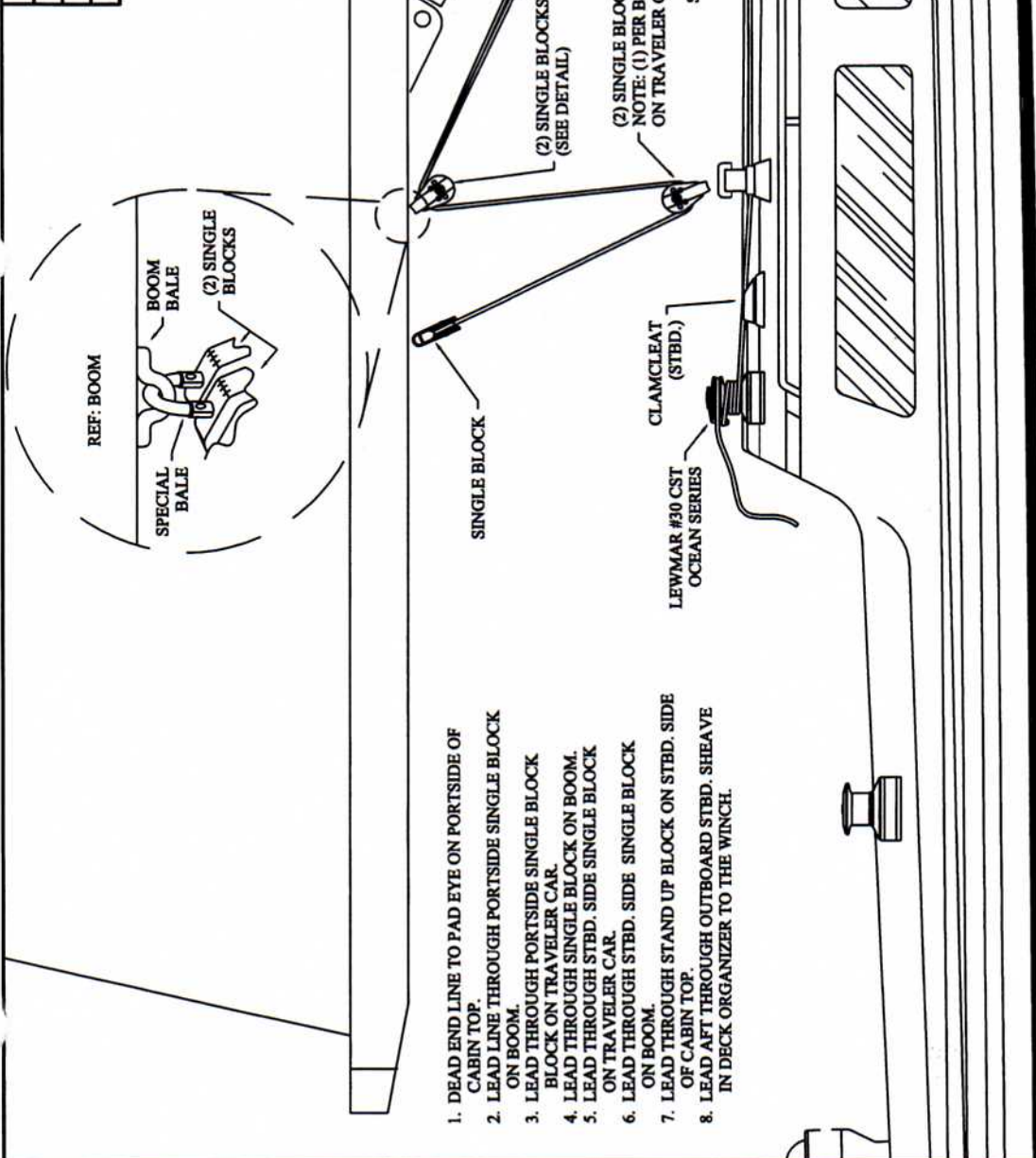


REV	DESCRIPTION	APPROVAL	DATE
1	UPDATED FOR CURRENT SYSTEM		3/22/02
2	REVISED FOR NEW TRAVELER BAR HULLS 937 & UP		10/11/02
3	REVISED FOR (2) BALES ON TRAVELER CAR		10/11/02



1. DEAD END LINE TO PAD EYE ON PORTSIDE OF CABIN TOP.
2. LEAD LINE THROUGH PORTSIDE SINGLE BLOCK ON BOOM.
3. LEAD THROUGH PORTSIDE SINGLE BLOCK BLOCK ON TRAVELER CAR.
4. LEAD THROUGH SINGLE BLOCK ON BOOM.
5. LEAD THROUGH STBD. SIDE SINGLE BLOCK ON TRAVELER CAR.
6. LEAD THROUGH STBD. SIDE SINGLE BLOCK ON BOOM.
7. LEAD THROUGH STAND UP BLOCK ON STBD. SIDE OF CABIN TOP.
8. LEAD AFT THROUGH OUTBOARD STBD. SHEAVE IN DECK ORGANIZER TO THE WINCH.

