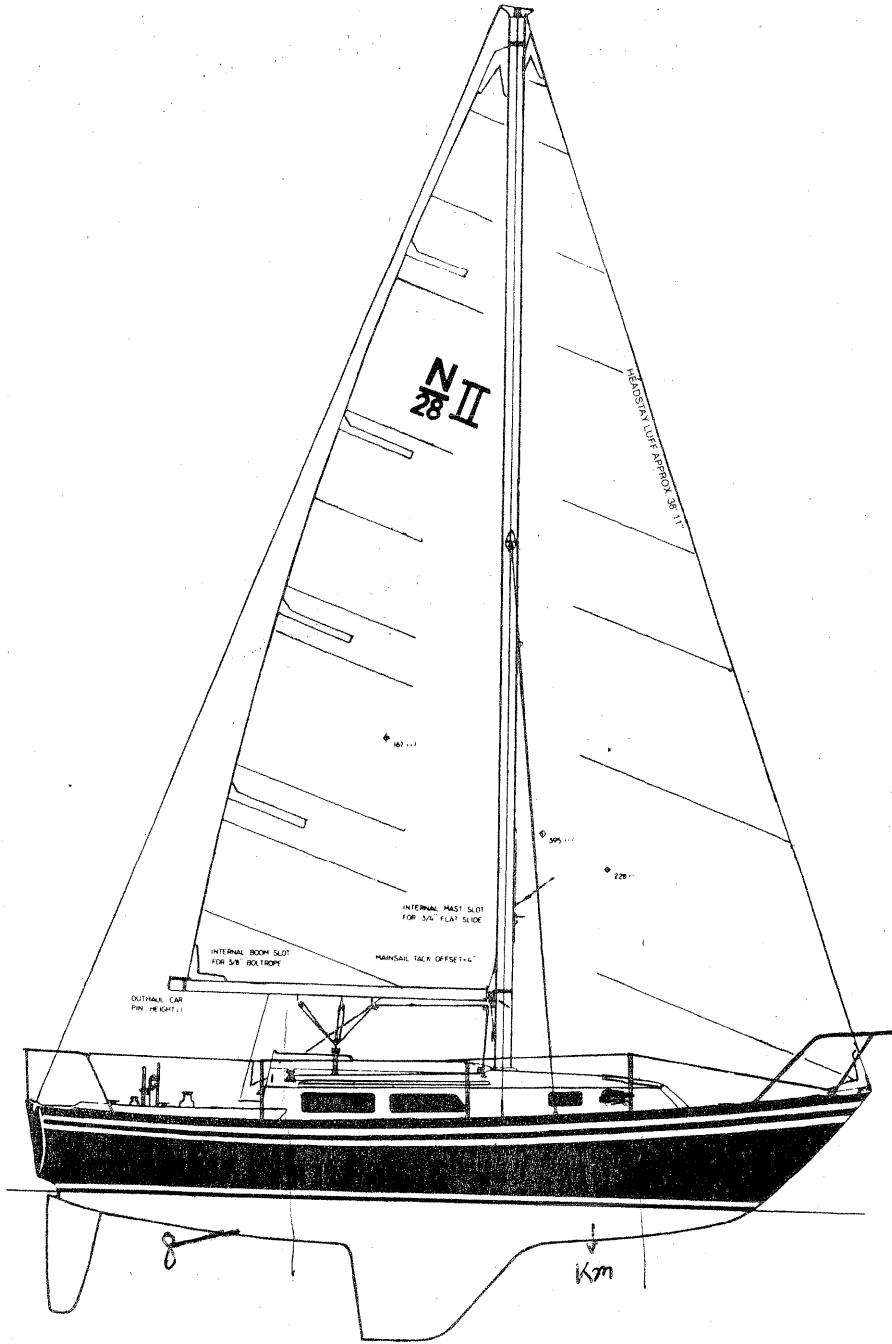
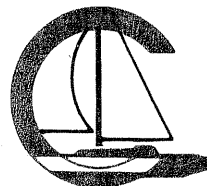


OWNER'S MANUAL



newport 28II

Hull No. _____



CAPITAL YACHTS, INC.
NEWPORT • NEPTUNE • GULF
25914 PRESIDENT AVENUE
HARBOR CITY, CALIF. 90710
~~(213) 530-4941~~

Dear Newport Owner:

Your new Newport 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 and metal toe rails, etc., require resealing and/or retightening.

Because of these climatic and use conditions, Capital Yachts cannot guarantee these windows, stanchions, or metal toe tails, etc., from leaking on a new boat. Please note that in the case of metal toe rails, several tightenings may be required after sailing until leaks stop. 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

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Dear Newport Owner:

Welcome to the Newport 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 Newport 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.

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

Capital Yachts, Inc.

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, lead keels, heavy duty rigging and hardware, and interior designs for extended blue water sailing at a 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.) In the beginning the odds were heavily against them, but due to their great desire and vast experience, they entered into the sailboat manufacturing business. As it turned out, 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 tells the rest of Capital Yachts’ history.

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 Newport 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 Newport 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 physical makeup and pigmentation used in the gel-coat 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. Even though we use top quality materials and procedures to achieve the best gel-coat finish available, we are unable to warranty the hardness and finish of gel-coat. It is considered to be in an as-is condition along with all the other paints and finishes on your boat at the time of delivery.

Depending on many factors beyond our control, your boat may be subject to blistering below the waterline. A protective barrier of epoxy coating before applying bottom paint before the first launch or at the first sign of blistering is believed to help prevent this occurrence. This is not a guaranteed procedure against blistering it is a suggested method to help prevent possible blistering.

3. In order to determine the cause and extent of a problem precipitating a warranty claim, a Newport 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.



CAPITAL YACHTS, INC.
 BOX 327
 25914 PRESIDENT AVENUE
 HARBOR CITY, CALIF. 90710
 (213) 530-1311

1-1
 NEWPORT SAILBOATS
 LAUNCHING & COMMISSIONING RECORD
 TO BE RETURNED WITH WARRANTY CARD

DEALER: _____

HULL NUMBER: _____

OWNER: _____

CLASS: _____

DATE DELIVERED: _____

DATE SOLD: _____

PLANT: _____

OPERATION
BEFORE LAUNCHING:

OPERATION
BEFORE STARTING ENGINE:

1. Optional epoxy primer prior to bottom paint.
2. Bottom clean and paint OK
3. Hull sides clean and finish OK
4. Bright work clean and finish OK
5. Decks clean and finish OK
6. Interior clean and fits
7. Upholstery clean and fits
8. Mast clean and complete
9. Through hulls closed
10. Bilge pump connections OK

25. Ignition and wiring connected
26. Throttle and choke cable OK
27. Clutch control and cable OK
28. Crankcase oil level at "Full"
29. Reverse gear oil level "Full"
30. Engine intake water open
31. Dual fresh water cooling expansion tank "Full"

WITH BOAT IN WATER:

STARTING ENGINE:

11. No leaks, outboard well, through hulls, shaft log, rudder post
12. No leaks through hull fittings when open
13. Hose test window & cabin leaks
14. All electrical equipment operates
15. Water pressure system operates
16. Fuel and water tanks checked for leaks
17. All toilets operate OK
18. With coupling disconnected, engine & shaft alignment OK

32. Oil pressure and exhaust water flow OK
33. No fuel leaks, fittings, carburetor, filters
34. No engine water leaks
35. No engine oil leaks
36. Reverse gear shifts through all positions
37. Adjust inside stuffing box and lock nut

RIGGING & EQUIPMENT:

WATER TEST BOAT:

19. Check hardware & optional items against invoice
20. Wind & through-hull instruments work
21. Winch handles fit
22. Halyard lengths OK
23. Rigging, including toggles correct length
24. All mast lights work before stepping

38. Engine instruments register OK
39. Sailing instruments register OK
40. Mast alignment OK
41. Roller reef & outhaul OK
42. Check & tighten, as necessary, keel bolts, rigging
43. Boat steers & balances under sail
44. Owners's packet & accessory literature ready for owner
45. Warranty card made out to be mailed to factory

COMMENTS _____

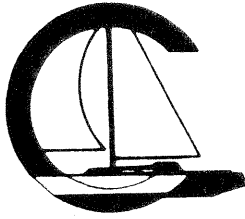
DATE: _____

This must be returned with Warranty Registration (in order for warranty to go into effect) to:

CAPITAL YACHTS, INC.
 P. O. BOX 327
 25914 President Ave.
 Harbor City, Calif. 90710

 CUSTOMERS SIGNATURE

 SERVICE MANAGER SIGNATURE



CAPITAL YACHTS, INC.

1-5 WARRANTY CLAIM REPORT

(to be executed by the Authorized NEWPORT Dealer)

DEALER _____

OWNER _____

Address _____

Address _____

YACHT CLASS _____

YACHT NUMBER _____

YACHT NAME _____

LOCATION _____

DATE YACHT SOLD _____

Address _____

ENGINE NUMBER _____

Slip Number _____

CLAIMS COVERED BY WARRANTY:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

ESTIMATED COST OF REPAIRS:

	MATERIAL	LABOR	TOTAL
\$			
\$			
\$			
\$			
\$			
\$			

CLAIMS AUTHORIZED BY MANUFACTURER:

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

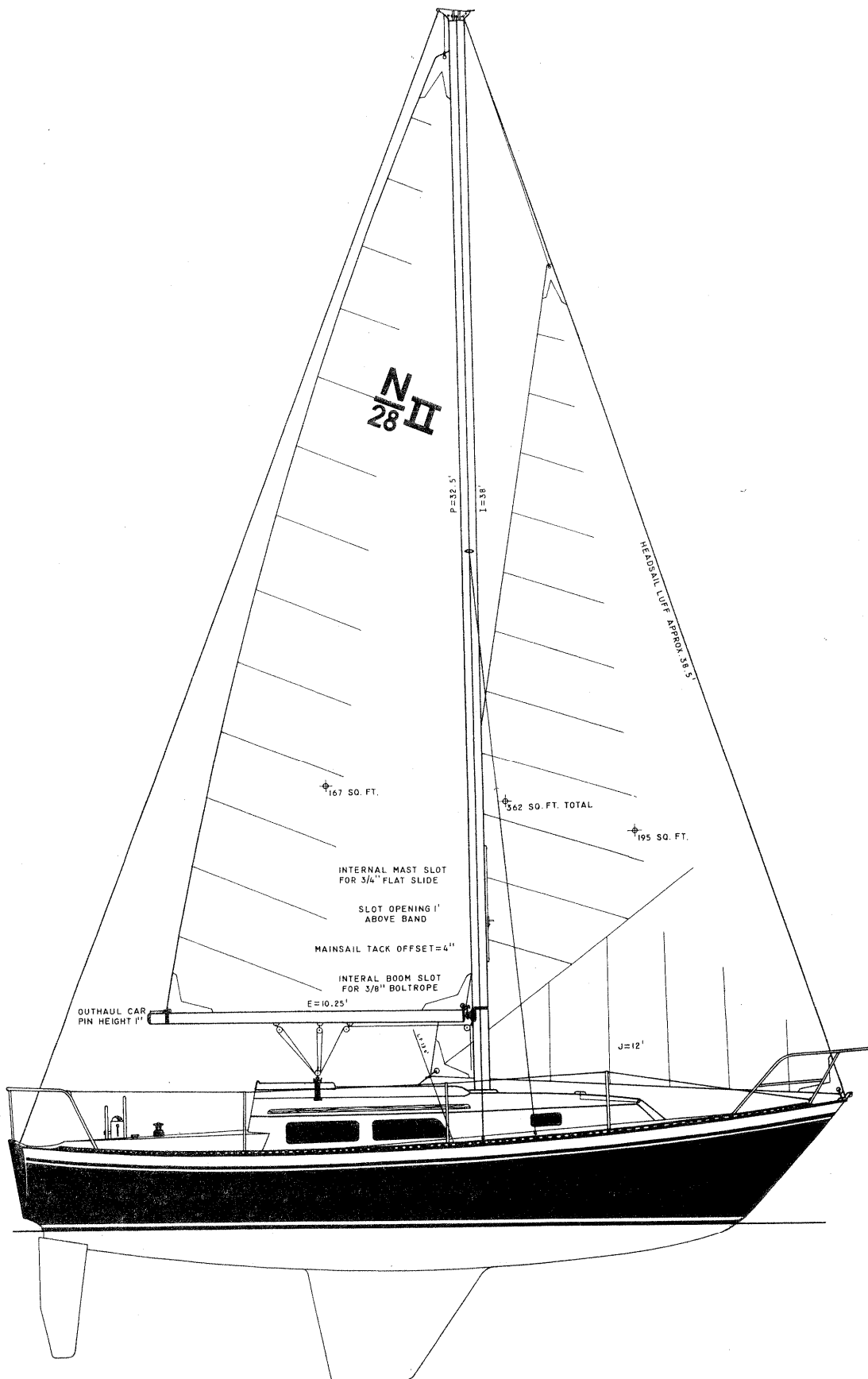
WARRANTY REGISTRATION CERTIFICATE RECORDED AT FACTORY - YES NO

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.



