

# **Restoration of Boats**

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## RESTORATION OF BOATS

Introduction: The phenomenal growth that we are seeing today in pleasure boating, the multitude of fabrics being used on the boats that are being built and a lack of qualified restorers in the market, leaves the door wide open for you and me as Certified Restorers and we must meet this challenge "head on."

### I. History of Boating.

- A. Growth has been phenomenal.
  - 1. Due to lowered cost of boats.
- B. The infancy - age of pleasure boats.
  - 1. 1958 - WSCG started to collect statistics.
  - 2. 1971 - Standards for manufacture were established.
  - 3. 1973 - First Federal study was done.

### II. My first experience of water damage on a boat

- A. Boats had no fabrics.
- B. Restoration services were not available.

### III. Nautical language is needed to:

- A. Communicate with owner.
- B. Understand electric panel.
- C. Seek out insurance companies.

### IV. When a boat goes down.

- A. Sequence of events.
- B. When the restorer is called:
  - 1. How to bid a boat.
  - 2. Access can be difficult.
  - 3. You will lose equipment.
  - 4. Your workmen's comp insurance.

### V. Sequences of restoring the interior of a boat.

- A. Preliminary cleaning.
  - 1. Remove contents.
    - a. Inventory your contents.
  - 2. Clean and sanitize.
- B. How you handle the contents.
  - 1. Water extraction.
  - 2. Sanitize.
  - 3. Disinfect.
  - 4. Clothes.
  - 5. Fishing reels.
  - 6. Mold and mildew.
  - 7. Vinyl.
  - 8. Buttons

- C. How to handle docking and mooring lines.
  - 1. Leave her exactly as you found her.
  - 2. Study Chapman's.

- VI. Techniques and products that I have used.
  - A. Fiberglass stain remover.
  - B. Speedbrite.
  - C. Kreosene.

- VII. All mishaps are not water born.
  - A. Boat transported by truck
    - 1. Diesel exhaust on fiberglass.

- VIII. Each job is a learning curve.
  - A. I will share my future knowledge.

## RESTORATION OF BOATS

### Why Boats?

Boats, our oldest mode of mechanical transportation, have become America's top family sport, with over 62 million people participating in some form of boating at the present time<sup>1</sup> and the tip of the iceberg is showing in it's growth.<sup>2</sup> Our United States Coast Guard is keeping vigil over 14 million boats in our American waters.<sup>3</sup> There are ten states with over 1/4 million pleasure boats registered in each state.<sup>4</sup>

Although pleasure boating has been around for a long time, probably the first being Cleopatra's "pleasure" boat, it wasn't until the early 1900's that pleasure boats began to become big business,<sup>5</sup> and it was a sport of the very wealthy until after World War II.<sup>6</sup>

It was the advent of fiberglass in the mid-1950's that lowered the purchase price of boats, making them more affordable to a larger segment of our population, and stimulating the astronomical growth that we are seeing today.<sup>7</sup> It was not until 1958 that the U.S. Coast Guard was given the authority to collect statistics on pleasure boating; 1971 standards were established for Boat Manufacturers, and as recent as 1973

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1. Boating 1983 pp. 2
  2. Main Report pp. 81
  3. Coast Guard History pp. 32
  4. Boating Statistics pp. 82
  5. Stevens Bros. Boat Builders pp. 3
  6. Stevens Bros. Boat Builders pp. 4
  7. USCG interview-Vance Bennett.

the first Federal Study of Pleasure Boating was done.<sup>8</sup>

These facts that were gathered revealed a startling revelation about the infancy-age of this multi-million dollar sport that is soaring higher yearly.

My very first experience with water damage on a boat was in 1950, when my brother-in-law put me in charge of the boom on his small sailboat; within 10 minutes, a gust of wind hit the sails, I pulled in on the boom thus tightening the sail, and turned the boat over, dumping three of us into the water. After righting the boat, we extracted the water by bailing with a bucket and two beach towels, and it then took two days to dry down the sails. We were fortunate not to have upholstery and fabrics to worry about. Today, however, the interior of boats are loaded with fabrics on bulkheads, headliners, carpeting, bedding, drapes, and upholstery which has created a whole new field in cleaning and restoration. Yachtsmen are noted for their concern in keeping their boats in "Bristol Fashion" and tend to be more meticulous and to seek the professional, top quality services more often than their wives do in maintaining the home, hence the origin of the saying "a boat is known as a hole in the water into which you pour money." Until recently, however, cleaning and restoration services of top quality have not been readily available.

