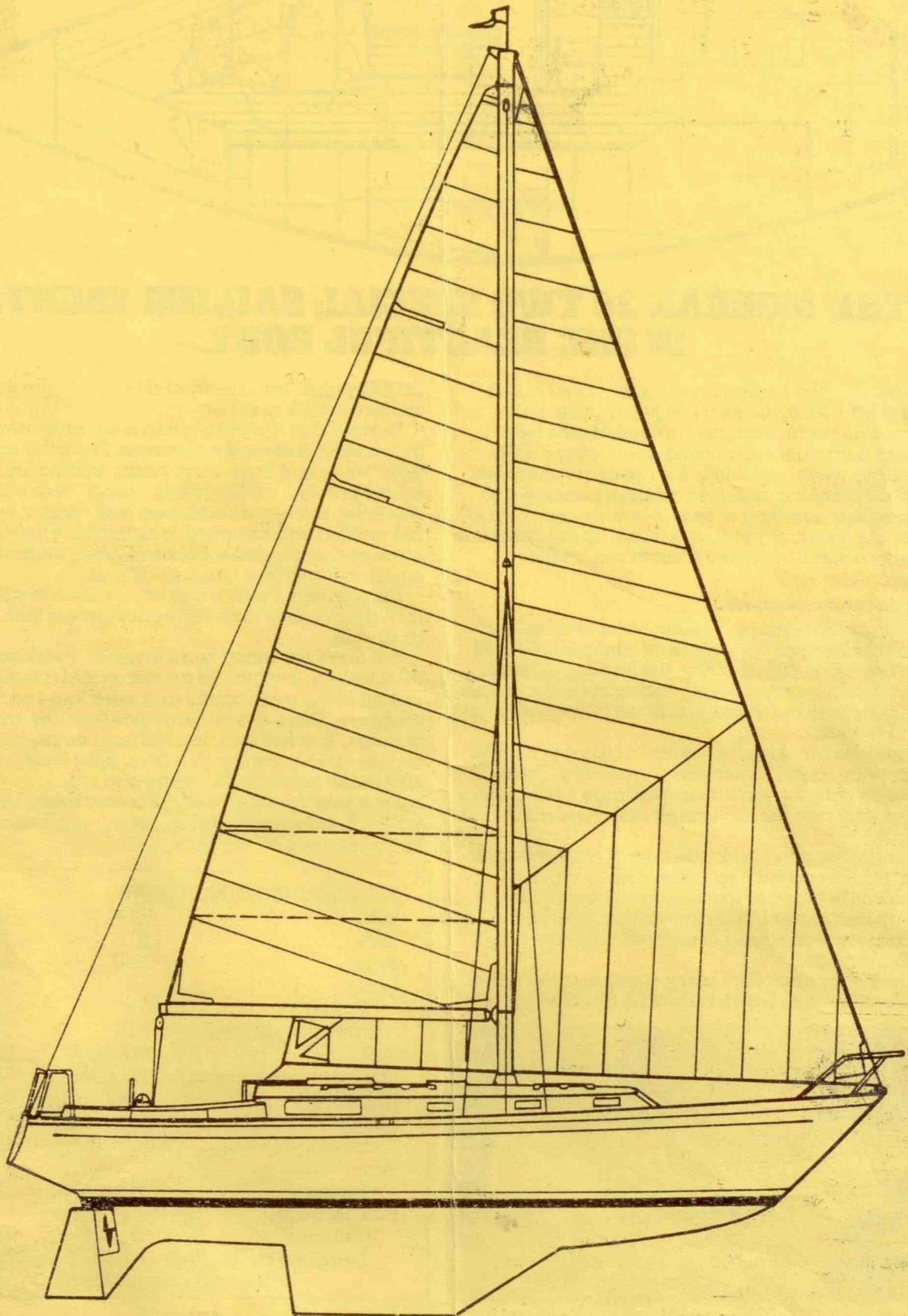
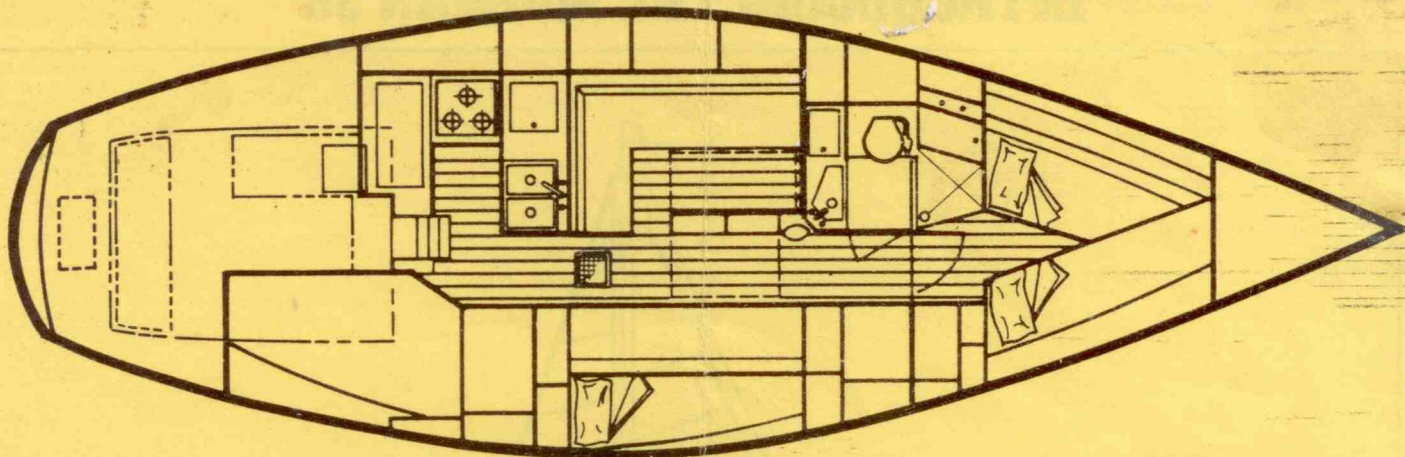


INTRODUCING THE MORGAN 38



**THE BLUE-WATER CRUISING YACHT
THAT LOVES TO GO RACING.**



THE MORGAN 38 TWO SPECIAL SAILING YACHTS IN ONE BEAUTIFUL BODY.

Our new 38 is the beginning of a new breed of sailing yachts from Morgan. It's a fast, top quality, blue-water cruising yacht, designed to combine the best qualities of both classical cruising and racing yachts. As a cruising yacht, she fulfills the needs of the serious sailor who's planning extended offshore passage and wants excellent handling at sea, plus supreme comfort dockside. As a sailing yacht, she meets all the demands of the serious competitor who's "out to win" in the club races.

It takes on the one-tonners.

The Morgan 38 features a heavy hand laid-up fiberglass hull constructed with fire-retardant resin. Our 38 hull has been tank-tested at Stevens Institute for both speed and stability in passage-making conditions. And proven faster than the average one-ton hull tested within the past few years.

The topsides are Airex®-cored for maximum rigidity and to provide sound and thermal insulation. There are opening ports for ventilation and large fixed ports in the galley and over the navigation station for additional light.

The roomy T-shaped cockpit is both comfortable and efficient. All sheets and the engine control can be operated easily from the wheel steering station. There are two cockpit lockers, lined for easy maintenance; and an aft lazarette with sealed overboard vent offers additional storage.

The deck plan also offers many safety features. Like wide side decks with 5-inch bulwarks, double lifelines,

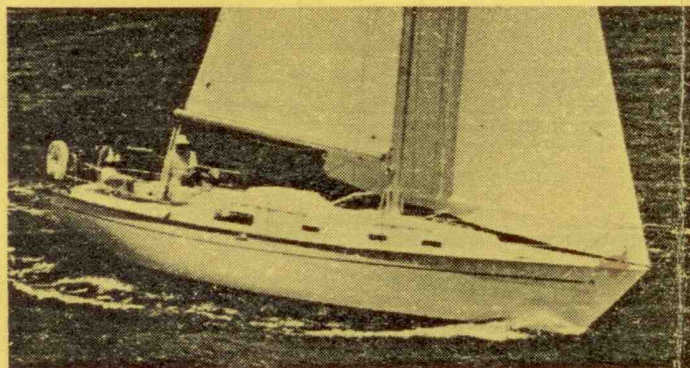
double pulpit, and plenty of non-skid to protect sail-tenders in slick weather.

Below deck, the main cabin is sensibly arranged to give a feeling of roomy openness. The color scheme is teak, white and brass for a warm, traditional look. Her sound-proofed all-fiberglass "head" features a home-size toilet and separate shower stall. In fact, everything below has been designed to make this a very handsome and comfortable dockside home that's ideal for entertaining guests at sea or ashore.

Here, again, there is a great attention to safety. Including no less than eight easy-access teak and brass grab-rails.

But there are many more features. Including three deck lockers, a separate anchor locker, a night lighting system in the main cabin, and extra large cockpit scuppers. There are performance features and comfort features. Touches that resulted from us listening to what serious sailors wanted in a boat. (Like lots of storage space: she has over 40 lockers and bins.)

Look into the 38. The first of a new breed of sailing yachts from Morgan. It's like getting two beautiful new boats. At one beautiful low price.



PRINCIPAL SPECIFICATIONS

LOA	38'4"	11.68m
LWL	30'6"	9.30m
Beam	12'0"	3.66m
Draft:		
Standard keel	5'0"	1.52m
Optional deep keel	6'0"	1.83m
Sail Area	668 sq. ft.	62 sq. m
Displacement (approx.)	17,000 lbs.	7,711kg
Ballast (approx.)	6,800 lbs.	3,084kg
Main Mast Height		
above DWL	50'6"	15.39m
Water Tankage		
(standard)	55 gals.	208 liters
Fuel Tankage		
(standard)	40 gals.	151 liters

Designed by Ted Brewer, Jack Corey and the Morgan Design Group.

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE.



Morgan Yacht/7200 Bryan Dairy Rd.,
Largo (St. Petersburg), Florida 33543
Tel: (813) 544-6681 Telex: 52-3457

I. FOREWORD

A. Welcome!

With your purchase of your new Morgan Yacht, you became a member of a large fraternity of Morgan owners. Welcome to the group!

Over the years, more than 4000 Morgan yachts have been produced and sold. We have maintained contact with many of the owners and users of our yachts. Feedback from them has been extremely useful in our continual upgrading of our product. This feedback, coupled with our internal R&D programs and the application of new technologies developed in the marine industry and related industries, is reflected in your yacht's design and construction. We believe that your yacht represents the current "state of the art"; and, we believe she will satisfy your expectations with respect to aesthetics, function, and safety.

Morgan Yacht is committed to producing and marketing the best value in sailing yachts available in the world. While each person's concept of value varies, factors generally considered are quality of design and workmanship, performance, safety, aesthetics, purchase price, and resale value. The weighing of these factors differs by individual and over time. We welcome your assessment of our product. Input from you will help us measure and, if necessary, change the balance of priorities assigned to our product.

We wish you many happy years of sailing with your new yacht, and.....

LET'S KEEP IN TOUCH !

MORGAN YACHT

I. FOREWORD

B. Purpose and Scope of Owner's Manual

The purpose of the Owner's Manual is to provide you with the following information:

1. General operating procedures for your yacht and all of the factory installed systems.
2. General maintenance procedures.
3. Specifications, drawings, and schematics on the yacht, her components, and her system.

Volumes could be written on the operation, maintenance, and repair of your yacht and her systems. To keep the text manageable in terms of readability and easy reference, much of the detail has been omitted. Supplementing the text, you will find separate manuals for most of the major equipment in your yacht. The separate manuals, coupled with the general text and drawings provided in the Owner's Manual, should allow you or your yard to diagnose and correct most problems you are likely to encounter.

We encourage you to first study the Owner's Manual carefully and then to read the various equipment manuals. This will provide you with an understanding of the basics and a knowledge of where to locate specific details.

Discussions on navigation and general boat handling are beyond the scope of the Owner's Manual. Information on these extremely important areas is available in numerous publications. A list of recommended reading is included in the last section of the manual.

Morgan Yacht continually upgrades its product. Every effort is made to update the Owner's Manual to reflect these changes, and the manual is believed to be current at the time of printing. If, however, you find a discrepancy between the manual and the yacht, consult your dealer before operating the system in question.

I. FOREWORD

C. Sources of Additional Information and Parts

Morgan Yacht dealers have been selected on the basis of their knowledge in the marine field. In most cases, your dealer will be able to answer questions which arise and are not covered in the manual. He can also obtain replacement parts for you from Morgan Yacht. You should contact your dealer first for information or repair parts.

Morgan Yacht has three internal service groups to assist you with problems the dealer is unable to resolve. All are located at the main plant at 7200 Bryan Dairy Road, Largo, Florida 33543. The phone number is (813) 544-6681.

Warranty Department: Provides information on warranty policy and administers warranty work.

Customer Service Department: Provides general and technical information on Morgan products.

Ship's Store: Supplies repair parts, retrofit kits, and general marine gear (hours 10:00 A.M. to 5:00 P.M. Monday through Friday).

II. SPECIFICATIONS

A. Design Concept

Your new Morgan 38 is the result of the most intensive and challenging design concept undertaken by Morgan Yacht in recent years. The concept of combining cruising appeal with maximum sailing performance has been achieved to its fullest in the Morgan 38. While this goal is common to the expanding range of club racers, there are significant departures from the norm which distinguish the Morgan 38.

"Refinement" is the key to the Morgan 38 distinction. But, before refinement in design could begin, a basic design, dictated by general dimensional parameters was drawn up as a starting point. From this starting point began a long, intensive honing to perfection of the end result.

The refinement process was heavily influenced by design inquiries received from existing and potential owners through the Morgan marketing/dealer organization. Using this input, positive design direction was defined, while establishing a more broad participation and critiquing through the development stages.

The preliminary design underwent repeated and highly critical analysis of the following details:

1. Exterior profile - resulting in low profile cabin trunk lines, pleasing sheer and beautiful overhangs.
2. Deck layout - resulting in wider side decks, functional cockpit and high "sea safe" bulwarks.
3. Design ratios of waterline, displacement, sail area, beam and wetted surface. These ratios are important to achieve minimal resistance with maximum sail horsepower.
4. Interior arrangement refinements to achieve maximum utilization of space within the performance hull design. Livable volume is at a premium in any high performance hull.
5. Hull and keel design without objectionable compromises. A thorough testing program at Stevens Institute of Technology was used in the final design adjustments and assured a high level of performance potential in the final configuration.

II. SPECIFICATIONS

A. Design Concept (continued)

The test tank data of the "M-36 One Ton" was used for comparison. As a high performance racer of similar hull dimensions and race proven performance (second place in the "One Ton National Championships"), the M-36 provided a reliable yardstick for evaluating the new Morgan 38.

The high stability of the M-36 was duplicated in the Morgan 38 with a slightly greater effective sail area. Less draft was accomplished without sacrificing stability by the choice of a lower aspect ratio keel profile. This allows thicker keel sections, which provides efficient placement of the lead ballast.

The Morgan 38 test tank results are equal or better than "test tank standards" for upright resistance, stability, and boat speed in the close-hauled condition.

6. Material cost engineering to put the right materials in the right places for their intended service requirements. The all fiberglass head is an example of material engineering at work in your new Morgan 38. This effort also yielded a better value for your investment, resulting in a fine seaworthy yacht for substantially less initial cost than other yachts of similar size and quality, comparably equipped.
7. Accessibility to structural areas has been thoroughly engineered to provide flexibility never before incorporated in a production yacht. Headliner, engine, and tank access has been made easy.
8. Additional convenience features have been pre-engineered into your Morgan 38. These items would otherwise be left to you and probably would result in "dumped aboard" rather than "built-in." Some examples of these features are double access garbage bin, ice box food racks, dacron cockpit storage bins, below the sole dust bin, insulated hull sides, etc.

You can be assured that during the refinement process of the Morgan 38, many choices of any particular detail were considered. The details incorporated in your Morgan 38 result in less compromise than any alternate choice.

The Morgan 38 was Morgan Yacht's first experience in the utilization of an outside design office on a production model. Ted Brewer worked closely with Jack Corey, Morgan's Chief Designer, and the Morgan Design team throughout the design, pre-production and production start-up phases of the Morgan 38.

II. SPECIFICATIONS

A. Design Concept (continued)

At the outset, there was some concern that "two creative efforts" on the same project could result in conflict or a hodgepodge. These concerns were dispelled early-on in the project as it became obvious to all of us that both Ted Brewer and Jack Corey were "springboarding" of each other's efforts. We believe that the Morgan 38 design effort was a true synergism where the sum is greater than the parts. We are extremely pleased with the end result, and think you will be also.

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II. SPECIFICATIONS

B. General Design Specifications

Length Overall	38'4"	11.68 m
Length Waterline	30'6"	9.30 m
Beam	12'0"	3.66 m
Draft (Optional 6' draft available)	5'0"	1.52 m
Displacement	17,200 lb	7,801 kg
Lead Ballast (Internal)	6,800 lb	3,084 kg
Sail Area	668 sq. ft.	62 sq. m.
100% Fore Triangle	374 sq. ft.	35 sq. m.
Mainsail	294 sq. ft.	27 sq. m.
Standard Engine	33 hp Yanmar	
Fuel Tankage (FRP Tank)	40 gal.	151 liters
Water Tankage (Rotomolded Polyethylene Liner in FRP structure)	60 gal.	227 liters

II. SPECIFICATIONS

C. Standard Equipment

HULL

Designed by Ted Brewer, Jack Corey and the Morgan Design Team
 Five redundant main
 Laminare hand-laid up, substantially reinforced
 in way of keel and chine/strake
 Interior wood construction below cabin sole
 treated with preservative
 Design proven for speed and painting ability by
 tank test at Stevens Inst. of
 Tech. and shape of keel assure easy tracking
 Large rudder for full control on downwind legs
 Shoal or deep draft keel available
 Insulated core hull construction to improve
 stiffness and reduce noise and condensation
 Thru-hull fittings recessed to minimize underwater
 resistance
 Cabin sole access for easy transducer installation
 Fiberglass double bottom system over internal
 lead ballast
 Boat in contrasting color

DECK & EXTERIOR HARDWARE

5" high bulwark w/roak cap & aluminum rubrail
 Cant aluminum midship mooring chocks w/cleats
 for spring lines
 4 mooring cleats fore and aft
 3 non-corrosive opening parts w/Leam glazing
 and covers
 Large fixed ports in galley and navigation area
 Custom welded stainless steel bow and stern
 pulpit w/groove
 2 1/2" high stainless steel lifeline stanchions
 w/vinyl covered double lifelines
 Stanchions thru-bolted to bulwark for strength
 and to keep deck clear
 Lifeline groove, port and starboard
 Custom stainless steel sternmost fitting
 Flush anchor and winch locker w/overboard
 drain built into foredeck w/roak rib
 Stern chock anchor rode fairlead
 Companionway hatch w/Inlay and fiberglass cover
 Foredeck and amidship hatches of heat aluminum
 w/transparent Lexan
 Teak deck handrails
 2 1/2" wide weather decks
 Deck and cabin top reinforced for addition of
 hardware
 Space for 8" dinghy aft of mast
 Lexan storage locker w/overboard drain
 and roak hatch

COCKPIT

360° visibility while seated in cockpit
 Custom-designed cockpit seats and seating
 T-shaped cockpit footwell designed for level-
 based steering and winching
 Extra large self-draining cockpit scupper
 Scupper designed to prevent backflow
 8" illuminated compass w/can shield
 Steering system inspection and access through
 helmman's seat
 Helmman can handle charts and engine controls
 from steering station
 Two cockpit seat lockers with liners
 Traveler removed and flush to escape cockpit
 cushions
 Provision for mounting optional Schaefer P30-36
 racing blocks
 Teak cockpit coverings

SALON & FORWARD CABIN

Wet locker with drain located close to
 companionway
 Large 21" deep chart table with storage under
 Accessible instrument counting area in navigator's
 station
 Teak chart table w/liqueur locker and storage
 below
 Double quarter berth opposite galley

SALON & FORWARD CABIN (continued)

One pilot seat berth w/cowage under and one
 guest berth to starboard
 Berths convert easily into double berth with
 waterproof molded storage under
 A total of 40 lockers, drawers and bins throughout
 Canned goods storage area under chart table
 Two hanging lockers
 Separate door for privacy in forward cabin
 European style teak doors and drawer faces
 41" headroom
 Teak and holly cabin sole
 Teak varnish paneling on all bulkheads
 Mildew resistant and fire retardant vinyl interior
 hull liner
 Custom fabricated 4" foam cushions
 Decorator-coordinated fabrics and materials
 Teak companionway ladder
 Brass and teak handrails
 Teak fiddle throughout
 Insulated engine room w/eccom both sides and
 front
 Brass interior hardware
 Inside lock on companionway hatch
 Locker doors ventilated
 Night light system of sole
 All teak hand rubbed and sealed
 Duct pump w/roak grate
 Hand rubbed penetrating sealer on all teak surfaces

GALLEY

U-shaped galley
 Pockets installed for optional safety harness
 Galley located near companionway hatch
 8 1/2 cu. ft. ice box w/shelving and hand pump
 Adherent dry food lockers can be used to install
 2 cu. ft. Moralee refrigerator/freezer
 Ice box has 3" foam insulation
 Ice box lid hinged in middle for easy removal
 when loading
 Deep double draining steel sink close to counterline
 Selected bins and lockers include Rubbermaid made
 Flush counter space over ice box
 Emergency fresh water hand pump in galley
 Saltwater galley foot pump
 Lockers lined w/vinyl and/or teak
 Overboard bin accessible from galley and cockpit
 Alcohol stove with two burners and oven, graduated
 Silverware bin w/tray
 Pot locker behind stove

HEAD

Sound-insulated head
 Large home-size toilet with lever pump
 Molding tank standard
 Holding tank pump-out warning light in head
 Entire head unit designed in fiberglass for water-
 tightness and durability
 Teak shower with seat
 Telephone-type shower head allows washing down
 of entire head compartment
 Overboard drains in both shower and head sole
 Light with outer air mirror designed for
 comfortable shower and make-up

BILGE

Only one locker and vent stop drain into bilge
 Reinforced cast aluminum vent stop adjustable for
 fore and aft ride
 March covers for clearing and servicing bilge pump
 Bilge designed for limitation of manual bilge
 pump use
 All lead ballast — on ferrous metal panelings

STANDING & RUNNING RIGGING

Sloop rig
 Mast stepped on keel
 Mast/boom — glass covered (hardened) surfaces for
 increased strength and corrosion resistance

STANDING & RUNNING RIGGING (continued)

PVC wiring conduit with messenger inside mast
 Airfoil section aluminum spreader
 Complete standing and running rigging
 Boom w/teak gooseneck and internal outhaul
 system
 Topping lift
 Internal halyards standard
 Pre-stretched dacron rope halyards
 Masthead has two wire sheaves for spinnaker halyards
 Masthead w/4:1 purchase through Schaefer blocks
 Genoa sheet
 Double spinnaker zlines at masthead

SAIL HANDLING EQUIPMENT

Two 2-speed Lewmar 43 sheet winches
 One 10" winch handle
 One Lewmar 8 main halyard winch
 One Lewmar 18 two-speed jib halyard winch
 Nicas-Fits maintenance w/cover & movable
 stop
 1 1/2" x 12" aluminum genoa track

PROPULSION & STEERING CONTROLS

33 hp Yanmar diesel engine w/2:1 reduction gear
 Senour's fresh water cooling
 Mechanical transmission stops free-wheeling of
 prop without shaft brake
 Propeller shaft marked for vertical alignment of
 blades
 Fiberglass engine drip pan removable for easy
 cleaning
 Engine can be serviced easily from within
 Ecom mechanical steering
 w/passenger
 Large stainless steel cast-iron-type wheel
 2-bladed propeller on 1 1/2" stainless steel shaft
 Engine control panel includes tachometer, automatic
 bilge pump override switch, slower switch, and
 visual/audio oil pressure, water temperature, and
 bilge pump alarms
 Provision for optional emergency filler

TANKAGE & PLUMBING SYSTEMS

All tanks located below sole and berths or in keel
 to keep weight low
 Inspection ports in water and fuel tanks
 Provision for removal of water tanks
 All tank fills located on weather decks
 55 gal. Integral fiberglass water tank with poly-
 ethylene liner for strength & resistance to water storage
 Space provided for optional 40 gal. water tank on
 port side
 40 gal. Integral baffled fiberglass fuel tank below
 sole for 300 mile cruising range
 Pressure water system w/fitter at pump and rigid
 PVC distribution lines
 Plumbing system pressure tested
 1200 gal. submersible 12 volt bilge pump in bilge
 Manually controlled 12 volt electric shower drain
 pump

ELECTRICAL SYSTEM

All wiring SEA color coded
 All interior circuits (except engine) pass through
 one main junction panel
 Custom 11.5/12 volt DC modular electronic panel
 w/hydraulic magnetic circuit breaker w/roak
 sole stem indicator, voltmeter and amp meter,
 block switched aluminum fuse
 11.5 volt 30 amp shore-power system w/transparent
 and w/30" cord and 15 amp shore
 battery has an on-board fuel line (changing circuit)
 Batteries — two 65 amp hour 12 volt marine
 4-position vent-boost master battery selector
 12 volt lighting throughout
 12 volt engine main blower
 Large, flat European-style international running
 lights on cockpit
 Daylight light, bowhead light, compass light
 Night light system

PRICES AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

II. SPECIFICATIONS

D. Serial Numbers

Hull Number (Coast Guard)

Engine Serial Number

Hot Water Heater Serial Number

Stove Serial Number

Refrigerator Serial Number

II. SPECIFICATIONS

E. Manufacturer's Documents

For every yacht manufactured by Morgan, a Master Carpenter's Certificate (MCC) and Manufacturer's Statement of Origin (MSO) are prepared upon request. Both the MCC and MSO must be prepared with the name of the dealer to which the yacht was originally sold. The dealer, then, upon payment in full, endorses these documents over to the person to whom the yacht was sold. The MCC is used for U.S. Coast Guard documentation, and the MSO is the title to the yacht and used for state registration.

Morgan Yacht can issue only one original MCC and MSO. If they become lost, no duplicate will be issued by Morgan Yacht. However, if you wish to document your yacht, and the MCC has been lost, Morgan Yacht can provide a letter which will enable you to proceed with documentation of your yacht with the U.S. Coast Guard.

II. SPECIFICATIONS

F. Procedures and Data for Documentation

Documentation must be accomplished with the United States Coast Guard in the United States or with the governing agency in the country where your vessel is to be registered. We suggest you contact the Documentation Office nearest you for full details, forms, and instructions.

The following notes and references are made for your information and convenience. They should in no way be misconstrued as complete and detailed instructions.

Procedure:

Pleasure Class - Under 20 tons requires a Yacht License. Twenty tons and over requires a Certificate of Enrollment and a Yacht License.

Application for Admeasurement - Requires a Master Carpenter's Certificate issued by the builder on the prescribed Coast Guard form. This certificate will be retained by the Coast Guard with certified copies available to the owner.

Admeasurement - The admeasurer uses data on the Master Carpenter's Certificate (MCC) to compute net tonnage. The following formulas are used for sailboats:

$$\begin{aligned}\text{Gross Tonnage} &= 1/2 (LBD/100) \\ \text{Net Tonnage} &= .9 (\text{Gross Tonnage})\end{aligned}$$

where

L = Length
B = Breadth
D = Depth

Official Number - After admeasurement files your certificate of tonnage, application is made for an official number. Title and mortgage papers are required.

Additional Forms - Application for Number
Declaration of Ownership and/or Extent of Interest
Identification of Owner's or Existing Mortgages
Declaration of No Foreign Interest Involved

II. SPECIFICATIONS

F. Procedures and Data for Documentation (continued)

Designation of Master of Vessel

Declare No Freight or Commercial Passengers to be Carried on Board

Designated Home Port - Licensing Office

Designated Hailing Port - Berth Marking Certificate

Commercial Class - Contact your U.S. Coast Guard Documentation Office for information, due to the complexity of application.

For your information and reference, the next two pages contain sample copies of actual MCC's and MSO's containing the vital information on your boat.

These forms are signed by Morgan Yacht with the authorized signature and title of the person or responsibility, and are notarized.

Several magazine articles have been written on the subject, which may be of assistance to you in your application. Reprints of these articles should be available from the various yachting and boating magazine publishers.



Morgan Yacht Corporation

7200 BRYAN DAIRY ROAD • LARGO, FLORIDA 33540 • 813-544-6681

MANUFACTURERS STATEMENT OF ORIGIN TO A BOAT SOLD IN THE

The undersigned manufacturer hereby certifies that the new boat described below, the property of said manufacturer, has been sold this _____ day of _____, 19 _____ on

Invoice No. _____

Dealer's Name _____

Address _____

City, State and Zip Code _____

Model Year _____ Serial No. of Boat _____

Hull Length 38 ft. 4 in. Beam 12 ft. 0 in.

Hull Material: ___ Wood ___ Aluminum ___ Steel Fiberglass

Type Boat: ___ Outboard ___ Inboard Sail ___ Other

This form shall be presented with application for Florida title.

The manufacturer certifies that all information given herein is true and accurate to the best of his knowledge.

FIRM NAME Morgan Yacht

Authorized Signature

TITLE OR POSITION Vice Pres.-Manufacturing

Before me personally appeared _____
who by me being duly sworn upon oath says that the statements set forth
above are true and correct. Subscribed and sworn to before me this _____
day of _____, 19 _____

Notary Public

(SEAL)

Date Commission Expires _____



Morgan Yacht Corporation

7200 BRYAN DAIRY ROAD • LARGO, FLORIDA 33540 • 813-544-6681

MASTER CARPENTER'S CERTIFICATE (BUILDER'S CERTIFICATE)

PLACE	Largo, Florida 33543	DATE	Current Date	NAME OF MASTER OR PRINCIPAL CARPENTER	Douglas G. Franzese
ADDRESS	7200 Bryan Dairy Road, Largo, Florida 33543				
NO.	Oil Screw	NULL NO.			
VESSEL WAS BUILT (Insert "By me," "Under my direction," or "By _____" giving full corporate name, if applicable)					
By Morgan Yacht					
YEAR OF COMPLETION	PLACE WHERE BUILT	Largo, Florida 33543 U.S.A.		MATERIAL OF BUILD	Fiberglass
NAME OF PERSON OR PERSONS FOR WHOM BUILT AND INDIVIDUAL INTEREST OWNED					

Dealer Name and Address

(Individual interest owned 100%)

NUMBER OF DECKS	NUMBER OF MASTS	CONTOUR OF STEM	SHAPE OF STEM
		Straight	Reverse Transom
LENGTH OF VESSEL	38 $\frac{3}{10}$ FEET	BREADTH OF VESSEL	12 $\frac{0}{10}$ FEET
		DEPTH OF VESSEL	8 $\frac{3}{10}$ FEET
GROSS TONNAGE	NET TONNAGE		

THE FOLLOWING ADDITIONAL PARTICULARS SHALL BE GIVEN FOR THE ENGINE OF MACHINERY-PROPELLED VESSELS

TYPE OF ENGINE (See preceding beam, turbine, etc., if steam, oil, gas, etc., if internal combustion)	
Diesel	
PLACE WHERE BUILT	YEAR BUILT
BUILT BY	
POWER (Steam, heavy oil, light oil, gasoline, kerosene, etc.)	
Diesel	

I certify that the information given above is true and correct to the best of my knowledge and belief.