Newport 28 II Sailplan	
CAPTA YACHTS INC 2814 PRESIDENT AVENUE HARBOR CITY, CALIF 94746 (415) 882-1811	DWG. NO. 2-1
DATE 7-82	

SOME ITEMS SHOWN ARE OPTIONAL

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 Newport boats is a solid lead and alloy keel. The galvanized iron keel bolts are permanently locked in place by positioning them in the keel at the time it is poured. An epoxy adhesive is applied to the top of the keel before it is bolted to the keel recess in the hull. A fiberglass cloth is bonded over the entire joined area to further seal it. A resin filler mixture is poured into the keel recess and allowed to harden. The covered keel bolts and their nuts are now permanently locked and insured of never having water come in contact with them.

The area of the hull to keel joint and the entire keel is now coated and faired in with a resin based fairing agent. The whole area is then ground smooth and more micro-balloons are applied to any hollow spots. This process is repeated until the entire installation is smooth and uniform. It is then sanded and is ready for bottom paint.

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. In parallel with this operation, the deck headliner is molded in a separate mold in a similar manner as the deck. When it is cured, it is bonded onto the deck and weights are applied to insure a complete continuous bond over the entire surface.

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 wir-

ing, 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 (N/41), 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.

Pedestal Steering

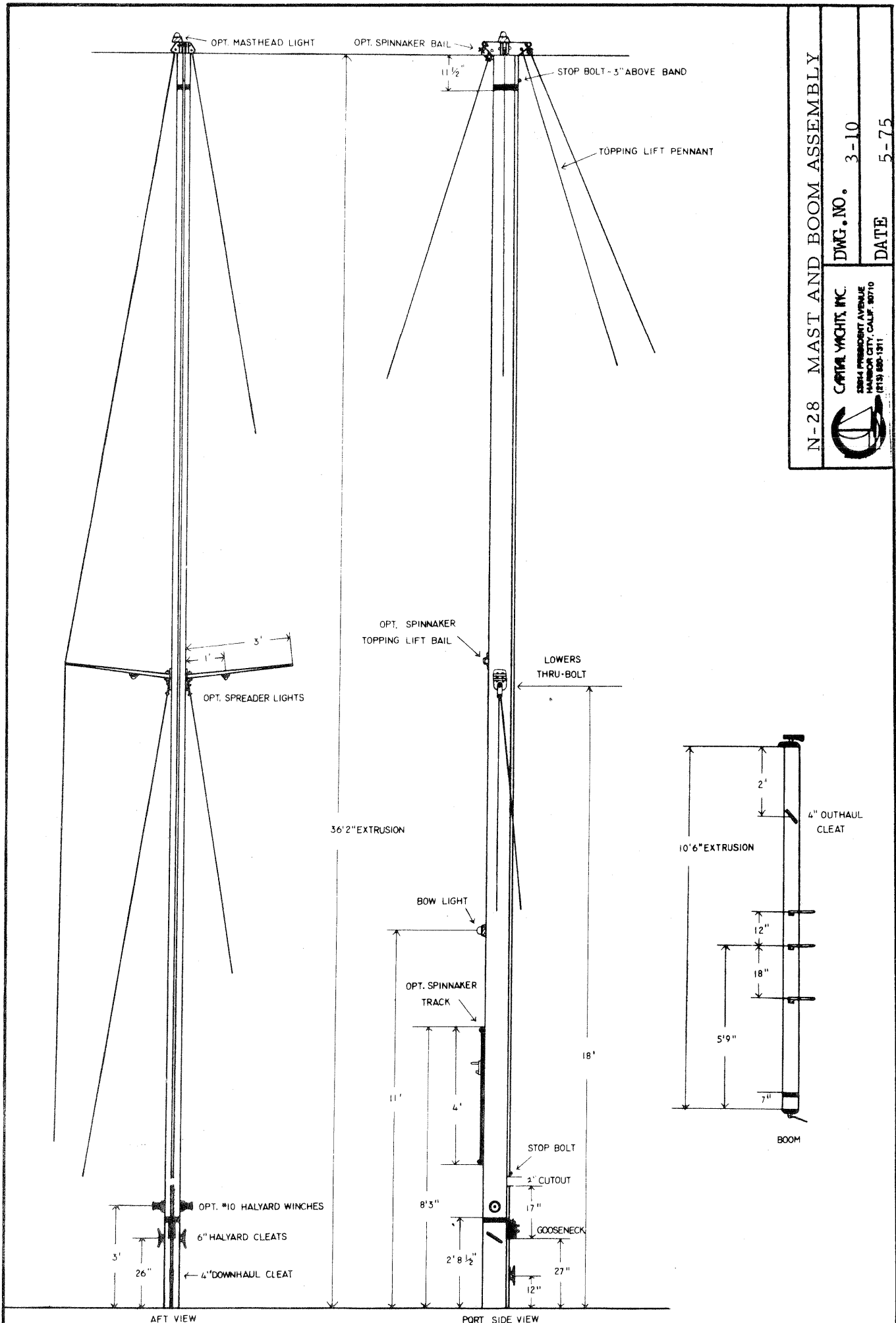
The pedestal on the optional factory installed pedestal steering unit is cast from a corrosion resistant

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.

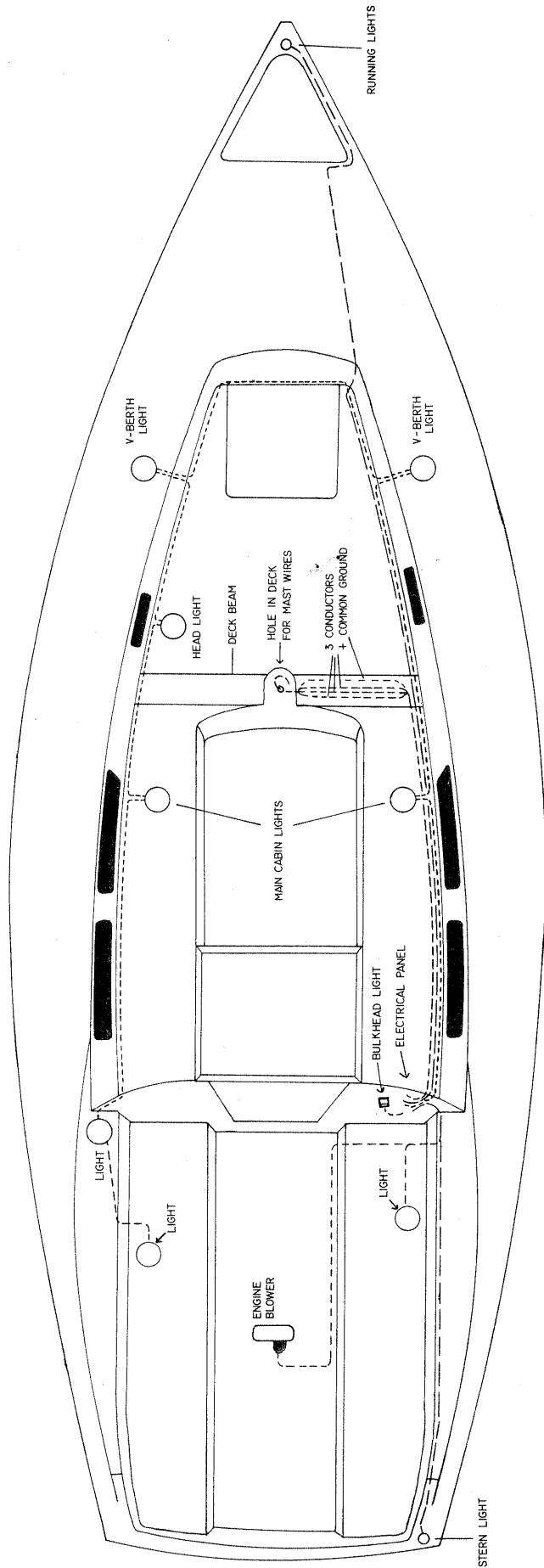
Aluminum steering wheels are coated with white nylon, while the larger stainless steel steering wheels are polished and may be partially coated with white nylon.

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.