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8. USCG interview-Vance Bennett.

NIFR has been instrumental in educating insurance companies in the values of restoring the contents of homes after fire and water damage; however, to date, boats have continued to be overlooked and have been totaled out or the interiors completely replaced after such mishaps. In the year of 1982, over 15 million dollars in value was lost due to boating mishaps.<sup>9</sup> In order to vie for this business, your rig should be a familiar sight around the marinas and it would be extremely beneficial to be known as one who is knowledgeable about boats and boating as well as a top quality professional in your field.

When I first started my cleaning business "Rub-A-Dub-Dub", and came to my first convention, I found that your NIFR people were speaking a different language, such as: brown-out, crocking, warp, weft, corn rowing, blooming, etc. Since this was not a part of my vocabulary, I found it very difficult to understand some of the seminars that I attended. The language of boatmen and yachtsmen is also unique. Learning the proper nautical terms will mark you as a person truly interested in a boat and her equipment.<sup>10</sup> The Captain of a two or three hundred thousand dollar yacht will feel more secure having your crew aboard his yacht, if he feels you are not a corinthian. "A corinthian is a non-professional in the field of boating."<sup>11</sup> He will expect your crew to board his

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9. Boating Statistics 1982 pp. 16

10. Piloting and Seamanship pp. 1

11. Piloting and Seamanship pp. 3

boat with deck shoes only (non-slip rubber soles made for boats), to keep their damn feet off the varnish, and to put nothing into the head (toilet). If he tells you, "You will find the key to the cabin on the aft deck, hanging on the port side, of the starboard lazarette," you will know exactly where the key is located. When you need lights or the generator while on board, you need to know how to read the electrical panel, which will be in a/c and d/c, and labeled in abbreviated boating terms. For the above reasons, I have included a list of the more common nautical terms and their meaning, a list of do's and don'ts, a typical layout of an electrical panel, and a diagram of directions while aboard a boat. However, if you wish further study, I would suggest "Piloting and Seamanship" by Chapman or take a course in boating safety offered by the U.S. Coast Guard or the Power Squadron in your area.

Now that you have a working vocabulary of nautical terms, like any other language, you need to learn to think in that language, and not have to literally translate in your mind as you use it. You now are ready to seek out insurance companies in heavy boating areas, who specialize in marine insurance. These groups deal almost exclusively with boatmen and yachtsmen and are usually boatmen themselves, which is another important reason for a thorough working knowledge of boating. You may also contact marinas or marine shops that have haul out facilities. I belong to a yacht club,

and this membership gives me access to all other yacht clubs in my area. I also belong to the Northern California Marine Association, and through this membership, I am in close contact with marine insurance dealers, yacht sales, and other business people directly dealing with the boating industry.

When a boat goes down, the sequence of events that usually take place, includes calling the coast guard, a shipwreck or salvage crew is dispatched to the scene, divers go down with air bags which are secured to the underneath part of the hull, the bags are then pumped with air and the buoyant bags then refloat the boat. With the air bags in place the water is then pumped out of the boat. The derelict is then taken in tow and towed to the nearest haul out facility, where the boat is hauled out of the water and shored up. The engines must be bled immediately and filled with diesel. Then you are called in for the initial cleanup and dry down of the interior of the hull. Hull and engine repairs are then done and you are called back to finish cleanup and detail the interior of the boat. Often canvas repair and electronics people are called in.

Most often, I work with the marine haul out and repair shop, usually giving my bid directly to the adjuster, but you must keep in mind that the shop that has the boat, has a lot of money at stake on the job and wants a restorer who will work with them time wise and do a quality job, so that their customer is pleased with the final detailing, or you



could hold up everyone from getting paid. A case in mind, about two years ago, an independent adjuster brought in a cut rate carpet and upholstery cleaner to bid on a boat that was fire damaged. His bid was \$600.00 and my bid was around \$1,800.00. I was not able to convince them that my bid was as low as I could possibly go due to the scope of work involved, so the cut rate cleaner got the job, which is probably the greatest blessing in disguise that I could have hoped for, because such a mess was made of the boat that the owner would not accept it, and litigation involved kept everyone from being paid until the case was settled. It finally cost the insurance company \$4,500.00 to replace all the upholstery, etc., and now the marine shop will not allow any one but "Rub-A-Dub-Dub" to work on a boat in their facilities that they are responsible for, so I now have no competition. Bidding a boat can be very difficult. An enormous amount of unexpected time can be spent in detailing all the lockers and cubby holes which may contain silt and debris and you must keep reminded that you are detailing this boat for a very fastidious Captain. Since almost all the services performed on a boat are based on her length, I try to reach a price based on a per foot cost. You could run from \$10.00 to \$250.00 per foot, depending on the scope of work to be done. If you can evaluate the time that will be involved, you could possibly bid your hours plus materials and travel, but I have a problem with this type of bidding,