Before me personally appeared _____ who by me being duly sworn upon oath says that the statements set forth above are true and correct. Subscribed and sworn to before me this _____ day of _____ 19____ _____ Notary Public (SEAL) Date Commission Expires _____	SIGNATURE OF MASTER CARPENTER OR BUILDER
	SAMPLE COPY ONLY - NOT TO BE TRANSFERRED

II. SPECIFICATIONS

C. Standard Equipment

HULL

Designed by Ted Brewer, Jack Corey and the Morgan Design Team
 Fire retardant resin
 Laminate hand-laid up, substantially reinforced in way of keel and chainplates
 Interior wood construction below cabin sole treated with preservative
 Design proven for speed and painting ability by tank heat or Stevens Institute
 Skag and shape of keel assures easy tracking
 Large rudder for full control on downwind legs
 Shoal or deep draft keel available
 Insulated core hull construction to improve stiffness and reduce noise and condensation
 Thru-hull fittings recessed to minimize underwater resistance
 Cabin sole access for easy transducer installation
 Fiberglass double bottom system over internal lead ballast
 Boat in contrasting color

DECK & EXTERIOR HARDWARE

5" high bulwark w/teak cap & aluminum rubrail
 Cast aluminum midship mooring chocks w/cleats for spring lines
 4 mooring cleats fore and aft
 3 non-corrosive opening ports w/Lexan glazing and screens
 Large fixed ports in galley and navigation area
 Custom welded stainless steel bow and stern pulpit w/gates
 27" high stainless steel lifeline stanchions w/vinyl coated double lifelines
 Stanchions thru-bolted to bulwark for strength and to keep deck clear
 Lifeline gates, port and starboard
 Custom stainless steel stemhead fitting
 Flush anchor and windlass locker w/overboard drain built into foredeck w/teak lids
 Stone chock anchor rode fairlead
 Companionway hatch w/fiberglass and fiberglass cover
 Foredeck and amidship hatches of cast aluminum w/transparent Lexan
 Teak deck handrails
 23" wide weather decks
 Deck and cabin top reinforced for addition of hardware
 Space for 8' dinghy aft of mast
 Lazarette storage locker w/overboard drain and teak hatch

COCKPIT

360° visibility while seated in cockpit
 Comfort-designed cockpit seats and coaming
 T-shaped cockpit footwell designed for level-footed steering and winching
 Extra large self-draining cockpit suippers
 Scoopers designed to prevent backflow
 5" illuminated compass w/sun shield
 Steering system inspection and access through helmman's seat
 Helmman can handle sheets and engine controls from steering station
 Two cockpit seat lockers with liners
 Traveler recessed and flush to cockpit cushions
 Provision for mounting optional Schober P30-26 turning blocks
 Teak cockpit coaming

SALON & FORWARD CABIN

Wet locker with drain located close to companionway
 Large sit-down chart table with storage under accessible instrument mounting area in navigator's station
 Teak dinette table w/liquor locker and storage below
 Double quarter berth opposite galley

SALON & FORWARD CABIN (continued)

One pillar sea berth w/storage under and one settee berth to starboard
 Dinette converts easily into double berth with waterproof molded stowage under
 A total of 40 lockers, drawers and bins throughout
 Canned goods stowage area under chart table
 Two hanging lockers
 Separate door for privacy in forward cabin
 European style teak doors and drawer faces
 6'3" headroom
 Teak and holly cabin sole
 Teak veneer paneling on all bulkheads
 Mildew resistant and fire retardant vinyl interior hull liner
 Custom fabricated 4" foam cushions
 Decorator-coordinated fabrics and materials
 Teak companionway ladder
 Brass and teak handrails
 Teak Raffles throughout
 Insulated engine room w/access both sides and front
 Brass interior hardware
 Inside lock on companionway hatch
 Locker doors ventilated
 Night light system at sole
 All teak hand rubbed and sealed
 Dust sump w/teak grate
 Hand rubbed penetrating sealer on all teak surfaces

GALLEY

U-shaped galley
 Padeyes installed for optional safety harness
 Galley located near companionway hatch
 8 1/2 cu. ft. ice box w/shelving and hand pump
 Adjacent dry food lockers can be used to install 2 cu. ft. Norcold refrigerator/freezer
 Ice box has 3" foam insulation
 Ice box lid hinged in middle for easy removal when loading
 Deep double stainless steel sink close to centerline
 Selected bins and lockers include Rubbermaid racks
 Flush counter space over ice box
 Emergency fresh water hand pump in galley
 Saltwater galley foot pump
 Lockers lined w/vinyl and/or teak
 Garbage bin accessible from galley and cockpit
 Alcohol stove with two burners and oven, gimbaled
 Silverware bin w/tray
 Pot locker behind stove

HEAD

Sound-insulated head
 Large home-size toilet with lever pump
 Holding tank standard
 Holding tank pump-out warning light in head
 Entire head unit designed in fiberglass for water-tightness and cleanability
 Seat shower with seat
 Telephone-type shower head allows washing down of entire head compartment
 Overboard drains in both shower and head sole
 Light with mirror and mirror designed for comfortable shaving and make-up

BILGE

Only wet locker and mast step drain into bilge
 Reinforced cast aluminum mast step adjustable for fore and aft rake
 Hatch access for clearing and servicing bilge pump
 Bilge designed for installation of manual bilge pump hose
 All lead ballast — no ferrous metal punchings

STANDING & RUNNING RIGGING

Sloop rig
 Mast stepped on base
 Mast/boom — glass paneled (hardened) surfaces for increased strength and corrosion resistance

STANDING & RUNNING RIGGING (continued)

PVC wiring conduit with messenger inside mast
 Airfoil section aluminum spreaders
 Complete standing and running rigging
 Boom w/fixed gooseneck and internal outhaul control
 Topping lift
 Internal halyards standard
 Pre-stretched dacron rope halyards
 Masthead has two extra sheaves for spare halyards
 Main sheet w/4:1 purchase through Schober blocks
 Genoa sheets
 Double spinnaker cranes at masthead

SAIL HANDLING EQUIPMENT

Two 2-speed Lewmar 43 sheet winches
 One 10" winch handle
 One Lewmar 8 main halyard winch
 One Lewmar 16 two-speed jib halyard winch
 Nicro-Floa mainsheet traveler w/car & movable stops
 1 1/2" x 12" aluminum genoa tracks

PROPULSION & STEERING CONTROLS

33 hp Yanmar diesel engine w/2:1 reduction gear
 Secure fresh water cooling
 Mechanical transmission stops free-wheeling of prop without shaft brake
 Propeller shaft blanked for vertical alignment of blades
 Fiberglass engine drip pan removable for easy cleaning
 Engine can be serviced easily from cabin
 Eson mechanical steering w/pedestal
 Large stainless steel destroyer-type wheel
 2-bladed propeller on 1 1/2" stainless steel shaft
 Engine control panel includes tachometer, automatic bilge pump override switch, slower switch, and visual/audible oil pressure, water temperature, and bilge pump alarm
 Provision for optional emergency tiller

TANKAGE & PLUMBING SYSTEMS

All tanks located below sole and berths or in lead to keep weight low
 Inspection ports in water and fuel tanks
 Provision for removal of water tanks
 All tank fills located on weather decks
 55 gal. integral fiberglass water tank with polyethylene liner for strength & no-leak water storage
 Space provided for optional 40 gal. water tank on port side
 40 gal. integral baffled fiberglass fuel tank below sole for 500 mile cruising range
 Pressure water system w/filler at pump and rigid PVC distribution lines
 Plumbing system pressure tested
 1200 gph submersible 12 volt bilge pump in bilge
 Manually controlled 12 volt electric shower drain pump

ELECTRICAL SYSTEM

All wiring BIA color coded
 All interior circuits (except engine) pass through one main junction panel
 Custom 115/12 volt DC modular electric panel w/hydraulic magnetic circuit breakers w/water-shielded indicators, voltmeter and amp meter, block anodized aluminum face
 115 volt 30 amp shorepower system w/transformer and w/30' cord and 15 amp adapter
 In-line fuse on main feed line (charging circuit)
 Batteries — two 65 amp hour 12 volt marine 4-position vapor-proof master battery switch
 12 volt lighting throughout
 12 volt engine room blower
 Large, blue European-style international running lights on pulpit
 Masthead light, foredeck light, compass light
 Night light system

PRICES AND SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

III. COMMISSIONING AND DECOMMISSIONING

A. Initial Commissioning

The commissioning of your yacht is an owner's responsibility. Your dealer may be able to provide you with this service at his yard or recommend a yard which is competent in commissioning Morgan yachts. We strongly recommend that you have the initial commissioning performed by a yard that is experienced in sailboats, and preferably, Morgan sailboats.

The initial commissioning is extremely important. In addition to putting the yacht into service, the following functions are also served:

- Shipping damage is revealed. The trucking company is liable for shipping damage. They require prompt notification of any claims against them.
- Part shortages are revealed. Morgan boxes the loose gear and provides an indexed packing list. We do occasionally make errors. It is much more convincing to us that the error is ours, if we are notified before the yacht is sailed. One owner claimed that he was short shipped a stanchion and that this was first discovered six months after launch!
- Quality defects are revealed. Your yacht is thoroughly checked at the plant. Our quality program for each yacht includes a pool test, water drench test, functional testing of all systems, and visual checks of the entire yacht. However, overland travel often causes leaks and other problems which are difficult to detect by visual inspection alone. Also, we occasionally miss something. As with claims of short shipments, early notification to the factory adds credibility to the claim of a quality defect.

The following functions should be performed during the initial commissioning. Detailed procedures are described in their respective sections of this manual.

1. Inspect hull, deck, rudder, propeller and shaft, and spars for shipping damage,
2. Inventory all loose gear and report shortages or damaged parts.
3. Install thru-hull fittings for owner and/or dealer supplied equipment.
4. Paint bottom. For maximum anti-foulant life, a full second coat of bottom paint is recommended.
5. Launch and inspect all underwater fittings for leaks.
6. Install all loose drain plugs (in bag in galley sink).

III. COMMISSIONING AND DECOMMISSIONING

A. Initial Commissioning (continued)

7. Fill fuel, water, and alcohol tanks and search for leaks. Caution: Be sure to bleed hot water heater before turning on the 110 v. element. The element will burn out immediately if energized in a dry or partially filled tank.
8. Install pulpits, stanchions, and lifeline wires. Safety-wire lifeline ends and gates.
9. Install standing and running rigging on mast. Check mast wiring and lights. Record rigging lengths from tags supplied. (See following check list.)
10. Step mast, set up and adjust rig, pin and tape all tumbuckles, check halyards, and install mast boot. Install boom and topping lift.
11. Reeve sheets, bend on and hoist sails. Furl sails and install sail cover.
12. Connect prop shaft coupling. Align engine to .002" max. clearance. Note: The coupling was disconnected at the plant after alignment check in the pool. This is necessary to prevent damage to the drive train during overland shipment, hauling and/or launching.
13. Check oil and water level in engine. Note: Engine fresh water system has been winterized with permanent antifreeze.
14. Complete installation of owner or dealer supplied equipment.
15. Check battery condition and recharge, if necessary.
16. Check operation of all systems and equipment.
17. Check all doors and drawers for proper movement and secure latching.
18. Water test deck, fittings, and ports and search for leaks.
19. Sea trial under power and sail.
20. Recheck for leaks in interior plumbing systems (fuel, water, and waste) and exterior hardware.
21. Complete Commissioning Certificate and Inspection Report and return to Morgan Yacht.
22. Clean interior and exterior of yacht thoroughly.

The next few pages provide you with a check list used by some of our dealers to inspect and commission Morgan 38's. Your completing this check list will provide you with a "condition report" of the boat before and after initial commissioning.

III. COMMISSIONING AND DECOMMISSIONING

A. Initial Commissioning (continued)

Receiving and Commissioning Check list
(For Owner's Records)

Delivery Inspection

- Boat properly cradled
- Spars properly cradled
- Free of sideswipe damage
- Free of bridge damage
- Companionway seals unbroken
- Absence of external hardware theft
- Loose gear inventory complete

Pre-Launch Inspection

- Road dirt removal
- Bottom paint touched up
- Propeller secured properly
- Rudder moves freely
- Prop shaft turns freely
- All below waterline fastenings are tight
- All plumbing to thru-hulls connected
and securely fastened
- All thru-hull valves closed

Launching Inspection

- Boat properly slung during launch
- No damage during launch
- Thru-hull fittings leak-free
- Rudder bearing leak-free
- Shaft log leak-free
- Shaft packing nut adjusted to 1 drop/
30 seconds with engine off
- Thru-hull valves, connecting and
plumbing leak-free with valves open

YES	NO	CORRECTED

III. COMMISSIONING AND DECOMMISSIONING

A. Initial Commissioning (continued)

Receiving and Commissioning Check List
(For Owner's Records)

Engine Installation

- All mounting bolts tight
- Engine aligned to .002 max. clearance
- Coupling bolts tight
- Shaft set screw tight
- Crankcase oil level full
- Transmission gear box oil level full
- Throttle/shift linkage secure
- Engine stop connection secure
- Drain plugs installed and petcocks closed
- Cooling water level full

Tankage and Plumbing Connections

- Fuel tank and lines leak-free
- Water tank and lines leak-free
- Alcohol tank and lines leak-free
- Alcohol pump functions properly
- Alcohol tank retains pressure

Pulpits and Lifelines

- Pulpits and stanchions secure
- Lifelines properly tensioned
- Lifeline end fittings safety-wired
- Gates function properly
- Lifeline wires free of physical damage

YES	NO	CORRECTED

III. COMMISSIONING AND DECOMMISSIONING

A. Initial Commissioning (continued)

Receiving and Commissioning Check List
(For Owner's Records)

Spars and Standing Rigging (Pre-Stepping)

- Mast free of physical damage
- Boom free of physical damage
- Rigging free of physical damage
- Mast wiring and lights functional
- Masthead pins secured and sheaves free-wheeling
- Standing rigging and topping lift properly fastened to spar and pinned
- Halyards installed
- Spreaders fit and properly secured
- Sail track free of burrs
- All fasteners tight
- Standing rigging lengths recorded below:

YES	NO	CORRECTED

	Length on Morgan Tag	Actual Length
Headstay		
Backstay		
Port Main Shroud		
Starboard Main Shroud		
Port Forward Lower		
Starboard Forward Lower		
Port Aft Lower		
Starboard Aft Lower		

III. COMMISSIONING AND DECOMMISSIONING

A. Initial Commissioning (continued)

Receiving and Commissioning Check List

(For Owner's Records)

Spars and Rigging (After Stepping)

- Standing rigging adjusted
- Tumbuckles pinned and taped
- Boom fits
- Spreader angle correct
- Mast rake correct
- Winches run free
- Sails fit and slide freely
- Outhaul installed and functional
- Jiffy reefing rigged and functional
- Halyards function properly
- Furling gear operates properly
- Sail cover fits
- Mast boot installed
- Mast lights operational

Batteries Fully Charged

Cable Steering Inspection

- Wheel rotates freely and uniformly
- All connections in steering gear tight
- Cables properly adjusted

Electrical System Check

- All 110 volt systems work w/shore power
- All 12 volt systems operate properly
- All light bulbs O.K.

Fresh Water System Check

- Cold water runs freely from all faucets
- Hot water runs freely from all faucets
- Hand pump operational
- Shower operates properly
- Electric pump shuts off w/faucets closed
- Plumbing system free of leaks

YES	NO	CORRECTED

III. COMMISSIONING AND DECOMMISSIONING

A. Initial Commissioning (continued)

Receiving and Commissioning Check List

(For Owner's Records)

Marine Toilet and Waste Lines

- Marine toilet operates properly
- Marine toilet free of leaks
- Sinks drain properly and no leaks
- Shower drains properly, uses electric pump, and no leaks
- Ice box drain functions properly
- Cockpit drains function properly
- Side deck drain functions properly

Bilge Pumps

- Electric bilge pump operates in manual setting
- Electric bilge pump operates in automatic setting
- Manual bilge pump operates properly

Other Systems & Equipment

- Refrigeration system operates properly
- Stove operates properly
- Engine room blower operates properly
- All dealer or owner installed electronics operate properly
- Emergency tiller operates properly
- All deck mounted winches operate properly
- All deck blocks rotate smoothly
- All portlights and hatches operate correctly.
- Port screens present.

Check Joinerwork

- All drawers pull smoothly and latch in closed position
- All doors open smoothly and latch in closed position
- Sole drop-ins fit properly
- Berth access panels fit properly

YES	NO	CORRECTED

III. COMMISSIONING AND DECOMMISSIONING

A. Initial Commissioning (continued)

Receiving and Commissioning Check List
(For Owner's Records)

Water Test Deck

- All fasteners tight
- Portlights free of leaks
- Portlight drains function properly
- Hatches free of leaks
- Cockpit drains operate properly
- Side deck drains operate properly

All Coast Guard Required Safety Gear Aboard

Registration Numbers Mounted (if applicable)

Sea Trial

- Engine, engine controls, engine instruments, and drive train operate properly
- Steering system operates properly
- All sail handling gear operates properly
- All sails O.K.
- No excessive weather or lee helm
- Mast tuned under sail
- Compass swung
- All electronics operate properly
- Notes on weather and sea conditions

YES	NO	CORRECTED

Comments: _____

III. COMMISSIONING AND DECOMMISSIONING

A. Initial Commissioning (continued)

Receiving and Commissioning Check List
(For Owner's Record)

Names of Company and Individuals Involved:

Owner Present

Commissioned by: _____

Yes

No

Sea Trials by: _____

Compass swung by: _____

Electronics checked by: _____

III. COMMISSIONING AND DECOMMISSIONING

B. Decommissioning for Storage (Winterizing)

Winterizing consists of removing gear and equipment that may be damaged, removing liquids which may freeze, thorough cleaning of the yacht, and protecting the yacht from the elements. Procedures for winterizing are described below:

1. Drainage of fresh water system

- a. Open faucets and run pump until water flow stops.
- b. Disconnect hoses at pump and use air pressure to blow out water in low spots.
- c. Remove drain plug on bottom fitting of water heater.
- d. Pump hand pump until water flow stops.
- e. Leave all faucet valves in open position.

Note: Non-toxic antifreeze for fresh water systems is available from many marine supply stores. This is recommended, since it will protect the system from any accumulations of water that were missed in the draining operations. Follow the instructions on the can. We understand that some owners have used Vodka for the same purpose -- with favorable results.

2. Head and holding tanks

- a. Winterize head by following the procedure given in the Raritan manual.
- b. Empty holding tank and rinse with fresh water and pump out again.

3. Thru-hulls

- a. For in-water storage, all thru-hull valves should be closed.
- b. For out-of-water storage, leave valves open.

4. Engine

- a. Engine coolant. Two acceptable methods of winterizing the engine cooling system are described below. Your Morgan 38 was winterized at the plant prior to shipping, using the second, and preferred method, adding antifreeze to the system.

- (i) Complete drainage -- involves closing thru-hulls, removing all drain plugs on the engine and muffler, and opening drain pet-cocks per manufacturer's instructions. Store with expansion tank cap off and salt water pump cover loose.

III. COMMISSIONING AND DECOMMISSIONING

B. Decommissioning for Storage (Winterizing)

4. Engine (continued)

(2) Antifreeze -- Drain system per instructions above. Close petcocks and replace drain plugs. Disconnect intake side of raw water pump hose and feed it into a bucket of pre-mixed antifreeze solution. Run engine until antifreeze is discharged from the exhaust, and then shut the engine off. Finally, fill the fresh water cooling system with antifreeze mixture.

- b. Drain and clean engine seawater strainer and leave top loose.
- c. Check water separators in fuel system for water accumulation. Drain as needed.
- d. Check engine handbook for further "lay-up" details.

Failure to adhere to the manual can affect your engine warranty.

5. Clean yacht interior

- a. Clean and drain bilges.
- b. Remove all perishables.
- c. Wash out and dry refrigerators and/or ice boxes. Leave lids off and/or doors open.
- d. Empty all compartments, drawers, and hanging lockers. Clean and leave compartments open.
- e. Clean all interior surfaces.
- f. Clean and apply spray lubricant to steering units, engine coupling, hose clamps, rudder packing gland, shaft log packing gland, gate valves, and throttle/shift controls.

6. Remove the following gear

- a. Electronics. Store at home or send out for any professional attention that may be required.
- b. Compass.
- c. Cushions, seat backs, carpet, curtains, towels, etc. Store in dry area to prevent mildew.
- d. Interior light bulbs. Spray sockets and bases with WD-40 or CRC 6-66 to prevent corrosion.
- e. Batteries. Store in a cool, dry location. Check condition periodically and slow charge as required.

7. Drain shower pan pump and clean strainer.

8. Wash exterior. Polish, wash, and lubricate metal deck hardware.

III. COMMISSIONING AND DECOMMISSIONING

B. Decommissioning for Storage (Winterizing) (continued)

9. Wash and wax spars. Lubricate winches and sheaves. Inspect for any damage.

10. Clean standing rigging and inspect for damage.

11. Review manuals for all optional equipment. Follow any winterization procedures given. Generators, air conditioning systems, and some refrigeration systems are among those systems which require winterization.

12. If boat is hauled, clean and inspect bottom thoroughly. Pay particular attention to signs of structural damage to glass, rudder operation, gudgeon, and fasteners, electronic senders, thru-hulls, propeller, and zincs.

Caution: Be certain that the prop shaft coupling is disconnected prior to hauling the yacht, and follow hauling instructions in this manual.

13. It is a good practice to record items that were given attention and any defects found during decommissioning. This list will be valuable to you when re-commissioning in the spring.

14. You may wish to use deck covers and/or various devices available to prevent ice formation around a yacht stored in the water. These will provide additional protection to the yacht during the winter months. Consult your local marina for further information and sources of this equipment.

III. COMMISSIONING AND DECOMMISSIONING

C. Re-commissioning After Lay-Up

Re-commissioning after lay-up is somewhat less involved than the initial commissioning. The following steps are suggested:

1. Check operation of all thru-hulls before launching boat.
2. Apply anti-foulant bottom paint. Add zincs, if required.
3. Clean exterior of boat thoroughly.
4. Reinstall charged batteries, checking terminals for correct polarity.
5. Check notes on decommissioning. Make any necessary repairs.
6. Launch, step spar, connect rigging, and tune mast. Bend on sails. Check all components prior to reinstalling them.
7. Reconnect coupling and check engine alignment.
8. If engine was drained, replace all drain plugs, tighten caps, and shut drain cocks. Fill and bleed engine cooling system.
9. Fill fuel tank. Bleed engine fuel system per instructions in the Yanmar engine manual.
10. Replace hot water heater plug and reconnect water line at pump. Flush the fresh water system, then fill the water tank.
11. Clean and inspect engine and engine room equipment. Check oil levels throughout.
12. Clean interior thoroughly.
13. Check operation of all systems.
14. Install cushions, carpet, electronics, and other loose gear removed during winterization.
15. Sea trial.

The check list provided in Section III-A will be a useful reference for the yacht's condition after re-commissioning.

III. COMMISSIONING AND DECOMMISSIONING

D. Hauling and Cradling

Improper hauling or cradling procedures can result in serious damage to the yacht. The following guidelines should be followed:

1. Prior to hauling, disconnect prop shaft coupling.
2. Refer to drawing number I located in the last section for proper placement of slings. Proper locations are also indicated by molded-in sling marks just under the hull sheer.
3. To prevent abrasion damage, the hull topside may be protected by placing carpet between the sling and the gelcoat. Be sure the carpet backing surface is against the sling.
4. If spars are removed, be certain they are properly supported for prolonged storage.
5. The hull should be cradled so that most of the weight is borne by the bottom of the keel. Side supports should contact the hull at or near a major bulkhead location.

IV. OPERATING PROCEDURES

A. Tips on Sailing the Morgan 382

A detailed discussion of specific boat handling and sailing techniques is beyond the scope of this manual. This section describes the general sailing characteristics of the Morgan 382 and, hopefully, will help in achieving maximum performance from your yacht.

Most yachts will have some compromising features, but they are definitely in short supply on the 382 Morgan. The best of both worlds is offered for the cruiser/club racer, or each independent of the other.

Having purchased a performance/cruiser will enhance your cruising pleasures even if having no intention of competing in an organized form. It is definitely an easy, simplified yacht to cruise and a fast, smart-looking yacht on the race course.

The wide side decks with bulwarks provide the comfort and security necessary for working forward, hauling anchor, raising sail, etc. All these necessary tasks have been simplified by well thought out design.

You've chosen the moderately deep keel or deep draft keel according to the area you sail and whether the boat's performance characteristics will be put to the test in organized racing. These keel sections allow the stability and resistance factors to maintain a well balanced, easy to sail yacht. The stability and boat speed in close hauled conditions were proven in tank testing prior to production, but have now been proven time and again with the actual product.

Comfortable angles of heel (15° - 20°) can be held and boat speed achieved with little effort. In some sea conditions (downwind work), she will begin to surf, and designed hull speed of 7 - $7\frac{1}{2}$ knots will be approached. Spinnaker gear can be installed at the factory or added at a later time for racing, but a whisker pole would be in order for serious, long term cruising. Poling the jib to windward and keeping the main to leeward with the apparent wind between 150° - 180° on either tack, and the pole trimmed perpendicular to the apparent wind is sailing "wing and wing". A boom vang will be a necessary arrangement under these conditions to prevent the boom from raising and lowering and "spilling" the mainsail air.

With the wide lifeline gates port and starboard, the vang will be placed further aft on the boom and attached to the aft gate stanchion bale at the deck. This arrangement works well for cruising, but a padeye approximately one foot further forward on deck could be added for increased vang performance when racing.

The inboard genoa track would be an asset, allowing for an improved, closer inboard sheet lead from the 150% genoa, in particular, for racing. For cruising,

IV. OPERATING PROCEDURES

A. Tips on Sailing the Morgan 382 (continued)

this is certainly not a necessity but would enhance the reaching characteristics of the boat. The 140% genoa has proven to be an excellent all around working sail where there is a limited sail inventory, even in light airs and downwind work.

The mainsail is of a size that can be furled easily by one person (and, with practice, neatly). The mainsheet traveler is easily accessible to helmsman and crew for trimming the main, and the sheet can lead to the forward or aft side of the traveler.

The boom has an internal topping lift and leads to the forward most end of the boom. Take care in releasing (before setting the mainsail) that those in the cockpit have been alerted to avoid body/boom collisions. The boom height when released is lower than some cruising models in order to have the efficient high aspect ratio mainsail and still maintain an easily handled size main.

External rope halyards are easy on the hands and comfortable, but for racing, a wire/rope jib halyard would be an asset where there is a serious concern for a tight headsail luff.

In most all conditions, particularly reaching, with the headsail and mainsail in balance, you should feel the boat drive to windward and point in the "groove". The boat will, in turn, have a balanced helm, making for an easy to steer condition with very little helm force. Longer distance cruising will be achieved with much less fatigue than one might expect.

Leeway on the Morgan 382 has been found to be negligible. A compass bearing should be able to be held with no more than 3° - 5° compensation according to tide and sea conditions. This can be determined best in your particular circumstances by trying on short legs and working with your boat closely to find its particular idiosyncrasies. This will give a much greater degree of confidence when plotting your course for longer distances.

A pedestal brake has been provided and is a nicety that should be used. The 382 tracks efficiently and with the brake set only a slight nudge to the wheel is necessary for staying on course. Do not over compensate. The helm is responsive and should not require more than a 1" movement in either direction to stay on course in easy seas.

General "Rules of Thumb":

- The boat should not need to be heeled at a greater than 20° - 25° angle. The keel staying deep in the water does minimize leeway.

IV. OPERATING PROCEDURES

A. Tips on Sailing the Morgan 382 (continued)

- Do not over-trim the sails, especially the jib. When setting, start approximately 12" off the shrouds and adjust accordingly. Trimming the headsail too close will reduce the boat speed.
- The jib sheet lead for the 140% genoa can be set approximately 14 - 17 points from the aft end of the track and adjusted accordingly to sea and air conditions. The headsail should luff in the top 1/3 just before the other 2/3.
- A set of tell tales are in order to aid in determining the proper lead position and trim. All ribbons (inside and out) should lay coordinated and parallel to each other when in trim.
- The roller furling headsail equipment gives the advantages of convenience in sail handling, a smaller sail inventory and less luff sag, which improves windward performance. However, in order to change sails, the jib must be unfurled and taken out of the luff groove of the rod headstay before hanking on a smaller or larger headsail.
- When sailing off the wind, the ordinary principles of sail trim prevail. Ease the sail out until it luffs and then firm up on the sheet.
- Always trim sail from a forward to aft position. That is, trim the jib first, then the main to achieve the proper balance.
- As on any sailing yacht, halyard tension should be regulated to position the draft of maximum camber of the sail. It is suggested that the owner discuss the cut and design of the yacht's sail inventory with the sailmaker for ideas and advice on how the sails were built to be used.
- It is important to "sail the boat" through a tack so as not to stall her momentum. Turn the wheel with moderate speed and break the old sheet just after the bow passes through the eye of the wind. Releasing the sheet sooner increases the chance of ending up in "irons", while holding too long will allow the boat to lose its forward momentum and will backwind the jib.
- When tacking from a reach to a reach, trim the jib to a close hauled position prior to the bow passing the eye of the wind. The boat will maintain her forward momentum while passing through the wider tacking angle.
- When executing a jibe, it is best to bring the boom closer in towards centerline, then let it out after the stern passes through the wind angle.

IV. OPERATING PROCEDURES

A. Tips on Sailing the Morgan 382 (continued)

One must keep in mind that the more experience acquired on board and the better one gets to know the yacht, the greater the pleasures achieved. With these experiences come the security and natural instinct of how she performs and what to expect in the various conditions encountered.

As a performance/cruiser, we think the Morgan 382 will exceed your expectations and give you the best of both worlds in cruising and/or racing.

IV. OPERATING PROCEDURES

B. Spars and Rigging

1. Stepping the Mast and Dockside Tuning

Assembling the rigging and stepping the mast are normally part of the commissioning procedures. The following steps should be followed:

- a. Check all rigging diagrams in this manual for proper attachment of the rigging to the mast. Rigging changes are much easier to effect on the ground than on a bosun's chair at the masthead.
- b. Record lengths of each piece of standing rigging in the appropriate section of the commissioning check list (in the preceding section). In the first column, record the length shown on the Morgan tag attached to the piece of rigging. This is the correct design length. In the second column, record the actual measured length. Both numbers should agree to within 1/2". If a greater discrepancy is found, notify the factory.

Actual measurements should include the end fittings and the turnbuckle. The turnbuckles should be 2/3 extended during the measurement. (They are pinned in this position at the factory.) The measurement is taken from the centerlines of the pin holes (used to attach the piece of rigging to the mast) and the chainplates (extreme end pin holes).

