed if the bright, sparkling, original appearance of your boat at delivery is to be retained throughout the years. Much of the maintenance information has been found in the foregoing sections where it related to specific items. In this section we will try to pick up any "loose ends" and try to answer any remaining questions on keeping your boat in a yacht-like condition. You can also keep up on new ideas with the boating periodicals.

8-1 Rudders, Keel, and Bottom Paints

When your boat is not in use the tiller or wheel should be snugly secured to prevent the rudder from moving. This constant movement of the rudder shaft in the bearings and packing box will result in unnecessary wear and, consequently in excessive play and "slop". Also, a tiller banging around in the cockpit from wave and water action on the rudder could cause considerable damage. If the rudder action is stiff, a light grease such as "Lubriplate" should be used. Each time the assembly is lubricated also check for play at the upper and lower ends. "Nylotron" shims easily remedy excessive play.

The keel is one area where drag producing slime and bottom growth can accumulate if proper care is not exercised. During regular haul-outs the keel should be thoroughly sanded before painting.

A new bottom must be well sanded to remove all gloss from the gelcoat. After sanding, the entire bottom must be washed with whatever is recommended by the paint manufacturer.

A used bottom must be well cleaned and sanded to remove growth, let dry and if no repairs are needed paint bottom with roller or brush using same brand of paint as was previously used for best results. While two coats are normally recommended for a good bottom job, it is a good idea to run a third coat for a distance of about 8" to 10" below the boot top. This area collects all the harbor scum and tends to get brushed harder and more often than the rest of the bottom so it can stand the extra coat.

8-2 Spars, Rigging, and Hardware

The surface of your aluminum spars is protected from corrosion by a natural film of aluminum oxide. Unfortunately in time dirt, salt, and chemical contaminants will break through this natural protective film, causing it to appear grimy and unsightly. To prevent adherence of these materials, coat the surface of your spars with a good automotive paste

wax or a commercial protective coating. Two-part epoxy paint is often used on painted spars. It consists of a prime coat, two undercoats, and a gloss coat. This product is compatible with other paints if touch up is required. A good hosing with fresh water helps, and always keep the halyards tied away from the mast. Besides protecting the aluminum oxide or painted surface it does away with the din created by halyards slapping against the mast, which makes any anchorage sound like a tin can factory.

Periodically take a trip aloft to check the entire rig. Look for signs of chafe and check all nuts, bolts, screws, cotter keys, blocks, and masthead sheaves. Make sure the spreader tips are well covered with tape or leather to protect the sails from chafe and tearing. Take along a rag and bucket of fresh water to clean the rigging and mast on your way up. A clean rig means clean sails. On your way down, re-apply whatever protective coating you have decided to use on the mast and your work aloft is done until the next time.

The halyards, sheets, and guys, along with all rope and wire splices, should be carefully checked before and after each sail for wear. Wire rigging must be examined for broken strands and signs of frayed sections which rest on sheaves. When sails are lowered, be especially careful not to pull down hard on the wire halyard. What happens is that the Nicropress thimble, which forms the loop for the dacron halyard tail, is jammed into the masthead sheaves and sheave spacer plates, causing dangerous chafe on the wire and dacron tail. The lines supplied with your boat are dacron, have little stretch, and wear very well if not abused. Sheets and vang often lead where they will rub together or chafe on lifelines. By adjusting leads or by applying inexpensive chafing gear expensive damage may be prevented. When not in use, running rigging should be tied away from the mast or neatly coiled and hung in regular locations where it can be readily found. Frayed ends may be respliced following the instructions available from Samson Cordage Works, 470 Atlantic Ave., Boston, Mass. 02210.

All blocks, sheaves, turnbuckles and winches used in conjunction with running rigging should be lubricated periodically with a light grease such as "Lubriplate" or sprayed with a protective film such as "WD-40".

Why is my stainless steel rusting? Basically it is a galvanic action and you can prevent it with a cleaning rag! If you keep the stainless hardware on your boat free of marine growth and polished it will last longer and look better. Saltwater sailors must hose off with fresh water after a hard, wet sail, and a rub down with a chamois helps.