as I invariably underestimate the hours. At least three other elements will affect a higher cost factor than in a normal household situation: access, vulnerability of your equipment and insurance.

Access to a boat can at times be very difficult. I have had 500 feet of line out from my rig, and sometimes strung over small bodies of water, which as you are aware involves time, also your vacuum lines must have no leaks or breaks as I have a strange feeling my truck mount might strangle to death if the whole river were being sucked through a leaky line.

You won't have to run the boat docks long before you learn how vulnerable your equipment can become. We have lost overboard a blower, a 3 gallon stainless steel sparyer, extension handled brushes, small hand sprayers, etc. We retrieved the stainless steel sprayer and the blower with grappling hooks, which are now a part of our standard equipment, and sometimes a very large magnet on the end of a line can solve a problem, as it did when the keys to the boat we were working on inadvertently slipped overboard. Now I know you are going to say, "that is the reason Mert invariably underestimates her time when bidding by the hour, because she spends it fishing her equipment out of the water," and that may be partly true; however, I would like to share with you some of the solutions we have come up with and perhaps save you some of the agony. In case some "landlubber"

comes through the marina's 5-mile zone, trying to see how much wake he can lay with his brand new boat, it is best not to have your equipment on the foreward deck unsecured, or it may go "pitchpoling" right into the water. We now "stow" our equipment on the dock at a point beyond where we will be laying out our lines and hoses, as the sprayer or wands have a propensity for getting between the vacuum hose and the water and a pull on the hose will send them diving for a drink. We found we could cut up old ski belts and with good old "duct" tape strap them to our long extension handles about a third of the way up the handle, which serves two purposes. When working overhead, it keeps the solution from running back down the handle and if your brush gets tired and decides to take a bath, it will float. If you use sprayers that you hand pump with air, I'm speaking of small hand sprayers, they will float if dropped overboard if you have not over filled them and keep them pumped up. As for the keys to the boat you are working on, it would be very embarrassing to have to call him fifty or a hundred miles away to come lock up his boat because his keys decided they wanted to take a swim, so now we carry a float attached to a ring that we can slip any key onto and if the unfortunate happens again, "It floats."

Last, but not least in importance, is your workmen's compensation insurance. Before you send your crew aboard a boat that is in the water, you must carry out the provisions

of Section 35 of the United States Longshoremen's and Harbor Workers' Compensation Act.<sup>12</sup> This means that the regular Workmen's Compensation Insurance that you now carry will not cover your crew while working inside or outside of a boat that is in the water, even though it is tightly secured to a dock. This means you have to get special marine coverage and it will cost you almost twice as much per one hundred dollar payroll, as you are now paying, and you can ill afford not to have it.

You do have one advantage on a boat, after the haul out and you are called in, the boat can't get any wetter than it has been and is now, besides it was made to withstand water. You take out the drain plugs, spray it down with traffic lane, or I use Heavy Duty Soil Lifter put out by Chemspec, then we brush to agitate and then put the power sprayer to it with hot water, and let it drain out of the boat. Then I saturate the boat with Ultra Fresh, (an anti-crobial), spraying a heavy concentration in the heads, as the holding tank will back up into the heads when the boat goes down. Then you extract the water from the carpet and perform a preliminary cleaning. Set up the blowers and de-humidifyer if the temperature for the latter is correct. Dry down takes approximately three to four days during which time daily monitoring is necessary.

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12. Longshoremen's and Harbor Workers' Compensation Act: (44 Stat. 1224 as amended; 33 U.S. Code 901, et. seq.)

We remove all the upholstery and contents of the boat and take them with us, clean and sterilize all the dishes and cookingware from the galley, using a disinfectant and sanitizer of the type used in restaurants and bars, pack them and store them until the derelict is once again "Ship Shape."