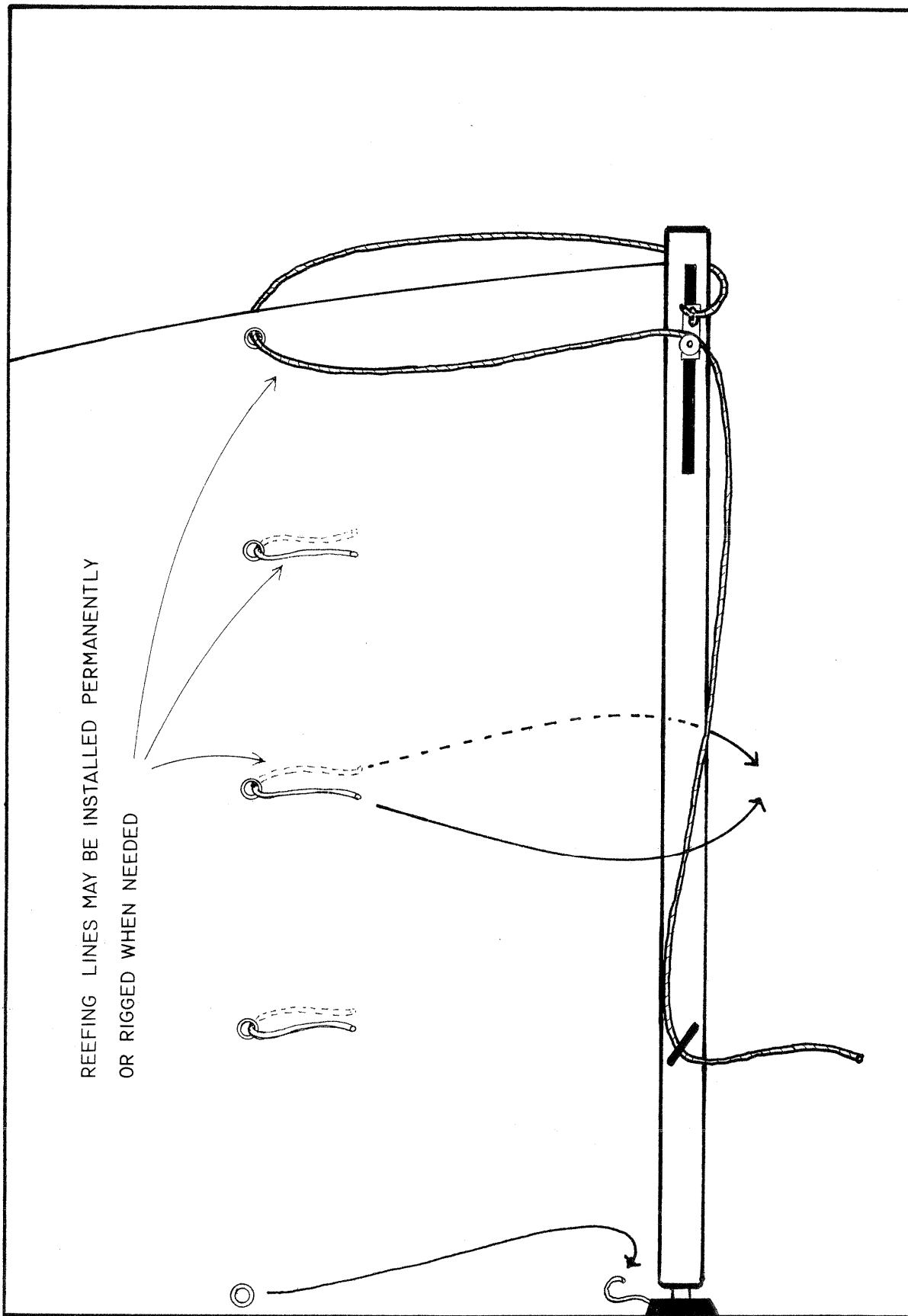


N-28 MAST AND BOOM ASSEMBLY	
CAPITAL YACHTS, INC.	DWG. NO. 3-10
2384 PRESCOTT AVENUE MARLBOROUGH CITY, CALIF. 90710 (714) 888-1311	DATE 5-75




NEWPORT-28 DECK WIRING DIAGRAM	
CAPITAL YACHTS, INC.	DWG. NO. 4-3
28914 PRESIDENT AVENUE HARBOR CITY, CALIF. 90710 (415) 530-1311	DATE 7-79





REEFING LINES MAY BE INSTALLED PERMANENTLY
OR RIGGED WHEN NEEDED

Jiffy Reef System	
	DWG. NO. 3-12. DATE
CAPITAL YACHT INC 2814 PRESIDENT AVENUE HANFORD CITY, CALIF 97710 (213) 830-1311	

3-16 DATE 10-81

NEWPORT SPINNAKER GEAR LIST

- 2- SPINNAKER SHEETS 3/8" LINE X 60' YACHT BRAID
- 1- SPINNAKER HALYARD 3/8" LINE X 95' YACHT BRAID
- 1- TOPPING LIFT LINE 5/16" LINE X 65' YACHT BRAID
- 1- FORE GUY LINE 5/16" LINE X 35' YACHT BRAID
- 5- SNAP SHACKLES
- 1- SPINNAKER TOGGLE AT TOP OF MAST
- 1- TRACK ON MAST WITH SPINNAKER CAR
- 5- 6" 2 HOLE CLEATS
- 5- BLOCKS (TOPPING LIFT, SPINNAKER HALYARD,
FORE GUY, TOE RAIL PORT & STARBOARD)

SPINNAKER POLE LENGTHS - DOUBLE BRIDLE

N-28 II
12' 1 1/2"

N-30 MK III
12' 8"

N-33
13' 0"

Spinnaker Gear Layout

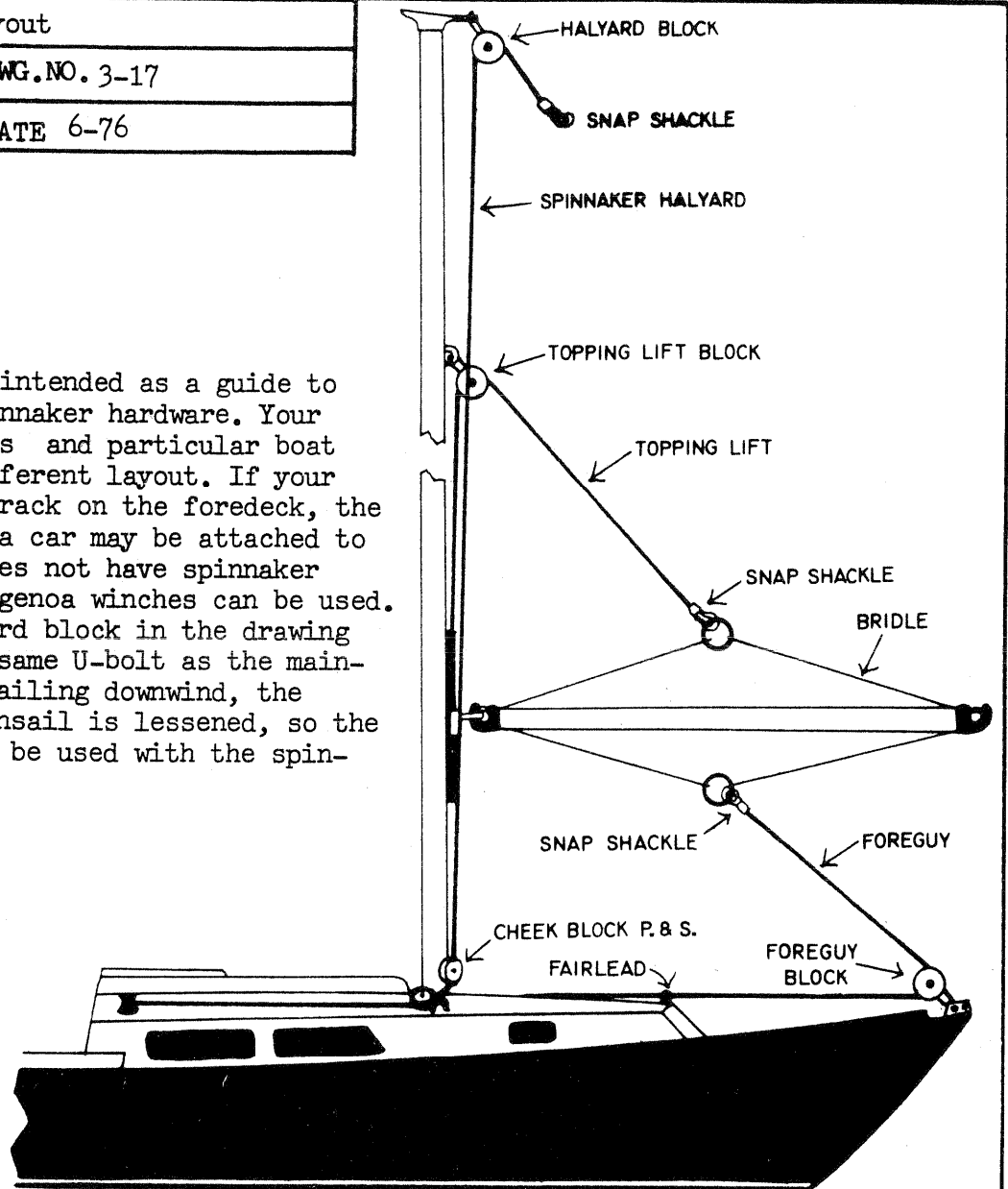


CAPITAL YACHTS, INC.
 22014 PRESIDENT AVENUE
 HARBOR CITY, CALIF. 94710
 (415) 888-1211

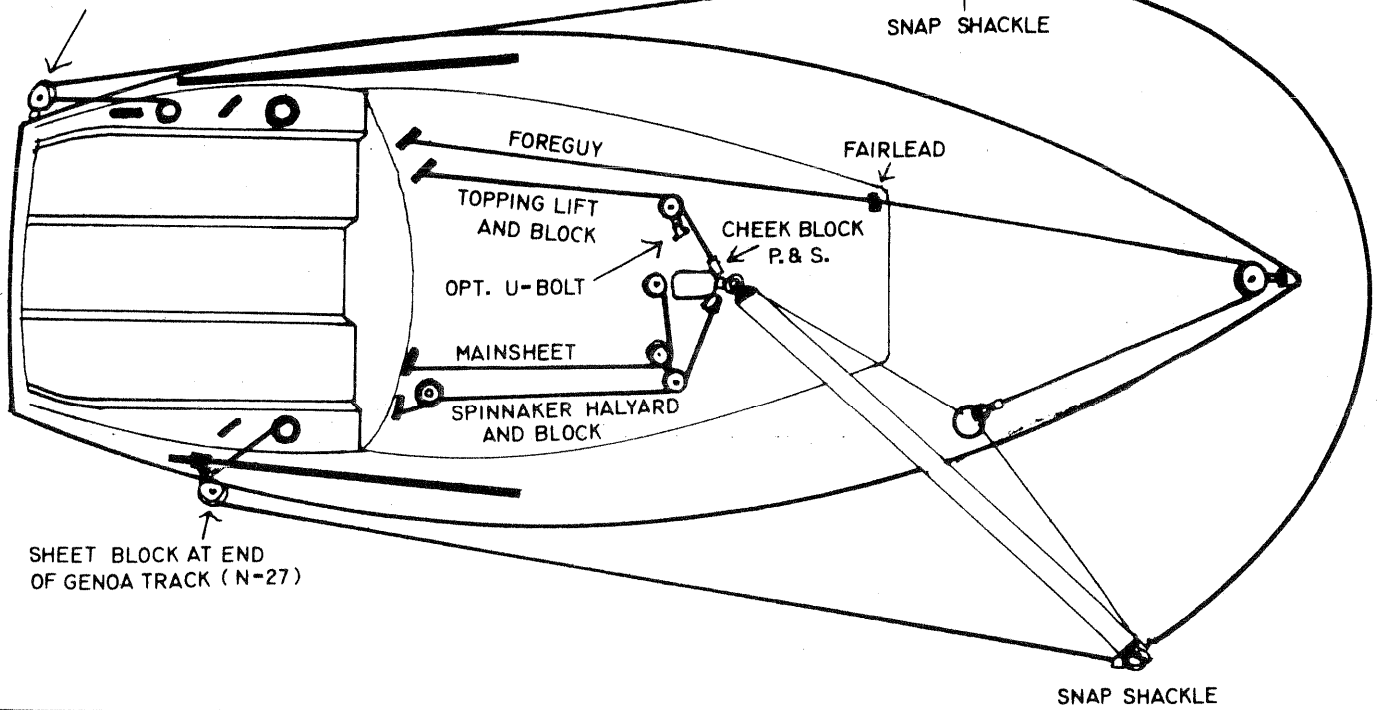
DWG. NO. 3-17

DATE 6-76

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 block 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.



SHEET BLOCK AT
 END OF TOERAIL (N-28, 30 & 41)



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	Below 11	... Very low battery charge
Running or	11 - 12	... Low battery charge
at Idle	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**. Note that panel and meter illumination is also provided by this same 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, operate the **blower for five minutes**, and 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 an automotive 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 while under sail or moored.

4-2.2 Mast Head Light

This 32 point white light meets the international and inland rules for a light to be used when at anchor. It has a GE-68 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.