- c. Install spreaders, standing rigging, and halyards to the spar. Install any required electronics wiring in the PVC mast conduit provided. Check all attachments and test lights and electronics wiring for proper functioning. Check that the mast step is ready to accept the mast.
- d. Schedule the crane and suitable manpower to manually guide the mast during stepping.
- e. Remove cotterpins from turnbuckles and extend to their full open position. Raise the mast to the vertical position and lower slowly into the deck partner. Guide electrical mast wiring through the hole carefully to prevent damage. Place the neoprene mast partner around the spar and work into place inside the aluminum collar as the mast is lowered in place.

Spray lubricant and a rubber mallet will help. Be sure wiring is held away from the step when lowering the mast onto the step.

- f. Attach the headstay first and then the backstay. Next connect the main shrouds and tighten turnbuckles by hand. Fully release crane support to the spar.

IV. OPERATING PROCEDURES

B. Spars and Rigging

1. Stepping the Mast and Dockside Tuning (continued)

- g. Tighten backstay until about a 2" deflection is visible when side pressure is applied approximately four feet above deck. Tighten main shrouds so that they are equally engaged and tension will allow approximately one inch deflection with a side load applied about four feet above deck level.
- h. Connect lower shrouds and tension equally for approximately two inch deflection. Sight up the mast to determine the straightness of the mast. If any bends are visible, adjust lower shrouds accordingly until mast is reasonably straight. Intermediate uppers, if any, should be tightened to 1½ inch deflection.
- i. Install cotterpins, bend over, and tape with rigging tape. Be sure spreader angle bisects shroud angle, then seize the spreaders and install spreader boots or tape ends. Install mast boot. Install boom and connect topping lift. Bend on sails and furl.

2. Tuning Under Sail

With a 10 to 12 knot breeze, sail your yacht to weather. Sight the mainsail track for visual straightness. If the mast appears to take on an "S" curve laterally, luff up and adjust the weather shrouds accordingly. It will usually take only three or four turns on any single turnbuckle. Go back on the same tack and sight the track. If straight, change tacks and repeat the same procedure.

Adjust the fore and aft lowers to remove any bends in the longitudinal direction. The mast should be straight fore and aft, or have a very slight hook forward near the masthead. You may also notice the masthead falling off to leeward slightly which is acceptable.

Check the final tuning by tacking several times until satisfied.

In moderate to heavy weather, a noticeably visible slack should appear in the leeward main shrouds. The lower shrouds to leeward should not be loose enough to flop around, but should have a feel of reduced applied load.

You may find it necessary to re-tune during the first fifty hours of sail. During this period, the shrouds may stretch slightly and the chainplates will take their final position.

Your Morgan 38 has a fixed headstay length which has been determined by experience to provide the correct balance. If you experience lee

IV. OPERATING PROCEDURES

B. Spars and Rigging

2. Tuning Under Sail (continued)

helm or excessive weather helm, this can usually be corrected by changing the rake of the mast. Before changing the rake, be sure the actual setting matches the rake shown on the sailplan. Rake is changed by moving the mast step fore and aft. For excessive weather helm, the mast step is moved aft to decrease the aft rake of the mast. To correct lee helm, the step is moved forward to increase the aft rake of the mast. It is necessary to re-tune the rigging after changing the mast rake.

3. Halyards and Outhauls

The halyards are located on the mast and are used to raise and tension the sail in the vertical direction. When the sail is fully up, there should be at least three wraps around the halyard winch, and the tail should be used on the cleat.

The outhaul is located on the boom and is used for sail foot tensioning. It can be thought of as the horizontal halyard of the sail.

The clew of the sail is attached to the outhaul car which travels on a track. The car is controlled via a multi-purchase rope assembly (internal) that leads out to a cam cleat on the port side of the boom.

If a greater air pocket is desired for prevailing air conditions, the tension on the clew of the sail can be reduced by releasing the outhaul rope. This will allow the sail and outhaul car to travel forward on the track.

If prevailing air conditions require a flatter sail, tension is added to the clew outhaul rope, pulling car and sail toward the aft end of the boom.

Amount of adjustment required for each condition of sail is at the skipper's discretion. More adjustments will be required during the first few hours of use because the new halyard rope will show initial stretch. This characteristic of rope halyards, while annoying, will diminish quickly. After this period, the many advantages of rope halyards will be more appreciated.

4. Quick Reefing

The following operating procedure is simply a suggested method of quick reefing with actual practice left to each individual skipper's discretion.

Reefing points are provided on the mainsail with reefing lines, blocks, etc. If your mainsail does not have lace lines, they should be added.

IV. OPERATING PROCEDURES

B. Spars and Rigging

4. Quick Reefing (continued)

It is suggested that the aft end of boom (sail clew) be reefed first, then the tack. The reef line on the boom should be uncleated, and tension added to line via the winch to raise boom to reef point. The reefing line should then be re-cleated.

The halyard should now be eased, and the reef line on the mast uncleated, and pulled down, bringing the sail down to the boom gooseneck, leveling the boom. The halyard should be re-secured, the reef line re-cleated. The sail should now be laid on the boom, and the lace lines tied around the boom. The sail should now be neatly reefed to the boom.

If your sail has double reefing, the procedure should be the same as that above.

IV. OPERATING PROCEDURES

C. Engine (Perkins)

1. Pre-Starting Check Off

It is advisable to use a pre-start check list, as even the most experienced skipper can overlook an important detail that may evolve into an unpleasant or costly mishap. The check list will vary, as each owner may have optional equipment that will require attention at this time.

The following procedures are offered to help you develop your check list:

- a. Check fuel level.
- b. Open fuel shut-off valve.
- c. Check engine oil and transmission.
- d. Check for signs of fuel or oil leakage.
- e. Check engine coolant level.
- f. Open sea water intake to engine (gate valve).
- g. Check bilge, shaft log area.
- h. Check battery switch "on".
- i. Turn on "blower".

2. Starting Procedures

- a. Release shaft lock, if so equipped.
- b. Set controls in neutral. Pull throttle control knob "out", if so equipped.
- c. Check operation of "stop" control.
- d. Advance throttle slightly -- approximately 1/4.
- e. Turn ignition switch to "on" and operate "starter".
 Note: Some engines equipped with "pre-heat". Check engine manual for instructions.
- f. Operate engine about 1000 rpm. Check immediately for oil pressure reading.
- g. Check for water discharge.
- h. Check ammeter for "charge" indication.
- i. Allow engine to reach normal operating temperature and observe any tendency to continue to rise.
- j. A final visual check of the engine room is recommended, as the engine is warming up.
- k. Check forward and reverse operation at idle speed before "casting off" lines.

3. Engine Operation

- a. Run engine at speeds as recommended in engine manual. Always reduce engine rpm to "idle" before shifting, and make throttle adjustments gradually.

IV. OPERATING PROCEDURES

C. Engine (Yanmar Diesel)

1. Pre-Starting Check-Off

It is advisable to use a pre-start check list, as even the most experienced skipper can overlook an important detail that may evolve into an unpleasant or costly mishap. The check list will vary, as each owner may have optional equipment that will require attention at this time.

The following procedures are offered to help you develop your check list:

- a. Check fuel level.
- b. Open fuel shut-off valve.
- c. Check engine oil and transmission oil level.
- d. Check for signs of fuel or oil leakage.
- e. Check engine coolant level.
- f. Open sea water intake to engine (gate valve).
- g. Check bilge, shaft log area.
- h. Check battery switch "on".
- i. Turn on "blower".

2. Starting Procedure

- a. Set clutch control in "neutral."
- b. Advance throttle to "full" rpm.
- c. Operate starter (key switch).
- d. Reduce your rpm and check for warning lights (oil and generator) on panel to go "off." Check water discharge at exhaust.
- e. Allow about five minutes for warm up. Check operation of forward and reverse controls before maneuvering from the dock.
- f. A final visual check of the engine room is recommended while the engine is warming up.

3. Engine Operation

- a. Run engine at speeds as recommended in the engine manual. Always reduce engine rpm to idle before shifting and make throttle adjustments gradually.
- b. Observe panel for warning lights periodically.
- c. Avoid long periods of maximum rpm as well as extended "idle" periods. Always run engine long enough to reach normal operating temperature, as short runs cause excess engine deposits and sludge formation of oil.
- d. Become familiar with the sound of your engine at its cruising speed, and note any vibration characteristics. When an abnormal sound or severe vibration occurs, reduce rpm and make a quick check of instruments (or lights) and related conditions. Shut down engine if condition is critical. Have problem area checked as soon as possible.

IV. OPERATING PROCEDURES

C. Engine (Perkins)

3. Engine Operation (continued)

- b. Observe engine instruments periodically.
- c. Avoid long periods of maximum rpm, as well as extended "idle" periods. Always run engine long enough to reach normal operating temperature, as short runs cause excess engine deposits and sludge formation of oil.
- d. Become familiar with the sound of your engine at its cruising speeds, and note any vibration characteristics. When an abnormal sound or vibration occurs, reduce rpm and make a quick check of instruments and conditions. Have problem checked as soon as possible.
- e. Observe ammeter readings periodically; and as battery becomes charged (low charge rate), you may switch over to the #2 battery. Caution: Do not turn battery switch to "off" position while engine is running. To do so will damage voltage regulators and possibly destroy diode rectifier in the alternator. It is advisable to reduce rpm to idle if possible, while switching batteries to prevent unnecessary surge on the system.

The alternator should not be charging at maximum for long periods of times, any more than an engine should. If this occurs, it is advisable to allow a cooling off period at 10 minute intervals, switching to the "charged" battery or operating at lower rpm's.

4. Engine Shut-Down

- a. Allow the engine to idle for a few minutes before stopping, and check instruments for proper readings.
- b. Pull "stop" control and hold til engine stops. Return to "run" position.
- c. Turn "off" ignition switch and blower.
- d. Close fuel valve and seacock if boat is to be left unattended.
- e. Visually check engine room and bilges for leakage.

Note: Check engine "hours" for maintenance scheduling (see engine manual).

READ AND USE YOUR ENGINE MANUAL

IV. OPERATING PROCEDURES

C. Engine (Yanmar Diesel)

3. Engine Operation (continued)

- e. Do not turn battery switch to "off" position while engine is running. To do so will damage the voltage regulator and possibly destroy the diode rectifiers in the alternator. Selecting battery to be charged with the battery switch (boats with dual battery systems) is best done at low rpm to avoid a possible surge on the electrical system.

4. Engine Shut Down

- a. Allow the engine to idle for a few minutes before stopping, and check warning lights for safe reading "off."
- b. Stop engine with throttle control "full aft". Hold until engine is fully stopped. Do not use decompression lever to stop engine.
- c. Oil pressure and generator light should now be "on."
- d. Turn off ignition switch and blower.
- e. Close fuel valve and seacock if boat is to be left unattended.
- f. Visually check engine room and bilge for leakage.
- g. Log engine hours for maintenance checks.

Note: Check engine "hours" for maintenance scheduling (see engine manual).

READ AND USE YOUR ENGINE MANUAL

IV. OPERATING PROCEDURES

D. Fuel System

The fuel tank is a molded-in fiberglass tank under the cabin sole. A drop-in in the cabin sole allows access to the fuel shut-off valve and fuel gage. The handle on the fuel valve must be parallel to the valve when "on", and at a right angle when "off."

A bulkhead-mounted filter/water separator is provided in line between the engine and tank. Check periodically for water accumulation at this point by removing bottom plug and draining into a container. Replace the element at least once each season, or as required by the manufacturer's recommendations. There is also a fuel strainer on the engine itself, and should be serviced as the engine manual specifies.

The fuel fill deck plate is electrically bonded to the main ground at the engine. Although diesel fuel is considered relatively safe, safe fueling practices are always recommended:

1. Turn off heaters and galley equipment.
2. Extinguish all cigarettes, pipes, etc.
3. Stop engine and turn battery switch to "off."
4. Close all hatches and ports to prevent entry of fumes.
5. Do not attempt to take on fuel in rough water or inclement weather, as water might enter through the deck plate.
6. Avoid fueling after dark or in poorly lighted areas.
7. Maintain continuous contact between the nozzle and the deck plate fitting to eliminate the possibility of static electric discharge while filling.
8. Take on only gallonage anticipated by the fuel gage. Do not overfill to point where fuel remains in fill hose.
9. Wipe up or wash down spills after replacing and tightening deck plate cap.
10. Open all hatches, air bilges, and operate blower before starting engine or re-lighting galley stove. Turn batteries "on."
11. See engine manual for "bleeding" procedures.

Another note worth mentioning is to acquire your fuel from a reliable source. A diesel engine requires clean fuel -- water and dirt being its worst enemy. Keep a clean and tight fuel system, and you will have a most reliable engine.

IV. OPERATING PROCEDURES

E. Electrical System

It is important to remember that the DC electrical system in a boat is not the unlimited source of power that one is accustomed to in the home. The battery is a rechargeable storage cell. You can only take out of it what you have put into it, for a limited period of time. There is generally an over-abundance of electrical equipment drawing from the battery, and it is not intended to supply all these fixtures at one time.

1. Battery

The battery requires periodic attention to terminal connections, electrolyte level, and secure fastening. The use of a hydrometer is an inexpensive and accurate measure of the battery's condition. Specific gravity measurements of the electrolyte should read between 1.275 and 1.280 on a normally "charged" battery. All cells should read relatively equal. Any one cell that has a noticeably low reading is an indication of a bad cell, and the battery should be replaced. The electrolyte (acid) level should be maintained to cover the plates in the battery. Add distilled water as necessary to maintain that level. Excessive need of water is an indication that the charging rate is too high. A check of the charging voltage should not read over 15.5 volts.

Exercise care in using a hydrometer, as well as all operations around the battery, due to the corrosive nature of sulfuric acid. It is a good practice to have a solution of baking soda around to clean up spills or drippings before they can do damage. Flush with fresh water. Baking soda is excellent for cleaning around batteries, provided the solution is not allowed to get into the cells. After cleaning the battery post and cable connections, a light coat of grease, Permatex, or special spray paint is an effective means of controlling further corrosion.

2. Alternator

The next most critical point in the electrical system is the alternator. Its job is to maintain the battery's charge and cover the demands on the electrical system while the engine is running. The alternator converts mechanical energy into electrical energy, and the drive belt is its only link. This is normally the only periodic attention the alternator will need, maintenance-wise. With the engine stopped, the drive pulley on the alternator should not be able to be turned by hand. Belt tension may seem tight enough, but the pulley may still slip if the belt is glazed or oily. When checking or tightening the alternator and its connections, it is advisable to turn off the battery switch. This prevents accidental "shorting" of the output terminal which is "live" even when the engine is at rest.

IV. OPERATING PROCEDURES

E. Electrical System (continued)

3. Starter

The engine starter motor is the most demanding load that will be placed on the electrical system and is not fused or protected by an overload device. Therefore, it is wise to make periodic checks on the connections at the starter and solenoid switch for tightness and cleanliness. Do not allow tools or other metal objects to come into contact with these connections while the battery is "on."

4. Battery Switch

The main battery switch connects either or both batteries to the engine circuit and the DC switch panel, which serves the boat's interior circuits. Do not switch to "off" position with engine running. "Both" position is intended for emergency or extended engine cranking ability. Continuous running in the "both" position when the batteries are in a low state of charge, can cause overload and possible damage to the engine alternator.

5. Electrical Panel

The AC-DC breaker panel is located in the navigator's station. This panel is equipped with high quality hydraulic-magnetic circuit breakers.

Each circuit breaker is wired to an indicator light to show at a glance if the circuit is on. The DC indicator lights are solid state light emitting diodes which require very little current draw. The AC indicator lights are neon, and each of the AC breakers are of the double-pole type which breaks both sides of the circuit when tripped.

The DC ammeter monitors the amount of current drawn from the battery, and the voltmeter gives an indication of the battery's condition.

The voltage reading may be interpreted as follows:

		<u>Battery Condition</u>
Engine off and electrical system under minimal or no load	Below 11 volts	Very low
	11-12 volts	Low
	12-13 volts	Well charged
Engine running fast idle or above	13-13.5 volts	Low charge rate
	13.5-15.5 volts	Normal charge
	15.5 or higher	Excessive voltage (Voltage regulator defective. Replace or adjust.)

IV. OPERATING PROCEDURES

E. Electrical System

5. Electrical Panel (continued)

The voltage readings should be taken in either battery position, not in "both" position. Start your engine on the highest charge battery and allow time for the battery to return to its full charge state before putting it on reserve. When switching over to the other battery, be sure not to switch through the "off" position. This would damage the regulator and possibly the alternator diodes. The "both" position is for emergency or extended cranking periods and should not be used to charge two batteries at the same time. This could overload the charging circuit if the batteries are low.

6. Engine Control Panel

The engine control panel incorporates an audio/visual warning system. This system utilizes a combination red indicator light and buzzer type alarm which is activated by the engine panel warning light circuits.

The buzzer and light will operate each time the engine is started until oil pressure builds up, which gives a constant check on the operation of the system.

When the alarm does sound, the helmsman's attention will be drawn to the panel and the respective light indicating the system at fault (oil, temperature, or generator).

While this unit is provided primarily for engine protection, an extra circuit has been included (as a secondary function) that will cause the alarm to sound when the bilge pump "float" switch is activated but does not have power (12 volt DC) to start the pump.

If the bilge pump switch is on and functioning, the alarm will not sound. This feature, however, is in effect only during engine operation, since it is part of the engine alarm system.

When the alarm is sounding and none of the engine panel lights are glowing, it indicates a flooding bilge and bilge pump failure.

The bilge pump has a separately fused circuit which operates from the engine control panel to manually override the "automatic" circuit. The pump will run continuously until the manual switch is turned off.

The engine control panel has in-line fuses for the blower, bilge pump "manual circuit" and instrument circuit.

IV. OPERATING PROCEDURES

E. Electrical System

6. Engine Control Panel (continued)

Spare fuses should be kept on board in the sizes listed below:

- 60 amp - Main line fuse (at engine starter "Bat." terminal)
- 7.5 amp - Bilge pump and instrument panel and alarm system
- 10 amp - Blower motor
- 2 amp - Holding tank warning light (at junction panel)
- 2 amp - Compass

7. AC 110 Volt Shore Power System

The AC system is a three-wire shore-grounded circuit. The shore power inlet is rated at 30 amps and is mounted on the aft face of the cockpit coaming.

The main circuit breaker is located in the aft cockpit locker. This, in turn, feeds the AC breaker panel. Each circuit (AC) is protected by a double-pole breaker. There are two breakers provided for the two separate receptacle circuits. For reasons of safety, it is recommended that all appliances used aboard be equipped with a three-wire grounded cord.

The hot water heater is connected to a breaker on this panel, but also has a high temperature re-set button built into the heater. Before applying power to the water heater, always be sure the heater has been filled by turning on one of the hot water faucets long enough to get a steady flow. An empty hot water heater will burn out the heating element before the temperature re-set button can break the circuit.

The proper procedure for connecting shore power to the boat safely is as follows:

- a. Turn ship's main breaker to "off."
- b. Turn receptacle on dock to "off," if possible.
- c. Connect cable to power inlet on boat first (to prevent handling a "live" power line and possibly coming in contact with water).
- d. Route the cable in such a way as to prevent strain on either connector, allowing for the rise and fall of the tide, and to prevent chafing.
- e. Connect to dockside receptacle and turn shore switch on.
- f. Turn on ship's main breaker.

Disconnect procedure:

- a. Turn off ship's main breaker.
- b. Turn off dockside power and disconnect cord.
- c. Replace all weather-tight caps on receptacles.

IV. OPERATING PROCEDURES

E. Electrical System

7. AC 110 Volt Shore Power System (continued)

The owner must be aware of the hazards of using high voltage AC aboard ship, and should maintain this system in safe condition.

Don't take chances handling AC equipment in wet weather or while washing down topsides. Caution guests and children about hazards, and do not use any equipment that does not function properly or is suspected of being defective.

8. Battery Charger Option

The battery charger, or converter as it is also referred to, is connected to the feed or "output" side of the main battery switch. This allows you to select either or both batteries to be put "on the line" for charging when the engine is at rest. It also insures that, when the battery switch is "off," all circuits are positively disconnected from the batteries during an emergency shutdown.

Do not turn the battery charger on when the battery switch is in the "off" position. This could possibly feed the ship's circuits without the back-up support of the batteries. It could also cause premature failure of electrical equipment in the boat, if the regulator section of the charger should fail, allowing high voltage into the system.

The battery charger has an automatic cut-off circuit which is wired to the engine electrical system. Whenever the engine is started, the charger will shut off and allow the engine-driven alternator to take over, returning to service when the engine is stopped.

The charger is protected by internally-mounted fuses on the AC and DC circuits, as well as the main circuit breaker on the AC panel. Be sure all the related circuits are "off" when opening the charger cabinet for service. The charger is an air-cooled unit with louvers on top and bottom. Care must be taken not to restrict the ventilation provided, nor allow small tools or hardware to fall into the charger while performing maintenance work in the engine room.

IV. OPERATING PROCEDURES

F. Plumbing System

1. Thru-Hull Connections - Valve Operations

Below is a list of thru-hull penetrations and their locations. It is advisable to become familiar with the location and operation of each one, with the thought in mind to maintain quick access in the event of emergency.

Head: 1½" discharge, ¾" intake. The gate valve for overboard discharge is located under the head sink cabinet and is connected to a tee-fitting with a cut-off gate valve on the line to the holding tank. When using the head in restricted waters, the overboard gate valve must be closed and the holding tank gate valve opened. The adjacent ¾" intake valve must be opened in either method of operation. The warning light will glow when the holding tank reaches ¾ of its holding capacity.

Head Sink: 1½" discharge, located under head sink cabinet. Also serves as discharge for shower pan sump pump.

Galley Sink: 1½" discharge, located under galley sink cabinet.

Engine Sea Water Inlet: ¾" thru-hull and valve located port side, aft of engine.

Cockpit Drains: Deck drain, bilge pumps and ice box drain pump connect to main cockpit drain manifold aft of engine compartment. No shut-off valve, since the manifold exits well above the waterline.

Note: It is a good practice to close all gate valves when leaving the boat unattended. This is not only intended as a safety factor, but also insures that gate valves are maintained in working condition, in the event it becomes necessary to close them in an emergency situation.

Prop Shaft: Access through the quarter berth door. See details on prop shaft stuffing box in "Maintenance Procedures" section.

Rudder Shaft: Accessible through aft cockpit sail locker.

Rudder Shaft Stuffing Box: See "Maintenance Procedures".

Engine Exhaust: Not fitted with gate valve. Access to thru-hull fitting through cockpit sail locker.

Galley Salt Water Pump: ½" gate valve located under starboard quarter berth drop-in, aft of battery boxes. *Verify*

IV. OPERATING PROCEDURES

F. Plumbing System (continued)

2. Fresh Water System

An integral 55 gallon tank with a rotomolded polyethylene liner is installed under the starboard settee berth and space for an optional 30 gallon tank on the port side under the dinette seat. These tanks are filled from above deck and vented aft at the transom. Valve(s) for water tank selection is located under the galley sink.

The pressure pump is located ^{IN} under the cabinet below the ~~companionway~~ ^{galley SINK} ladder. A manually operated hand pump is installed at the galley sink for use under conditions of power or pump failure. This hand pump is connected to the electric pump inlet line with a tee connection and a gate valve, which is normally kept closed until such a need arises. The hand pump gate valve is located under the galley sink. There is an in-line strainer at the water pressure pump. This prevents foreign material from reaching the pump and should be checked periodically. Leaving manual pump gate valve open while operating pressure water system may cause air in the water lines.

The pressure water pump is activated by a switch on the DC panel and will run until the water pressure reaches 30 psi. When a faucet is opened and pressure water drops, it will automatically re-start at 16 psi. Upon closing the faucet, the pump will again shut off at 30 psi. If the pump cycles on and off by itself, it is an indication of a leak in the system.

When filling the fresh water system for the first time, or whenever the system has been completely run out of water, it will be necessary to run the pressure pump long enough to purge the air from the lines. Starting from the faucet closest to the pump, run the hot water side until a solid stream of water flows. It is important that the hot water heater is bled in this manner before turning on the AC breaker, as the heating element will be damaged if the tank is empty.

Operate each faucet in turn until air is out of the system and "top off" the water tank.

The hot water heater also utilizes the engine cooling system to heat water while the boat is underway. The connecting lines and the heat exchanger must be bled when the engine cooling system is filled.

IV. OPERATING PROCEDURES

F. Plumbing System (continued)

3. Bilge Pumps

The bilge pump is a submersible type pump capable of removing 1400 gallons per hour. It is actuated by a switch on the instrument panel in either the automatic position (via the float switch) or in the manual position, which overrides the float switch. It will run continuously until returned to "off" or automatic. The water is routed to the aft cockpit drain in the engine room.

4. Shower Pan Drain Pump

A sump pump is provided for the shower pan drain. It is controlled by a switch in the head which must be turned on when using the shower. The circuit is protected by a 10 amp breaker on the DC panel.

5. Marine Head

The marine head is manually operated, using sea water for flushing. The inlet and discharge gate valves should be checked to be open before using.

A decal is supplied with operating instructions which should be mounted on the bulkhead adjacent to the toilet. Further detailed instructions for winterizing, etc., will be found in the manual supplied by the head manufacturer are:

"To Operate Toilet: Inlet valve should be in open position. Before using, pump to wet inside of bowl. After using, pump until thoroughly cleaned. Pump a few more times to clean lines. If excess waste should cause water to rise in bowl, stop pumping until water recedes.

"To Winterize Toilet: Shut off intake valve. Pump until dry. Remove drain plug in base. Pump again to remove all water. Do not use anti-freeze.

"Do not put rags, matches, paper towels, or anything in bowl that will plug up valves."

6. Holding Tank

Your M-38 has an integral FRP holding tank in the bilge behind the internal ballast. Holding tanks, for use in restricted waters, allow the heads to be used as needed. But, one must remember to minimize the amount of water pumped for flushing to extend the capacity of the tank.

IV. OPERATING PROCEDURES

F. Plumbing System

6. Holding Tank (continued)

It is connected to a tee fitting in the normal overboard head discharge system. To use the holding tank, rather than the overboard discharge, the gate valve at the thru-hull must be closed first and then open the holding tank shut-off valve.

The holding tank has a capacity of 15 gallons, enough for 30 average flushings. A deck plate provides for pumping out at dockside, and the system should be rinsed and re-pumped out. This can be done by pumping through the toilet or by a hose through the deck plate. Use of a commercial chemical toilet treatment and deodorizer is recommended.

7. Optional Dockside Water Supply

As an added convenience, a dockside water supply may be installed. This allows the boat's fresh water system to operate without drawing from the tank or using the ship's DC power supply to operate the pump.

The water inlet fitting is mounted on the port cockpit coaming and is connected by means of a garden hose to the shore supply. There is an in-line pressure regulator valve which maintains 40 psi or less to the fresh water system.

The electric pressure pump has a check valve in the outlet fitting which prevents water from flowing back to the boat's water tank.

CAUTION: Do not leave the boat unattended with the pressure water line "on." A failure in any of the yacht's water lines could result in sinking of the yacht.

IV. OPERATING PROCEDURES

G. Refrigeration

1. Ice Box

The ice box is a one-piece molded fiberglass unit insulated with a nominal three inch thick surrounding of polyurethane foam. The inner surface is gelcoated with a sanitaryware formula which is non-toxic and will not "flavor" food.

The drain is connected directly to a hand pump, and is pumped overboard through a connection in the galley sink drain.

When the boat is to be idle for a prolonged period, it is advisable to flush the ice box and leave it open to the air to prevent mildew or odor formation.

2. Norcold Refrigeration Option

A dual voltage refrigerator may be optionally installed, which operates on 110 volt shore power and automatically switches over to 12 volt DC when shore power is off.

The refrigerator is connected to the boat's "receptacle" circuit by a plug and wall outlet behind the refrigerator. The DC circuit is wired directly to the main DC panel.

The panel switch or breaker should be left in the "on" position, and the refrigeration controlled by the thermostat switch inside the cabinet. In the event of an AC failure when the boat is dockside and unattended, the unit will automatically switch over to the ship's power without any subsequent loss of cooling or spoiling of perishable food.

The owner's manual provided with the Norcold refrigerator gives detailed information on operation and trouble shooting. Particularly important is the notation to be sure that the unit is turned "off" when using a quick charger. This could allow high voltage to damage the inverter.

Another item to consider is the thermostat setting which should be kept at a level just low enough to keep the unit cold. This will minimize the amount of running time, and thus conserve battery power.

IV. OPERATING PROCEDURES

H. Alcohol Stove

Although a copy of the manufacturer's operating instructions is included in the owner's packet, we would like to bring some of the basic and important instructions to your attention:

1. Fueling

Always purchase a good grade of denatured ethyl alcohol for your stove. Ethyl glycol or methyl alcohol are not recommended, as they cause operational failure and possible damage to the unit.

Unless a remote fill station is installed in your vessel, filling should be at the tank fill. Loosen fill cap slowly to relieve any pressure. Remove fill cap and fill tank with alcohol, using a funnel. Replace cap and screw in place.

2. Operating

- a. Pump tank to 20 pounds air pressure.
- b. Carefully open one burner control at a time, allowing alcohol to flow into the priming cup beneath the burner until the center section of the cup is about half filled. Do Not Overfill! Shut off burner control and light the priming alcohol. When the priming alcohol is consumed, open valve one quarter turn and light burner. Pre-heated burner produces vaporized alcohol and will ignite like a gas burner.
- c. A flare-up at this time indicates insufficient pre-heating. If this occurs, shut the burner control off, allow the burner to cool, and repeat step b.
- d. Operate the burner as you would a gas stove. Flame intensity is controlled with the burner knob. Periodically check the tank pressure. Proper burner performance requires a pressure of between 10 and 20 psi.

3. Shut Off

To shut off stove, turn control knob to the right, cutting off the flow of alcohol to the burner.

Release the air pressure at the storage tank by loosening filler cap to avoid "flooding" of burner, should controls be accidentally opened when stove is not in use. If a ball type shut-off valve is installed in the alcohol line near the stove and is used for fuel shut-off, the tank pressure need not be released except for filling operation.

IV. OPERATING PROCEDURE

H. Alcohol Stove (continued)

4. Miscellaneous

General information and maintenance tips are outlined in your manufacturer's instructions. Please read them carefully before using your stove. Though alcohol is a relatively safe cooking fuel and easily extinguished with water, a thorough understanding and familiarity of the equipment is the best safety device and precaution.

Good cooking to you in your practice of the seafaring culinary arts!

IV. OPERATING PROCEDURES

1. Opening Ports and Hatches

1. Ports

The opening ports on your Morgan 38 are all plastic. This eliminates the corrosion problems associated with metal frames. The glazing is Lexan, an extremely tough plastic, which flexes but is almost impossible to break. A neoprene "O" ring is the primary seal between the glazing and the frame.

When dogging down the ports, it is not necessary to use more than "finger tightening" force. Excessive force, for example, through the use of pliers, may damage the gasket. If finger tightening does not provide a complete seal, open the port and check the seating of the gasket. The usual causes for leaks through the portlights are shifted or damaged gaskets and/or dirt on the gasket or lens surface.

The portlights have integral sill drains. If water collects in the lower recesses, check that the drain holes are free.

2. Hatches

The operation of the hatches is straightforward. The following precautions will prevent accidents and reduce the chance of damaging the hatches.