8-3 Fiberglass Surfaces

The glossy outer surface of your laminated fiberglass boat is known as "gelcoat", a polyester resin into which coloring pigments and weathering retardants have been incorporated. It should be hosed with fresh water after every outing and routinely washed with a good mild detergent. Use a sponge on the smooth surfaces, followed by more fresh water to avoid streaking the topsides, a stiff deck brush will be helpful on the non-skid surfaces. Do not use abrasive cleaners as they will rapidly dull the gelcoat surface.

At least once a year the smooth gelcoat surfaces should be waxed and polished with a good automotive wax or a boat wax, that is especially formulated for fiberglass surfaces. A power buffer will make work on the large areas, like the hull, easier, but care must be taken not to cut through the gelcoat surface, particularly at corners and edges. Color in gelcoat, as in any material exposed to direct sunlight, tends to fade, dull, or chalk, and will require heavier buffing to bring back the original luster. For power cleaning use a light abraasive cleaner, such as Mirro Glaze #1, while a heavier rubbing compound such as Dupont #7 may be used when polishing by hand. After buffing, wax and polish all surfaces **except the non-skid areas.**

Regardless of the amount of care lavished on your boat occasional scratches, cracks, crazing, blistering, discoloring, and small gouges, along with badly crushed sections or even a large hole, are bound to appear. This is not covered under your warranty. It is best to discuss the proper course of action with your local dealer or professional who is skilled in the repair of fiberglass sailboats. Consult your marine store for additional written material.

8-4 Sails

Sails should be folded for storage whenever possible. This means always on small keel boats, and almost always on larger keel boats. If you leave the mainsail on the boom always remove the battens and then flake it down carefully, with one person at each end of the sail so that the flakes are smooth and wrinkle free, before putting on the sail cover. Proper folding will help keep wrinkles out of sails and will prolong the life of the chemical fillers in the cloth which hold stretch to a minimum. Vinyl windows should always lie entirely within one fold to eliminate creases.

In a long race or cruise it is sometimes difficult to fold large headsails, so just stuff them loosely into their sail bags. After sailing, one of the first jobs is to wash off any salt water, dry, and then fold these headsails by flaking them down in alternate folds, starting with the foot, with creases running parallel to the foot. If you remove the mainsail from the boom, fold the first flake so that

the bolt rope is on the outside. The sail can thus be put back on the boom more easily next time you sail.

Hosing down sails with fresh water to remove salt is a good idea. Also, perhaps once each year, spread the sail on a soft surface, such as a good lawn, and go over it lightly with a very mild detergent and a very soft brush. Both practices comprise good maintenance. Pay attention to your sails and if any tears, rips, or worn spots appear on the corners, slides, or headboard, or stitching begins to chafe or has been caught and pulled to pucker the sail, make a note of the damage and its location. Many small tears and worn spots can be covered with tape until it is convenient to take the sail to a sailmaker for a professional repair job. (Non-porous whit^e Johnson's adhesive tape is good.) Any rip at the edge of the sail, such as at the leech or foot of a genoa, must be fixed immediately. Tears here can spread quickly through the entire sail. Small holes in spinnakers can be covered with "Ripstop" and sewn until it is convenient to deliver to the sailmaker for a proper repair.

Quite a lot is written about sails in any book on sailing which can be found in most local marine stores. In addition, many sailmakers have several articles on sails and sail handling.

8-5 Woodwork

The exterior and interior wood trim is one of the most durable and decorative of all hardwood but it must be maintained to keep it from splitting and discoloring. It may be maintained in three ways:

Leaving the wood untreated and allowing it to weather naturally can cause splitting and a poor appearance. Bronze wool or fine sandpaper should be used periodically to clean the surface and a commercially available preparation such as Teak-Brite should be applied to combat the dull gray appearance of naturally weathered wood and help eliminate splitting.

A second way is to help wood maintain its natural color and life longer by treating regularly with an oil from most any marine hardware store.

-CAUTION-

NEVER use steel wool instead use bronze wool or sandpaper. Small filaments of steel break off and cause rust spots, they are very difficult to remove.