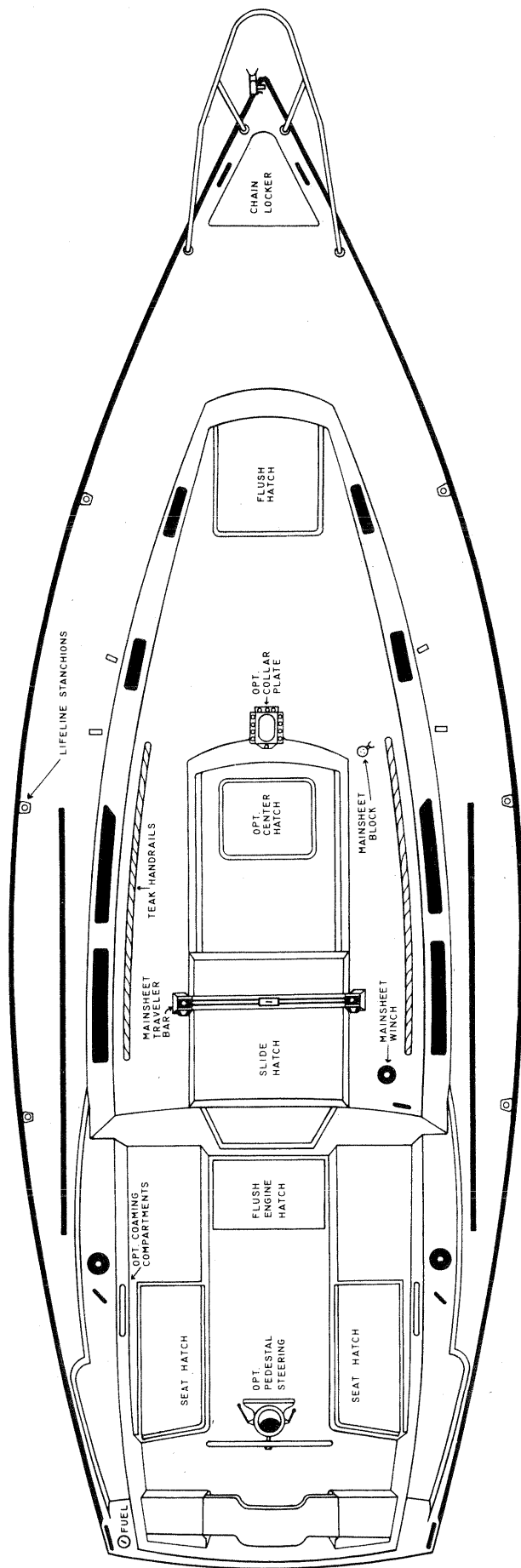
4-2.4 Spreader Lights

When optional spreader lights are installed at the factory, they are mounted on tubular aluminum spreaders, approximately $\frac{1}{3}$ 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.

Deck View



NEWPORT 28 II DECK HARDWARE LAYOUT	
CAPITAL YACHTS, INC. 25014 PRESIDENT AVENUE HARBOR CITY, CALIF 90710 (213) 630-1311	DWG. NO. 3-11
	DATE 8-82



5-0 Engine Operations

5-1 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 pro. Store fuel tank on level surface and secure with straps.

5-2 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.

5.2.1 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 eight thousandths (.008) 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, retighten anything that has been slacked off and recheck for excessive gap, it is still satisfactory, replace bolts in shaft coupling and tighten.

5-2.2 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 should be 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 packing that 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.

5.2.3 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 tank's related information.

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

The Electric Fuel Tank Gauge has been adjusted to read EMPTY with approximately 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 fuel tank can result in water condensation, which reduces fuel effectiveness to ignite properly.

5-2.4 Starting the Engine

When starting an engine, double check the specific engine manual, then:

1. Index the Master Power Switch to the strongest or starting BATTERY.
2. **Open the engine water intake valve.**
3. Check oil and fuel levels.
4. **Shift lever in Neutral Position.**
5. Turn on ignition switch and turn starter switch on.

When engine starts:

6. Check OIL PRESSURE by listening for Horn Device. if Pressure is low, Horn will sound indicating low oil pressure or excessive water temperature. Stop Engine and check Oil Level, Water Intake Valve and Water Pump.
7. If water does not begin to flow out of the **transome thru-hull** in 1 to 2 minutes, **STOP** the engine and check **water intake valve and cooling system.**

5-2.5 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 Engage at Idling RPM's only. Damage Stopped: could result if engaged at much over 900-1000 RPM

Shifting **Boat Moving Forward:** Engage at RPM Forward: 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 900-1000 RPM.**

Shifting **Boat Moving Aft:** Engine at IDLE and Forward: 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 Regardless of the boat's forward move- into ment the blades will open at idle and then Reverse increase throttle 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 you wish to increase hull speed then check your prop size and pitch and verify with dealer or factory as to available changes.

5-2.6 Securing the Engine

1. Reduce RPM to IDLE and shift into NEUTRAL and turn OFF the ignition switch.
2. To reduce the drag of 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 reverse.

5-2.7 Winterization

In all boats with inboard engines that are shipped to areas that have below freezing temperatures, the cooling system has been 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.

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.

5-2.8 Galvanic Corrosion (Electrolysis)

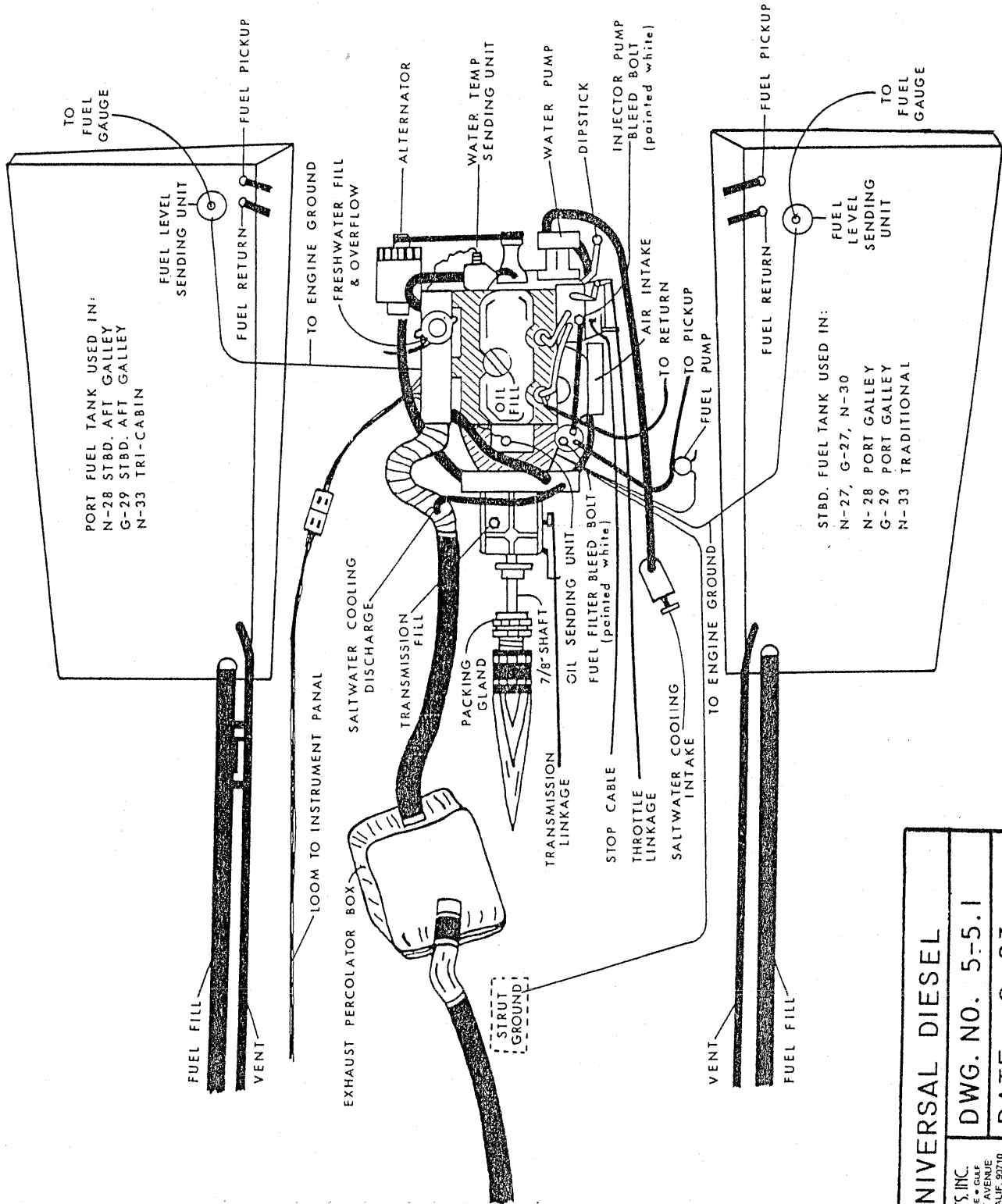
When two dissimilar metals are immersed in the conductive solution like sea water, condensation (with dissolved impurities), or the dampness that is often found on boats, an electric current may flow through the water from the metal that reacts more strongly with the solution to the metal that reacts 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 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 all 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 most areas.

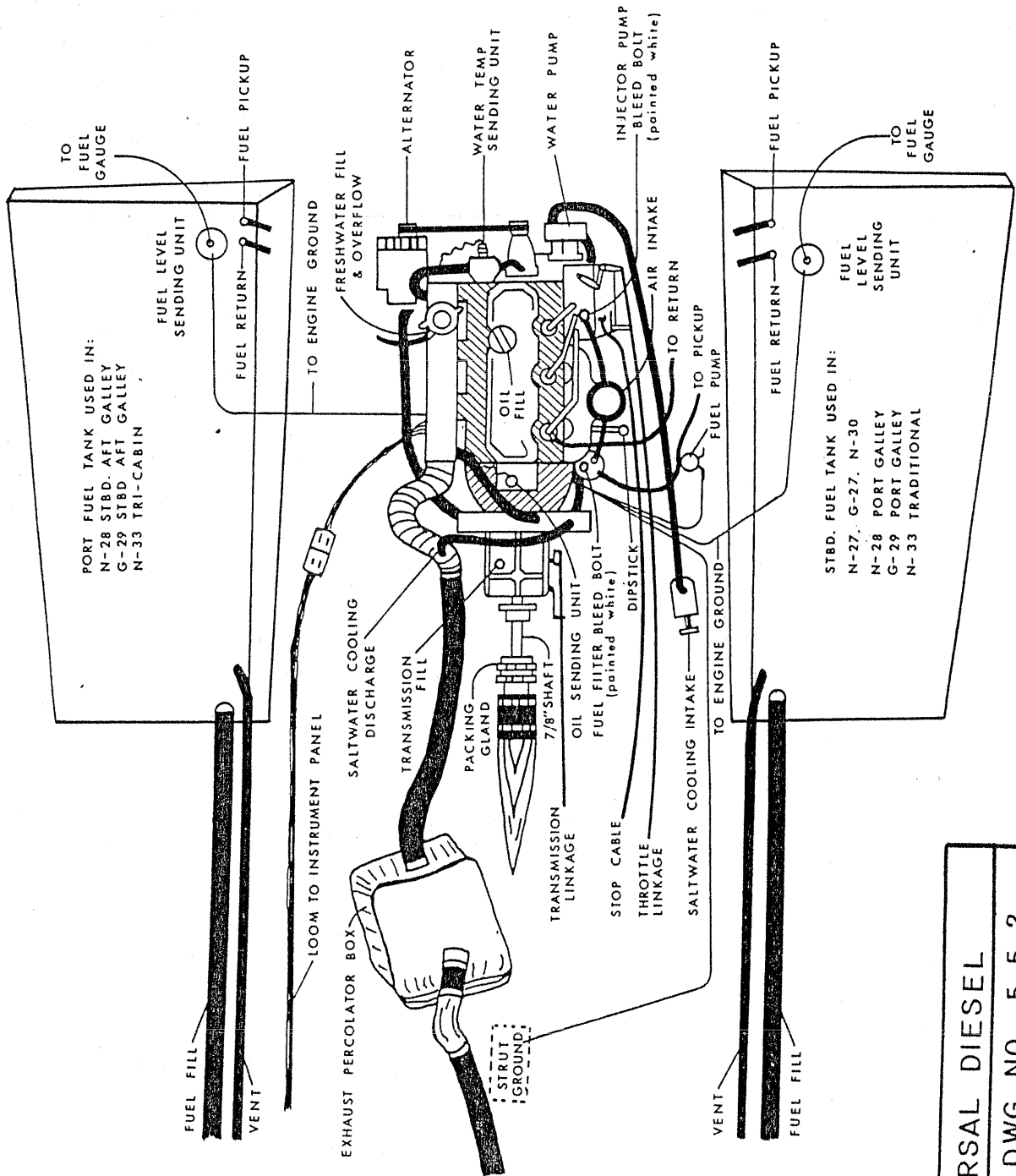
On Capital boats, a zinc collar is fitted on the propeller shaft to control initial galvanic corruptions (electrolysis). Once the boat is launched, however, it is the owner's responsibility to protect the metals on this boat against galvanic corrosion and replace zincs as often as necessary.