- Open and close hatches carefully. The thermoformed acrylic hatches can be damaged (at the hinge attachment) by slamming the hatch opened or closed.
- When the hatch is to be left open, be sure that all positioning devices are used.
- Before closing the hatches, be sure all obstructions (particularly fingers and heads) are clear.
- When dogging down the hatches, do not use excessive force. You should not need to use any tools for this purpose.

IV. OPERATING PROCEDURES

J. Navigation Lights

Navigation, or "running" lights must be in accordance with the rules and regulations of the navigable water the yacht owner intends to use.

International rules and regulations are required to be observed on seagoing vessels. The Inland rules and regulations are for intracoastal waterways, with certain areas such as the Great Lakes and Western Rivers having special requirements and rules pertinent to their local areas.

Morgan Yacht has listed the following notes, for your reference, from the International rules. We suggest the owner of any vessel acquire a copy of the United States Coast Guard publications on the "Rules of the Road" for their intended areas of navigation.

In general, the navigation lights are required from sunset to sunrise, weather conditions good or bad. It is suggested that, in times of reduced visibility, from sunrise to sunset, navigation lights be operational.

If vessel is underway by use of power, and is under 150 feet in length, it is required to operate a forward light, white in color, 20 point angle (225 degrees), 5 miles visibility range; a stern light, white in color, 12 point angle (135 degrees), 2 mile visibility range; side lights, green to starboard, red to port, in color, 10 point angle (112½ degrees), 2 mile visibility range.

If vessel is underway by use of sail, it is required to operate its side lights (same specification as underway power) and stern light.

If vessel is anchored, it is required to operate its anchor lights, white in color, 32 point angle (360 degrees), 2 mile visibility range.

The yachtsman is encouraged to become familiar with the complete rules and regulations of the above mentioned situations, as well as other possible conditions of operation. Proper operation and use of navigational lights is important for the safety of the yachtsman and the future of boating. A diagram illustrating navigation lights installed on your Morgan 38 at the factory is given in the last section of this manual.

IV. OPERATING PROCEDURES

K. Lightning Protection

Your yacht was not provided with a lightning protection system during construction at Morgan Yacht. The reasons are as follows:

1. We are not aware of a procedure for lightning protection which is proven reliable under all conditions. We are aware of situations where yachts with elaborate lightning protection systems have sustained serious damage from a direct lightning strike.
2. If the builder were to assert that the yacht were lightning protected, it could instill a false sense of confidence in the owner/operator, leading to less than prudent actions when lightning threatened.
3. Lightning systems are "out-of-sight, out-of-mind", except when lightning threatens. Generally, they are not checked and maintained on a regular basis. A defect in the system (i.e. a break in a ground line) could, in some cases, increase the risk of personal harm and damage to the yacht, as compared to a yacht with no protection. The reason for this is that many lightning protection systems distribute the high voltage throughout the yacht before allowing it to exit through the ground.
4. It is impossible for Morgan Yacht to control changes you, the owner, may make to the yacht, which could affect the lightning protection system.

You, the owner, must decide whether you wish to equip your yacht with lightning protection, and if so, the method of doing so. For your guidance, a copy of ABYC recommendations is attached. The following suggestions and comments are also offered:

1. Keep the system as simple as possible. This will facilitate both installation and inspection/maintenance. Perhaps a single oversize ground (battery cable) from the mast base to the engine, coupled with external shroud grounds (see 2 below), will maximize reliability.
2. ABYC recommends straight line wire runs, which is virtually impossible within the yacht. For grounding the shrouds, a battery cable, which clips to each shroud and extends outside the yacht to the water, can minimize the number of bends required. This method has the added advantages of keeping the power surge outside the boat and allowing easy and routine inspection. The obvious disadvantage is that the clip-on cables are not a permanent installation and may not be in place when an unexpected lightning strike occurs.
3. Use only top quality materials and go oversize where possible.

IV. OPERATING PROCEDURES

K. Lightning Protection

4. Keep all permanent attachment points and connections where they are readily available for inspection, yet protected from damage or inadvertent disconnection.

Factory installed metal tanks, 110 volt systems and major metal components are grounded to the engine. The engine is grounded via the shaft and prop to the water. The purpose of the internal grounding is for static charge control and accidental shorts in the internal systems -- not to provide lightning protection. However, you can incorporate the ground lines present in a lightning protection system you may wish to add.

By far the most important consideration regarding lightning is observing common sense safety precautions when lightning threatens. The key considerations are listed in paragraph 7 of the attached ABYC recommendations.

RECOMMENDED PRACTICES AND STANDARDS COVERING LIGHTNING PROTECTION

PROJECT E-4 (ADOPTED NOV.3, 1959)

ABYC E-4-70

1.0 SCOPE

- 1.01 WHEREIN standards and recommended practices outline the means whereby all types of craft can be afforded a high degree of protection against lightning.

2.0 GENERAL PRINCIPLES

- 2.01 In view of the wide variation in structural design of boats, the following basic guides should be considered and used in designing and installing a lightning protection system for any given craft: (See Fig.1.)
- 2.1 A grounded conductor, or lightning protective mast, will generally divert to itself direct hits which might otherwise fall within a cone-shaped space, the apex of which is the top of the conductor or lightning protective mast and the base is a circle at the surface of the water having a radius of approximately two times the height of the conductor. The probability of protection is considered to be 99.0 percent for the 60 degree angle shown in the illustration. The probability of protection can be increased to 99.9 percent by increasing the height of the mast so that the 60 degree angle becomes 45 degrees.
- 2.2 To provide an adequately grounded conductor or lightning protective mast, the entire circuit from the top of the mast to the ground should have a conduction equivalent to a No.8 A.W.G. copper conductor and the path to ground followed by the conductor should be effectively straight.
- 2.3 If there are metal objects of considerable size within a few feet of the grounding conductor, there will be a strong tendency for sparks or side flashes to jump from the grounding conductor to the metal object at the closest point. To prevent damage from such side flashes an interconnecting conductor should be provided at all places where they are likely to occur.
- 2.4 Large metallic objects within the hull or superstructure of a boat should be interconnected with the lightning protective system, or the bonding system, to prevent a dangerous rise of voltage due to a lightning flash. Items which are not part of the electrical system of the boat may be independently grounded, provided it is not practical to interconnect with the lightning protective or bonding systems.
- 2.5 Since a lightning conductor system is expected to remain in working condition for a long period of time with relatively little attention, the mechanical construction should be strong and the materials used should offer high resistance to corrosion.

3.0 INSTALLATION RECOMMENDATIONS

- 3.1 *Lightning Protective Mast* - A lightning protective mast should be of adequate height (Section 2.1.) and should be mechanically strong in order to withstand exposure to use and weather. If the mast is of non-conducting material, the associated lightning or grounding conductor should be essentially straight, securely fastened to the mast, should extend at least 6 inches above the mast, should preferably terminate in a sharp point and should meet the requirements of Section 3.3.
- 3.2 *Radio Antenna* - A radio antenna may serve as a lightning protective mast provided it is equipped with transmitting type lightning arresters or means for grounding during electrical storms. The grounding of metal rod type radio antennas constitutes sufficient protection for wooden boats, without masts and spars, provided the following conditions are met:
- 3.21 All conductors in the grounding circuit of the antenna are at least No.8 A.W.G. copper or equivalent in accordance with Section 3.31.

- 3.22 A line drawn from the top of the antenna downward toward the water at an angle of 60° to the vertical does not intercept any part of the boat. (Section 2.1).
- 3.23 Antennas with loading coils are considered to end at a point immediately below the loading coil unless this coil is provided with a suitable gap for by-passing the lightning current.
- 3.24 Non-conducting antenna masts with *spirally* wrapped conductors are not considered suitable for lightning protection purposes.
- 3.3 *Materials* – The materials used in the making of a protective system should be resistant to corrosion. No combination of metals should be used that forms a galvanic couple of such a nature that in the presence of moisture or direct submersion, corrosion is accelerated. Except for the use of conducting materials which are otherwise part of the structure of the boat, only copper should be used as the conductor. Where copper is used, it should be of the grade ordinarily required for commercial electrical work, generally designated as being of 98 percent conductivity when annealed.

3.31 *Copper Conductor*

Copper conductor should weigh at least 50 lbs. per thousand feet.

Copper cable conductors should be of a diameter not less than No.8 A.W.G. The size of any wire of a cable should be not less than No.17 A.W.G. The thickness of any copper ribbon or strip should be not less than No. 20 A.W.G. (0.032 inch).

Where other materials are used the gauge should be such as to give conductivity equal to or greater than No.8 A.W.G. copper cable.

3.32 *Joints*

Joints should be mechanically strong and should be so made that they have an electrical resistance not in excess of that of 2 feet of conductor.

3.4 *Interconnection of Metallic Masses*

- 3.41 *Interconnection or Grounding* – Metallic masses aboard boats which are a permanent part of the boat, or are permanently installed within or about it, should with the exception of those of comparatively small size, be made a part of the lightning-conductor system by interconnection with it (see Paragraph 2.4.) or independently grounded, or both, depending upon their location with respect to the lightning conductors and their surroundings, as more fully described in Sections 3.42 to 3.44, inclusive.

Note: The object of interconnecting the metal parts of a boat with the conductor is to prevent damage from side flashes especially in the case of rather extensive metal objects that are near by. The main principle to be observed in the prevention of such damage is to pick out on a boat the places where side flashes are most likely to occur and provide metallic paths for them.

- 3.42 *Exterior Bodies of Metal* – Metal situated wholly on the exterior of boats should be electrically connected to the grounding conductor at its upper or its nearest end, and, if of considerable length, should be also grounded or electrically connected to the conductor at its lower or its farthest end.

Note: Exterior metal bodies on boats include any large masses such as horizontal handrails on cabin tops, smoke stacks from galley stoves, davits or metal signal masts.

- 3.43 *Interior Bodies of Metal* – Metal situated wholly in the interior of boats which at any point comes within 6 feet of a lightning conductor should be electrically interconnected with it. The bonding required to prevent electrolysis should be considered adequate.

Note: Interior bodies of metal include engines, water and gasoline tanks, control rods for steering gear or reversing gear. It is not intended that small metal objects such as compasses, clocks, galley stoves, medicine chests, and other parts of the boat's hardware should be grounded.

3.44 Metal which projects through cabin tops, decks or sides of boats above the sheer should be bonded to the nearest lightning conductor at the point where the metal emerges from the boat and should be grounded at its lower extreme end within the boat. Spotlights and other devices projecting through cabin tops should be solidly grounded regardless of any other type of lightning protection. Personnel should refrain from operating this gear when lightning is in the immediate vicinity.

3.45 Radio transmitter antenna should be (1) equipped with means for grounding during electrical storms or (2) the transmitter and antenna should be protected by transmitting type lightning arresters.

3.5 *Ground Connection* - A ground connection for a boat may consist of any metal surface which is normally submerged in the water and which has an area of at least one square foot. Propellers and metallic rudder surfaces may be used for this purpose. The ground plate as required by FCC for radio transmitters should be considered adequate. A steel hull itself constitutes an adequate ground.

3.6 *Vessel with Metal Hulls* - If there is an electrical contact between metal hulls and metal masts or other metallic superstructure no further protection against lightning is necessary. Boats with non-conducting or ungrounded objects projecting above the metal masts or superstructure should have these objects grounded in order to protect them.

4.0 PROTECTION OF SAILBOATS

4.1 *Sailboats* - Sailboats with metallic standing rigging will be adequately protected provided that all rigging is grounded, so that the mast and rigging meet the requirements of Section 3.1 and 3.3.

4.2 *Open Day-Sailers* - Open sailboats will be adequately protected if the shrouds and back stays or preventors are grounded. These should be electrically connected at the lower end and grounded to a copper plate on the hull or to a metal rudder, or center board or keel. *For the protection of personnel*, it is recommended that any continuous metallic track on the mast and boom be connected at the lower or forward end of the grounding system. *For protection of the boat only*, it is necessary to ground but one pair of shrouds.

4.3 *Cruising Sailboats* - All stays and all sail tracks should be grounded on cruising sailboats since it is assumed that persons will be in proximity of fore-stays as well as after-stays. Grounding of other objects on cruising boats should be in accordance with the foregoing paragraphs.

5.0 PROTECTION OF POWER BOATS

5.01 Power boats may be adequately protected by a grounded radio antenna or other suitably grounded lightning protective mast as specified in Section 3.1., provided the height of the mast meets the requirements for the specified cone of protection. Interconnection and grounding of metallic masses should be in accordance with this specification.

5.1 Where the size of the boat is such as to render the use of a single mast impractical, additional lightning protective masts should be erected to form overlapping cones of protection. It is recommended that the provisions of the United States Department of Commerce Handbook No.46 "Code for Protection Against Lightning" be followed.

6.0 PROTECTION OF SMALL BOATS

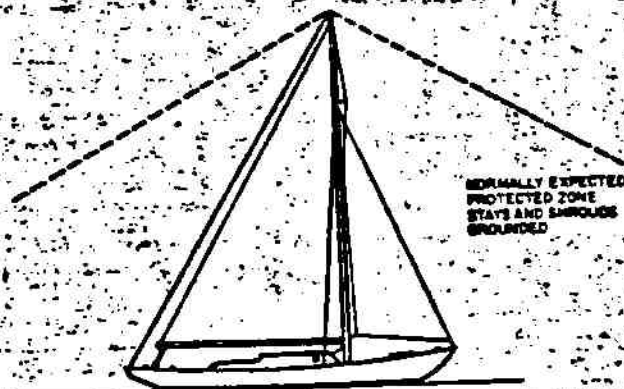
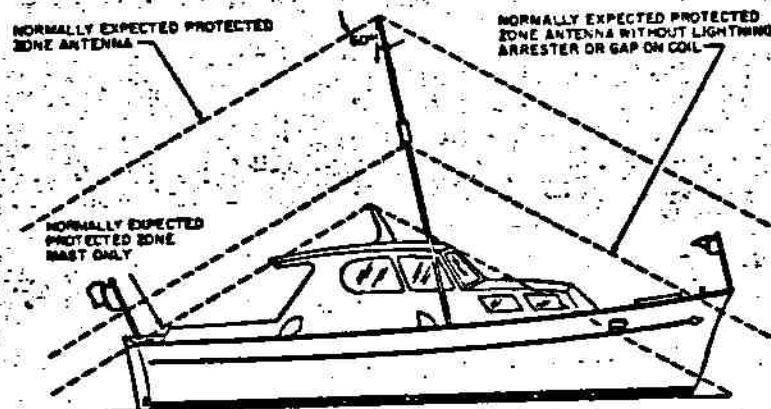
6.01 Small boats may be protected by means of a temporary lightning protective mast which may be erected under lightning conditions. Grounding provisions may be made by means of flexible copper wire and a submerged ground plate of approximately one square foot in area.

7.0 SUGGESTED PRECAUTIONS FOR PERSONNEL

- 7.01 Inasmuch as the basic purpose of protection against lightning is to insure the safety of personnel, it is appropriate that the following precautions be listed in this report.
- 7.1 One should remain inside a closed boat, as far as practical, during a lightning storm.
- 7.2 One should avoid making contact with any items connected to a lightning conductive system and especially in such a way as to bridge between these items. For example, it is undesirable that an operator be in contact with reversing gear levers and spotlight control handle at the same time.
- 7.3 No one should be in the water during a lightning storm.
- 7.4 If a boat has been struck by lightning, compasses and electrical gear should be checked to determine that no damage or change in calibration has taken place.

ZONES OF PROTECTION

FIGURE 1



V. MAINTENANCE PROCEDURES

A. Engine: Perkins Diesel

Please consult your engine manual for detailed procedures. The engine manual must be followed exactly to obtain maximum engine life and to keep your warranty in effect. The following sections summarize the maintenance requirements described in the manual and are intended as general information only.

1. Break-in Period

During the first twelve hours of operation, the engine should not be run at maximum rpm. At twelve hours, the following service should be performed:

- a. Change engine oil and filter.
- b. Tighten cylinder head nuts in correct sequence to correct torque.
- c. Re-set valve clearance and check oil feed to rockers.
- d. Check belt tension.
- e. Check all external nuts, set screws, etc., for tightness.
- f. Check shaft coupling alignment.
- g. Check fuel, oil, and coolant levels and look for leaks.
- h. Adjust idle speed, if necessary.

2. Before Each Outing

- a. Check coolant level.
- b. Check engine oil level.
- c. Check transmission oil level.
- d. Look for evidence of leaks under engine.

3. Every 1500 hours or 3 months (whichever occurs first)

- a. Change engine oil and filter.
- b. Check drive belt tensions.
- c. Clean air intake.
- d. Clean motor trap.
- e. Look for evidence of leaks.

4. Every 450 hours or 12 months (whichever occurs first)

- a. All steps under item (3) above.
- b. Change final fuel filter element.
- c. Check hoses and clips.
- d. Drain and clean fuel tank.
- e. Change gearbox oil.
- f. Service atomizers.

V. MAINTENANCE PROCEDURES

A. Engine - Yanmar Diesel

Please consult your engine manual for detailed procedures. The engine manual must be followed exactly to obtain maximum engine life and to keep your warranty in effect. The following sections summarize the maintenance requirements described in the manual and are intended as general information only.

1. Break-In Period

The engine manufacturer's recommendations for "running in" your new engine will be found in the operator's manual supplied with the engine. This break-in period requires that the engine not be subjected to excessive load for the first 50 hours. During this period, check the color of the exhaust. Excessively black exhaust is an indication the engine is overloading and throttle setting should be reduced. It is a characteristic of the Yanmar diesel engine to emit some black smoke if the throttle is advanced quickly. The throttle should always be advanced gradually, allowing the boat to reach speed.

After the running-in period, it is advisable to check the engine over for signs of loose bolts, etc., and any unusual wear or chafing of lines. Refer to engine manual for scheduled servicing, which should include the following items:

- a. Change lube oil and filter.
- b. Re-torque cylinder head bolts as follows:
 - Remove rocker cover.
 - Re-torque bolts beginning with center bolts and proceed diagonally opposite towards each end of cylinder head. Torque requirements are 80 ft. lbs. "cold" or 100 ft. lbs. "hot."
- c. Check belt tension.
- d. Check engine/shaft alignment.

2. Before Each Outing

- a. Check coolant level.
- b. Check engine oil level.
- c. Check transmission oil level.
- d. Look for evidence of leaks under engine.

3. Routine Maintenance

Refer to the engine manual for scheduled preventive maintenance operations. For maximum engine life, adhere strictly to those schedules and the procedures recommended.

V. MAINTENANCE PROCEDURES

A. Engine: Perkins Diesel (Continued)

5. Every 2400 hours

- a. Have Perkins representative examine and service proprietary equipment such as starter, generator, etc.
- b. Adjust valve tip clearances.

6. Bleeding the fuel system

- a. Check fuel tank shut-off to be "on".
- b. Check fuel filter for sediment or water by opening drain plug on bottom. Replace plug.
- c. Follow routing of hose from fuel filter to engine lift pump, inspecting hoses as you go. On the engine pump, you will find a lever which allows you to manually operate the diaphragm inside, against spring tension. It may be necessary to turn the engine over with the starter slightly to allow the pump arm to relax against the cam shaft. This allows more stroke with the manual lever you are operating.
- d. Follow the fuel line from the pump to the engine fuel filter and locate the vent plug on top. Loosen plug two or three turns.
- e. It is advisable to have some large rags on hand to catch oil that will be expelled from this point in the course of bleeding.
- f. Begin operating the manual lever. This may take several minutes as the filters will need to fill up (as well as the lines). Operate the manual lever until fuel flows freely from the filter plug with no signs or air bubbles.
- g. Loosen the two bleed screws on the injection pump (the head locking screw and the governor vent screw).
- h. Operate pump again until fuel flows freely with no bubbles.
- i. Re-tighten the vents beginning with the lowest point (the filter, the head locking screw, and the governor vent screw).
- j. Wipe up any spills at this time.
- k. Slacken the union nut at the injection nozzles.
- l. Move throttle to full rpm and check to see if the "stop" control is in "run" position.
- m. Crank engine with starter motor until fuel flows from each injector. Note: Do not run starter motor continuously. It normally takes 30 to 60 seconds of cranking to completely bleed the injector lines. Twenty seconds of cranking with about a two minute rest between periods will be easier on the starter, motor, and battery than steady cranking.
- n. Re-tighten injector lines, wipe spills.
- o. Re-set throttle position and proceed with normal start-up.
- p. Allow sufficient running time to re-charge battery.

V. MAINTENANCE PROCEDURES

A. Engine - Yanmar Diesel

3. Routine Maintenance (continued)

Periodically check the engine and equipment for any signs of a problem. Look for signs of wear on belts and hoses, loose clamps or fasteners, and signs of leaks.

4. Bleeding the Fuel System

- a. Check fuel tank shut-off to be "on."
- b. Check fuel filter for sediment or water by opening drain plug on bottom. Replace plug.
- c. Follow routing of hose from fuel filter to engine lift pump, inspecting hoses as you go. On the engine pump, you will find a lever which allows you to manually operate the diaphragm inside, against spring tension. It may be necessary to turn the engine over with the starter slightly to allow the pump arm to relax against the cam shaft. This allows more stroke with the manual lever you are operating.
- d. Follow the fuel line from the pump to the engine fuel filter and locate the vent plug on top. Loosen plug two or three turns.
- e. It is advisable to have some large rags on hand to catch oil that will be expelled from this point in the course of bleeding.
- f. Begin operating the manual lever. This may take several minutes, as the filters will need to fill up (as well as the lines). Operate the manual lever until fuel flows freely from the filter plug with no signs of air bubbles.
- g. Loosen the two bleed screws on the injection pump (the head locking screw and the governor vent screw).
- h. Operate pump again until fuel flows freely with no bubbles.
- i. Re-tighten the vents, beginning with the lowest point (the filter, the head locking screw, and the governor vent screw).
- j. Wipe up any spills at this time.
- k. Slacken the union nut at the injection nozzles.
- l. Move throttle to full rpm and check to see if the "stop" control is in "run" position.
- m. Crank engine with starter motor until fuel flows from each injector.
Note: Do not run starter motor continuously. It normally takes 30 to 60 seconds of cranking to completely bleed the injector lines. Twenty seconds of cranking with about a two-minute rest between periods will be easier on the starter, motor, and battery than steady cranking.
- n. Re-tighten injector lines, wipe spills.
- o. Re-set throttle position and proceed with normal start-up.
- p. Allow sufficient running time to re-charge battery.

V. MAINTENANCE PROCEDURES

B. Drive Train

1. Engine Alignment

The propeller shaft of the Morgan 38 is $1\frac{1}{4}$ " diameter, bronze. During installation at the factory, the shaft is carefully aligned to the engine with the hull being properly supported and level. At this time, the shaft log and bearing is bonded to the hull penetration. The coupling to the engine is checked again for alignment by the commissioning dealer or agent prior to delivery of the boat. This alignment check should be made periodically, since the action of a rough sea could possibly change the shape of a boat enough to disturb engine alignment. If, after the first rough water experience, the alignment has not changed, it is usually only necessary to make the check once per season. The coupling should always be disconnected before the boat is lifted out of the water, and alignment will then be necessary.

The coupling is secured to the propeller shaft by two allen-head set screws into a recess in the shaft and sealed over with wax. It should not be necessary to disturb this fixture except in the event of a coupling or key failure. This has been precisely fitted and sealed by the propeller shaft manufacturer.

The alignment is considered acceptable if there is a gap less than .0005" per inch of face diameter of the coupling (.002 for a 4" coupling, .0025 for a 5" coupling). The feeler gage is inserted between the flanges at four points 90 degrees apart. Then check again keeping the engine coupling stationary and rotating the shaft coupling 90 degrees at a time. This checks the squareness of the coupling face to the shaft centerline. The engine alignment is adjusted by raising and lowering the adjusting nuts at each mount. To make lateral adjustment, loosen the mounting pad screws which anchor the engine to the bed. You will note there are slots in the mount pad which allow a reasonable amount of adjustment side-to-side.

After adjusting and re-tightening all mount screws and lock nuts, double check the alignment.

In the absence of a feeler gage, the alignment can be checked fairly accurately with a strip of paper. Insert the paper between the two halves of the outer flange and rotate both together 360 degrees. The paper should remain in place through the complete turn.

When the boat is equipped with a disc-type flex drive, check and adjust shaft alignment before installation. Do not depend on flex coupling to correct misalignment.

V. MAINTENANCE PROCEDURES

B. Drive Train

1. Engine Alignment (continued)

The flex coupling will reduce vibration and noise from the engine, allow for hull flexing under heavy loads and heavy seas, and help reduce cavitation problems by moving the propeller further aft from the hull. Generally, the coupling will have to be removed to allow the shaft to go forward for removal of the propeller.

Sacrificial zinc anodes between prop and shaft bearing may have to be removed also when removing the propeller and/or flex coupling.

The disc drive is normally shipped loose in the owner's shipping package and installed by the commissioning yard after engine and shaft are finally aligned in the water.

2. Transmission

Periodically check the oil level in the transmission and inspect the control cables for signs of damage, chafing, corrosion or loose fasteners. Lubricate the moving parts with spray lubricant or light grease.

3. Stuffing Box

The stuffing box provides a seal for the propeller shaft at the inner end of the shaft log. It is connected to the shaft log with heavy wall hose, double clamped at each end. This flex hose allows the stuffing box to maintain alignment with the prop shaft without creating excess wear of the packing due to misalignment or vibration.

The packing used is wax impregnated 3/16" x 3/16" square flax.

When the shaft is turning, it is normal to have a slight leakage at the seal. This acts as a coolant, as well as a lubricant, to protect the seal and shaft surface. Should excessive leakage be apparent, release the lock nut and tighten the packing nut slightly and re-tighten the lock nut. Re-start engine and check again with shaft turning.

When it becomes necessary to replace the packing (boat must be hauled out), loosen the lock nut, back off the packing gland nut, and slide it forward on the shaft. Remove all the old packing and replace it with three rings of new packing. Stagger the ends of each ring so as not to provide a path for water to leak through.

Do not wind one continuous strip spirally around prop shaft to make a seal.

V. MAINTENANCE PROCEDURES

B. Drive Train

3. Stuffing Box (Continued)

Slide the packing gland back and tighten enough to create a heavy drag on the shaft. This will seat and form the packing.

Back off the packing nut until the shaft feels free and re-set the lock nut. Re-check for proper leakage when boat is returned to the water. Be sure the lock nut is secure, as operating the boat in reverse could cause the packing gland to screw off the stuffing box, allowing water into the boat.

V. MAINTENANCE PROCEDURES

C. Exhaust System

Check for leakage and proper supporting. The section of exhaust hose leading from the bulkhead to the aft thru-hull should be inspected for leakage at its connections. This hose should be supported to maintain a downward pitch aft to assure proper drainage. Look for physical damage to the hose, particularly at support points and/or bulkhead penetration.

V. MAINTENANCE PROCEDURES

D. Steering System

Use 22" of 3/8" x 1/2" packing - cut into 3 equal lengths

1. Stuffing Box

The rudder stuffing box is packed with a wax impregnated flax packing. The cap nut is packed with three rings of packing and tightened down on the upper bearing tube to the point where no leakage occurs. This fixture has a tapered thread and will hold its position when properly tightened and packed. Should the fitting leak and further tightening is not practical, remove cap and re-pack with new packing, spacing each successive ring so that the ends are 180 degrees apart.

2. Gudgeon Assembly

Each time the yacht is holed, carefully inspect the gudgeon assembly and all its fasteners for signs of physical damage and/or electrolysis.

3. Cable Steering

The Orion steering system uses an arrangement of conduit-routed cables connected to a conventional steering quadrant.

It requires very little maintenance, since the conduits are lifetime lubricated. An occasional cleaning of the cables where they pass in and out of the conduit, and a seasonal lubricating of the bearings with a good marine grade grease is recommended.

The cables do not require the heavy tension loads that are common on conventional steering systems. Enough tension to eliminate free play in the system is all that is necessary.

The cables should be checked periodically at the sheaves for signs of wear or fraying. If a cable starts to fray, it will generally be detected by an increase in the steering effort due to the broken strands snagging in the conduit liner. This does not mean that the cable is about to fail, but replacement of the cable should be made as soon as practical.

Cable used is 7x19 stainless wire rope. Do not over-tighten cables, as this can cause excess friction and will shorten the life of the cables.

V. MAINTENANCE PROCEDURES

E. Electrical System

1. Preventive Maintenance

Electrical systems are adversely affected by moisture and a salt air environment. Preventive maintenance consists of protecting the system from the elements and periodic inspection for damage created by the elements.

There are numerous aerosol spray products available for moisture-proofing terminals and connections. RTV Silicone can also be used. The silicone provides a more permanent seal, but is more difficult to remove should you wish to disconnect the wiring. If RTV silicone is used, it should be a transparent grade so that the connection will be visible through the sealant.

Periodically check all wire harnesses and connections for secure fastening, cleanliness, and any signs of physical damage or corrosion. All terminals should be clean and bright at their mating surfaces. A dirty or corroded contact area will cause resistance, and, depending on the load attempting to pass through, generate heat. This, in turn, increases resistance and will eventually burn the terminal with a resulting failure of the circuit. Battery drainage and possible electrolysis problems will occur prior to the circuit failure. Thus, it is extremely important that connections be kept clean. Correct any problems detected in the inspection.

Caution: Do not perform any maintenance or repair functions on a "live" circuit. Be certain that the battery switch is off when working on the 12 volt system and the 110 volt main breaker is off when working on the 110 volt system. It is also a good practice to remove all metal jewelry (rings, watches, wristbands, etc.) when working near the batteries or on any electrical component.

2. Repair

Refer to the schematics shown in the last section of the owner's manual in trouble shooting and repairing electrical system problems.

With the exception of the engine harness (connector plug at the engine) and the mast harness (connector at the mast step), the wire runs are continuous from point to point.

The wiring is color coded to ABYC recommendations. The following list describes the color coding system used in your yacht.

V. MAINTENANCE PROCEDURES

E. Electrical System

2. Repair (continued)

Interior Harness

- Red - All feed circuits (from source of power) - positive
- Black - All return circuits (ground) - negative
- Green - All bonding circuits (non-current carrying) - static ground
- Gray - Navigation lights
- Blue - Cabin lights
- Brown - Pumps
- Orange - Accessory circuits

Engine Harness

- Purple - Ignition and/or instrument feed
- Tan - Temperature gage
- Blue - Oil pressure gage
- Yellow/Red - Starter solenoid circuit
- Gray - Tachometer (electric)
- Dark Blue - Engine instrument lights
- Orange - Alternator output
- Yellow - Blower motor

Mast Harness

- Red - Masthead light
- White - Bow light
- Green - Spreader or foredeck light
- Black - Ground

V MAINTENANCE PROCEDURES

E. Electrical System (continued)

3. GFCI Protection

The receptacles in the head and galley areas are equipped with ground-fault circuit interrupter devices. The GFCI receptacle is usually located in the galley, and other receptacles connected to this one will also be protected by this device. A test and re-set button is provided on the unit, and instructions for testing should be found adjacent to outlet or on main breaker panel.

The purpose of this device is to provide protection against the hazards of ground-fault currents that can cause loss of life. An example of ground fault current is the current that would flow through a person who is using an appliance with faulty insulation and at the same time is in contact with an electrical ground such as a plumbing fixture or wet floor.