Clothes and bedding are treated as with a normal fire or water damage restoration. The Captain usually already removed his fishing gear, tools and personal items. If not, the line should be removed from the reels and they should be cleaned and oiled. I keep an inventory of all groceries and miscellaneous items that we dispose of.

Upon returning to the shop with the upholstery, we use a technique that I learned from the NIFR group. We put a screen over the end of the vacuum hose, insert a cushion into a heavy plastic bag, insert the vacuum hose into plastic bag and clamp the open end around the hose, thus extracting the air and water simultaneously out of the cushions. The one change I have made is to then dip the cushions in a solution of Ultra Fresh and extract that material. We clean the fabric and set it in racks to dry. I believe an antimicrobial agent is necessary because these cushions have been submerged in contaminated water. This will prevent the accelerated growth of mold and mildew, which may already have been at work even before the boat was sunk, as mold and mildew is forever a boater's headache.

If the boat has vinyl or leather covered upholstery in good condition, we carefully remove the covering and dry the foam as above. If the foam is in good condition, we reuse it; if not, replace with new and reinstall original covering. I treat vinyl with a product used by dry cleaners, called plasticizer. I mix one part plasticizer to two parts pecrin and apply to vinyl. I also use this product in cleaning to renew suppleness to hardened or cracking vinyl. Buttons on the upholstery of boats, especially sailboats, are a constant source of rust and, unfortunately, the people who install covered buttons on them are not concerned as they continue to use steel backings. If I cannot find plastic backings in the proper size, I dip the steel backings into clear fingernail polish before covering the buttons. Salt water will rust unprotected buttons in an amazing quickness of time.

Never put anything on the varnished areas of a boat without direction from the captain himself, as this is his pride and joy, and he will come unglued if he feels anyone has altered his beautiful varnish.

Upon the call back for the completion and the "spit and polish" of the restoration, the boat is usually back in the water. At this time, I would like to caution you about the docking and the mooring lines of a boat. Usually the boat is moored in a slip, made fast in such a way to isolate it from the dock, in order to keep it from chafing

and in order to eliminate hull damage. When you arrive to work on the boat, you will have to release both stern lines in order to bring the boat close enough to the dock for easier boarding. You should examine the tie down before releasing the boat, in order that you retie her exactly as you found her. If you find the lines coiled on the dock, recoil them. Duplicate the exact tie down on the dock cleat and make sure the lines are in the proper chocks. If you are unfamiliar with this technique, I suggest you study the back pages of Chapman's "Piloting and Seamanship." How much experience you have had on boats is judged by the way you handle your lines.

We do not return the contents at this time as it usually takes from three to five days, sometimes more, for two people to detail out a boat. I have found Cahan's Fiberglass Stain Cleaner excellent for taking out stubborn stains in fiberglass on the hull and in the fiberglass bathtubs, showers and sinks. Sometimes you have to use a rubbing compound and then polish it out. The best product I have found for plastic-coated wood grain paneling is Speedbrite - it leaves a nice sheen that resists unsightly finger marks. One caution - do not use steel wool on decks or teak as it leaves rust spots. Bronze wool should be used. I would at this point like to caution you about teak mahogany; before I would attempt to redo the surfaces, I would make a thorough study into the techniques used, as teak must be bleached before it is oiled or finished.

Plexiglass is often found on boats. It is used as windows in canvas work and is now being used as hatchcovers. It is extremely sensitive to abrasives and chemicals, as they dull and scratch the sheen. Never use dry cloth, duster, or a glass cleaning solution on plexiglass. Flood it with plenty of water to wash off as much dirt as possible, using bare hands. A soft grit free cloth may then be used with a non-abrasive soap. Dry with a clean damp chamois--blot rather than rub. Grease and oil may be removed from plexiglass with kerosene or alaphatic naphtha (no aromatic content). DO NOT use solvents such as acetone, silicone spray, benzine, carbon tet, fire extinguishing fluid, dry cleaning fluid, or lacquer thinner, as they will attack the surface.<sup>13</sup> At this point, let me warn you that when detailing, be careful not to splatter any of these chemicals on plexiglass, or accidentally hit it with a cleaning cloth that has any of these chemicals on them.