PORT FUEL TANK USED IN:
 N-28 STBD. AFT GALLEY
 G-29 STBD. AFT GALLEY
 N-33 TRI-CABIN

STBD. FUEL TANK USED IN:
 N-27, G-27, N-30
 N-28 PORT GALLEY
 G-29 PORT GALLEY
 N-33 TRADITIONAL

18 H.P. UNIVERSAL DIESEL	
DWG. NO. 5-5.1	
DATE 9-83	
<small>CAPITAL YACHTS, INC. NEWPORT • NEPTUNE • GULF 2305 PRESIDENT AVENUE NEWPORT CITY, CALIF. 92710 (213) 538-1311</small>	



25H.P. UNIVERSAL DIESEL	
	
CAPITAL YACHTS, INC. 25014 PRESIDENT AVENUE HARBOR CITY, CALIF. 90710 (213) 539-1311	
DWG. NO. 5-5.2	DATE 9-83

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 your 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)

6-4.2 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 both thru-hull valves are open. Riase 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.

6-4.3 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. 6357 Arizona Circle, Los Angeles, Ca. 90045. Phone 213/776-6720.

6-4.5 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 not other reason than that 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.

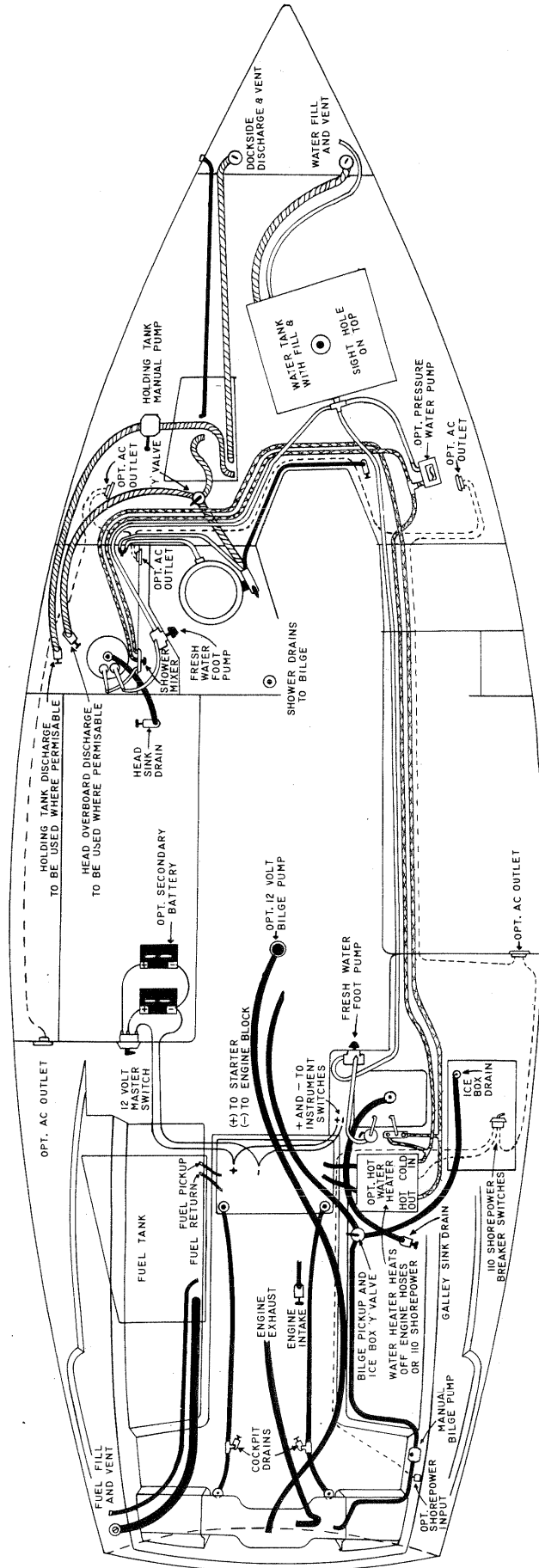
In the event your Marine Toilet is worn or has not had proper care, it is recommended that the pump unit be

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.



NEWPORT 28 STBD AFT GALLEY PLUMBING DIA.

CAPITAL YACHTS, INC.
 25014 PRESIDENT AVENUE
 HARBOR CITY, CALIF 90710
 (213) 630-1311

DWG. NO. 6-7

DATE 8-82



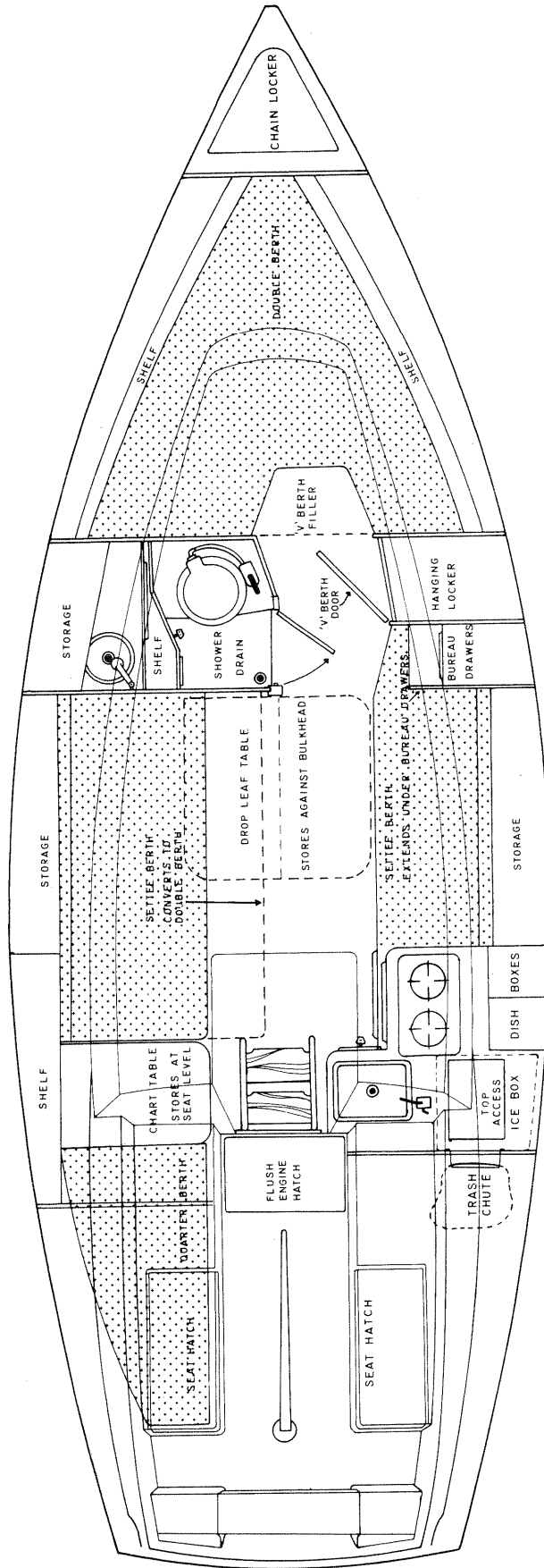
7-0 Interior Appointments

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.

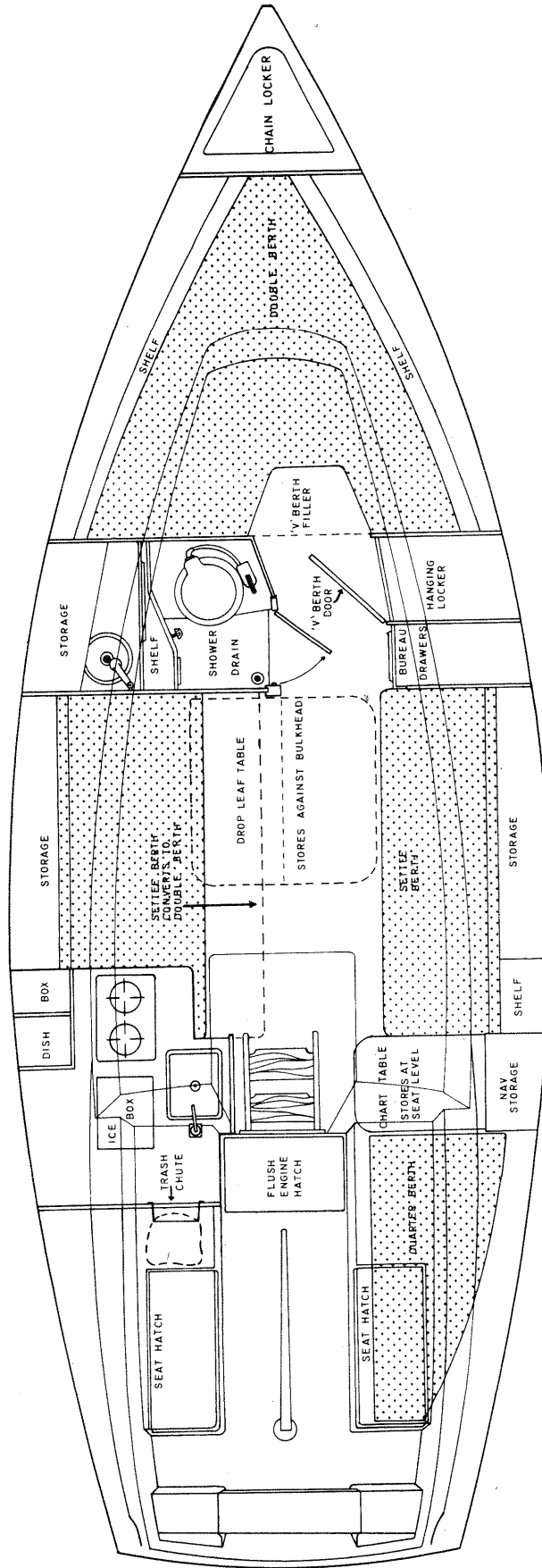
Stbd. Galley



NEWPORT 28 II INTERIOR ARRANGEMENTS	
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Port Galley



NEWPORT 28 II INTERIOR ARRANGEMENTS	
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The Alcohol Stove

Some practical advice on its use

By FRED ADAMS

Reprinted from Yachting Magazine

NEWS OF A NEAR-DISASTROUS FIRE last fall aboard Scotty Piper's One Tonner *Pipe Dream* prompts the thought that some words about alcohol stoves and alcohol as a fuel are in order. To many readers, some of the following may be old hat, but accidents do happen, even in the best-regulated galleys and to some of the most experienced sea-going chefs.