Even with GFCI protection, an electric shock may be felt, but such shock will be less dangerous. The GFCI does not protect a person who contacts both the hot and neutral wire. There is no known device that can offer complete protection against electrical accidents under all conceivable conditions. There is no substitute for remembering that electricity is dangerous when handled carelessly or misused.

The GFCI is not an overload type of circuit breaker, but senses an unbalanced condition between the "hot" and neutral circuit and immediately interrupts the circuit.

When the GFCI circuit opens, all other receptacles down line from it will also be "off". Remove the appliance at fault and re-set the button on GFCI unit to restore service.

Test the circuit frequently as instructed by the manufacturer or at least every 30 days.

V. MAINTENANCE PROCEDURES

F. Cathodic Protection

Cathodic protection is a means to control underwater galvanic corrosion.

This is an owner's maintenance responsibility. Your local boat yard or commissioning dealer can provide you with the necessary zinc sacrificial anodes suitable for the area and type of water in which the boat will be operated and moored.

Generally speaking, most boats have dissimilar metals somewhere below the water line, and the sea water acts as an electrolyte. This causes a current to flow from one to the other, with the yielding structure gradually corroding and weakening. This is a natural situation; but, when a zinc anode is attached to the section under attack, the zinc will yield instead, giving itself up and preventing corrosion damage. The zinc anode must be securely attached and electrically grounded to the fixture it is intended to protect. For example:

"The boat is equipped with a bronze propeller and stainless steel propeller shaft. The stainless steel is lower on the galvanic scale than bronze and would yield itself to the prop. A zinc anode, attached to the stainless prop shaft, would protect it."

Periodic checks, to determine the rate of deterioration of the zinc and the need for replacement, must be made to determine the size anode necessary. This depends a lot on the area in which the boat is moored. For this reason, the factory does not install anodes, nor does it offer warranty against galvanic corrosion.

V. MAINTENANCE PROCEDURES

G. Deck Hardware

All deck hardware should be rinsed off with fresh water after each outing and periodically washed with a soap or detergent solution. See section on finishes for additional information on care of deck hardware finishes. This section is concerned with lubrication and inspection of the deck hardware.

1. Winches

- a. Monthly: All winches should be lightly oiled and greased.
- b. Two or three times during season: All winches should be stripped, cleaned, inspected and re-lubricated.
- c. Start and end of season: Complete strip, clean, inspection, and lubrication. Inspect mounting bolts for proper seal and tightness.

Follow detailed procedures given in the Lewmar manual.

2. Blocks

- a. Inspect periodically for cracks, burrs, or other physical damage. Burrs can be removed with a file and emery paper. If the block is structurally damaged, replace it immediately.
- b. If the block is equipped with a removable sheave, remove and lubricate with Lubriplate Marine Lube "A". If not removable, oil shaft with SAE 30 oil.

3. Lifelines

Inspect lifelines, stanchions, and pulpits at least once a month. The following should be checked, with any needed corrections made immediately:

- a. Lifelines properly tensioned.
- b. Turnbuckles lubricated, pinned, and taped. All locking devices present.
- c. Plastic coating intact.
- d. Look for bulges or deformity in the plastic coating. This usually indicates rust or corrosion damage. Remove vinyl in this area and inspect wire. If wire is OK, wrap the wire with rigging tape.
- e. Inspect swage fittings. Look for cracks and/or corrosion damage on the fitting and the wire.

V. MAINTENANCE PROCEDURES

G. Deck Hardware

3. Lifelines (continued)

- f. Check eyelets on pulpits for structural integrity.
- g. Check all set screws on pulpit and/or stanchion bases.
- h. Examine stanchions and pulpits for structural damage and secure attachment to the deck.

4. Deck Hardware Mounting

Periodically check the tightness of all bolts used to attach the genoa track and all deck hardware. In the process, inspect for proper hardware seating and look for signs of loose or missing bedding. If small sections of bedding are missing, silicone can often be applied locally. If the sealant problem is more extensive, remove, re-bed, and reinstall the piece of hardware.

While sailing, observe the individual pieces of hardware as stress is applied. Look for any signs of movement.

5. Optional Hyde Roller Furling Gear

Once a year, or more frequently if you detect any binding, disassemble the unit to clean and lubricate with Lubriplate 1200-2-WBG or an equivalent non-fibrous wheel bearing grease. Follow the instructions in the Hyde manual.

Inspect the entire system for signs of physical damage at least once a month.

6. Running Lights

Check that all lights operate before each outing.

At least once a month, carefully inspect the fixtures for cracks or obstructions in the lenses, any signs of failure of the sealing gasket, and any signs of corrosion on the bulb, bulb socket, electrical wires, or connectors. If the bulb is removed, spray the bulb base and the socket with WD-40 or CRC 6-66 before reinstalling.

V. MAINTENANCE PROCEDURES

H. Spars and Rigging

Care and protection of finishes on the spars and rigging are discussed in the next sub-section. Listed below are inspections which should be made at least once a month during the active season.

1. Check fasteners for damage and tightness.
2. Insure blocks, tracks, sheaves, swivels, and pins are lubricated and operate freely.
3. Check sheaves and travelers for burrs. Emery paper and file will rid burrs.
4. Make sure sail tracks are straight.
5. Check fairleads and blocks for burrs and oxidation. File and emery paper will fix both conditions.
6. Check cleats for cracks and burrs. If cracked, replace immediately.
7. Examine and carefully check boom gooseneck, pin, cotters, and welds. If welds are cracked, professional attention is required immediately.
8. Examine chainplates for damaged eyelet (egg shaped) or cracks and to be sure they fair in line with shrouds. If cracks or eyelet damage occurs, replace chainplate (professional attention).
9. Be sure that turnbuckles turn freely, cotters are OK, and threads are lubricated and undamaged.
10. Check shrouds and stays for broken wires, chafing, and fairleading to chainplates. Check end fittings for cracks, corrosion, and any signs of wire slippage. Defects found in any of these areas require professional attention and/or replacement of the defective part.
11. Check all sheets and halyards for fraying and/or burrs. For isolated burrs, cut the burr off and tape over section. If numerous burrs occur, replace halyard and determine why burrs occurred. Raveled or frayed sheet ends, etc., need only to be stitched and burned. Burning melts ends and prevents unraveling.
12. Treat the swage point (where the wire joins a fitting) with automotive-type paste wax to resist corrosion. Important: The standing rigging is designed with a 2.5:1 safety factor with the yacht heeled 30°. While this factor is significant, you must realize that corrosion, etc. of the wire rope and fittings will reduce that margin. A careful inspection of the swage points at least annually is recommended. Also, many marine surveyors recommend replacing all the standing rigging every 5 to 8 years, depending on the environment where the yacht is kept/used.

V. MAINTENANCE PROCEDURES

I. Finishes

1. **Fiberglass**

The exterior surface of all of the fiberglass components on your yacht is polyester gelcoat. Morgan Yacht uses only the best grade marine gelcoats available. The base resin is isophthalic and/or NPG type which offers the best combination of initial gloss, resistance to weathering effects, and resistance to cracking and blistering. The pigments are carefully selected for color stability, color purity, and resistance to color float. All of the formulations include ultra-violet inhibitors and acrylic monomer which further reduce the effects of weathering.

Even the best gelcoats are not totally immune to the elements. As a general rule, you should treat the gelcoat surfaces of your yacht as you would your car's finish. The following procedures will maximize the useful life of the gelcoat:

- After every outing, rinse off the deck and topsides with fresh water.
- At frequent intervals, wash all fiberglass surfaces with a mild detergent or car wash solution. Use a sponge or towel on the high gloss areas. A brush may be used on non-skid areas. Always rinse thoroughly with fresh water.
- Apply wax to the glossy areas at least once a year and more frequently if the yacht is in southern waters. Do not apply wax to non-skid surface areas or the textured portions of the headliner. A good grade automotive wax specially formulated for fiberglass surfaces may be used. Follow the instructions on the can.

If the wax contains cleaners, extreme care must be taken if a power buffer is used. The cleaners are often abrasive which may remove some of the gel surface. Holding a power buffer too long in one spot, particularly on sharp radii, can result in "going through" the gel.

The preferred procedure is to use a wax with cleaners and to buff by hand with turkish towels. This method is a bit more work, but it results in removal of surface oxidation without risking excessive gelcoat removal.

If the surface becomes dull due to lack of routine care or aging, it can often be restored by hand buffing with an automotive rubbing compound such as Dupont Number 7 followed by a coat of wax. The compound will remove some of the gelcoat. Extreme care must be taken so as not to penetrate the gel layer. The factory applies gel

V. MAINTENANCE PROCEDURES

I. Finishes

1. Fiberglass (continued)

at a thickness of 18 to 25 mils (paint films are generally 1 to 4 mils), and gelcoats normally provide full hiding power at thicknesses as low as 8 to 10 mils. Thus, there is some margin for gelcoat removal without adversely affecting the appearance of the surface.

If rubbing compound does not restore its gloss, the surface may be sanded with 320 grit paper, then sanded with 400 grit paper, polished with rubbing compound or polishing compound, and finally waxed. This procedure can result in substantial gel removal and requires extreme care. Generally, this remedy should be undertaken by a yard experienced in fiberglass repairs. Even then, you should be prepared for the possible need to paint if the operator goes too deep in some areas.

Fiberglass surfaces may be painted, and there are several types of paint specifically formulated for re-surfacing gelcoated substrates. For the ultimate in gloss and weather resistance, we recommend a top quality two-part urethane (e.g. Dupont Imron available at paint stores). Two-part epoxies also provide glossy and durable finishes, but they may chalk with aging.

Scratches, nicks, or other surface damage which cuts deeply into the gel or penetrates to the laminate should generally be repaired by a competent yard. If you choose to do this work yourself, contact the factory for recommended procedures.

Caution: Gelcoats resist most chemicals, but they are not resistant to strong caustics, strong oxidizing compounds, or some halogenated compounds. Materials which should be kept away from gel surfaces include:

- Paint remover containing sodium hydroxide or methylene chloride
- Bleaches containing chlorine
- Cleaners containing chlorine or hydroxides
- Methylene chloride or carbon tetrachloride solvents
- Chloro-bromomethane fire extinguishers

Caution: Abrasive cleaners should not be used for routine cleaning operations, since they result in gelcoat removal and may leave scratches.

V. MAINTENANCE PROCEDURES

1. Finishes (continued)

2. Vinyl Hull Liner and Bulkhead Covering

Vinyl liners used in your yacht are fire retardant, mildew resistant, and are selected for durability in marine environments. Other than occasional cleaning with a mild detergent, they are maintenance-free.

The vinyl is applied at the factory with contact cement. Should a corner or edge come loose, it can be re-attached with contact cement.

The vinyl will not withstand rubbing with strong abrasives or solvents such as acetone or methylene chloride. Mineral spirits may be used as a solvent if care is taken not to let it set on the surface.

3. High Pressure Laminate Surfaces

The mica surfaces require only occasional cleaning with a mild detergent. Household cleaner/waxes such as Pledge may be used and will mask small scratches that may occur. Do not use strong abrasive cleaners on mica, as they may dull the surface.

4. Upholstery Fabrics

The fabric in your yacht is Herculon, and is self-extinguishing and mildew resistant. This fabric may be cleaned with household upholstery shampoo. Follow the instructions on the can. Care should be taken not to allow excessive liquid penetration into the foam, since it takes a long time to dry.

The cushion covers are removable and may be dry cleaned.

5. Spars

The spars on your yacht are finished by a glass bead peening process. This method is used in the aircraft industry but is unique to Morgan Yacht in our industry. The peening process provides a tempered surface on the aluminum, and a very substantial increase in corrosion resistance. As a final step, the spars are waxed before they leave the plant.

To protect the finish on your spars, the following steps are recommended:

- Rinse off spars with fresh water after each outing.
- Tie the halyards away from the spar when not in use. Not only does this prevent abrasion on the spar and halyards, but it eliminates the annoying slapping noise caused by the boat's movement.
- At least once a year, and more frequently in southern waters, wax the spars with a good grade automotive wax.

V. MAINTENANCE PROCEDURES

I. Finishes

5. Spars (continued)

Morgan Yacht does not paint the spars because of the inherent problems of nicks, scratches, and the resultant increased maintenance effort required to assure color uniformity. The peening process does not affect the paintability of the spars, but the factory applied wax does. If you decide to paint the spars, be sure that the factory applied wax is completely removed first. We suggest two-part urethane (e.g. Dupont Imron or Awlgrip) for maximum durability. Be sure to follow the manufacturer's recommendation in prepping, priming, and painting aluminum surfaces. Shortcuts can result in poor paint adhesion.

6. Aluminum Hardware

Periodic cleaning and waxing with automotive type wax is the only surface maintenance required. If the surface becomes pitted, emery paper and polishing compound may be used to remove or reduce the prominence of pits. This will remove the anodized surface and it will be more important than ever to keep the polished surfaces well waxed.

Caution: Do not use emery paper or polishing compound on black anodized aluminum surfaces. Black paint will mask scratches on the anodized surface.

7. Stainless Steel Rigging and Hardware

All of the stainless steel components and rigging are 304 or 316 grade which offers maximum corrosion and rust resistance in a salt water environment. To maintain the stainless steel surfaces, the following steps are recommended:

- After each outing, hose down the rigging and hardware with fresh water.
- Occasionally polish stainless steel surfaces with metal polish.
- At lay-up or before prolonged periods of disuse, apply automotive wax to stainless steel hardware. Wax should not be used on the wire rope rigging.

8. Chrome Plated Bronze Hardware

Rinse with fresh water after each outing, and clean as needed with automotive chrome polish. Wax with automotive wax at least once a year, preferably before lay-up.

V. MAINTENANCE PROCEDURES

I. Finishes (continued)

9. Boot and Cove Stripe

The boot and cove stripe are painted on with DuPont Imron two-part polyurethane. Routine maintenance is identical to that of the gel surfaces. Minor scratches or nicks can be touched up with automotive enamel or lacquer. A complete re-spray, if needed, should be done with a two-part epoxy or two-part urethane for maximum adhesion and long life.

10. Bottom Paint

The selection of type and brand of bottom paint will depend on local water conditions and your personal preference. To allow you maximum flexibility, the yacht is delivered new to you with an unprimed and unsanded bottom.

The key to a good bottom job is close adherence to the instructions on the paint can. Do not short cut the cleaning or priming operations. Apply the recommended number of coats of paint and launch within the recommended time after painting. Because the materials are expensive and bottom preparation is hard and dirty work, there is always the temptation to do a little less than the paint manufacturer asks for. But remember, premature failure will require re-doing the job and the additional expense of a haul-out.

The expected life of anti-foulant will vary significantly with water temperature, water salinity, local harbor conditions, the relative amount of use the yacht gets, and the particular owner's definition of the amount of growth that constitutes a need for removal. Under average conditions, you can expect to run six to twelve months between renewals.

Before re-painting the bottom, it is necessary that all marine growth is removed, that the bottom is thoroughly sanded, and that the bottom is absolutely dry. At least twenty-four hours should be allowed after hauling to assure dryness. If, in scraping off the marine growth, the paint is removed down to the gel, be sure the gel is thoroughly sanded so that all gloss is removed. If the gel itself is penetrated, seal with polyester resin or gel-coat before painting. If applying the paint, follow the instructions on the can.

Caution: The sanding dust from anti-foulant paint is toxic. A face mask, goggles, rubber gloves, and suitable protective clothing should be worn during sanding operations. After sanding, wash up thoroughly and clean dust from your tools.

It is also advisable to wear an organic vapor cartridge mask and goggles while applying the paint. Wash up thoroughly after painting.

V. MAINTENANCE PROCEDURES

I. Finishes (continued)

11. Lexan and Plexiglass

All of the exterior glazing (portlights and hatches) are Lexan polycarbonate or Plexiglass (acrylic). Some of the sliding doors and mirrors below may be Plexiglass. Both materials are extremely tough and have the advantage over glass of resistance to shattering if broken. However, both materials exhibit lower chemical resistance and abrasion resistance than glass. As a result, care is needed in cleaning these materials.

For general cleaning, a turkish towel dampened with a mild detergent solution is recommended. If the surface dirt is gritty, flush first with water. Never use acetone or other keytone solvents on either material. Never use abrasive cleaners on either material.

Minor scratches can be removed by hand buffing with jewelers rouge or cleaners specifically formulated for plastics. (Aircraft or motor-cycle service centers are good sources for these cleaners.) Some scratches can be removed by hand buffing with toothpaste and water.

12. Teak Joinerwork

Teak is used for all exterior and interior trim. Teak veneer plywood is used for all woodgrain interior joinerwork panels and on the main cabin sole. All of the teak is hand rubbed and oiled before the yacht leaves the plant.

There are several options open to you on maintaining teak. Your choice will depend on your preference in the aesthetic appearance of the brightwork and the amount of time and/or money you are willing to devote to brightwork maintenance. Some of the alternatives are described below:

a. Leaving teak untreated

Teak contains a natural oil which is one of the reasons it is so durable in a marine environment. As it ages, however, the oil exudes to the surface and disappears. (Direct sunlight speeds up the process.) When teak weathers, it takes on a silver gray color which many find attractive. The disadvantage of weathered teak is that the grain raises, and there is a tendency for the teak to check and split. Periodic cleaning with commercially available teak cleaners, such as Teak-Brite, will restore the original color and improve the aging characteristics of the teak.

V. MAINTENANCE PROCEDURES

I. Finishes

12. Teak Joinerwork (continued)

b. Oiling teak

Periodic oiling of the teak will help maintain the golden brown teak color and greatly increase the resistance to checking and splitting by replenishing the natural oil in the teak. Special oils (e.g., Teak-Brite Sealer and Watco Teak Oil) have been formulated for finishing teak. These are generally preferred over boiled linseed oil, because they contain toxicants for mildew resistance and other additives. Boiled linseed oil may be used on teak, but more frequent cleaning and re-oiling may be required.

The general procedure is to clean the teak (see above) and sand, if necessary, then apply oil liberally with a rag. Re-apply oil until it is no longer absorbed into the surface. Allow oil to penetrate for 15 to 30 minutes and then wipe off with turkish towel. Rub in the direction of the grain. Be sure to observe any special instructions on the can label.

c. Varnishing teak

A varnish finish provides the best protection for the teak, and most people agree that a varnish greatly enhances the appearance of the teak. The drawbacks to varnishing teak are the high initial cost (labor content) in obtaining a first rate job and the comparatively high maintenance effort needed. Exterior varnished teak will normally require a new coat of varnish every four months, and interior joinerwork will require re-coating at least every two years. If the varnish fails (peels, yellows, crazes, etc.) before re-coating, extensive sanding is required; and often the entire finish must be removed and re-done.

The main forces which work against a good varnish job on teak are dust, moisture, grain in the wood, and the natural oil in the teak. Their effects and avoidance techniques are discussed briefly below:

- (1) Dust -- Varnish must be sanded between coats, and the sanding dust must be removed before re-coating. Wipe all sanded surfaces with tack cloths, and then thoroughly vacuum the surrounding areas before varnishing. Brushes must be thoroughly cleaned, and the varnish should be strained before using. Varnish remaining in the can after completing a coat should

V. MAINTENANCE PROCEDURES

I. Finishes

12. Teak Joinerwork (continued)

be discarded. This eliminates dust accumulation in the can and eliminates the problems of surface skinning in the can. Varnishing must be done on a still day.

- (2) Moisture -- Moisture will cause varnish to blush and/or lift. Be sure all surfaces are absolutely dry before varnishing. Do not apply varnish when the humidity is high or rain is forecast within 16 hours after application.
- (3) Grain -- Teak has a sharply defined grain which will telegraph through several coats of varnish if the preparation is incomplete. The teak should be block sanded to a 150 grit finish. Take care on the panel surfaces not to penetrate the veneer, but strive to obtain a smooth surface everywhere. For best results, a "paste wood filler" or "filler stain" (Petit and Interlux both offer easy-to-use materials) should be used to fill the grain. Follow the instructions on the can to the letter.
- (4) Natural Oil in the Teak -- The natural oil in the teak exudes to the surface with aging. This helps protect unvarnished surfaces. It can destroy varnished surfaces by causing lifting. To minimize the risk of lifting, wash all teak surfaces to be varnished with acetone prior to the initial sanding.

Use plenty of acetone and change wiping rags frequently.

Caution: Acetone is extremely flammable. Be sure area is well ventilated and that all potential sources of spark or open flame are eliminated before using acetone. Do small areas at a time. Then allow the area to clear itself of vapors before continuing.

A thorough discussion of varnishing techniques is beyond the scope of this manual. Prior to tackling the job of varnishing your yacht, you should talk to experienced varnishers. Read the various publications issued by varnish manufacturers, and by all means follow the instructions on the can to the letter. Listed below are the steps that will be required to get a top quality finish. The listing is useful as a checklist of the major steps to be undertaken:

- Wash teak with acetone.
- Sand to 150 grit finish.
- Fill grain with filler stain.

V. MAINTENANCE PROCEDURES

I. Finishes

12. Teak Joinerwork (continued)

- Apply sealer coat - sand lightly.
- Apply three to seven coats of varnish, sanding between coats with 150 grit paper.
- Apply last coat. If a satin finish is desired, use satin varnish for last coat or apply high gloss varnish and rub with pumice and boiled linseed oil.

V. MAINTENANCE PROCEDURES

J. Sail Care

To help you obtain the best continued service and longest useful life from your sails, we would like to offer this advice for sail care. Good sail care is not difficult or particularly time consuming. Over a period of years, a little conscientious care can save hundreds of dollars.

Sail care for synthetic sails consists of three basic elements: cleanliness, protection from unnecessary ultraviolet radiation, and proper usage.

1. First, your sails should be kept clean. Simple flushing with fresh water will normally do this job. Once a year, or more often if necessary, a thorough washing using a mild detergent will keep your sails white and free of salt that can cause abrasive damage to sail fibers over a period of time.

Sails may be spread on a smooth clean surface and scrubbed to remove imbedded dirt; but, simply soaking the sails in a detergent solution with occasional stirring is preferable since it avoids any chafing of the sail against a surface. In any case, do not put your sails in a washing machine. You will get your sails clean at the expense of a great deal of cloth damage from slides and snaps working against the cloth.

Occasionally your sails may be stained, in which case there are several commercial stain removers that can be safely used; but, be certain that the instructions verify that the product is safe for dacron or nylon.

2. Secondly, the most destructive force to synthetic sails is ultra-violet radiation. The important thing to remember here is to keep your sails out of the sun except when in use. Use a mainsail cover if you leave the sail on the boom. Never leave your sails lying on a flat surface in direct exposure to the sun. One hour on the clubhouse lawn can have the same destructive effect as a weekend's racing.

After you have washed your sails, hang them up by the luff in the shade when possible. Put them under cover as soon as they are dry.

3. Finally, proper usage consists of protection from chafing, proper storage, and prevention of over-stretch.
 - a. Prevention of chafe is a common sense thing. Check spreader tips, tumbuckles, stanchions, pulpits, and other parts of the boat and rigging which may come in contact with the sails.

V. MAINTENANCE PROCEDURES

J. Sail Care (continued)

Some fittings, such as spreader tips, can be taped or covered with leather. Others, such as screwheads, should be filed smooth. A periodic inspection of the sails will help pinpoint sources of chafe or sharp edges that may eventually tear a sail or cut the stitching.

- b. All sails should be stored dry. Dacron sails should be folded, but they don't have to be. Soft unfilled sail cloth suffers little from "stuffing", since there is no filler breakdown from the repeated creasing. However, even soft cloth enjoys a longer life with folding, since folding and rolling of sails will minimize creases and strains on the fibers. Folded sails also require less space for storage and set more smoothly in light airs. Long term storage should especially be in a folded condition and in a cool, dry place. Never leave the battens in the main when it is not being used. The cloth, elastic, and battens will all suffer.
- c. Finally, proper use involves using the sail in its proper conditions. Using a 4 oz., 170% genoa on the 40 footer in 18 knots is obviously going to strain the sail and distort the shape. Unfortunately, there are no standard tables indicating the exact wind velocity at which the headsails should be changed. Sea conditions, stability of the particular boat, cloth weight, and sail shape are determining factors that all affect the decision to change sail.

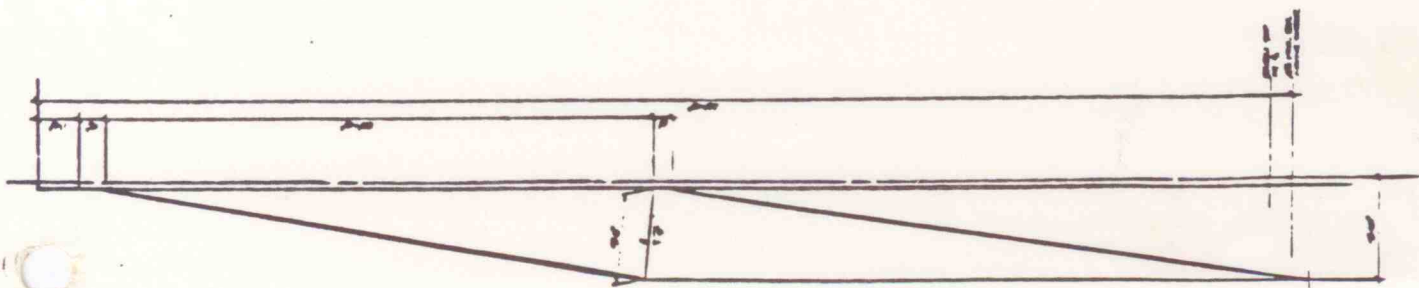
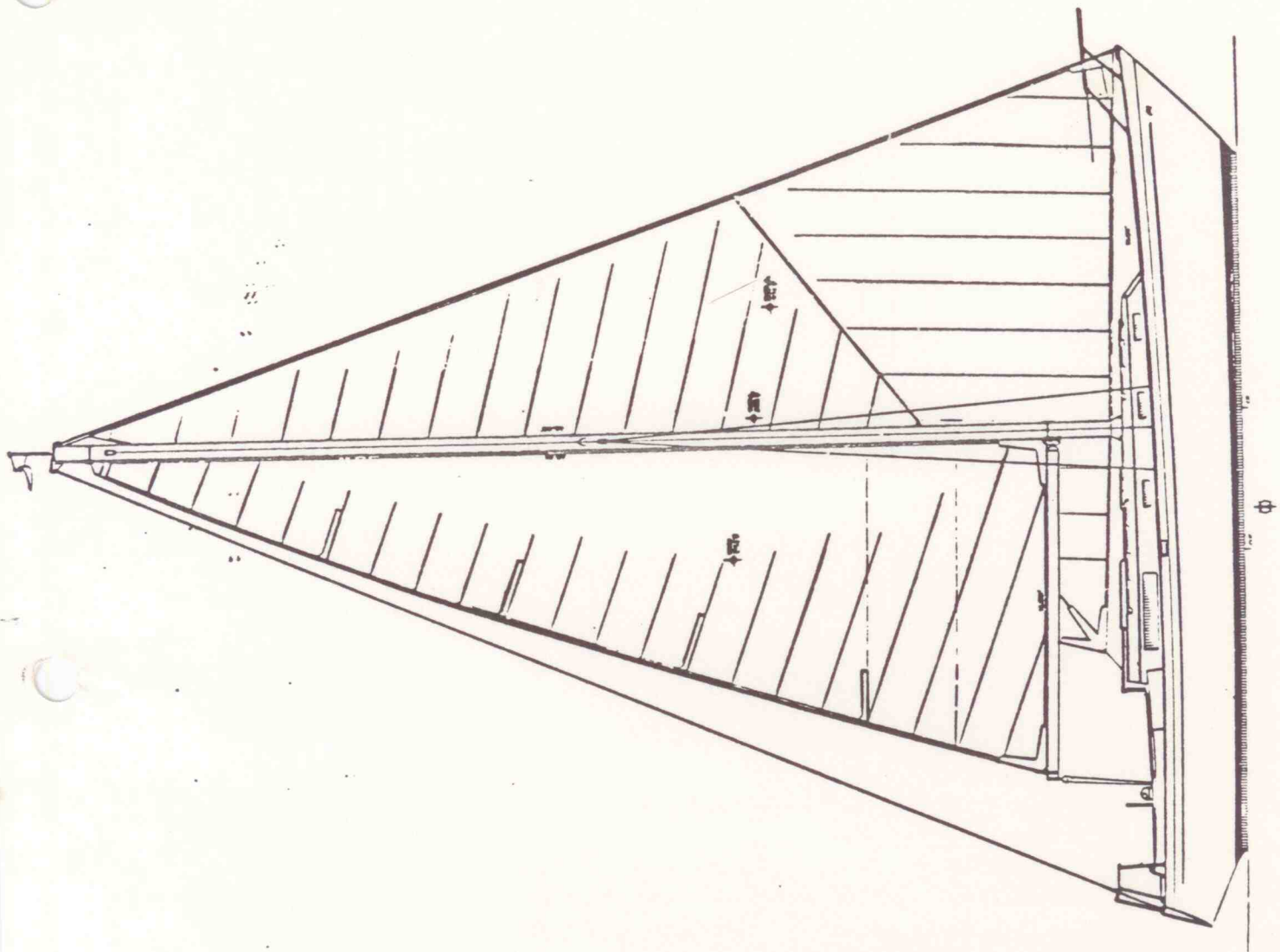
While we can give you guidelines for any individual sail, ultimately your judgment is going to be called upon. Watch the sail for signs of strain or distortion of its airfoil shape. Remember that sails are made of cloth; and, while modern synthetics are extraordinarily strong, they do have limits. Sails can be ruined by carrying them in winds beyond that for which they were designed, stretching a leech over a spreader, stretching the foot over the shrouds or a lifeline, allowing leech flutter uncontrolled, and excessive luffing.

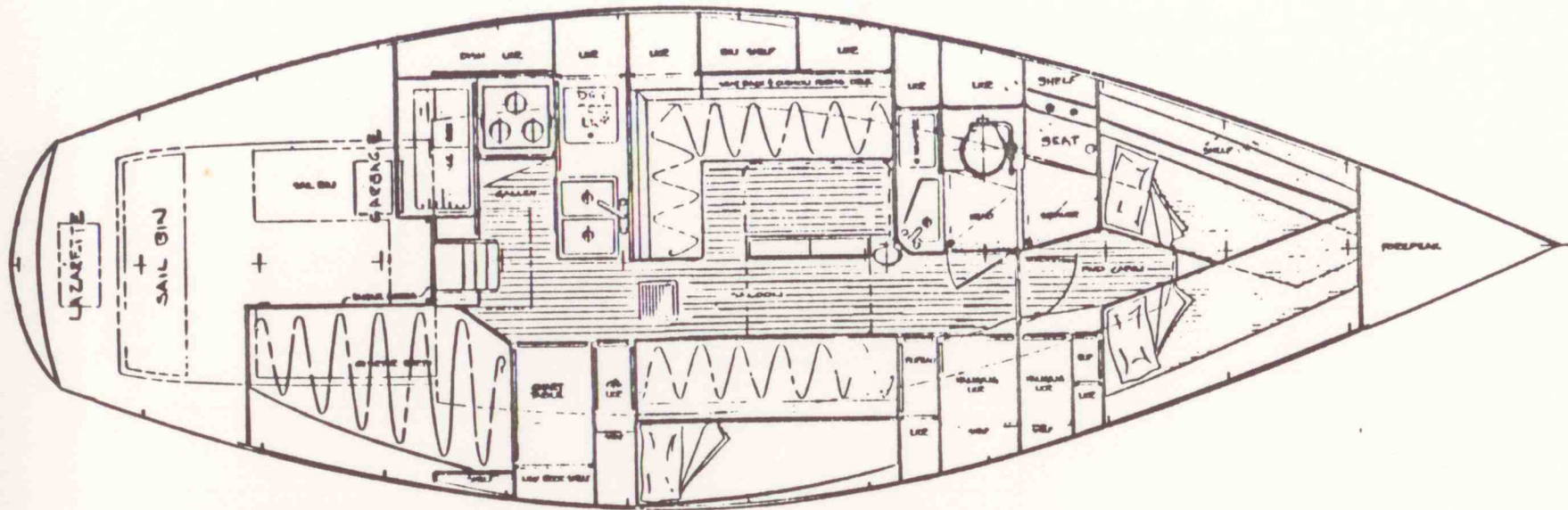
This is by no means a complete treatment of sail care. But, with common sense and the general care we have outlined, your sails will give you years of trouble-free service.