The third alternative for maintaining your exterior wood—varnishing—imparts the last word in a yacht finish but requires the most maintenance. However, for those who wish a "Bristol" condition yacht it is the only way to go. If you decide to varnish be prepared to add at least one additional coat approximately every four months. If the wood has been "oiled" it must be cleaned

by scraping and/or heavy sanding with #80 or #100 paper before sealing and varnishing.

While the wood still has its original color and texture, smooth with medium grit sand paper #120, dust the surface carefully and seal with a good sealer such as Brolite S-94 Clear Acrylic Sealer. Make sure you select a dry warm day, and do not seal or varnish much after noon as afternoon dampness will prevent proper drying and cause your varnish job to look discolored and uneven. Allow the sealer to dry at least overnight, then smooth the raised grain with #120 paper, dust carefully, and apply the first coat of a good quality spar or clear urethane varnish. The second and third coats are applied with at least a day's wait in between and

sanding with #120 or #180, depending upon the roughness of the grain, will provide a minimum varnish covering for your exterior wood trim. Four or five coats are better, now sanding in between with #180 sandpaper, and several thin coats always result in a far superior finish to a lesser number of thicker coats. A good rub with a chamois after hosing down will keep the gloss and also lengthen varnish life.

It should be noted there are teak oils available which will achieve the same appearance as varnishing however, their application is different. Deck's Ojle #1 and #2 is such an oil which has been reported to be more durable than the standard varnish application.

9-0 Sailing Tips

With the large number of books about sailing readily available it may seem strange that we would also want to venture into this area. We would like to recommend those books that deal primarily with the handling of the keel type sailboat you now own.

9-1 "Federal Requirements for Pleasure Craft"

CG-290, January 1970, deals mainly with requirements for a motor boat, but when under power a sailboat becomes a "Motor boat". Numbering Requirements, Coast Guard Approved Equipment, Required Lights and Safety Suggestions form the major part of this leaflet.

9-1.1 "Coast Guard Auxiliary Courtesy Exam" AUX-204

This leaflet covers most of the above, but also explains one of the several services performed by members of the Coast Guard Auxiliary. It contains a directory of the Auxiliary so you may communicate with the Flotilla nearest you.

9-1.2 "Forget to Bring this Guy Along and Your Boat May Never Forgive You" DBW -2

An excellent booklet on marine fire extinguishers printed by the State of California, the information will apply to any area in the United States.

9-1.3 "Personal Flotation Devices" DBW-5

The same idea as 9-1.2. You should also check your local state agency about regulations that might be different for your own area.

9-2 Navigation and Piloting

9-2.1 "Rules of the Road"

This publication contains the International and Inland Rules and Regulations for the primary purpose of preventing collisions between vessels. To insure the safety of your boat and passengers it is imperative that **all persons** operating your boat be familiar with them and conform strictly to them at all times.

9-2.2 Charts and Publications

In order to obtain accurate marine information, the United States has been supplying nautical charts and books on U.S. coastal waters since 1839. Three major areas are covered: Atlantic and Gulf Coast; Pacific Coast and Hawaii; and Alaska. A catalog for each may be obtained from Distribution Division (c44), National Ocean Survey, Riverdale, MD 20840.

9-2.3 "Marine Aids to Navigation"

This is a publication dealing with the basic principles underlying the marking of coasts and waterways of the

U.S. with lights, day beacons, fog signals, radio beacons, Loran, and buoys.

9-3 "Coast Guard Assistance"

A form that can be obtained from your local Coast Guard District Office, it contains important information explaining "How you can help us to help you". The material contained on this form could really get you out of a serious situation and its importance to you cannot be overlooked.

9-3.1 "Emergency Repairs Afloat"

This publication deals mainly with engine trouble shooting, but also contains some good tips on emergency repairs and staying afloat, along with basic tools and parts to have onboard.

9-4 UNDERWAY — AT LAST!!

WELL, ALMOST!! There are still a few things to do before we are actually sailing, and these will be covered immediately.

9-4.1 Preparation and Casting Off

To minimize confusion after leaving the slip, and to avoid leaving the sails or something of equal importance ashore, it is a good idea to have **all** the sailing gear rigged before casting off. Unless you will be under power for some time, sails should be bent on and ready for hoisting, or at least be stowed in their order of need.