All restoration jobs are not water born mishaps. As one of the most challenging projects that I have been called in on was a brand new forty-one foot Chris Craft that was transported by truck from Michigan to California. Chris Craft had a contract with the trucking company to haul the boat with the truck's diesel stacks down, but the contract was broken. The driver made the trip with diesel stacks

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13. Searay Owners Manual, pp. 53.



up. The diesel was not operating properly and black diesel exhaust covered the entire exterior of the boat. Not only that, but the driver had neglected to check out his load, and a port hole was open on the boat which allowed the exhaust to coat the interior of the boat as well. All of the bulkheads were of a nylon velvet type fabric and the seats on the bridge were of a synthetic suede type fabric. The non-skid areas of the boat were a textured fiberglass surface, making removal of the black exhaust difficult, as it was impossible to buff it out. We had to find a solvent that would remove the exhaust without damage to the fiberglass. After much testing, I discovered that volatile dry spotter could indeed meet these requirements. We used seven gallons of volatile dry spotter and hand scrub brushes. I found that acetone worked best on the bulkheads, volatile dry spotter on the suede and Chemspec's Heavy Duty Soil Lifter on the slick areas of the fiberglass. Caution-using flammable solvents aboard a boat allows fumes to settle into the bilge and one spark could be all she wrote.

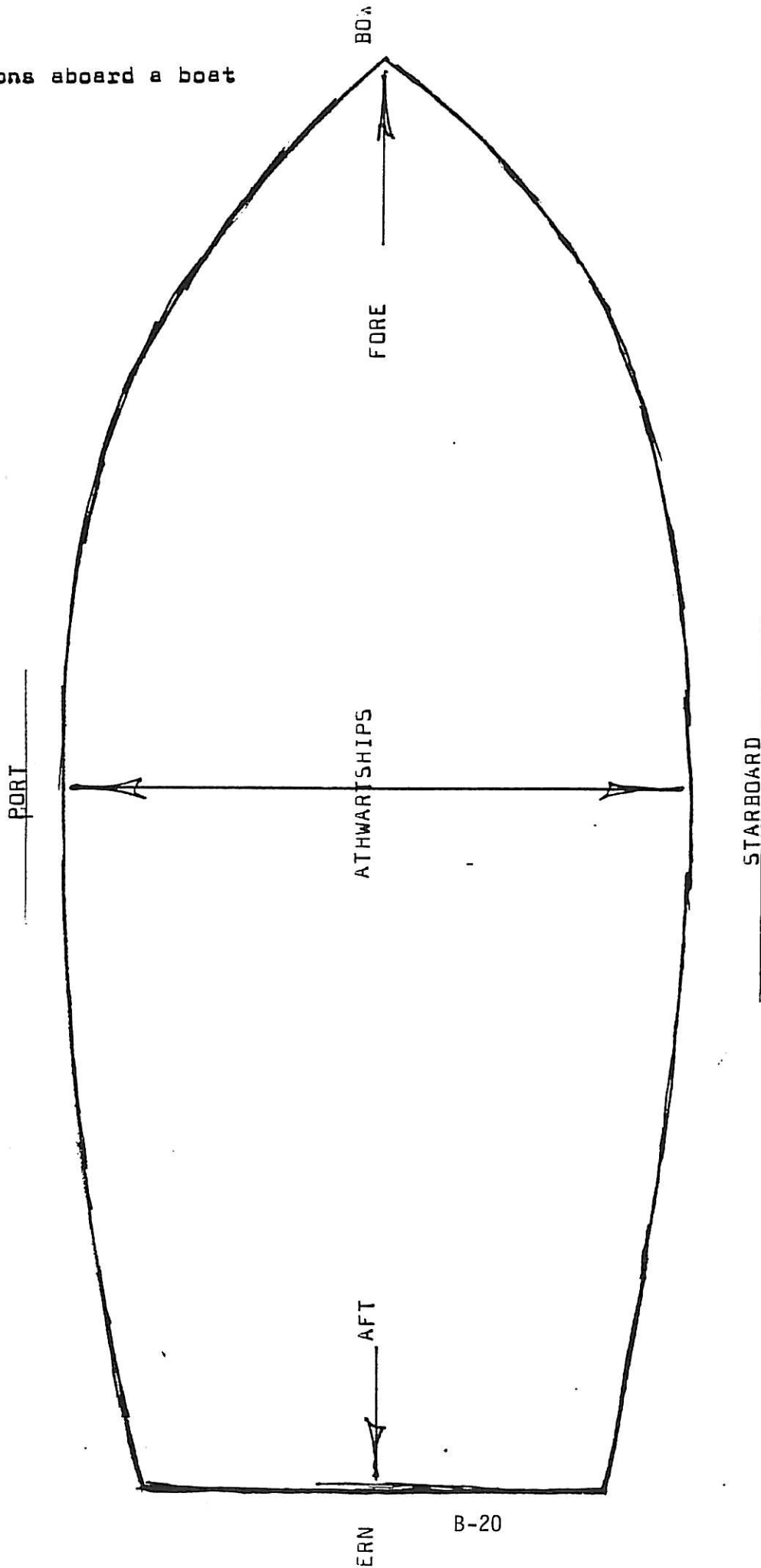
Each job is a new challenge and another learning curve. As I gain knowledge in the future, if you are so inclined, I would be more than happy to share this knowledge in the form of conversation. If you wish to find me, I will meet you on the leeward side of Terminous. You will recognize me because I will be holding my fishing pole, two points