My wife Harriet has probably had more experience with alcohol stoves than most people. She has babied them, cursed them and kicked them in four transAtlantic passages and many other thousands of miles of cruising and racing. Yet, in lonely Poul Doran (Pool of the Otters) in Scotland, in 1970, we had a nasty fire aboard our yawl *Katama*; the unseemly details come out later. Again, Hobey Ford, who was one of the most experienced sailors on the East Coast, opened the oven door on his *Jane Dore IV* and had his whiskers and hair singed by a fiery blast. You've probably heard of other near misses. However, take heart; alcohol stoves and ovens are safe (relatively, for nothing in the world is absolutely safe) if fully understood and if some simple rules are followed.

First: A skipper should never, never let anybody try to light an alcohol stove, much less the oven, who does

not fully understand the procedure. The stove operator should know that alcohol must be vaporized and mixed with air before it will burn with a hot blue flame. A small amount of alcohol burning in the priming cup (with the valve shut) preheats the vaporizer, after which the alcohol continues to be vaporized by the burner itself. When the prime has almost burned out, the valve is opened and the burner should then light. If it does not there may not have been enough prime, or it may have gone out. If the latter, try a match; but if that doesn't work, shut the valve immediately and start over.

Second: An accessible main shut-off valve placed well away from the stove is vital. This valve installation is now a Coast Guard recommendation (via the American Boat and Yacht Council). At the first sign of trouble, shut it off.

Third: Accessibility of a fire extinguisher is also of critical importance; it should be near, not in, the galley.

Fourth: Alcohol is called "safe" mostly because water will extinguish an alcohol fire. For years we kept a full teakettle sitting on the stove, thinking we had a handy supply of water, just in case. Then when we had the fire in Scotland, the kettle proved useless because getting the spout into the pan where the fire was blazing meant putting one's hand in the flames. A saucepan with a long handle was the answer. A bucket with a line attached in the cockpit is also a fine idea. On most boats you can douse stove, galley, cook and all right down the companionway. Don't be alarmed if small amounts of burning alcohol spill on to the cabin sole; they will extinguish themselves. Don't worry either if burners and oven get soaked; better that than a serious fire.

Always do remember that water should never be used on any but an alcohol or wood fire; *never on a fire fueled by kerosene or gas.*

Fifth: Skippers and others must not distract the person lighting the stove. Close attention is required to get the right amount of prime and then to be sure the burner is operating properly after it has been lit. I plead guilty to ignoring this admonition, which was part of the reason we had the fire in Scotland.

I was sitting in the cockpit when a friend approached to raft up for dinner. I asked Harriet to come up and help with the lines. She had been lighting the oven burners and thought they were burning properly. Ordinarily, she would have stuck with it until she was sure, but I had interrupted. Actually, only one of the burners was lit; the valve to the other was open. That did it. Fortunately, we put out the fire, although with some difficulty, and relearned a lesson in the process.

Sixth: Ignition. Paper matches are so short they tend to burn fingers and so are sometimes dropped into the prime cup. In the report of the *Pipe Dream* fire, one crewman said the unfortunate lady "had used about 20 matches and apparently didn't realize that alcohol had flooded the pan." My guess is that the matches were paper. Wooden so-called "safety matches" are somewhat better and the old-fashioned, long kitchen matches are still better. We have concluded that there is nothing like a taper, the kind altar boys use to light candles in church. If you don't have an altar boy in your family, tapers can be bought at religious goods stores and candle counters.

Finally, a word on maintenance: We dismantled all burners on our stove once or twice a season, cleaned them and made sure all the holes were clear of carbon deposits. The pesky parts were the vaporizers. Perhaps they have been improved in later models, but ours consisted of a cluster of small wires inserted in the tube across the top of the burner. They clogged all too often, cutting down the flow of alcohol and the size of the flame. Friend Ed Raymond suggested removing a few of the wires and that helped a lot.

Incidentally, different brands of alcohol use different denaturants and seem to differ in the rate at which they clog vaporizers. I can't make any recommendations except to say that we always stuck to the better-known brands.

All in all, in many years of racing and cruising under varied conditions, we've been well satisfied with the performance and safety of the alcohol stove, given good maintenance and with due attention paid to the precautions listed above. □

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!**

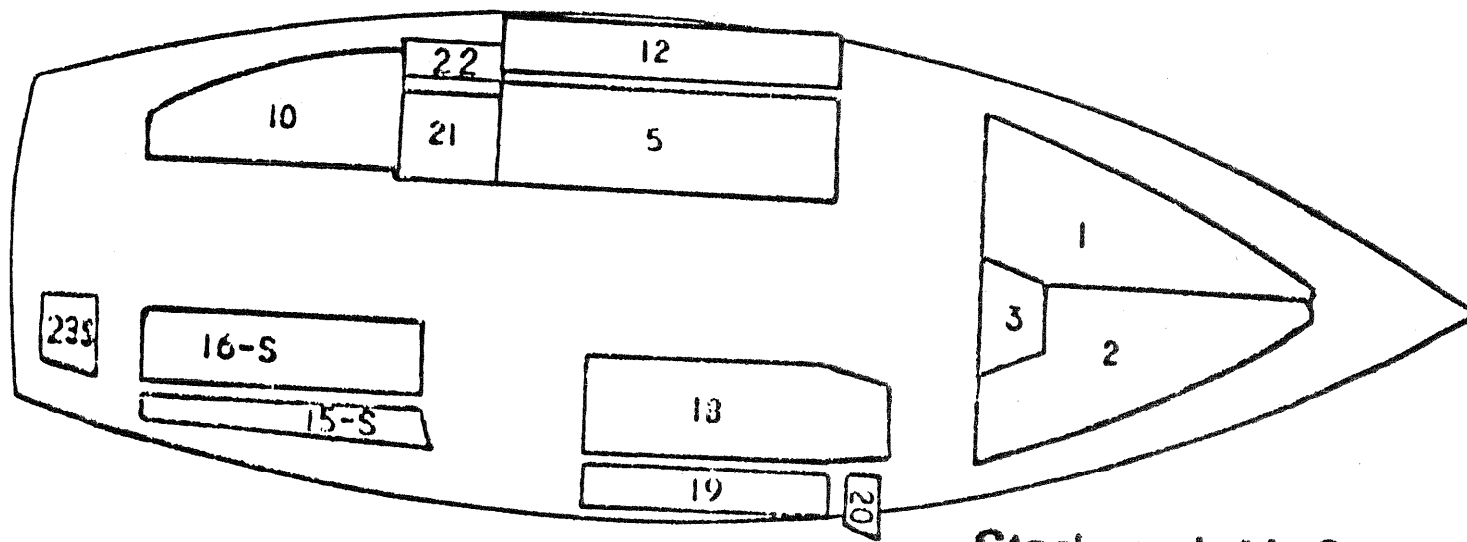
7. Burning alcohol is readily extinguished by water.

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.

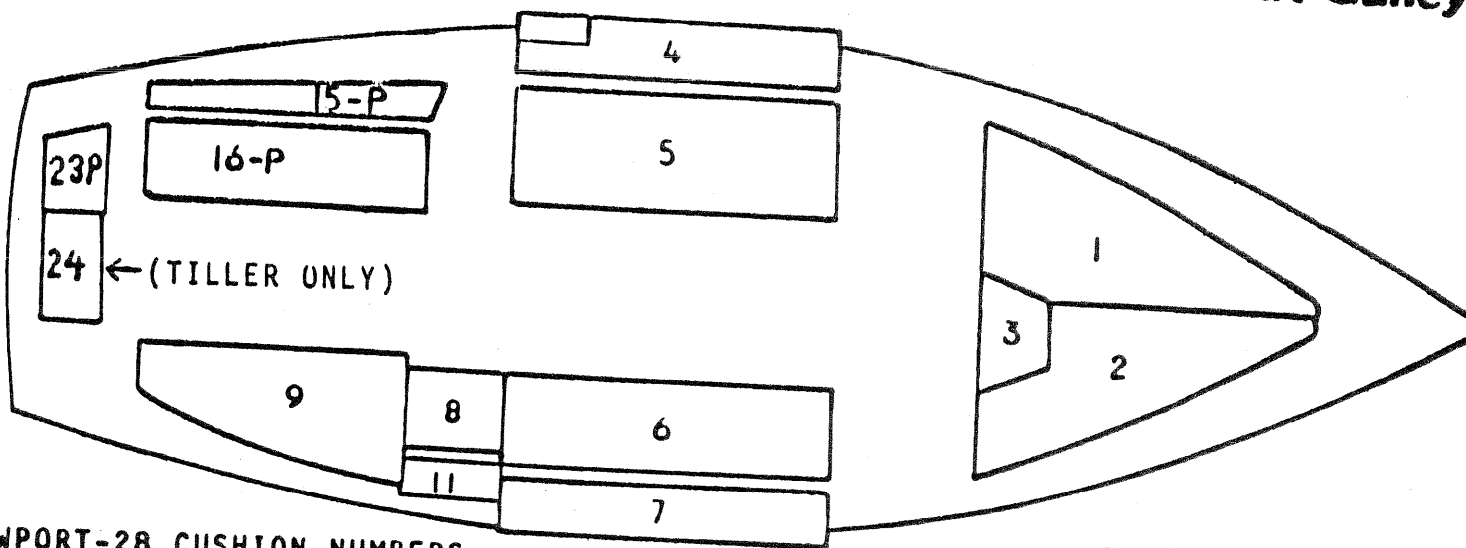
If you will drill yourself, and others, right from the beginning as to the proper sequence of steps and timing involved, most of the potential troubles will be eliminated. The remaining problems come about from improper maintenance of the stove. Regular checks, following the manufacturer's instructions,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




Starboard Aft Galley



Port Aft Galley

**NEWPORT-28 CUSHION NUMBERS:
ALL N-28 CUSHION NUMBERS BEGIN WITH 28-**

- | | |
|---|--|
| 28-1 PORT VEE BERTH | 28-18 STBD. SETTEE BERTH |
| 28-2 STBD. VEE BERTH | 28-19 " " " BACKREST |
| 28-3 VEE BERTH FILLER | 28-20 " " " FWD. BACKREST |
| 28-4 PORT SETTEE BACKREST | 28-21 PORT QTR. BERTH EXTENSION |
| 28-5 PORT SETTEE BERTH | 28-22 " " " " BACKREST |
| 28-6 STBD. SETTEE BERTH | 28-23p PORT 'T' COCKPIT SEAT. (OPT.) |
| 28-7 " " " " BACKREST | 28-23s STBD. 'T' COCKPIT SEAT. (OPT.) |
| 28-8 STBD. QTR. BERTH EXTENSION | 28-24 CENTER SEAT AFT, TILLER ONLY. (OPT.) |
| 28-9 STBD. QUARTERBERTH | |
| 28-10 PORT QUARTERBERTH | |
| 28-11 STBD QTR BERTH EXTENSION BACKREST | |
| 28-12 PORT SETTEE BACKREST | |
| 28-15P PORT COCKPIT BACKREST (OPT.) | |
| 28-15s STBD. " " (OPT.) | |
| 28-16p PORT COCKPIT SEAT (OPT.) | |
| 28-16s STBD. " " (OPT.) | |

Newport 28 II Cushion Diagram	
 <p>CAPITAL YACHTS, INC. NEWPORT & NEPTUNE GALLEY 25014 PRESIDENT AVENUE HARBOR CITY, CALIF. 90710 (213) 530-1311</p>	DWG. NO. 7-6
	DATE 6-82

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 polishing 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 abrasive cleaner, while a heavier rubbing compound may be used when polishing by hand. After buffing, wax and polish all surfaces **except 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. Two excellent books are presently available that will give you the background information necessary to be knowledgeable in this area. "How to Repair Fiberglass Boats" is published by Ferro Corp., One Erieview Plaza, Cleveland, Ohio 44114. Another more definitive book "Fiberglass Boats: Construction and Maintenance" by Boughton Cobb, Jr. is available through Yachting Publishing Corp., 50 West 44th St., New York, N. Y. 10026. Also refer to section 8-6 for do it yourself repairs.