VI. CHARTS AND DRAWINGS

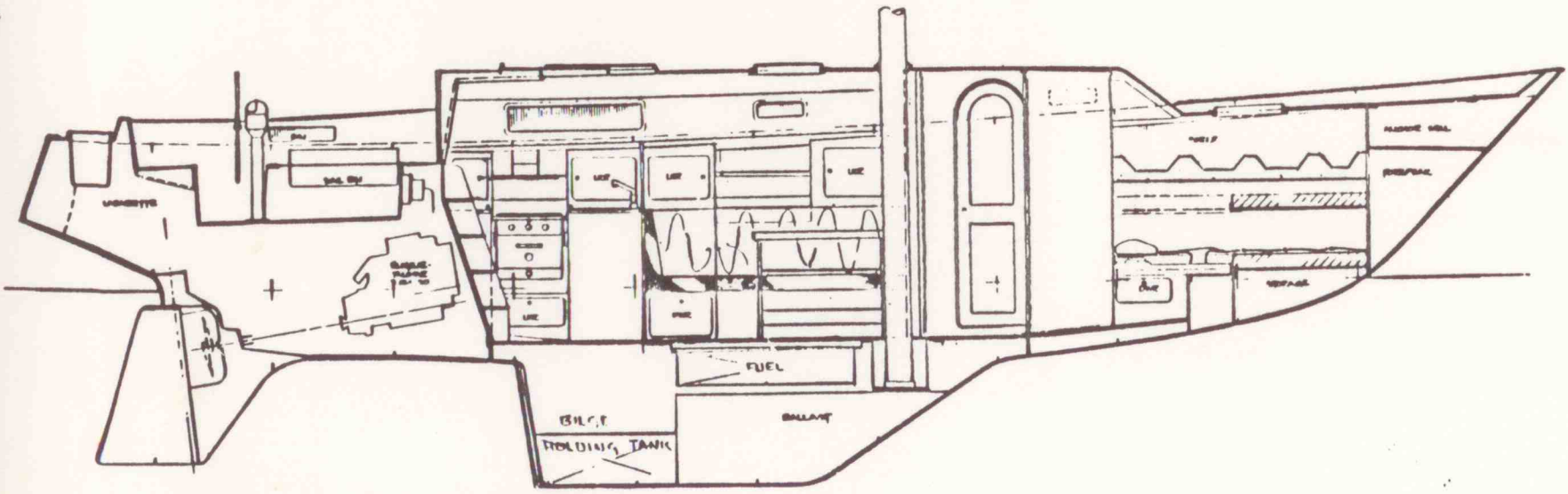
The drawings which follow are for descriptive purposes only and not to scale. They are not intended to be used as construction drawings.

The location of some accessories may vary on your yacht from the drawings due to engineering changes or the particular combination of options on your yacht. Consult your dealer on any discrepancies you may discover.

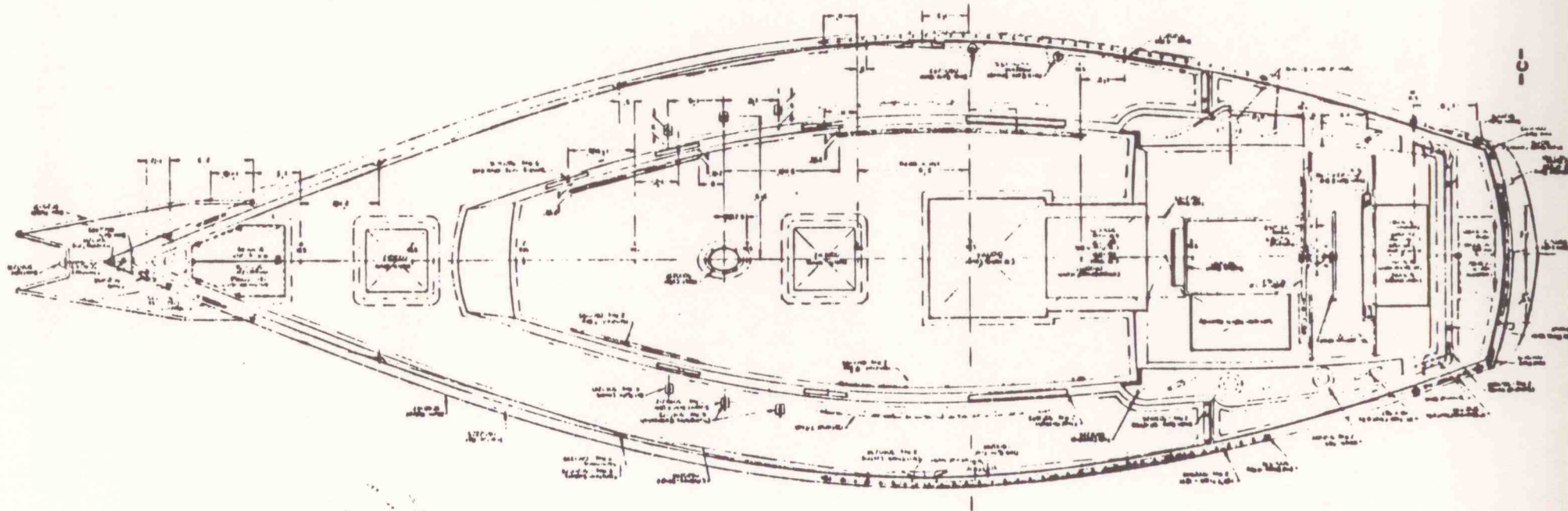


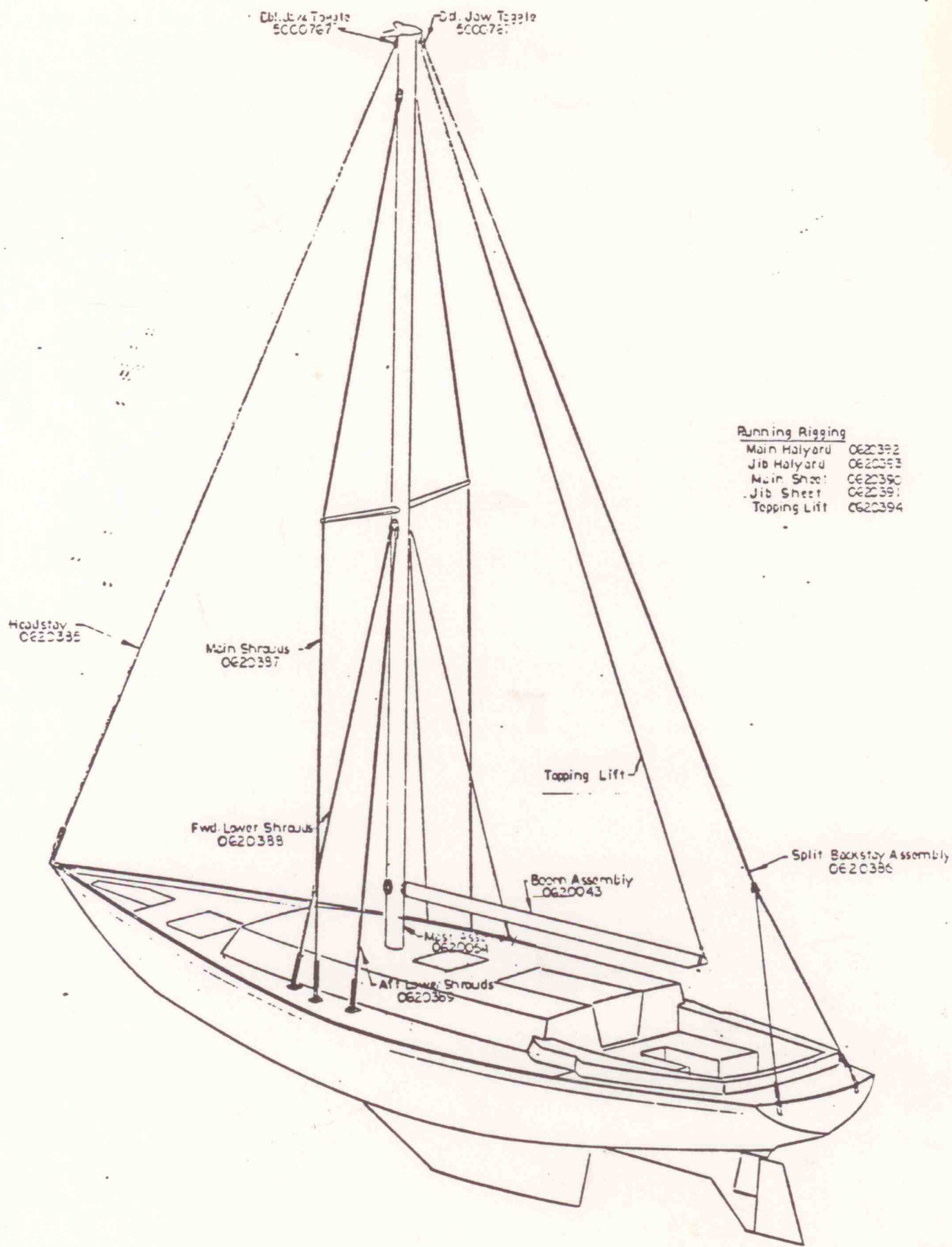


-9-



REVISIONS					
NO.	DATE	BY	DESCRIPTION	APPROVED	

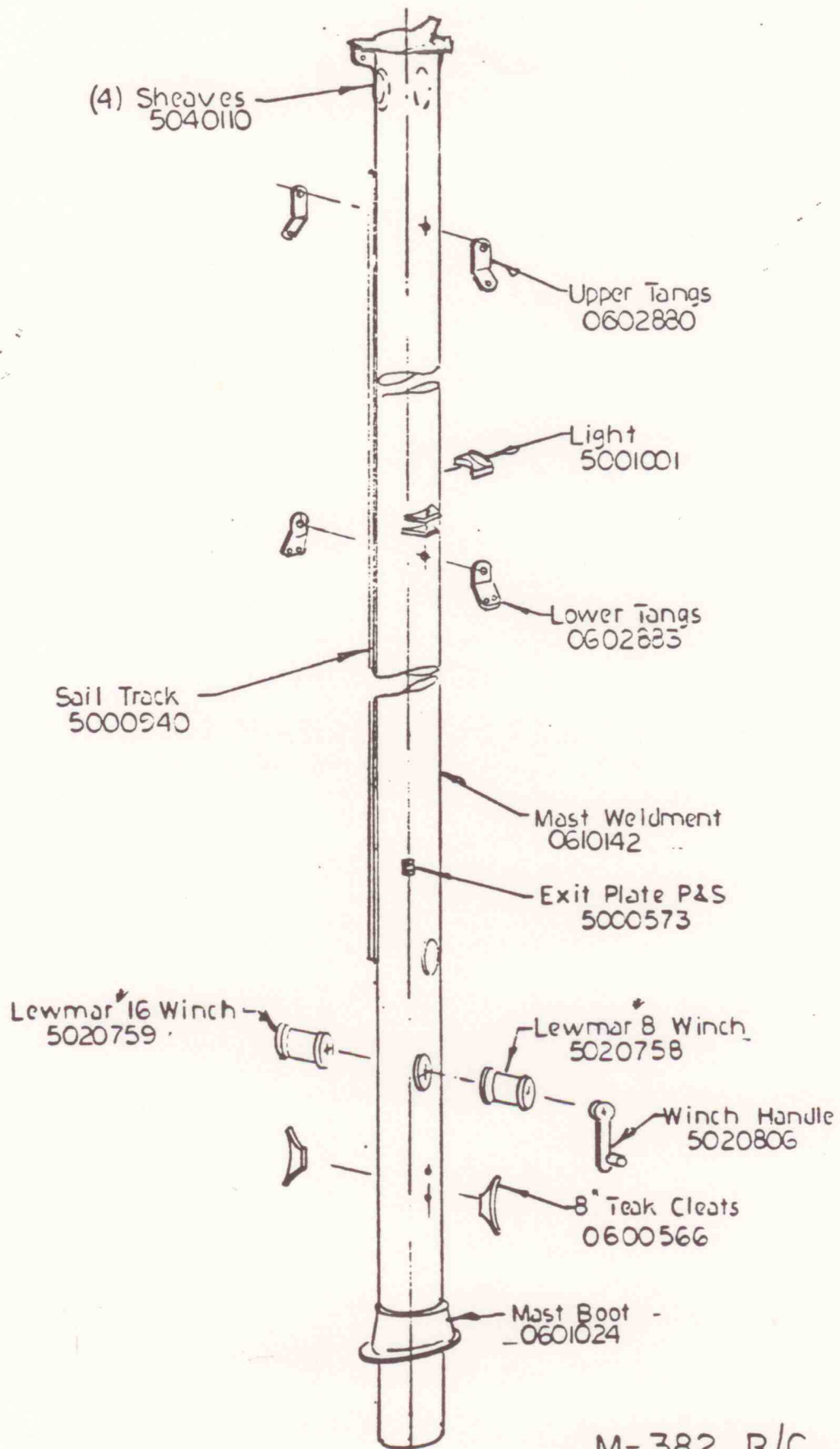




Running Rigging

Main Halyard	0620392
Jib Halyard	0620393
Main Sheet	0620390
Jib Sheet	0620391
Topping Lift	0620394

M-382 R/C
 STANDING RIGGING PLAN -d-



M-382 R/C
MAST ASSEMBLY
0620054

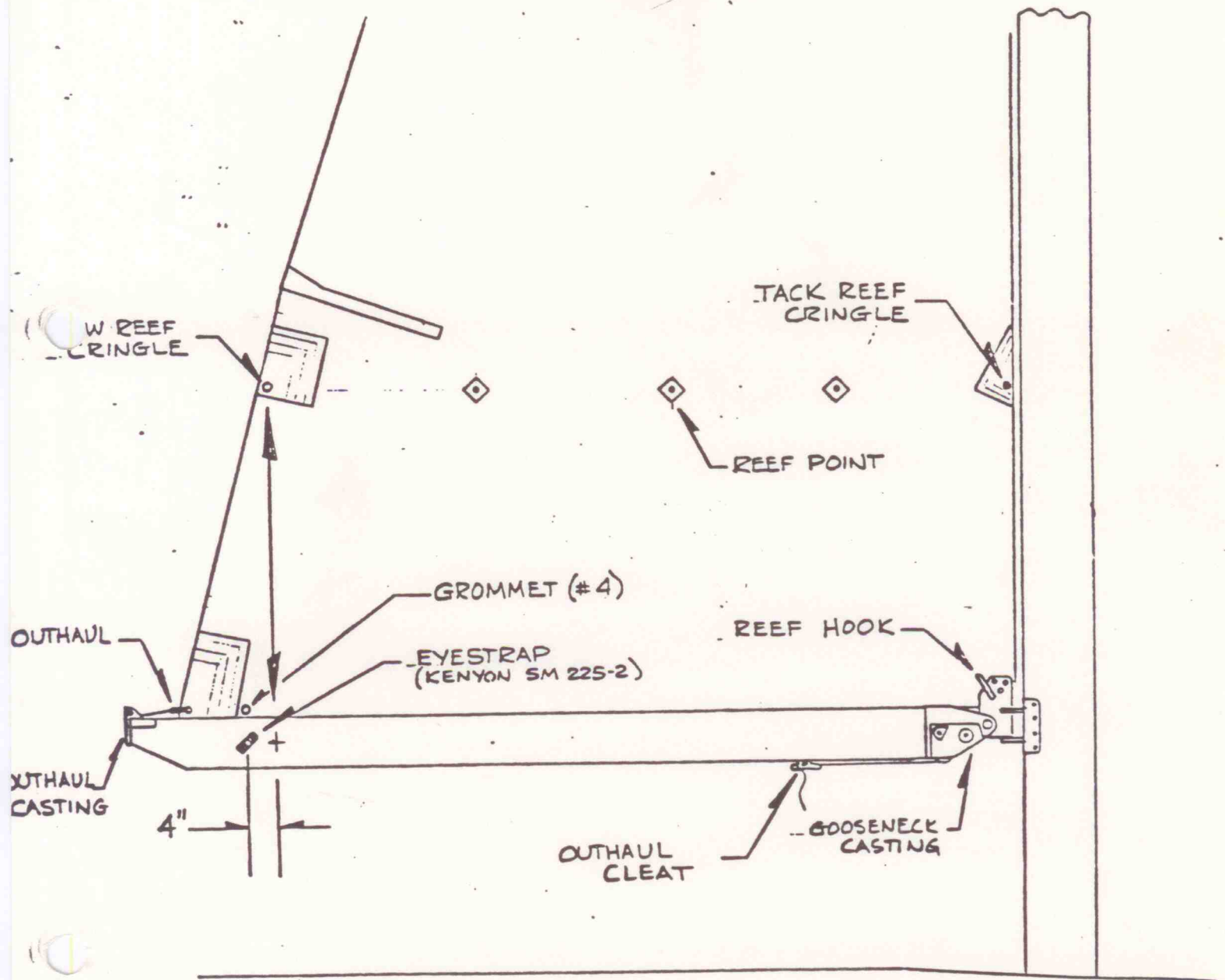


Kenyon Marine

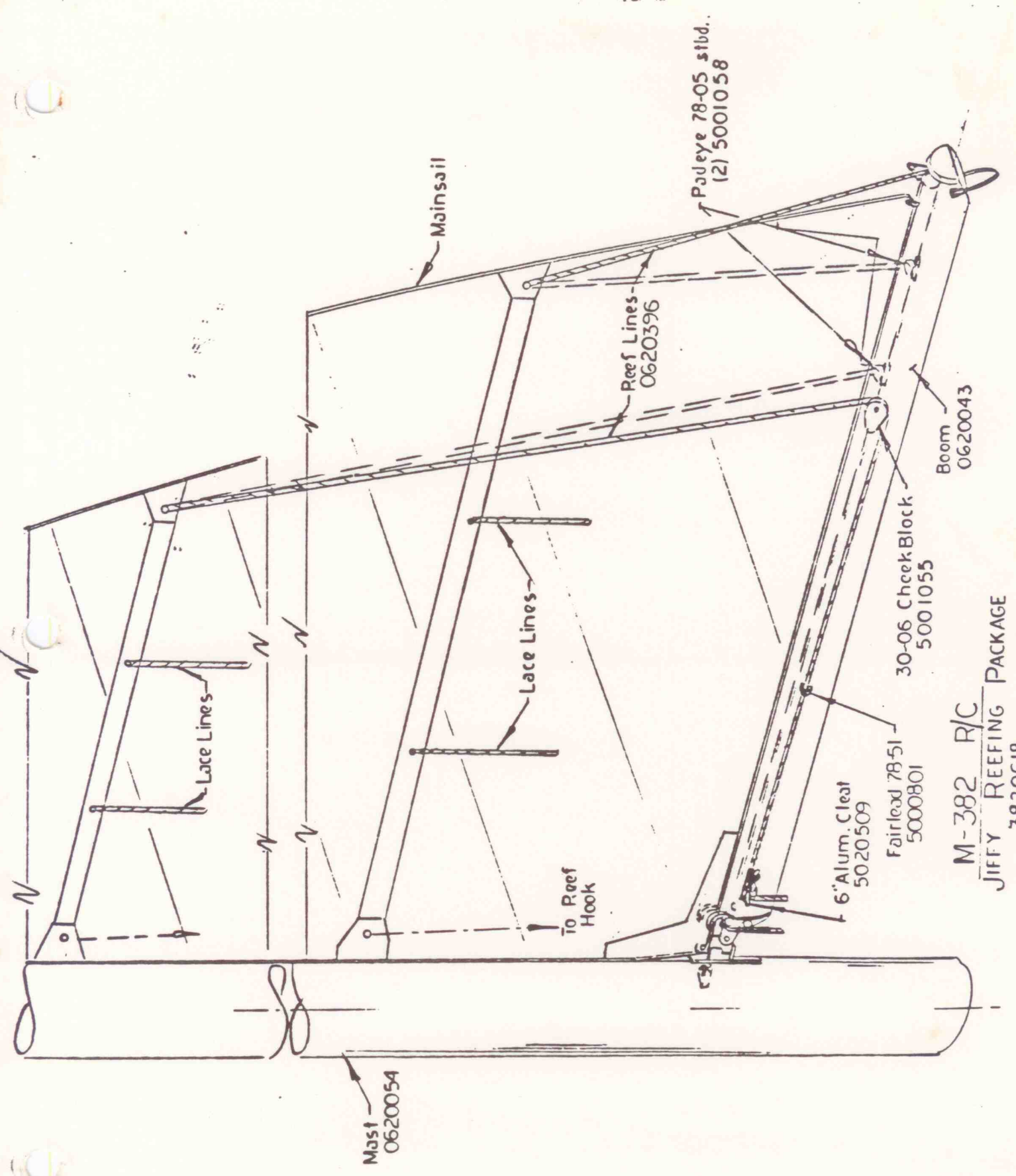
As "Quick Reefing" is an option on your yacht, Morgan Yacht elected to assembly your boom with the outhaul system operating through the center sheaves, and the topping lift the starboard outboard sheaves. Please reference diagram on "Quick Reefing System" for operational information.