The only items on deck should be those that are absolutely necessary for sailing. Anything else should be properly stowed below or, in the case of a dinghy, well secured on deck or in its davits or towed astern. Loose deck gear such as winch handles, spinnaker poles, flashlights, spare line, etc., **must** be secured to keep them from going overboard **even** when under power. The wake of some power boats is enough to toss even the largest sailboat about and could do considerable damage. Naturally all items stowed below should always be in the same place to simplify the job of locating them when they are needed.

If you have an inboard engine, remember to let the **blower** run for at least 5 minutes prior to starting the engine. During this time check over what we have just been discussing, along with the engine check-list, and if all is in order start up the engine, cast-off, and **LET'S GO SAILING!!**

P.S. Don't forget to pull in the fenders and dock lines.

9-4.2 Bending On and Hoisting Sails

Normally the mainsail is left on the boom, so just insert the battens, into their proper pockets, and attach the main halyard. But first look aloft to make sure it is

clear. With the mainsheet and cunningham slack, head into the wind and hoist to the **bottom** of the black band at the mast head. Loosen or cast off the topping lift and adjust the outhaul and cunningham tension for the anticipated wind strength—light winds, light tension—heavy winds, heavier tension.

While still powering head-to-wind, hoist the jib and apply halyard tension in relation to the expected wind strength. There must be at least enough tension so that the luff of the jib is straight without the “scalped” effect between the jib hanks. As helmsman, position yourself so you will be on the windward side, turn 90° so the wind is abeam, secure the engine, align the prop as recommended in Section 5-3.6, and **let's SAIL!**

9-4.3 Reaching and Steering

You will probably be able to learn more about sail trim and steering on this point of sailing than any other. It also will be the fastest and probably the most fun! When the wind is at right angles (90°) to the boat, you are **BEAM REACHING** and the sails should be let out as far as possible so they present the maximum area to the wind. You will also note that when the sails are properly trimmed there should be little pressure on the helm.

The trick in getting this proper trim is to balance the pull between the sails and usually the **JIB** is trimmed first. In order to properly trim the jib, the lead block will normally be set so that the sheet will bisect the clew angle. As the jib is gradually let out it should “break or luff evenly along the headstay. If the lead is too far forward the jib will break down low; if too far aft it will break up high. It is usually better to set the leads too far back than too far forward, especially on a reach.

Next we want to tape a couple of 6” to 8” lengths of light yarn or recording tape as “Tale Tales” about 6 to 7’ up on both sides of the jib and 6 to 8” back from the luff. The jib is now trimmed so that **both** yarns are flowing aft. If the jib is in too tight (over trimmed) the windward “Tale” will stall, and visa versa. This also is a great help in steering, as once the sails are set, if you steer too **high** the **windward** “Tale” will stall, and vise versa. You will find that by following the advice of these pieces of yarn you will **not** be steering a straight course, but a course that follows the slight shifts and velocity changes of the wind. This is the **fastest** and **proper** course to steer as the sails are always at their proper angle to the wind without having someone constantly trimming sheets.

The mainsail is now eased out until it is backwinded and caused to luff slightly by the jib, and then trimmed in just enough to remove this “bubble” from the luff. At this time the **boom vang** should be rigged to control the leech tension, thus getting the optimum shape and drive from the main. Keeping the weight on the windward side (except in drifting conditions) and aft, will also help

reaching performance, while keeping everybody dry and happy!

You will also notice that with a balanced (spade) rudder, the boat reacts very quickly to the slightest movement of the helm. The balanced rudder is somewhat like a high aspect airplane wing and can also “stall out” if moved too quickly or turned too far beyond 30° in either direction. By now it is also apparent that steering with a **tiller** is different than with a **wheel**. Wheel steering is common on many boats over 25’, as it allows for more power to be applied to the larger rudder. Naturally wheel steering is just like your car. With the **tiller**, everything is opposite and there is greater “feel” since the action of the rudder is transferred directly to your hand. By keeping a light touch on the tiller you can easily tell which way the boat wants to go and make the necessary steering corrections. Usually a slight weather helm is preferred. In other words, if you let the tiller, or wheel, loose, the boat will gradually turn into the wind. The best control is found by using steady pressure on the helm and this feeling will become more apparent with the following maneuvers. We can't keep on reaching in one direction forever, so we better turn around and try the other tack.