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^s 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.

8-6 Suggested Gel Coat Repair Instructions for Smooth Surfaces

8-6.1 What is Gel Coat?

Gel Coat is a paint made to be sprayed in a mold. Fiberglass is then laid up against the Gel Coat. The Gel Coat remains tacky so the fiberglass will adhere to the Gel Coat, the Gel Coat cures next to the mold: this is the finish on your boat. It cures on the mold side because the air has been sealed off. Gel Coat does not air dry.

8-6.2 How to Make a Proper Repair

To make a proper repair the Gel Coat must be air-sealed. This is done with mold release. The mold release puts a film over the Gel Coat, thus sealing off the air.

Color kit sent with boat contains all colors necessary.

Gel Coat should be sprayed. If you don’t have a spray gun, a spray cartridge works well with much less clean up. Spray cartridges are available at most paint and hardware stores.

Spraying Gel Coat is easy. Applying several coats is possible without getting runs. To achieve a smooth finish, Gel Coat requires sanding after curing, so make sure you put enough on to prevent sanding through.

- Thin Gel Coat with acetone to the consistency of milk.
- Catalize with 15 drops per oz. of thinned Gel Coat.
- Clean spray equipment with acetone.
- Application of mold release is easy. A light mist is all that is needed. Wash it off with water after gel has cured (4 hrs. in direct sun or overnight.)
- For non skid (textured) surfaces, thicken Gel Coat with Cabocol (fiberglass dust) to match pattern.

8-6.3 Repair steps

By following these instructions, your results should be that of a professional.

Step 1

Sand the area with 150 grit sandpaper. This area will extend outside the repair from 5 to 6 inches. Dust with a brush—do not use a rag since the fibers will remain; do not wipe with acetone as pin holes will appear.

Step 2

Thin the Gel Coat to the thickness of milk. Spray on with a spray gun or a spray cartridge. Test the spray on cardboard to get the feel and check the consistency. Apply 4 to 6 coats, allowing 30 seconds between coats. Brushing will work but causes additional work later on. Keep the Gel Coat at least 1 inch within the sanded area.

Step 3

After about 5 minutes, spray a thin mist of mold release - it doesn’t take much; if it runs, it’s too much. 2 quick coats is plenty. If you don’t have a sprayer, a Windex sprayer will do. Allow to dry overnight, or in 4 hours of direct sunlight.

Step 4

Remove the mold release with water and a rag. A light sanding with 150 grit will make it smooth. Wet sand with 400 grit to remove the scratches from the 150 grit. Wet sand with 600 grit to remove 400 grit scratches. (Be careful at this point to prevent sanding through newly Gel Coated surface.) Hand rub or buff with compound to remove 600 grit scratches and achieve luster to match surrounding areas.

8-7. Suggested Fiberglass Repair Instructions

8-7.1 Items needed for repair

Damaged fiberglass is repaired by replacing it with new fiberglass. Thousands of repairs have been made by the method used in these instructions. You will need a drill and a sanding disc using 24 or 36 grit paper. A 6-inch rubber sanding disc is available at any paint or hardware store. We use a 3-inch disc, it kicks up less fiberglass dust. You will also need resin, fiberglass mat and cloth and catalyst and 1" and 2" brushes.

Other items (not necessary, but useful) are a 1-inch putty knife and a sanding block (wood is okay), and surform blades (which are handy in forming areas with a radius). Stanley makes different surform blades and they are available at paint or hardware stores.

When adding catalyst (hardener) to resin the proportion of catalyst added to resin can be doubled since we are working with a small area. Direct sunlight and temperatures over 80° speed up hardening time. The colder temperature, the slower the hardening time. It is recommended that all applications of resin and filler be done in the shade.

Resin will harden faster in a bucket since the catalyst creates more heat. Once resin and bondo are catalyzed, plan on using it SOON. You can't save it, so mix small amounts. You can always mix more.

- Read the instruction on all the cans first.
- Wear a mask when sanding (fiberglass will itch)
- Clean brush, spreader, and hands with acetone after application.
- Do all work in a well-ventilated area.

8-7.2 Repair instructions

Step 1

Wipe with acetone, then follow the fracture with saw or hacksaw blade (drill hole to start cut). This will allow damage to return to the original shape.

Step 2

If surface is not even, apply wood splints to outside with sheet metal screws to align. It is important to maintain original shape at this time. Prepare the inside for fiberglass (remove paint, grease, etc., rough sand). Glass the inside with mat and cloth. The area to be glassed should surround damage by at least 3 inches. When glass on the inside has hardened, remove splints.

Step 3

Grind out the fractured fiberglass. This could range from 1" to 3" around the damage. Grind deep enough at the center to hit new glass on the inside. This will ensure a strong repair.

Step 4

Cut fiberglass mat in strips from 2" to 5" long and from

1" to 2" wide. The size of the strips will depend on the size of your repair. Mix resin and saturate fiberglass mat on a piece of cardboard.

Step 5

Apply mat. Tamp with end of brush to force out air bubbles. Tamping will also eliminate fibers from sticking up.

Step 6

When glass becomes workable (not too hard), use surform to remove excess glass. Glass is workable when it comes through surform holes clean. After sanding, the repair should follow the basic contour of the original shape.

Step 7

Mix enough filler to cover the entire area. This application will fill low spots and fill pin holes. Using a spreader, apply mixed bondo with a firm sliding motion to ensure a good bond and force out air bubbles. This application should be slightly higher to allow for forming and sanding. Use a waterproof type bondo/epoxy below waterline.

Step 8

When the filler is workable, surform is used to remove high spots and form to shape. Filler is workable when it comes through the surform openings in long strands. Don't let it get too hard.

Step 9

After surforming, wait about 10 minutes to let filler harden. Then sand with 80 grit to smooth and feather repair. Using sanding block (or wood) on flat areas. On the inside curves, use your hand or something round to form with.

Step 10

After sanding, pin holes and low spots may appear. Fill with filler. Repeat the steps shown in Steps 8, 9. Rub the repair with your hand if you feel any irregulars. Repeat the steps 8 and 9. Everything you feel with your hand will show up after repair is painted. Light sand with 150 grit. This will eliminate scratches caused by 80 grit. Sand about 6" outside repair to allow for a good bond with paint. After sanding, do not wipe with acetone. Clean surface and spray color with two part epoxy paint or Gel Coat. (See Gel Coat repair instructions).

Step 11

For different types of damage refer to the following for repair:

Small holes - less than 1/4"

1. Ream edges with chisel or putty knife.
2. Sand hole with 80 grit paper.
3. Wipe with acetone.
4. Using a putty knife, fill with filler (bondo).
5. Remove excess with 80 grit paper.
6. Lightly sand with 150 grit papers.
7. Repeat Steps 2 through 4 if necessary.

Medium Holes - 1/4" to 1"

1. Using a putty knife, fill with filler.

2. When filler is hard, grind hole and surrounding area (surrounding area should extend outside the hole by at least the diameter of the hole). Depth of grinding should be half way through the thickness of the fiberglass.

3. Apply mat (see Step 5).

4. Finish (see Step 6-10).

Large Holes - 1" to 3"

Glass inside of hole with 2 layers of mat. Area glassed should be twice the size of the hole.

2. Complete by following the directions for medium size holes.

Chips

Follow the same procedures as for small holes.

Scratches

1. Sand with 80 grit in the direction of the scratch.

2. Follow Steps 1 through 5 for small holes.

Deep Scratches - Halfway through fiberglass

Follow the same procedures the medium holes.

Broken Areas (Outline) See Steps 1-10

Follow fracture with saber saw or hacksaw blade. Push back to shape.

2. Apply splint and cardboard over the broken area. Glass inside.

3. After new glass on **inside** has hardened, remove splint and grind. Apply resin and mat to **outside**.

4. Remove excess fiberglass with surform then allow repair area to harden further.

5. Grind and sand seam where new and existing glass meet, then glass seam to bond new and existing glass.

6. Form to reshape and paint. See Steps 7 thru 10.

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 “scalloped” 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

Since all good things must end, the blower is again turned on and let run for 5 minutes, or the outboard is lowered into position. 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.

9-4.8 International Offshore Rule (I.O.R.)

The International Offshore Rule is an international handicap rating. It was designed to standardize handicap sailing throughout the U.S.A. and the world. Thus, where ever you race under I.O.R., your rating will remain the same. Other handicap systems change throughout the country depending upon what part of the United States you race in and under what particular system your boat was rated. The Newport Fleet of sailboats are manufactured to meet all I.O.R. specifications as well as the local handicap systems used in your area.

If you intend to race your boat contact your local sail-maker or call Capital Yachts (213) 530-1311 and ask for Jon Williams or Bill Smith, we'll be happy to discuss your sailing needs.

9-5 Cruising Suggestions

The following is a somewhat random list of suggestions and ideas for people who are planning extended coastal cruises. It applies to boats in the 27 to 33 foot range and, while it is by no means complete, it should help you outfit your boat and prepare yourself for safe cruising.

9-5.1 Boat

For the Eastern U.S. and Mexico, the Gulf, and the Caribbean, approximately 5 feet or less of draft is best for cruising. On the West Coast, there are no draft limitations, except in isolated areas.

9-5.2 Ground Tackle

You should have the following onboard and readily available:

1. One 22 pound Bruce anchor with 200 feet of half-inch line plus 25 feet of quarter-inch chain.
2. One 22 pound Danforth anchor with 200 feet of half-inch line plus 25 feet of quarter-inch chain.
3. One 13S Danforth anchor with 200 feet of half-inch line plus 25 feet of quarter-inch chain.

9-5.3 Boom

The boom should be equipped with double or triple jiffy reefing gear and lines.

9-5.4 Mast

Mast equipment should include a manual wind indicator, a radio antenna, masthead light, deck light, and boatswain's chair.

9-5.5 Electronics

The list of electronic equipment that is available for boating is almost endless. However, for coastal cruising, you should have the following:

1. Depth sounder that reads in both feet and fathoms.
2. Knotmeter, as accurate as you can get. Also, you need to plan on cleaning the knotmeter through-hull wheel regularly.
3. Radio direction finder and international beacon guide.
4. CB and VHF radios (the VHF should have excellent sensitivity and maximum transmitting power). In emergencies, radios can be critically important and you should seek professional advice when you purchase them.
5. Ham radio is useful but not necessary on cruising boats. To obtain a license for operating ham equipment, you must pass morse code and technical examinations. And installation of ham gear necessitates adding an insulated backstay and an extensive ground system throughout the boat.