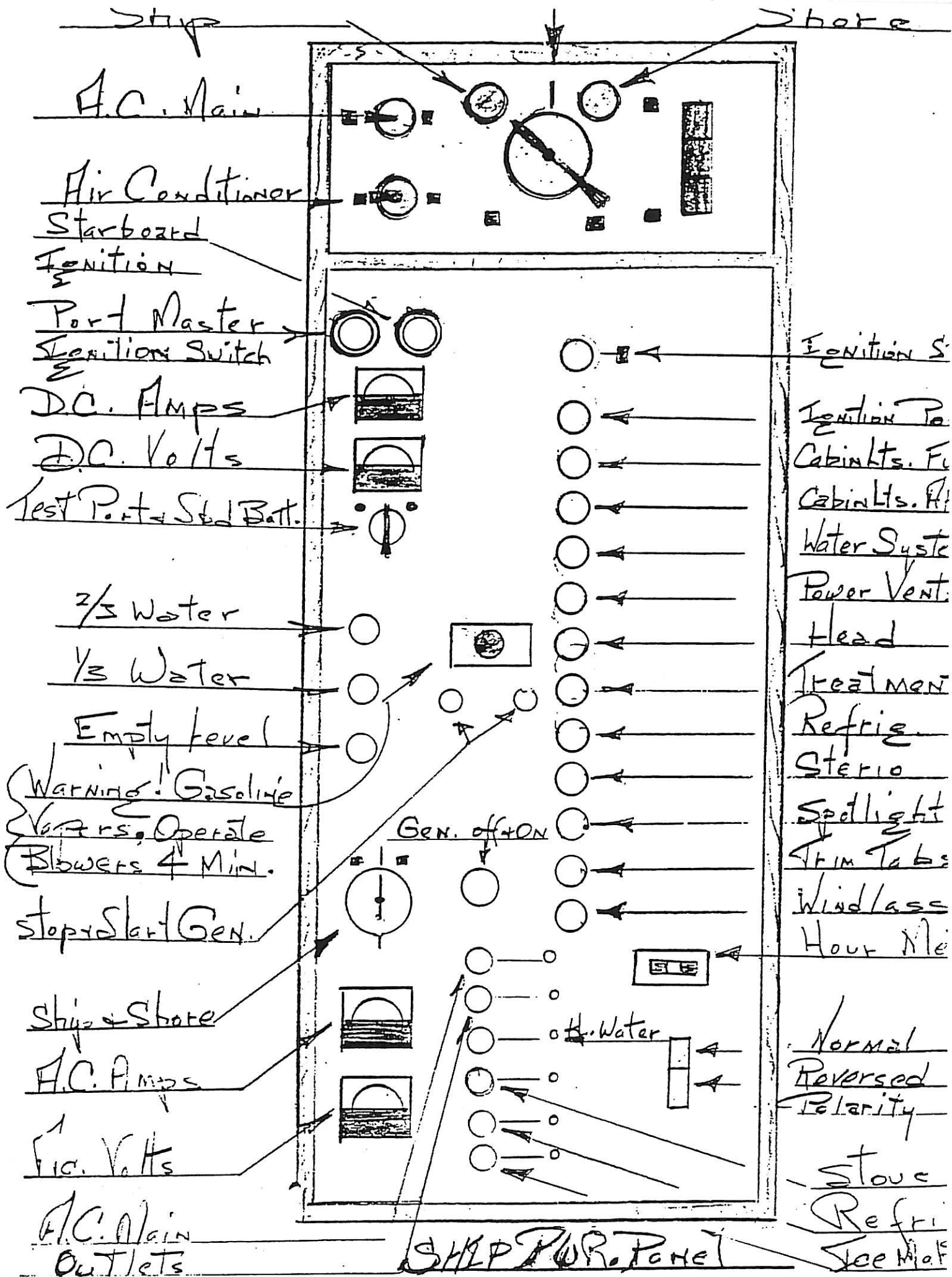
abaft the starboard beam, and my boat will be proudly flying a NIFR pennant with the letters C R carefully monogrammed thereon.