9-4.4 Tacking and Gybing

If the boat is turned **INTO** and **ACROSS** the wind we have tacked. If we turn **AWAY** from the wind, we have gybed. Tacking is the safer, especially in strong winds, as there is better control over the mainsail. When gybing, the trick is to trim in the main as fast as possible and let the sheet run out quickly when the main boom swings over to the other side.

Before you tack or gybe, let go the **boom vang**, unless it is led to the base of the mast, and set it up on the new, lee side. Trim sails for the return course, and then tack and gybe a few more times. The advantage of tacking and gybing from a reach to a reach is you have more time for the turning maneuvers and it gives the crew a chance to figure out where to move and who does what without rushing. It also is excellent practice for the helmsman as he can get the feel of the balanced rudder and how much, or little, rudder angle is needed to turn.

9-4.5 Beating

Probably the most difficult point of sailing is going to windward or **BEATING**. From a reach, gradually trim in the sails while coming up to about 45° to the **true wind**. This point will be reached when the jib is trimmed in so it **almost** touches the spreader tip and the main is sheeted in hard. By watching the yarns on the jib a course is steered that will keep **both** yarns flowing aft all the time.

Now the fine tuning takes place, and it will require many hours of concentration and unlimited patience. A

compromise must be reached between pointing and boat speed. The closer you head into the wind the slower you will go, but will "point" closer to the windward mark. As you bear off you pick up speed, but lose distance to windward. This compromise is also affected by wind and sea conditions; you can point higher in smooth water but must fall-off more in chop. **The sails must be trimmed in harder and flatter as the wind increases, and eased out in light air.** The adage that "races are won or lost on the windward leg" will soon become apparent!

Since a boat cannot sail directly into the wind, changing course by 90° through the eye of the wind is tacking. The main will take care of itself, but the jib must be changed each time; which can be a hard job unless the helmsman helps out. A large keel boat has enough weight so that it can "forereach" a few boat lengths while pointed directly into the wind without losing headway. This gives the jib time to swing over to the new leeward side and your crew time to trim it in **before** it fills with wind! Nice smooth tacks keep your winch grinders happier and results in a better, more efficient tack. Prior to tacking **be sure everybody is ready!!** The command "stand by to come about", gives ample warning in case somebody isn't ready for the actual "helm's a-lee!" Don't forget to be sure and check that the new sheet is led **clockwise** around the winch with no more than two turns. Once the sheet has been pulled in as far as possible by hand, throw on a couple more turns, put in the handle and grind in the rest, but watch the spreader tip!

9-4.6 Running

After beating to windward long enough to make everybody tired and hungry, turn "down hill" and **RELAX!**

This is the easiest point of sailing, as the main is let all the way out until it just rests on the lee spreader and shrouds. By keeping the wind just off the windward corner of the transom, the jib will also slightly fill on the lee side, or it can be winged out to windward with a pole. By not sailing directly "dead-downwind" there is less chance of an accidental gybe and steering is easier. Setting up the vang will also keep the main from accidentally gybing if you do happen to sail by the lee momentarily. Of course this is the point of sailing where the spinnaker is used. This is really a racing sail, and we're just out for fun. We will refer you to a local expert for help with this beautiful, yet frustrating, sail.

9-4.7 Docking and Securing

After checking the engine it is started and the boat is headed into the wind to lower sails. The jib is dropped directly on deck and gently stuffed and tied forward to be later folded on the dock. Hook up the topping lift to the main boom and then lower the mainsail. Remove the battens, slack the outhaul and flake down the sail smoothly on the boom and put on the cover.

All halyards should be led away from the mast and secured to the rail. This saves the mast finish and also does away with the annoying clatter of halyards against an aluminum mast when at anchor.

When leaving the boat be sure the Electrical Switches have been turned off and all thru-hull valves, except the cockpit drain valves, have been closed.

Care should be taken to tie the boat in the slip in order to avoid any harmful conditions which might develop prior to using the boat again. Nylon mooring lines are recommended as they are durable, strong, and have sufficient "give" in the event of sharp jolts or rolls of the boat. Bear in mind that boats are often left un-attended longer than anticipated.