9-5.6 Engine

Boats in the 27 to 28 foot range should have 15 horsepower diesel engines. Those in the 30 to 33 foot range should have 20 horsepower diesels. Make certain that the engine is correctly aligned before you depart and check the alignment again periodically as you cruise. Also be sure to equip the fuel system with a water separator.

Your spare parts kit for the engine should include at least two extra engine belts, one extra alternator, and plenty of fuel and oil filters.

Learn to change filters and do as much work on the engine as possible.

9-5.7 Sails

Your sail inventory should include a 150 percent genoa, a lapper with reef, and a storm sail. Also, a reacher is nice to have and your main should be equipped with three reef points. All sails should be triple stitched and have heavy patching on the corners.

9-5.8 Pumps

You should have a spare manual bilge pump and a good stock of spare parts for all of the pumps onboard.

9-5.9 Stove

Propane stoves are excellent for cruising because fuel is generally readily available. You should have two 10-pound aluminum tanks mounted in the cockpit,

spare parts, a spare burner, and an electric shutoff switch in the galley.

9-5.10 Dinghy

A dinghy should be easy to stow and it should be designed so it can be towed without difficulty. If it is collapsible, it should be easy to inflate and deflate. The oar locks should be positioned so it is easy to row and it should be equipped with an outboard motor mount. If you get a sailing dinghy, make sure that it has these same attributes and that the sailing equipment is easy to assemble, that it is capable of sailing safely, and that it can sail well (especially to windward).

skip leader 9-5.11 Navigation

For coastal cruising, you should be thoroughly versed in piloting (coastal navigation) and you should have all the equipment (charts, dividers, parallel rules, bearing compass, etc.) required. Also, you should know and be equipped for celestial navigation so you can track your position when you are offshore.

9-5.12 Swimming

Both for pleasure and for maintenance on the boat, it is a good idea to have a snorkel, fins, and a mask for swimming. If you are not experienced at using these items, be sure to take lessons before you leave on a cruise.

9-5.13 Tankage

In addition to the tankage on the boat, be sure to have a good supply of collapsible water jugs and approved fuel containers onboard so you can carry water and fuel to the boat when necessary and so you will have extra capacity when needed.

9-5.14 Shower

Even though your boat may have a shower, it is a good idea to have alternative provisions, such as a portable Sun Shower or a swim step with transom-mounted foot-pump shower, for showering when you are cruising.

9-5.15 Fishing

Besides its potential for adding to the menu, fishing can provide entertainment during a cruise. However, it is usually best to keep the operations simple. Use bunjie cord and a good heavy line for trolling (some cruising fishermen use 200 feet of quarter-inch line) and a reel with 30-pound test line for bottom fishing when you are at anchor.

9-5.16 Auto Pilot

Automatic pilots are made for both tiller and wheel steering systems and they can be a great help on a cruise. When you select an auto pilot, you should look for one that is easy to install, works under all but the most severe conditions, has a low current drain, and provides different settings for different sea conditions. Also, you should select one that is made by a company that has a reputation for standing behind its products.

9-5.17 Food Storage

Learn to think in terms of getting along without ice since, on any extended cruise you are almost certain to be without it from time to time. Freeze dried and dehydrated food stores well and takes very little space so it is ideal for cruising meals. Also, take iodine to use when you wash vegetables.

9-5.18 Tupperware

Tupperware containers with their built-in sealing ability are great for food storage and for taking things (like cameras and radios that could be damaged by exposure to water) ashore in the dinghy.

9-5.19 Toilet

Learn to handle the full range of maintenance and repair operations that apply to the toilet on your boat. Pump liquid JOY or other mild detergent through the toilet at least once a week to lubricate the plunger and flapper valve assembly. For direct overboard discharge toilets, use lots of water while flushing and keep the toilet paper to a minimum. (Six squares and twenty pumps is a good rule to go by.)

9-5.20 Through hulls

Be sure to have at least one spare through hull valve for each size that is used on your boat onboard at all times. Also, keep a selection of tapered wood dowles, sized to plug the through hulls from outside, where they will be handy if they are needed.

9-5.21 Rain Catcher

Catching rain can help replenish your water supply while you are at sea. One type is deck mounted in the cockpit with a drain hole on deck aft where a hose with a shut-off leads to a bucket. Another type is suspended above the deck and has a hose that leads to a bucket.

9-5.22 Trade

Cruising sailors find opportunities to trade with other sailors and even with people ashore occasionally, if they have something that others might find desirable. Therefore, it is a good idea, when you go cruising, to take some booze, food, magazines, etc., that you can use for barter.

9-5.23 Forms and Guides

Babe Baldwin forms, People's guide, and Mexican Yacht Documentation Service (12601 Venice Blvd., Los Angeles, CA 90066, 213-398-5797) are typical of the source available.

9-5.24 Whisker Pole

A 6-to-12-foot extension-type whisker pole can be handy for keeping headsails under control on down-wind runs. (Or you can use a spinnaker pole, which is more durable and will last longer.)

9-5.25 Boat Hook

A 6-foot boat hook can be very handy, especially if it is stowed where you can grab it when you need it. (The fixed-length type is better than the extension type, which might collapse while it is in use.)

9-5.26 Self-Tailing Winches

Self-tailing winches make line handling much easier, especially if you are sailing short handed. An example of a good self-tailing winch installation would be two Lewmar number 40AST or 42AST winches on either side of the cockpit to handle jib sheets, and if the halyards are led aft, a 16AST for the mainsheet and a 16AST or a 30AST for the jib halyard mounted on the cabin top. (An alternative to the latter would be to mount 7A or 8A winches on the sides of the mast for the halyards.)

9-5.27 Dodger

A dodger can provide welcome shelter for those in the cockpit. Look for one that is supported by swivel-mounted stainless steel tubing and collapses forward.

9-5.28 Safety Equipment

While safety items are required by law, it is important to have equipment that is suited to the task at hand. For example, life jackets (PFDs) for adults and children should be the harness type with vinyl coated wire and snap shackle. In addition to these, several square floating cushions are nice to have and they come in handy for a variety of uses. Also, you should have good-quality foul weather gear, a good first-aid kit, a radar reflector, manual fog horn, bell, whistles, flare kit, and at least two waterproof flash lights with plenty of spare batteries. And finally, before you set out, you should get thorough instruction in first aid, including training in handling such things as sea sickness, severe sunburn, sunstroke, cuts that require stitches, setting broken bones, etc.

9-5.29 Camera

Many kinds of cameras are good for taking pictures while you are cruising. But Poloroid-type cameras offer the particular advantage of making it possible to see your photos immediately.

9-5.30 Insects

Get mosquito screens for all hatches and opening ports, and take plenty of mosquito repellent (Cutters is effective). Also, garlic (taken internally or used externally) is reputed to make a good mosquito repellent.

9-5.31 Tools

Capital's safety tool box is a good start. But you should also have drill bits, taps, extra fasteners, etc., available. Be sure to take everything you might need when you are on your own.

9-5.32 Fresh Water Filter

Install a cartridge type water filter in the water line under the galley pump. And be sure to take plenty of extra filters.

9-5.33 Battery Power

As a minimum, you should have two, heavy-duty, 70-amp batteries installed and hooked to the charging circuit.

9-5.34 Ladder

To make it safe and easy to enter and leave the dinghy, swim, and recover a man overboard, install a transom ladder and walk-through stern pulpit.

9-5.35 Compass

In addition to the steering compass that you must have for coastal cruising, you also should have a spare, box-type compass.

9-5.36 Clothing

Keep your wardrobe simple. Take rubber soled shoes for going ashore. The big problem with clothing on a cruise is what to do with the dirty ones and the following suggestions are based on the collective experience of a number of cruising sailors:

1. The longer the cruise, the more space you will need for dirty clothes.
2. Save a spot that gets good air circulation to avoid mildew (a bag for white and a bag for color hung in the head works well and pillow cases make good laundry bags). Carefully fold or roll dirty laundry (you get fewer wrinkles and it takes less space).
3. Sheets, linens, etc. should be changed at least weekly.
4. If you will be using coin-operated laundromats, note the following: Take a good supply of coins (also don't be surprised if you find laundromats that take only tokens that you have to buy in advance of use). Inspect the washer thoroughly BEFORE you put in your laundry and be sure to clean the lint filter. Minimize your use of laundry aids (it helps to pre-treat your laundry before you leave your boat). Use cold-water detergent (many machines do not have hot water). Do not leave your laundry unattended (to avoid theft and to make sure that impatient customers do not dump it when the machine stops). Take the laundry out of the dryer immediately and smooth and fold it (this makes a big difference around salt air).
5. If you are going to do laundry by hand, it is nice to have a hand-operated or roller-type wringer. A toilet plunger in a bucket makes a good manual washing machine and a washboard helps for the dirty spots. It is best to hang clothes and let them drip (twist wringing greatly shortens the life of the clothes).
6. If you hire a local laundress, give her a small trial load of old clothes and see how she does before you give her anything good.
7. If you are washing in salt water, use a low-suds liquid detergent. Then rinse several times in salt water and finish with a thorough rinse in fresh water and fabric softener.
8. Some cruising sailors, who do not like to bother with laundry, throw things away when they get dirty, except the ones that make the best rags for polishing and scrubbing.

9. Store washables away from other clothes or they will develop atmospheric stains. (Never store used or salty clothes, no matter how clean they smell, with clean clothes because odors and stains may transfer. And, of course, foul weather gear and used towels must be kept separate from clean, dry clothes.)

9-5.37 Other Things to Consider

1. Portable TV (AC-DC).
2. Sewing machine (AC-DC).
3. AC generator (belt driven by engine or portable), small tools like a three-eighths inch drill, saber saw, etc., and a 50-foot extension cord.
4. Solar panels (0.8 to 2.0 amps each)
5. DC refrigerator (requires solar panels and two extra batteries).
6. SAT NAV (satellite navigator).
7. Bimini top that folds down forward or aft. Should be swivel mounted on stainless steel tubing and the top should be easily removable from the tubing (via zippers).
8. Spear gun (trigger or manual type).
9. Hand gun and rifle (nice to have but not necessary). Make sure they are legal where you are going.
10. If you are cruising to a foreign country, learn the language or take a reference book (i.e. EASY SPANISH).
11. Take toys, candy, paperback books, etc., for children and for trading.
12. Masthead strobe light.
13. Self steering device (wind operated, transom mounted)
14. Kerosene lamps to provide heat in colder climates and provide light when the batteries are low.
15. Vegetable nets (that hang inside the boat and provide easy storage for fresh fruit and vegetables).
16. Fluorescent cabin lights (provide comfortable light with low drain on batteries). Require spare parts and replacement fluorescent tubes are often hard to find.
17. Salt water hand pump in galley.
18. Taffrail log (mechanical log that trails off stern and is used when others fail).
19. Dinghy motor (2 to 4 horsepower).
20. Bulkhead-mounted clock and barometer.
21. Headstay roller furling. (There are strong opinions for and against these devices, and you should understand them before you select one and install it on your boat.) Make sure you know how to reef and change head sails before you depart on a cruise.
22. Spinnaker sail. A spinnaker is a fun sail to use but it involves considerable work, extra gear (some of which must be installed on the mast), and a crew of three or more for easy handling. Make sure you know how to raise, trim, gybe, and lower the spinnaker before you depart on a cruise.
23. Twin spinnaker or whisker poles.