DIAGRAM 1

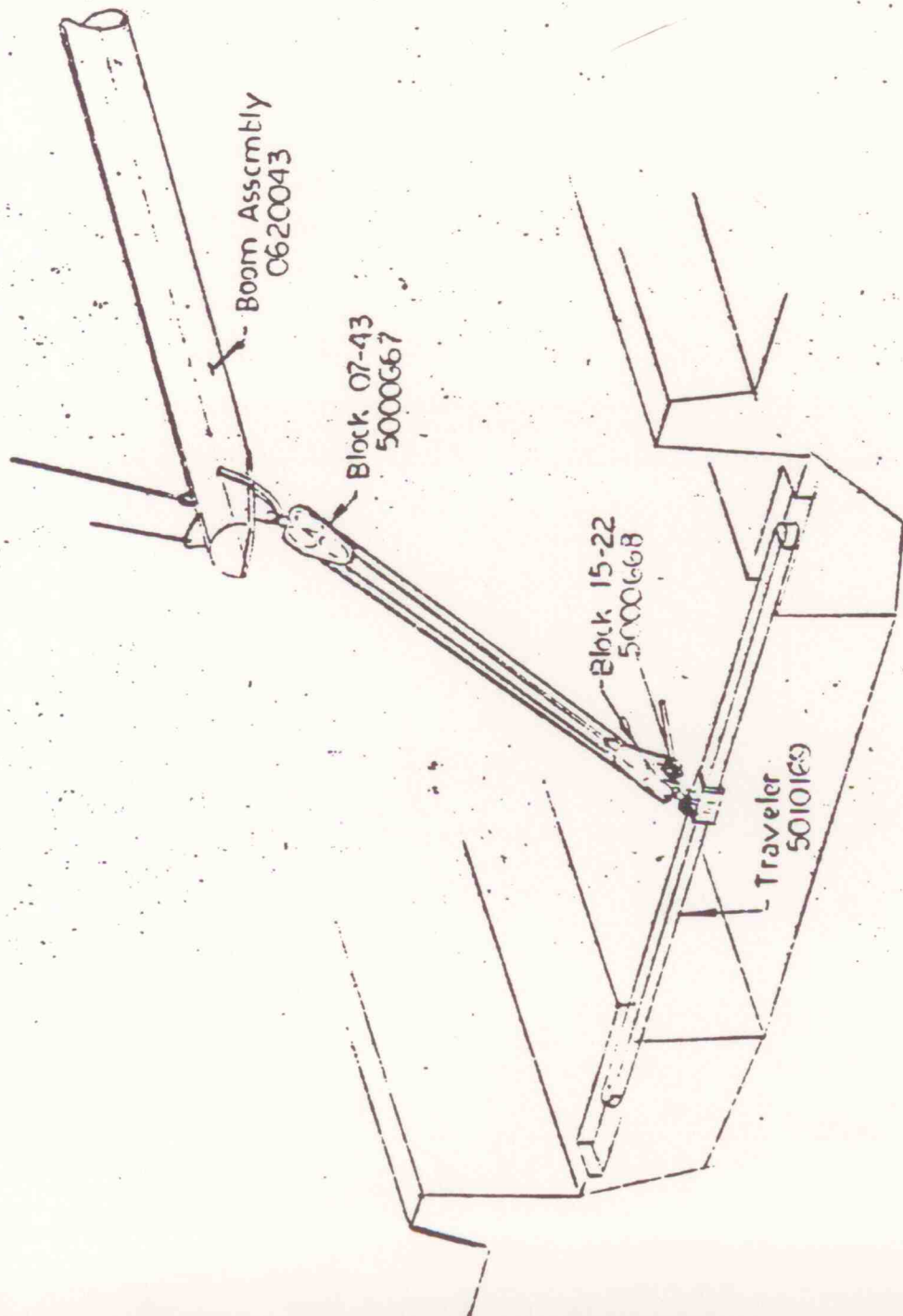
- 1. BOOM/REEF NOMENCLATURE
- 2. EYESTRAP DEADEND LOCATION



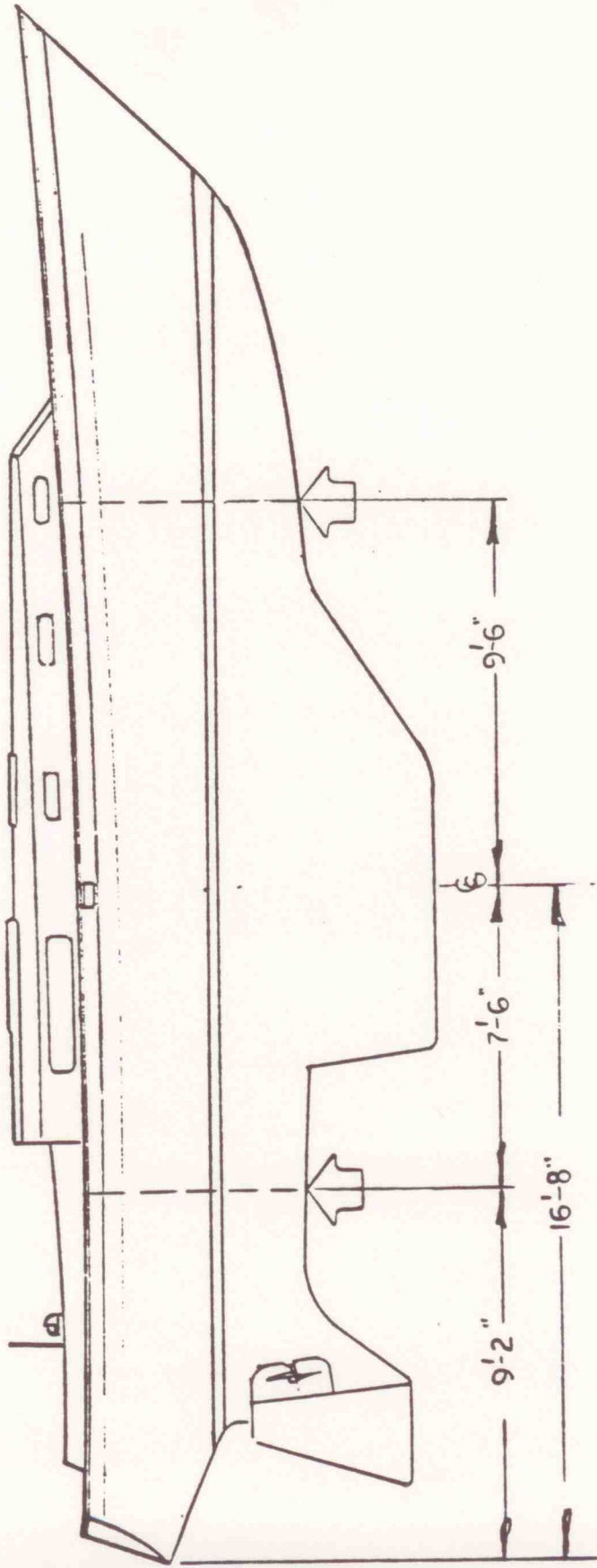
-f-



M-382 R/C
 JIFFY REEFING PACKAGE
 3820618

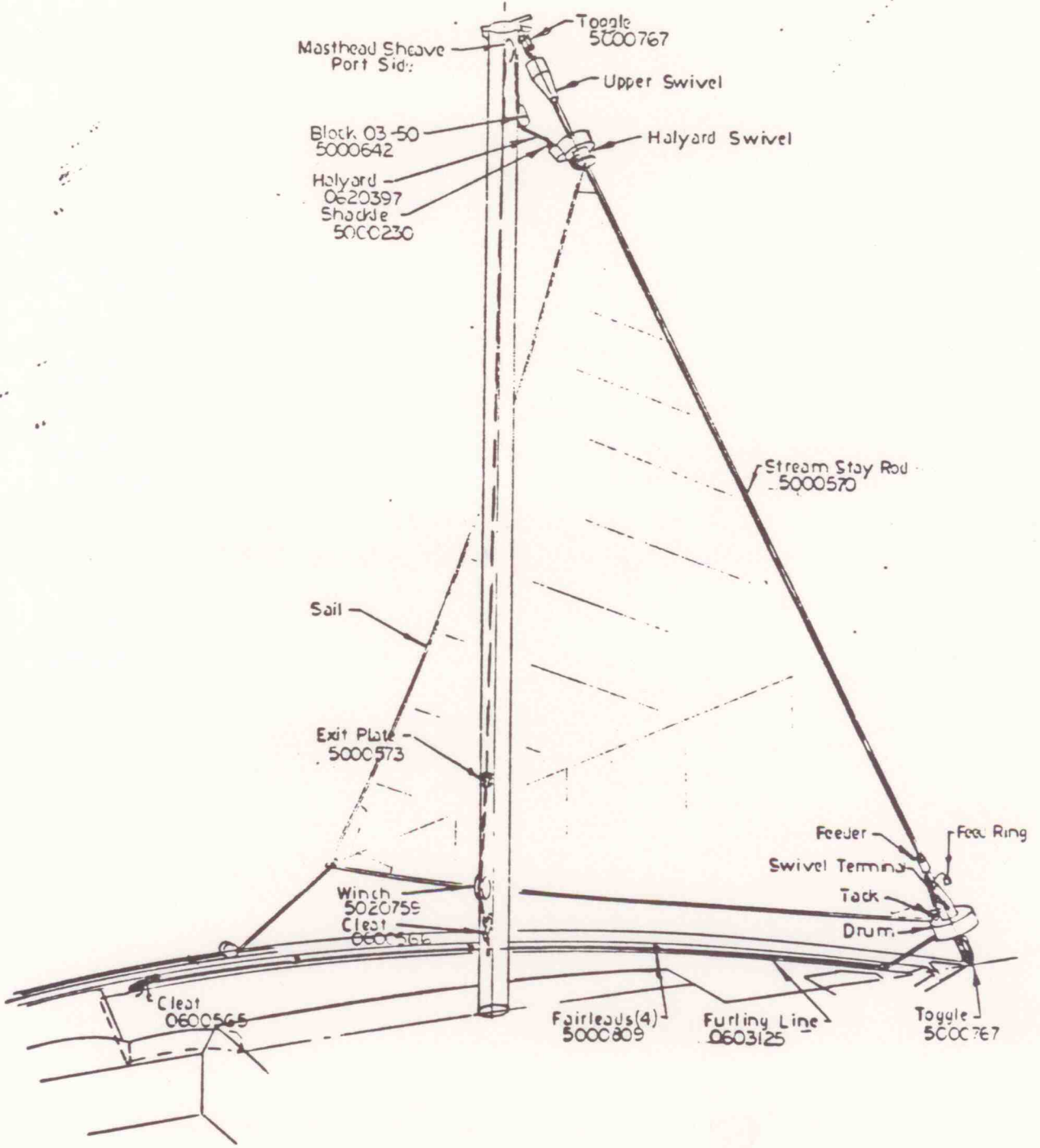


M-382 R/C
MAIN SHEET ARRANGEMENT



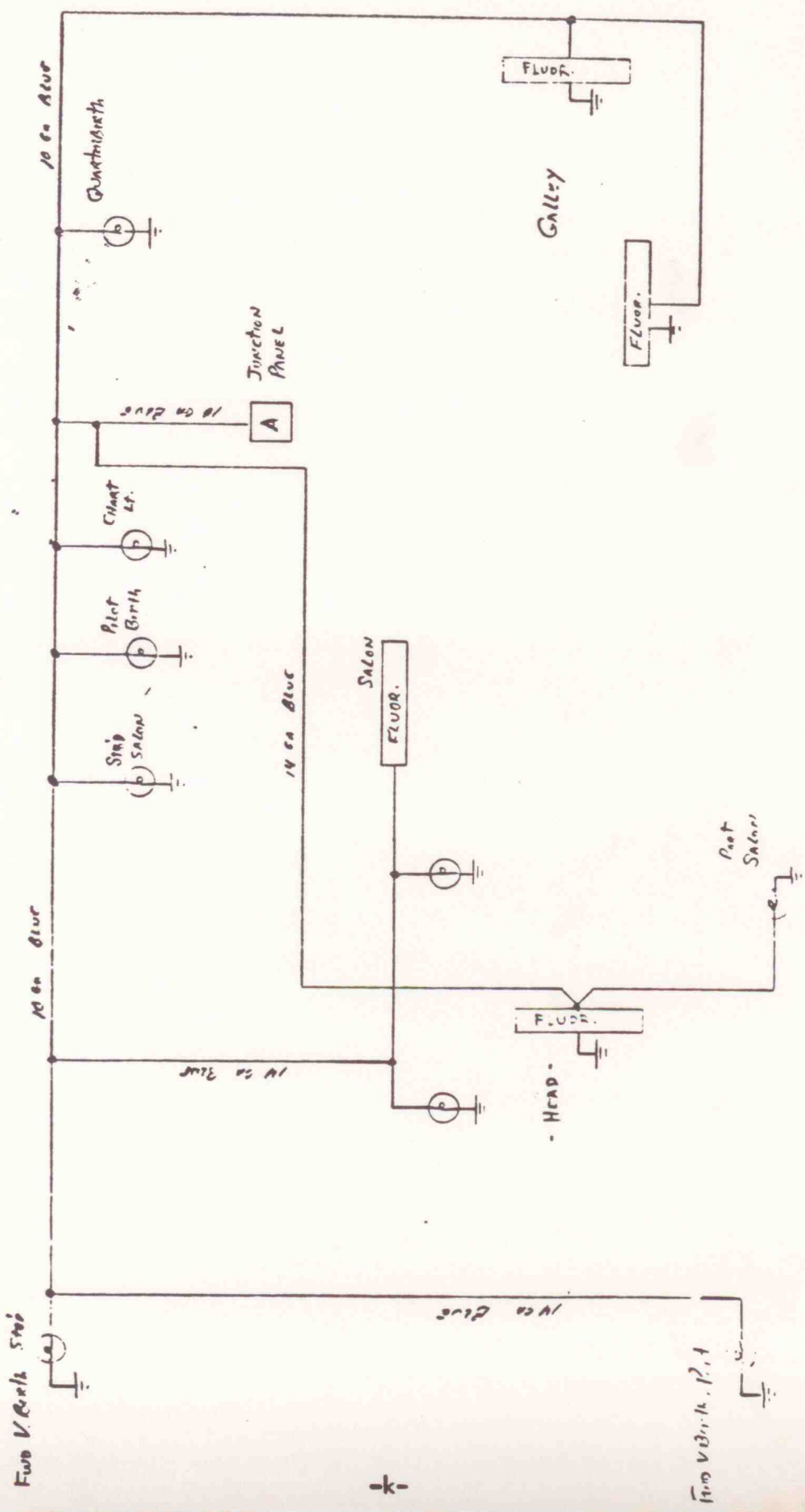
M - 382

HAULING DIAGRAM
 APPROX. WT. _____



M 382 R/C
 HYDE ROLLER FURLING SYSTEM
 3820704

NO.	REVISION	DATE



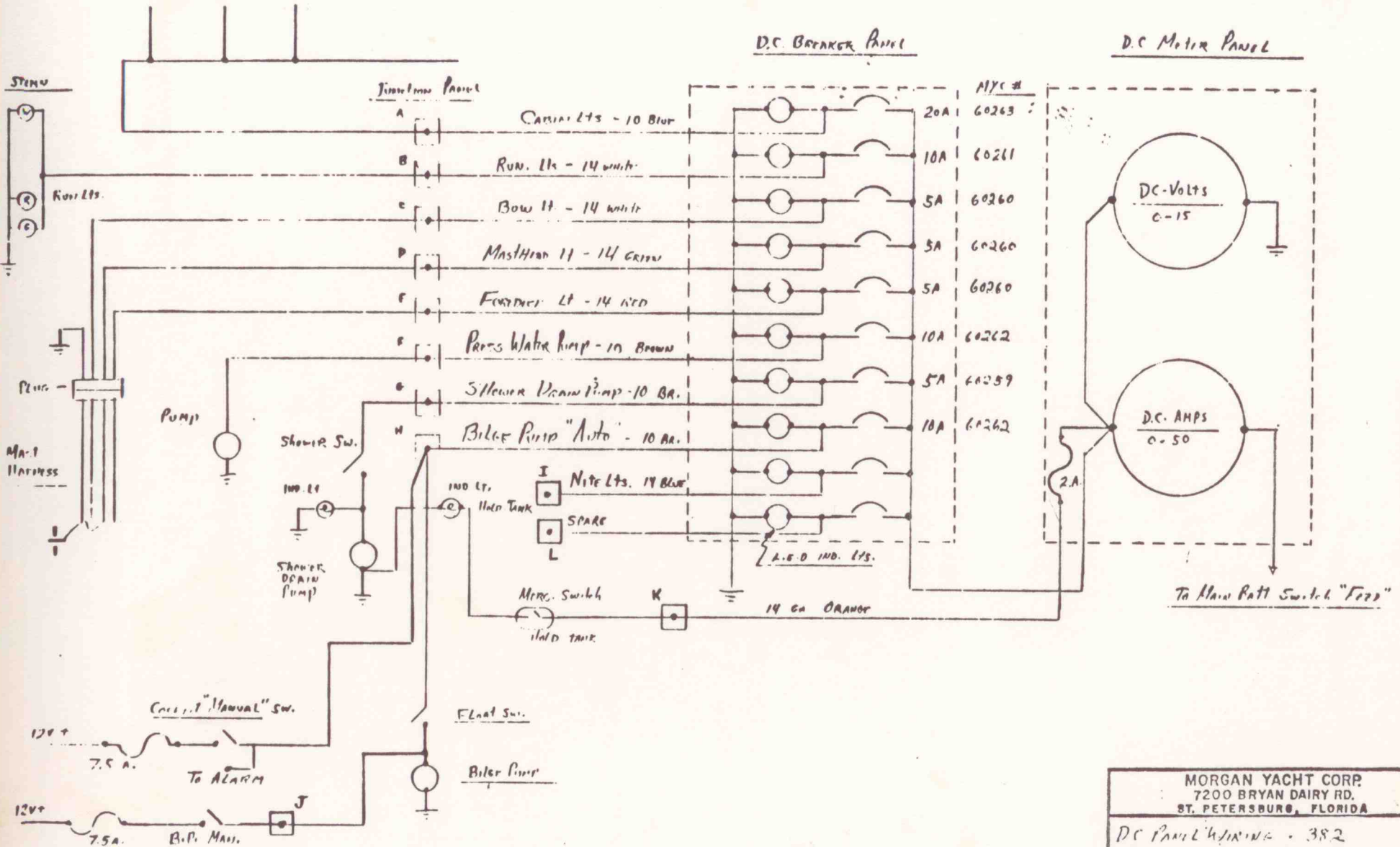
MORGAN YACHT CORP.
 7200 BRYAN DAIRY RD.
 ST. PETERSBURG, FLORIDA

382 CAROL Lt. WINNIE

DESIGNED BY	DATE	DRAWING NO.
DRAWN BY	1/29/77	382-223
CHECKED BY	SCALE	
APPROVED BY		

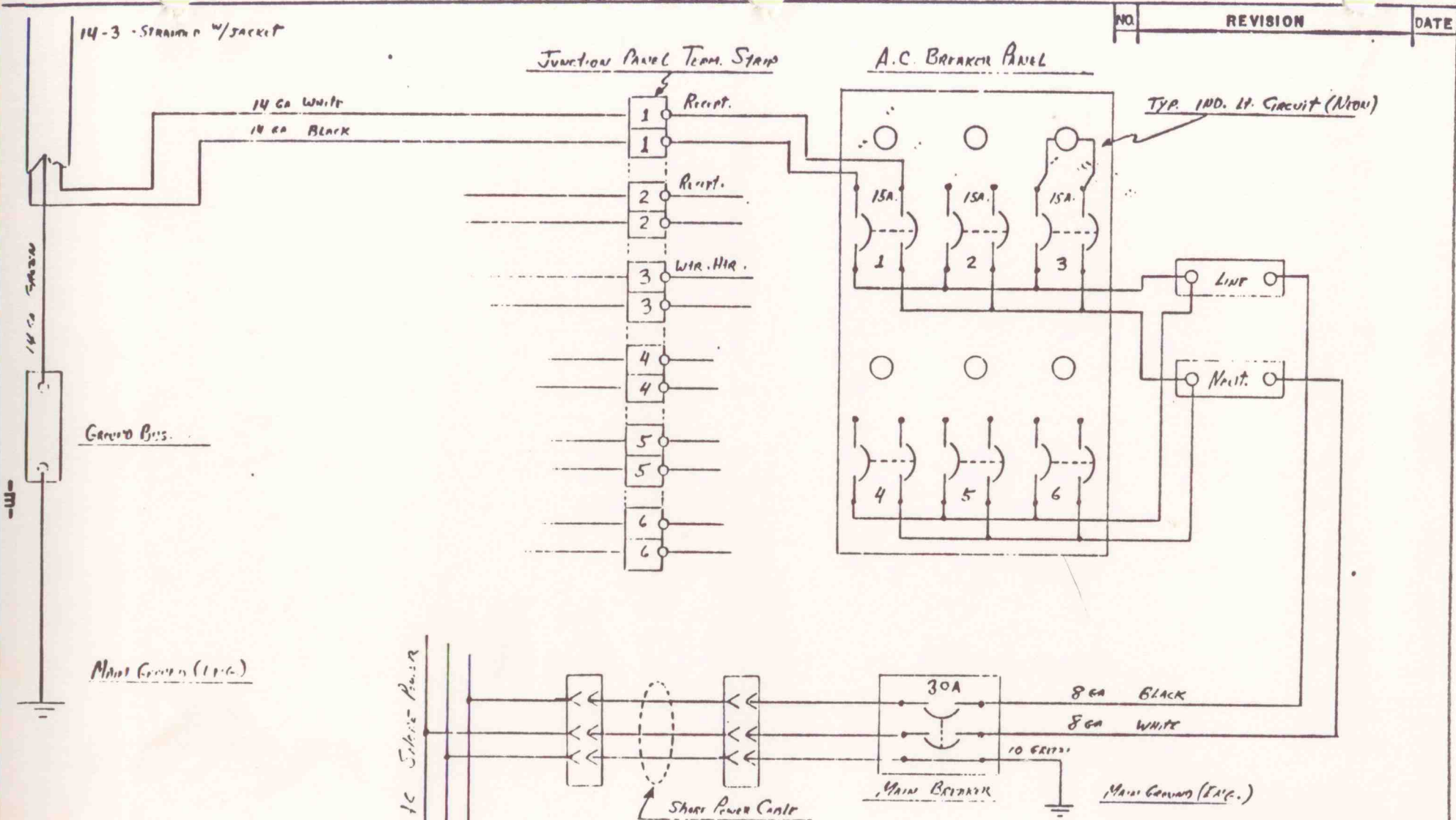
(See Drawg 382-223)

NO	REVISION	DATE

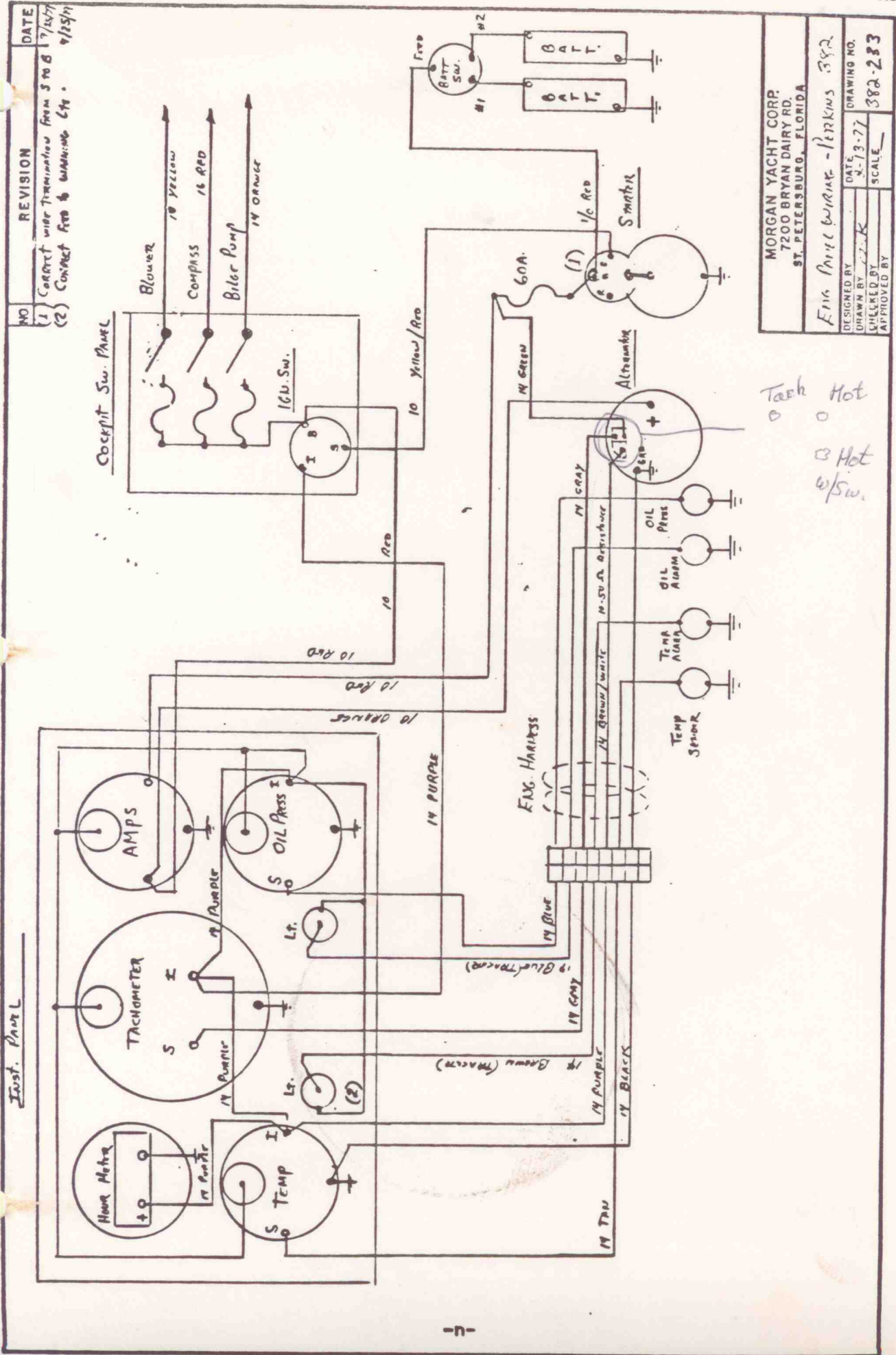


MORGAN YACHT CORP 7200 BRYAN DAIRY RD. ST. PETERSBURG, FLORIDA		
DC PANEL WIRING - 382		
DESIGNED BY	DATE	DRAWING NO.
DRAWN BY	11/22	382-205
CHECKED BY	SCALE	
APPROVED BY		

Updated 9/22/77



MORGAN YACHT CORP. 7200 BRYAN DAIRY RD. ST. PETERSBURG, FLORIDA		
Basic 110V AC Circuit 382		
DESIGNED BY	DATE	DRAWING NO.
DRAWN BY	1-22-77	382-206
CHECKED BY	SCALE	
APPROVED BY		



NO	REVISION	DATE
1	CORRECT WIRE TERMINATION FROM S TO B	7/15/77
2	CONNECT RED TO WINDING 64.	9/15/77

MORGAN YACHT CORP.
 7200 BRYAN DAIRY RD.
 ST. PETERSBURG, FLORIDA

DESIGNED BY: *EM*
 DRAWN BY: *J.R.*
 CHECKED BY: *J.R.*
 APPROVED BY: *J.R.*

DATE: 9-13-77
 SCALE:
 DRAWING NO. 382-283

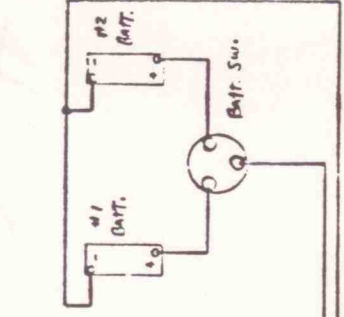
EM PERKINS - PERKINS 382

Tach Hot
 Hot
 Hot w/sw.

NO.

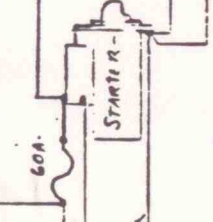
REVISION

DATE



To D.C. Panel

60A.



10 BLACK

Copper-Phos.
AL-Fluo.

14 Black

14 W.P.

14 Black

Temp. Sensor (300)

Temp. Sensor (300)

10-B.D.

10-B.D.

14-White/Red

14-Green

14-Blue/White

14-Red/Black

14-Black

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Copper-Phos.
(Terminal, etc.)

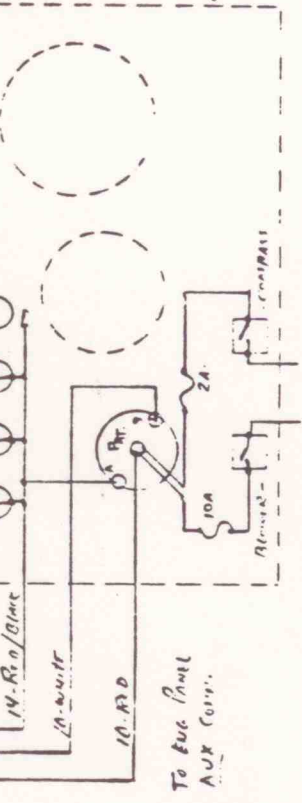
Copper-Phos.
AUX. (etc.)

YAPANESE / h. 1933 # 124770-91030

MORGAN YACHT CORP.
7200 BRYAN DAIRY RD.
ST. PETERSBURG, FLORIDA

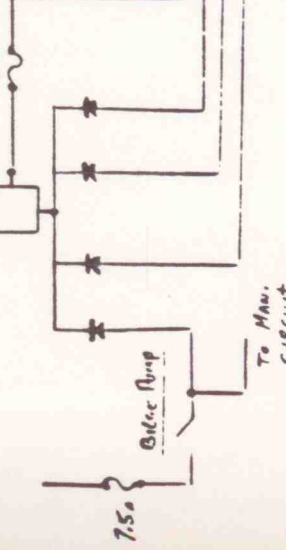
ENGINEER *John Morgan* YAPANESE 30820

DESIGNED BY _____ DATE _____
DRAWN BY _____ SCALE _____
CHECKED BY _____
APPROVED BY _____



Control Sw. Panel

- Alarm - 40102113 - 411122

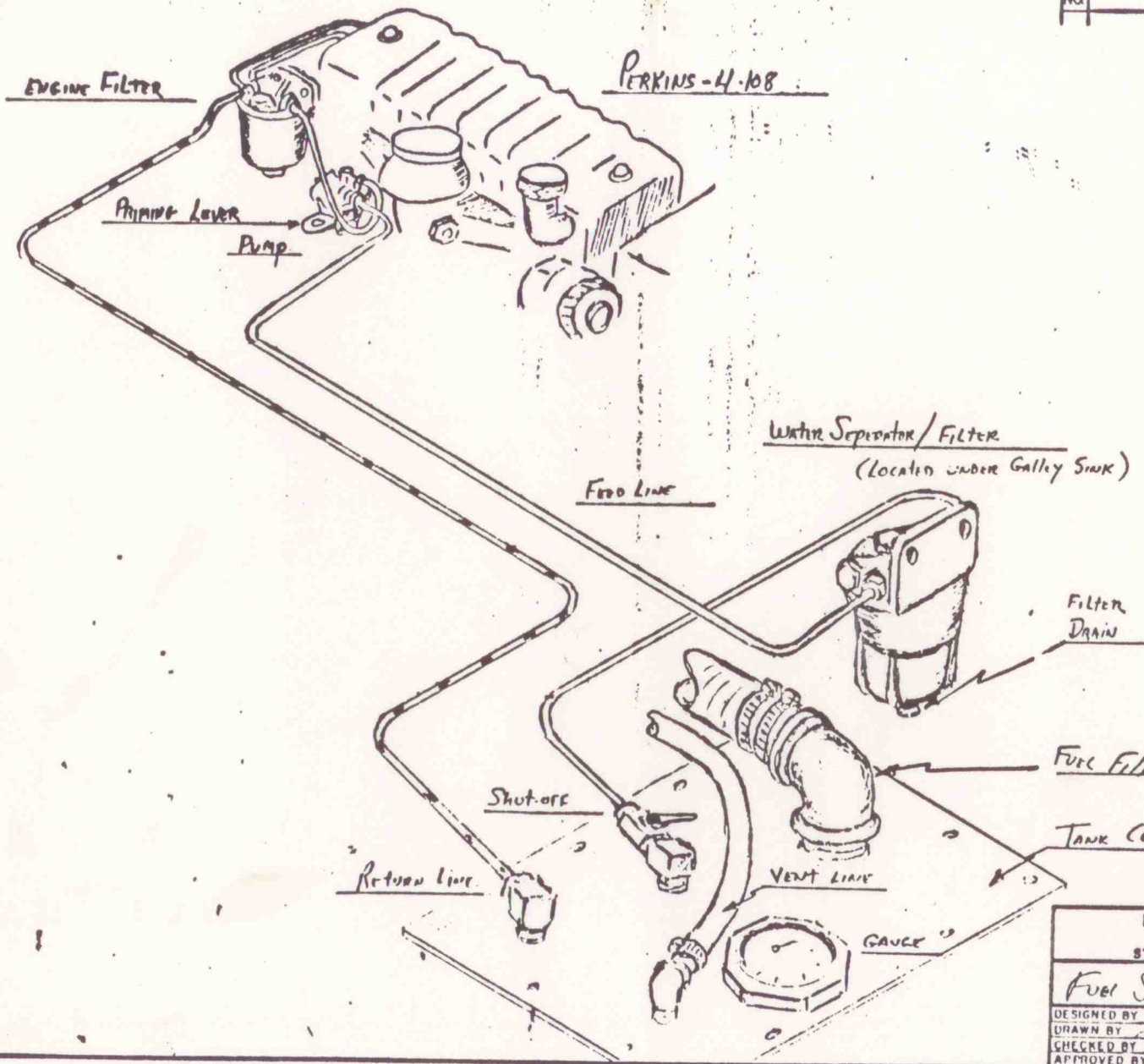


⚡

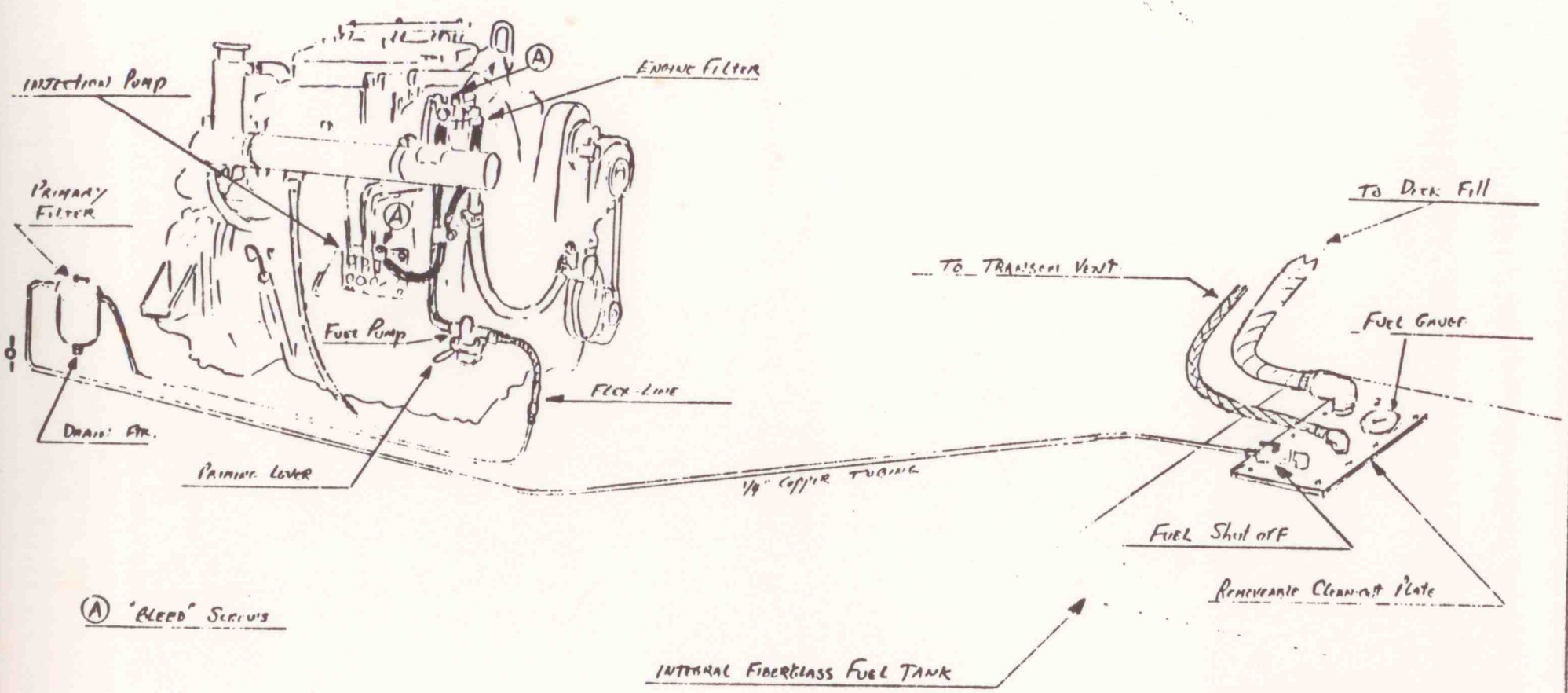
NO

REVISION

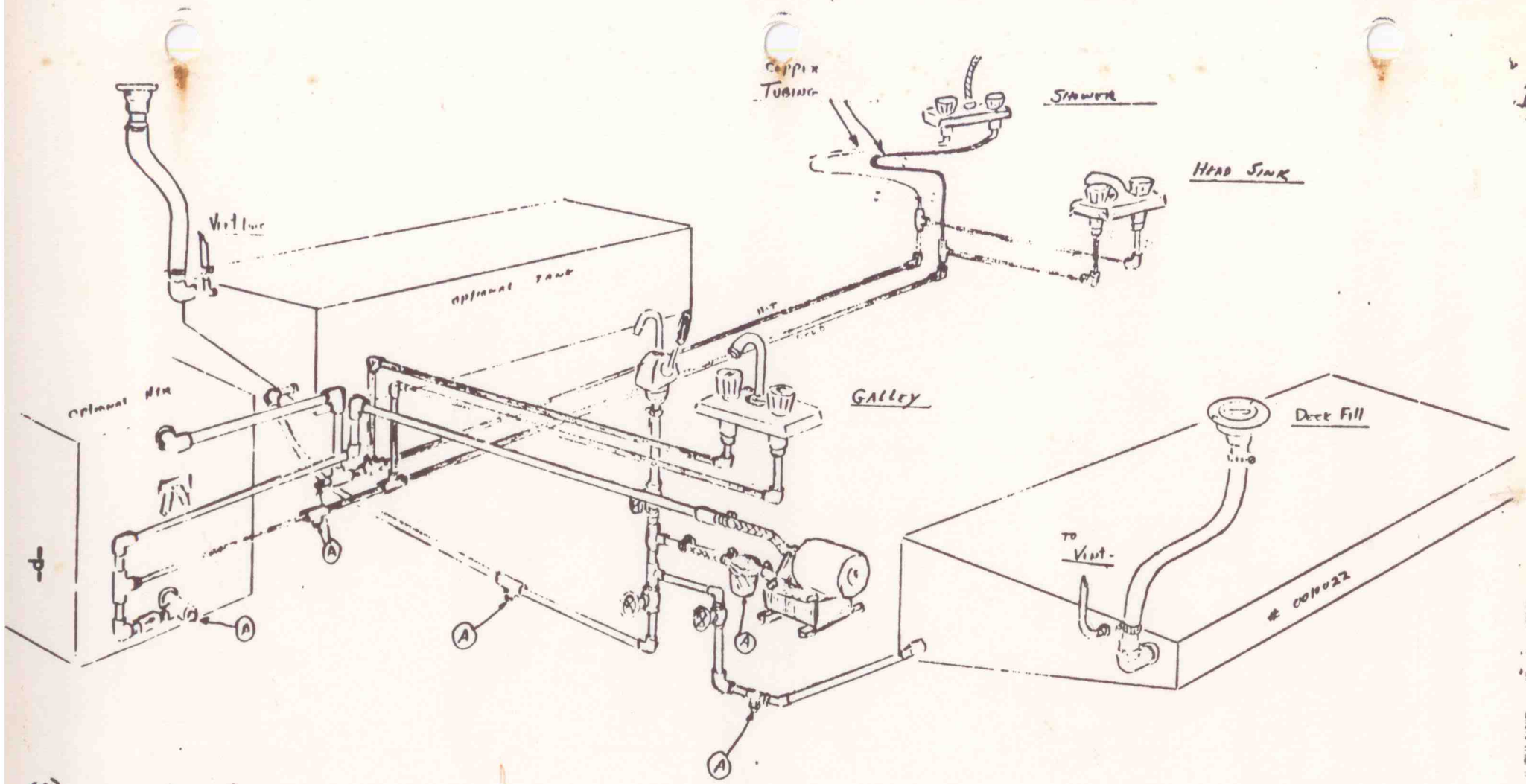
DATE



MORGAN YACHT CORP 7200 BRYAN DAIRY RD. ST. PETERSBURG, FLORIDA		
Fuel System 382-Perkins		
DESIGNED BY	DATE	DRAWING NO.
DRAWN BY	2-13-77	
CHECKED BY	SCALE	382-232
APPROVED BY		