## NAUTICAL TERMS

Entire living area . . . . .	Cabin
Bedroom . . . . .	Stateroom
Bathroom . . . . .	Head
Kitchen . . . . .	Galley
Livingroom . . . . .	Salon
Walls . . . . .	Bulkheads
Ceiling . . . . .	Overhead
Floors . . . . .	Deck
Windows . . . . .	Port or port holes
Beds . . . . .	Berths or bunks
Closets . . . . .	Lockers
Storage space . . . . .	Stowage
Steering wheel . . . . .	Helm or bridge
2nd bridge (above cabin). . . . .	Flying bridge
Opening in floor or deck. . . . .	Hatches
Ropes . . . . .	Lines
Width of boat . . . . .	Beam
Area under deck or floor. . . . .	Bilge
Front deck or floor . . . . .	Foredeck
Back deck or floor . . . . .	Aftdeck
Back portion of hull. . . . .	Transom
Basic part of boat . . . . .	Hull
To put something away . . . . .	To stow it
Shower . . . . .	Water closet
Steps . . . . .	Companion ladder
Anchor rope stowage . . . . .	Hawser hole
LOA . . . . .	Length overall
LOW . . . . .	Length of water-line
Skipper of sailboat . . . . .	Ragmen
Skipper of motorboat. . . . .	Stink potter
Compartment at stern . . . . .	Lazarette
Tied up . . . . .	Mooring
Bumpers . . . . .	Fenders

Directions aboard a boat





## DO'S AND DON'TS ABOARD A BOAT

Never board a boat until permission has been granted.

Always wear deck shoes.

Know how to tie lines.

Wear eyeglasses? Secure them with a keeper cord.

Don't wear hard soles or high heel shoes.

Keep your damn feet off the varnish.

Keep key to boat attached to a float.

Don't put anything in the head.

Don't press buttons in the head.

Don't wax the varnish.

Watch out for Plexiglass-- No solvents!

Using solvents? Beware fumes settle in the bilge.

Do not allow your crew to smoke aboard a boat.

Always turn off generator before leaving.

Be sure switches on electric panel are left as you found them.

Retie mooring lines exactly as you found them.

Do not use steel wool on decks ,It rusts! Use bronze

Do use an antibicrobial

Do test all chemicals in an inconspicuous place.

Do learn the boatsmen 's language.

Do monitor your dry down.

Do study Chapman; th Boater's Bible

Be certain you are covered by the proper workmen's compensation insurance.

## WELCOME ABOARD

Kindly observe the following rules, it will be a helluva lot easier and more comfortable for the crew . . . . . After all whose boat is it?

1. Keep your damn feet off the varnish.
2. Don't get impatient with the crew: Remember your Skipper is still learning and he is more scared than you are.
3. Keep your damn feet off the varnish.
4. If a fellow passenger gets anxious, knock him in the head with an empty whiskey bottle.
5. If you don't like the food, to hell with you — the captain likes it.
6. Keep your damn feet off the varnish.
7. Only six people allowed in the head at a time:  
Don't put anything in the head you haven't swallowed,  
exception — two sheets of paper per flush.
8. Be thankful you arrive anywhere.
9. Always let the crew off first — after all the damm thing might be sinking.
10. Keep your damn feet off the varnish.
11. Don't bother the Skipper — he's along for the ride too.
12. If your feet get wet, don't show any fear — you might frighten the crew.
13. SHUT UP. Keep your damn feet off the varnish.
14. By all means don't get seasick — at least, not until you are off the boat.
15. Don't expect the beer to be cold — it never is.
16. Don't ask embarrassing questions of the crew, such as
  - a. Where are we?
  - b. What time will we dock?
  - c. Does the radio work?
  - d. Where are the life jackets?
  - e. Where is the head?
  - f. How's the weather — is the front up ahead?

**KEEP THOSE FEET OFF THE DAMN VARNISH????**

*Rossmoor Yacht Club*

*Dedicated to safe boating.*

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