MORGAN YACHT CORP. 7200 BRYAN DAIRY RD. ST. PETERSBURG, FLORIDA		
382-YANIMAR-Fuel System		
DESIGNED BY	DATE	DRAWING NO.
DRAWN BY <i>CT</i>	7/22/77	382-222
CHECKED BY	SCALE	
APPROVED BY		



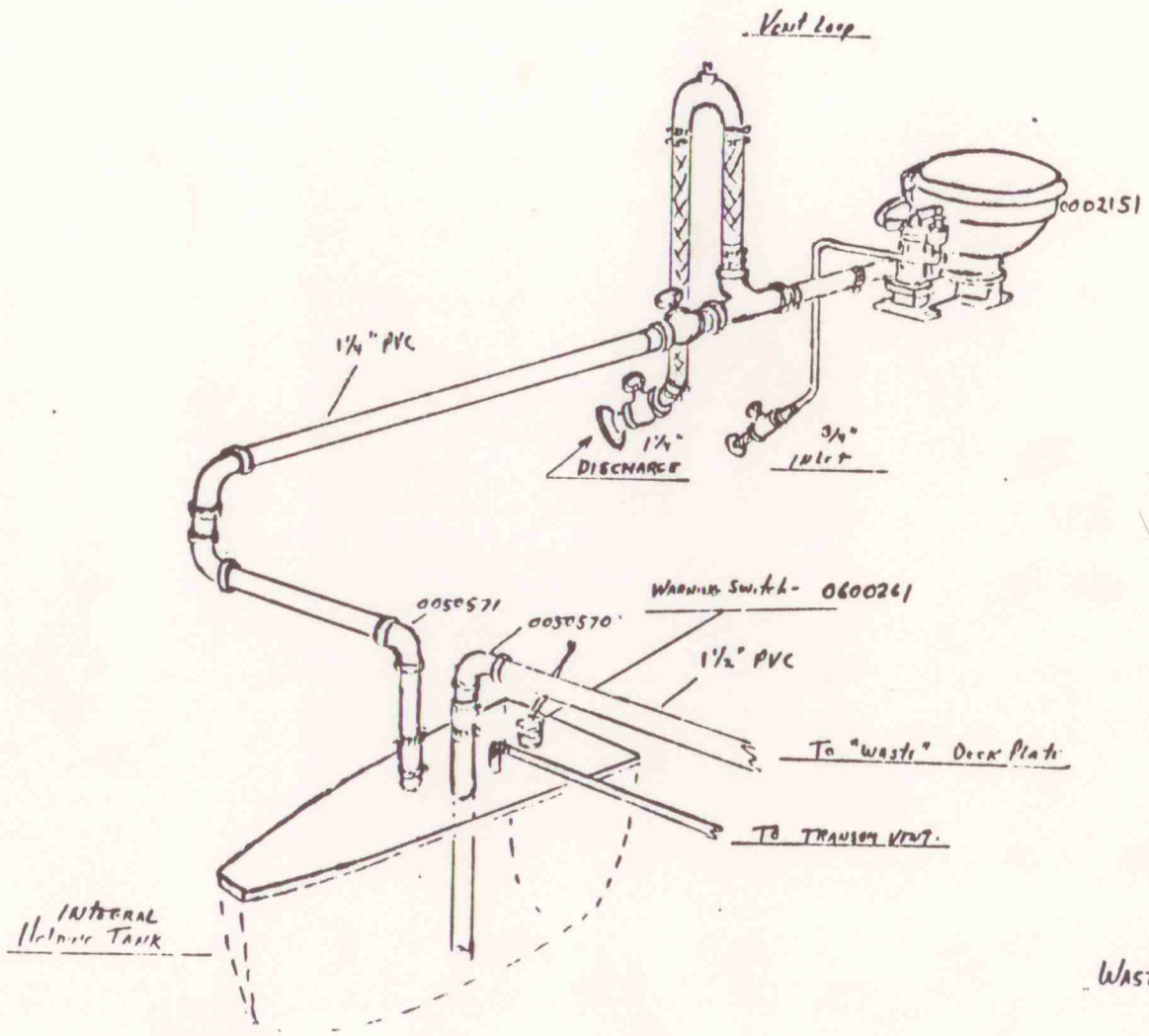
(A) winter Drain Points

382 Plumbing layout w/options

date 8-8-77

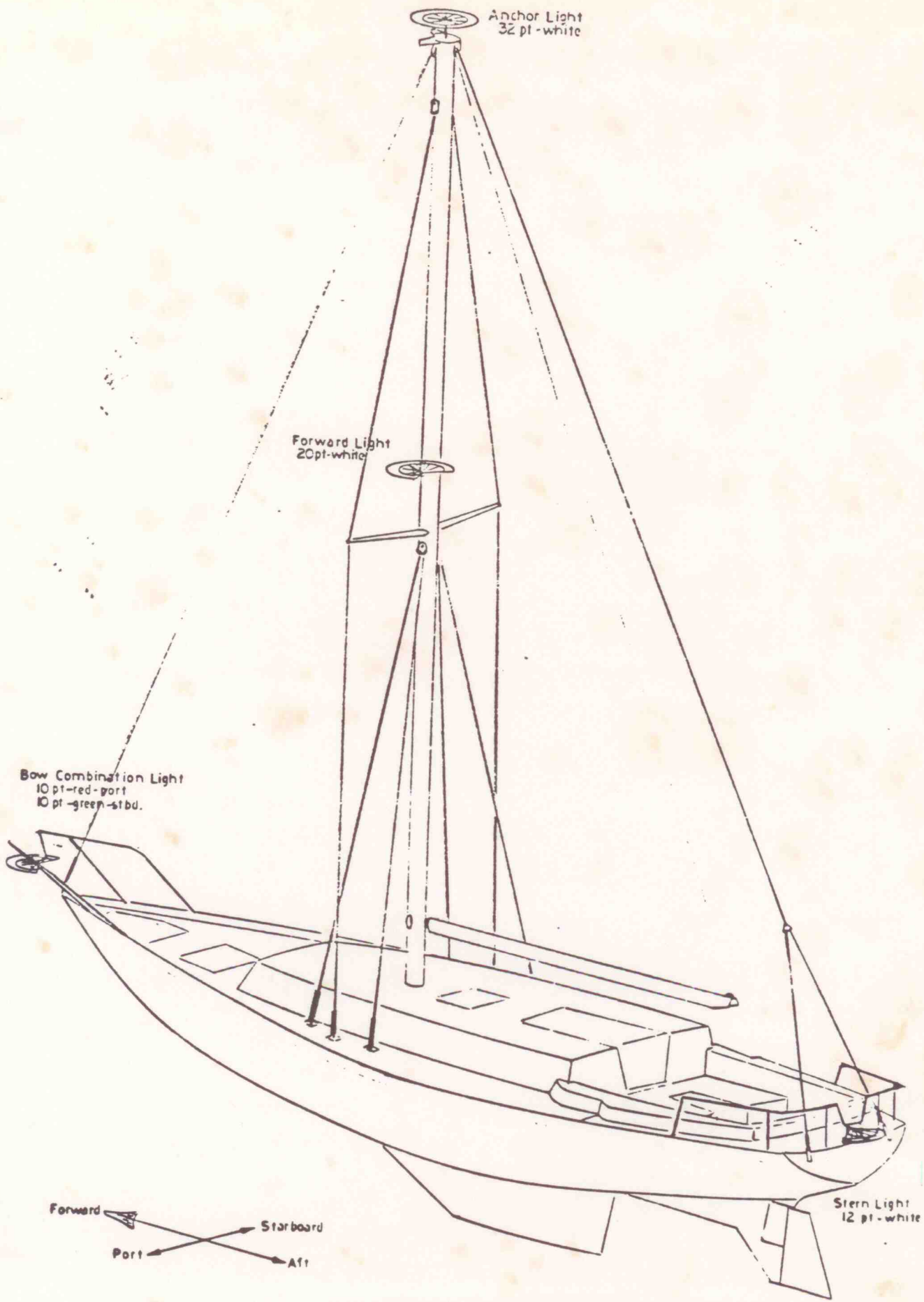
Draw # 382-220

-b-



Waste System-382

AK 5.9.77

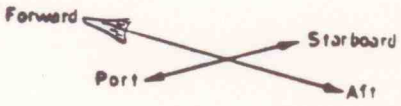


Anchor Light
32 pt - white

Forward Light
20 pt - white

Bow Combination Light
10 pt - red - port
10 pt - green - stbd.

Stern Light
12 pt - white



M-382 R/C
NAVIGATION LIGHTS

REQUIRED SAFETY EQUIPMENT

The yacht owner should reference the U. S. Coast Guard and/or the controlling body and codes for his area of operation. The following information is listed for your convenience, but should not be misconstrued as complete.

Navigation Lights

Per U.S.C.G. International rules, Inland rules, or governing codes for operational area.

Life Preservers

Shall be of approved type. Class 2 vessels (Morgan 38), if not carrying passengers for hire, shall carry an approved life preserver (Type I, II, or III) for each person on board plus one Type IV (buoyant cushion, life ring buoy, or throwable special purpose water safety buoyant device) available to be thrown. Storage of the above equipment shall be so placed as to be readily accessible. Note: Work vests (Type V) are not acceptable as part of the above requirements.

Fire Extinguishing Equipment

Shall be of an approved type. The Class 2 vessel requires two Type B-I extinguishers (1½ gals.-foam; 4 lbs.-carbon dioxide; or 2 lbs.-dry chemical), or one Type B-II (2½ gals.-foam; 15 lbs.-carbon dioxide; or 10 lbs. dry chemical) hand portable extinguishers; if the vessel has no fixed fire extinguishing system in the machinery space. It requires at least one Type B-I hand portable fire extinguisher if a fixed fire extinguishing system is installed in the machinery space.

Ventilation

Ventilation of machinery spaces containing the engine and/or tanks shall be accomplished with a minimum of one air intake duct, and one exhaust duct. The exhaust duct shall extend from the atmosphere to the lower portion of the bilge. The intake duct shall be installed so as to extend at least to the midpoint to bilge, below the carburetor intake, and to the atmosphere. The cowls shall be such that displaced fumes cannot be recirculated. The vents should not be closed at any time.

Whistles

One hand or power operated whistle, capable of producing a blast audible at a distance of at least one mile, and with blasts of at least two second duration.

Bell

If operating in water subject to the rules of the road, you must carry an efficient fog bell.

The above information is taken from the Coast Guard Publication of "Rules and Regulations for Uninspected Vessels," Subchapter C, May 1, 1970, Ref. CG-258, reflecting the minimums.

Recommendations by ABYC and boating manuals may be more strenuous, and should be followed at the owner's option.

Distress signals (flares, smoke signals, dye markers, signalling mirror and/or orange flag), while not required, are strongly recommended.

The yachtsman should become totally familiar with the "Rules of the Road" for his particular area. We suggest a publication like, "Piloting Seamanship and Small Boat Handling" by Chapman, for additional recommended equipment, their proper use, and conditions of operation.

MORGAN 38
TABLE OF FUSES AND BULBS

FUSES:

Bilge Pump (Manual Circuit)	10 amp in-line buss
Blower	10 amp in-line buss
Instrument Alarm	10 amp in-line buss
Compass	2 amp in-line buss
DC Main (on engine)	60 amp SC-60

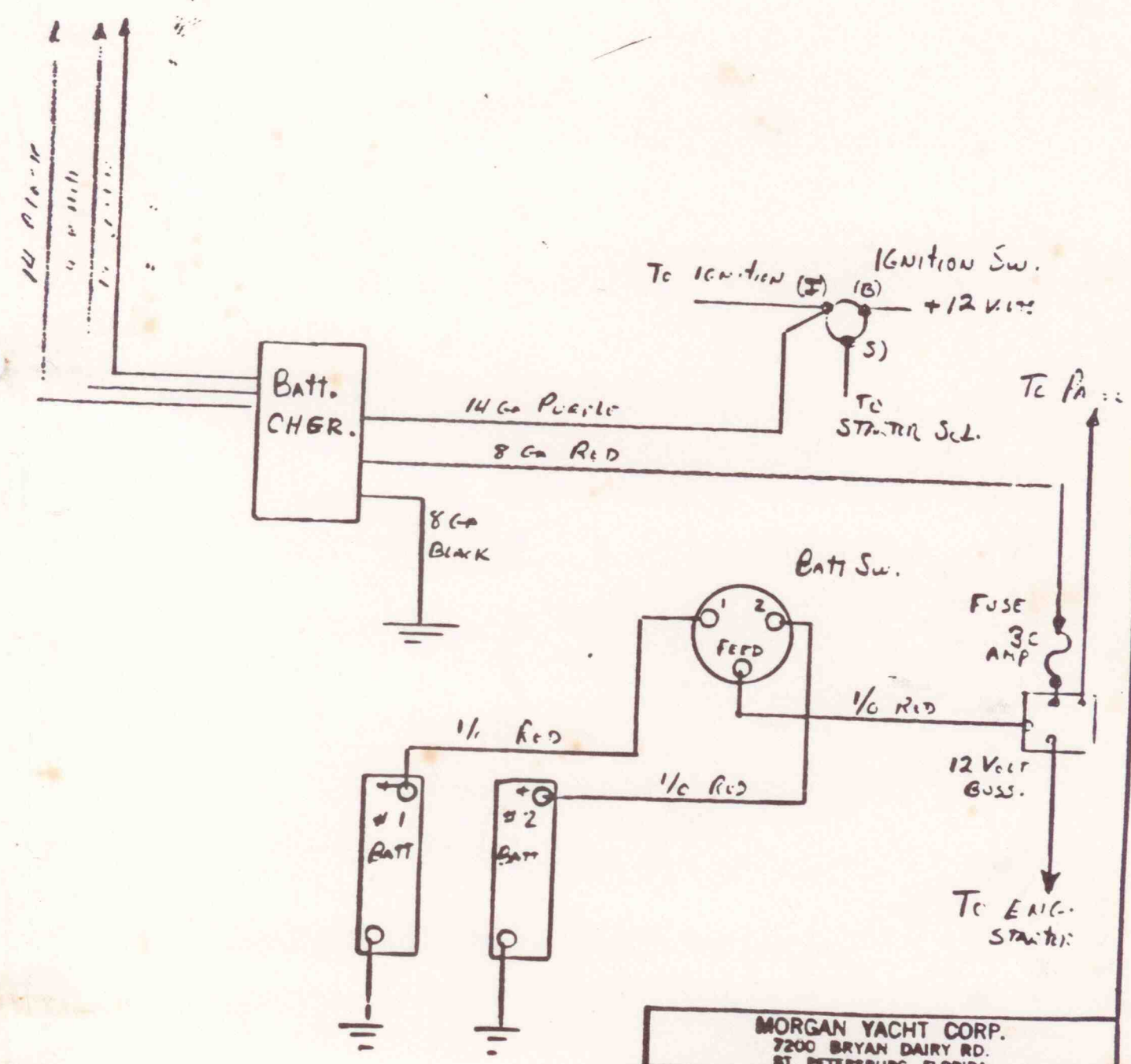
LIGHTS:

Night Lights	GE 1895
Instruments	GE #57
Tachometer	GE-161PL (12 v.)
Bow Light	GE#90 (12 v. 6 CP)
Foredeck Light	T 3606 E
Masthead Light	GE#90 (12 v.)
Stern Light	D-1002-Q-1 (12v., 25 w.)
Running Light	D-1001-P1 (12 v., 10 w.)
Chart Table Light	T3 1/4 #1487
Large Guest Light	25 w. 12 v.
Single Rectangular Light	#93 (12 v.)
Double Rectangular Light	#93 (12 v.)
12 v. Fluorescent	F8T5-CW
12 v. Fluorescent - Head	F15T8-CW
Engine Room Light	GE #90 (12 v., 6 CP)

New 5/80

NO.	REVISION	DATE
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To 15 AMP
A/C BREAKER

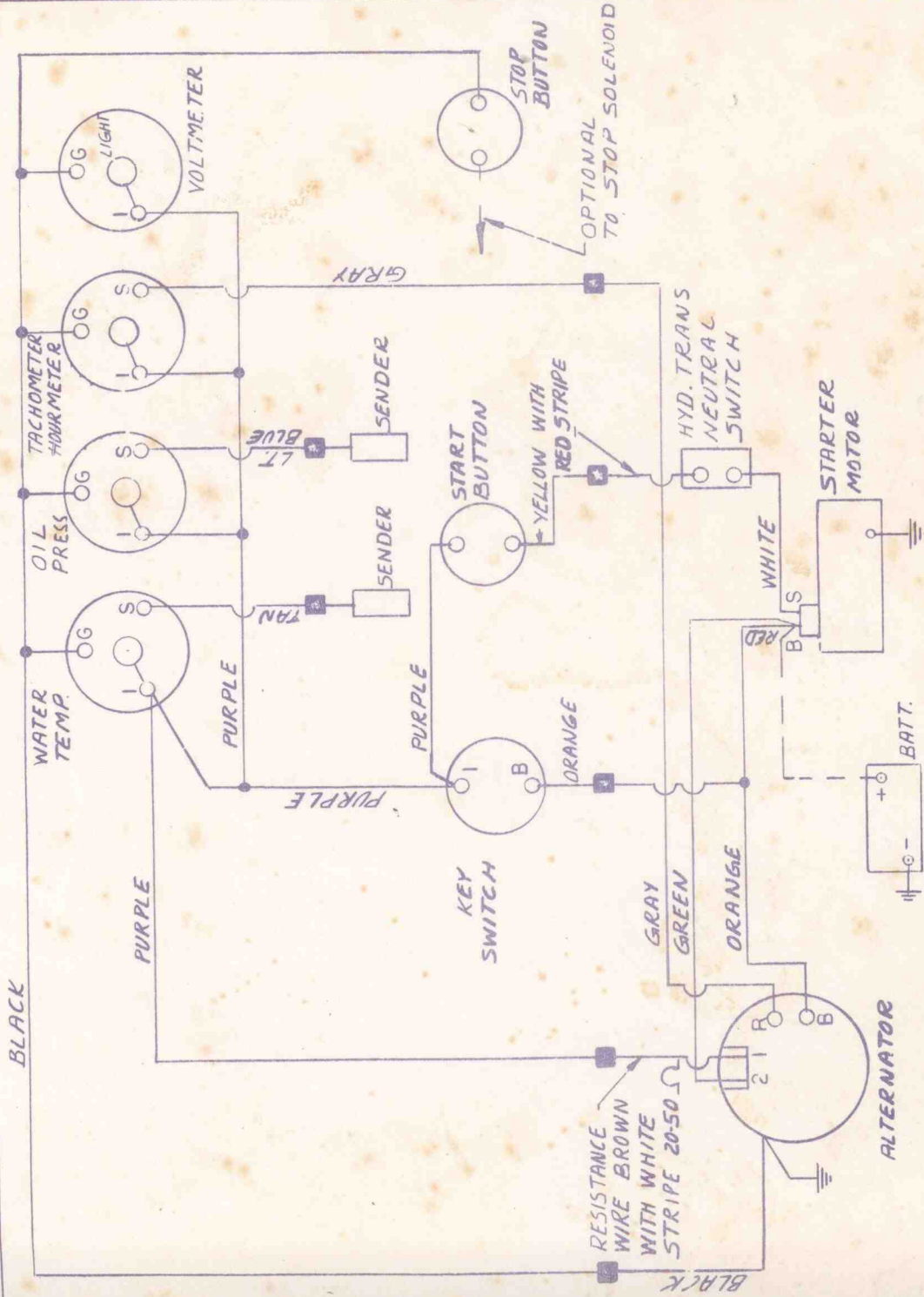
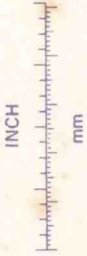


MORGAN YACHT CORP.
7200 BRYAN DAIRY RD.
ST. PETERSBURG, FLORIDA

Typical BATT. CHARGER Circuit

DESIGNED BY	DATE	DRAWING NO.
DRAWN BY	9-22-80	TYP-120-1
CHECKED BY	SCALE	
APPROVED BY		

NOTE ALL GAGES ARE VIEWED FROM REAR OF PANEL



NOTE: --- NOT SUPPLIED BY P.E.I.
■ PIN CONNECTOR
MALE FOR SINGLE PANEL NAO04844
FEMALE FOR DUAL PANEL NAO04843
USE WITH HARNESS NAO04854;
NAO04855, NAO04845

ALTERATIONS

DETAILS

NO. BY DATE

Table with multiple rows for recording alterations and details.

PERKINS ENGINES INC. FARMINGTON, MICHIGAN

SURFACE TEXTURE SPECIFICATION TO B.S. 308 & B.S. 1134 ✓ = MACHINE

REMOVE ALL BURRS SHARP CORNERS AND PROCESSING RESIDUE

TOLERANCE ON DIMENSIONS UNLESS OTHERWISE SPECIFIED FRACTIONAL: DECIMAL: ANGULAR: ALL DIMENSIONS IN THIRD ANGLE PROJECTION

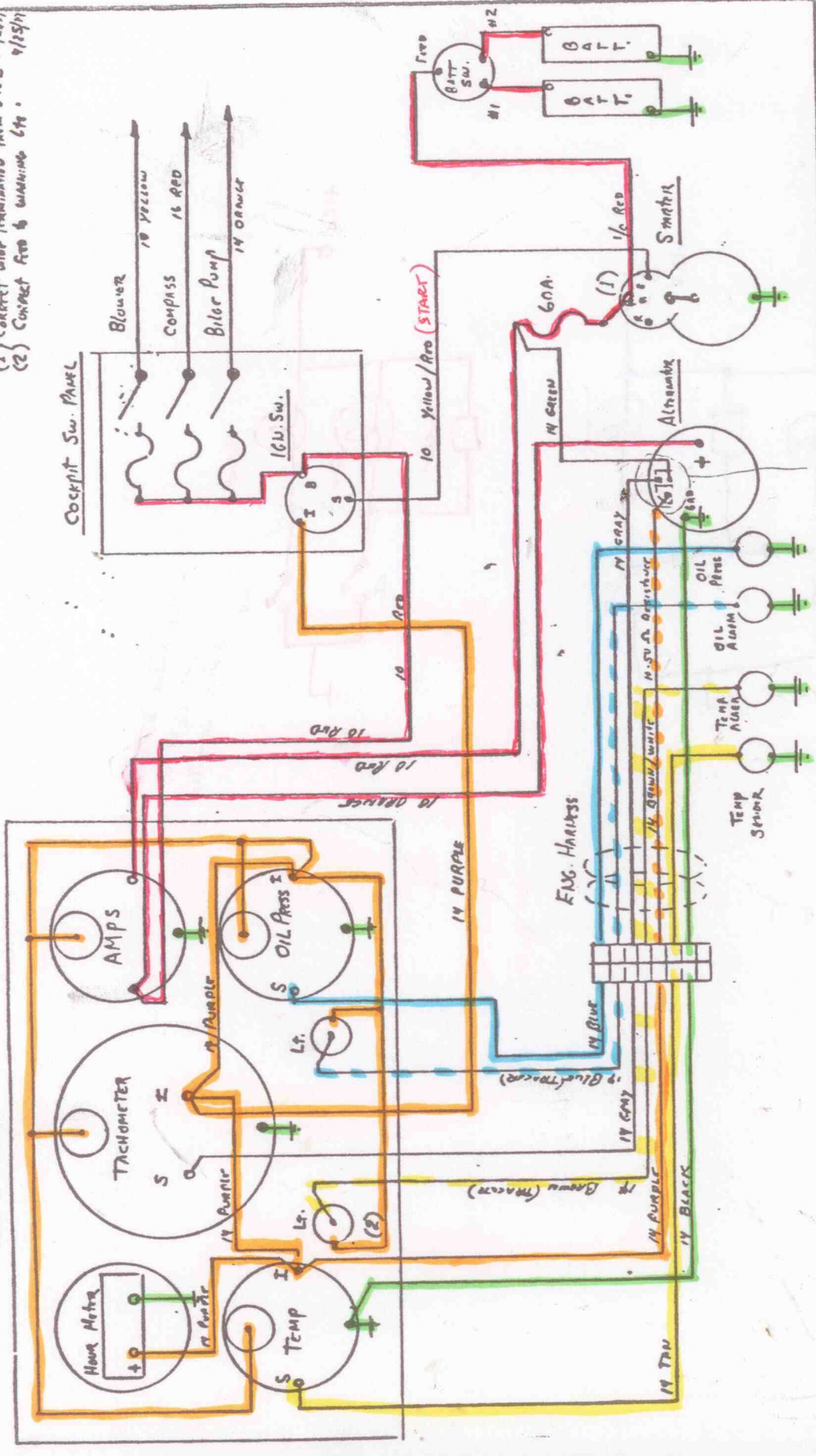
SCALE: PROJECT NO. US928 SIMILAR PART: DATE: FIRST USED ON: VARIOUS M MATERIAL: TD

NAME: SCHEMATIC - WIRING HARNESS AND INSTRUMENT PANEL

PRO. No. PAR. No. NAO05045

NO. REVISION DATE
 (1) Correct wire termination from 3 to 6 7/15/77
 (2) Connect Red to winding 6th. 4/15/77

Inst. Panel



MORGAN YACHT CORP.
 7200 BRYAN DAIRY RD.
 ST. PETERSBURG, FLORIDA

DESIGNED BY E. PERKINS
 DRAWN BY E. PERKINS
 CHECKED BY E. PERKINS
 APPROVED BY E. PERKINS

DATE 8-13-77
 DRAWING NO. 382-283
 SCALE

Inst. Panel
 8/15/77

Replacing Engine Control Cables

Replacing Cables

1) BUY YOUR REPLACEMENT CABLE

Determine type and length of engine control cable using measurements or markings from the original cable. Knowing the outside diameter of the original cable jacket will help determine the cable type and thread size. The length tip to tip of the cable core will give you the proper length.

2) REMOVE STEERING WHEEL

This will give you more room to work.

3) REMOVE COMPASS

Before removing the compass bolts, run a piece of electrical tape vertically from the compass across the engine control housing, top plate, and onto the pedestal. Slit the tape at each joint. This will help you realign the compass with the other parts when you reassemble this upper part of the pedestal. Remove the four round head 1/4-20 x 3-1/2 machine screws that serve as compass bolts.

4) REMOVE THE BRASS CLEVIS PINS FROM THE CONTROL LEVERS IN THE ENGINE CONTROL HOUSING

The clevises are screwed to the end of the engine control cables. Note which holes in the control levers the clevis pins came from. This helps when reassembling this unit.

5) REMOVE ENGINE CONTROL HOUSING

6) REMOVE THE CABLE HOLDER NUT OR ROUND HEAD MACHINE SCREW located on the aft side of the pedestal tube approximately 7" below the wheel shaft. This will release the Cable Holder (A-969 or A-705) that holds the two engine control cables. These cables remain attached to the cable holder inside the pedestal tube.

7) BRING BOTH CONTROL CABLES TO THE SAME SIDE OF WHEEL SHAFT.

From the top of the pedestal, push down both of the engine control cables just far enough so you can bring the throttle control cable (right hand side) under the wheel shaft and over to the left aft side of the pedestal along with the clutch cable.

8) PULL BOTH CONTROL CABLES UP.

With both control cables now on the same side of the steering wheel shaft, pull the cables up until you can reach the cable holder.

a) Twist the cables so that the bolt in the cable holder is pointing toward the sprocket. This should allow the cable holder to pass the sprocket.

a) Due to the limited amount of space in the pedestal tube the cable holder sometimes gets jammed up with the steering chain and cables. One solution to this problem is to turn the steering wheel shaft all the way to port, thus putting most of the steering chain over on the left side with the two engine control cables and cable holder. Then, while pulling up on the engine control cables, turn the steering wheel shaft back to starboard. The upward movement of the chain can help bring the cable holder and control cables up to a level where they can be reached.

b) Working space can be gained in the upper section of the pedestal by moving the chain forward of the chain sprocket. To do this, first tighten the brake, then ease the tension of

the chain and steering cables by backing off the nuts on the take-up eyes located on your radial drive wheel or quadrant which is attached to the rudderpost. With slack in the steering cables, lift the steering chain and move it forward of the hub sprocket located on the steering wheel shaft.

9) REMOVE THE OLD CONTROL CABLE

Now that you can reach the cable holder, remove the old engine control cable. When removing the old engine control cable, make sure you attach a "messenger" line to the end of the original cable. You will use the messenger line to run the new replacement cable through the same route as the original engine control cable.

10) RUN THE NEW ENGINE CONTROL CABLE

Using the messenger line, pull the new engine control cable into place.

11) REASSEMBLE BY REVERSING THE ABOVE PROCEDURES.

a) Attach the new control cable to the cable holder.

b) Push both control cables down into the pedestal far enough so you can bring the throttle control cable under the steering wheel shaft and over to the right hand side.

c) Pull up and push aft on the engine control cables.

d) Line up the cable holder with its screw hole on the aft side of the pedestal. A long rod or screwdriver will help. The A-969 Cable Holder has a threaded (1/4-20) stud that sticks out through the hole. Use "Loctite" on thread. The A-705 Cable Holder is held in place with a round head (1/4-20 thread) screw that comes from the outside of the pedestal tube and screws into the cable holder. Use "Loctite" on threads.

e) Attach control cables to fittings on engine end.

f) Put engine control housing in place.

g) Attach clevises to engine control levers.

h) Before mounting compass use the four 3-1/2" (Fig 817 Sz. 3.5) compass mounting bolts to hold the engine control housing in place. Test and adjust the engine controls at this time.

i) Remove the four compass mounting bolts. Mount the compass using the original tape alignment marks, and screw compass mounting bolts back in place using an anti-seize compound on the threads.