Catalina Yachts
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SCALE: NONE
 DATE: 2/18/93
 DRAWN BY: K.W.N.
 APPROVED BY: [Signature]
 REVISED: 3/10/03

MAINSHEET SYSTEM

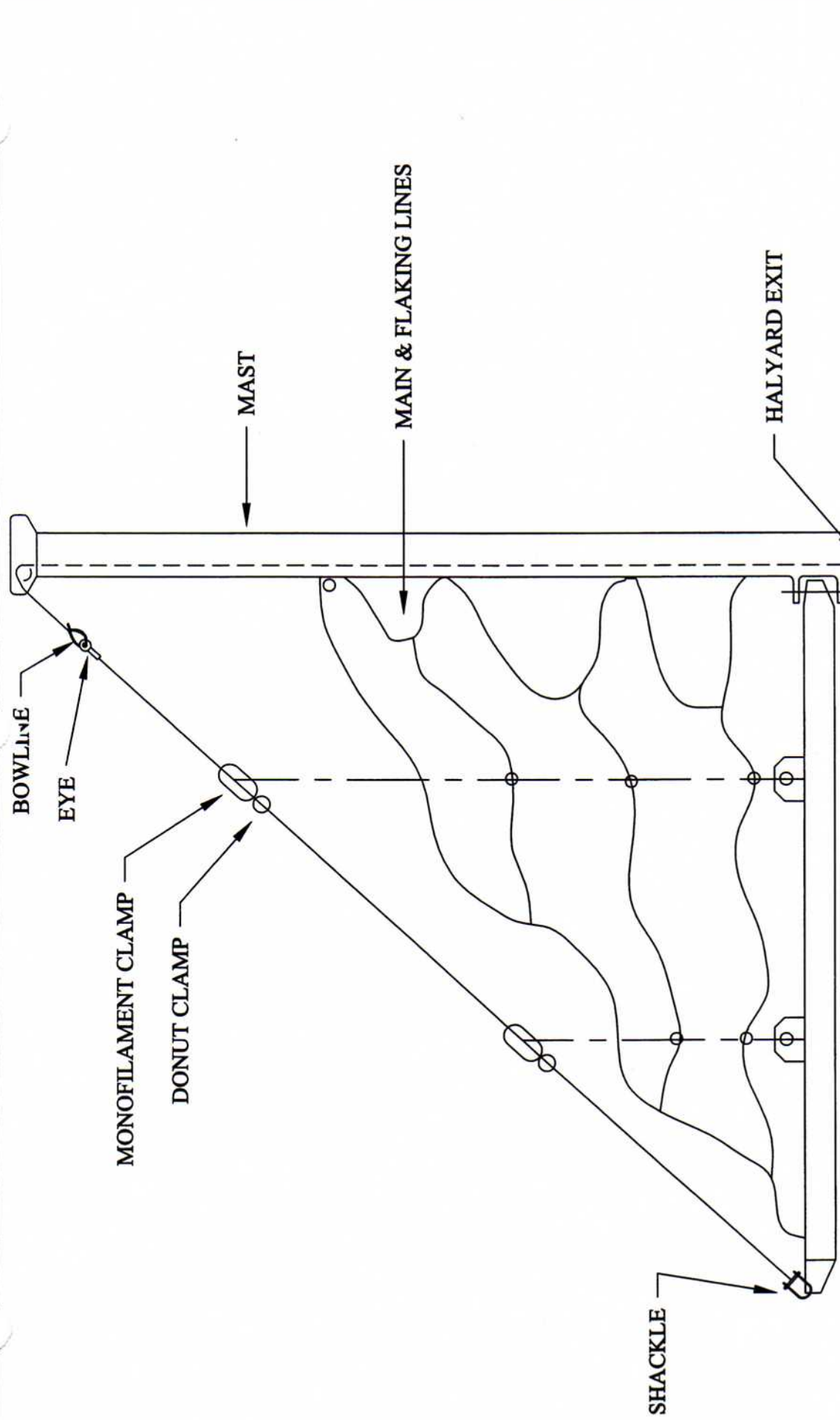
BOAT: CATALINA 320
 DRAWING NUMBER: 320-38015-3

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 X.X : ±0.1
 X.XXX : ±0.005
 SURFACE FINISH: 63

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Catalina Yachts

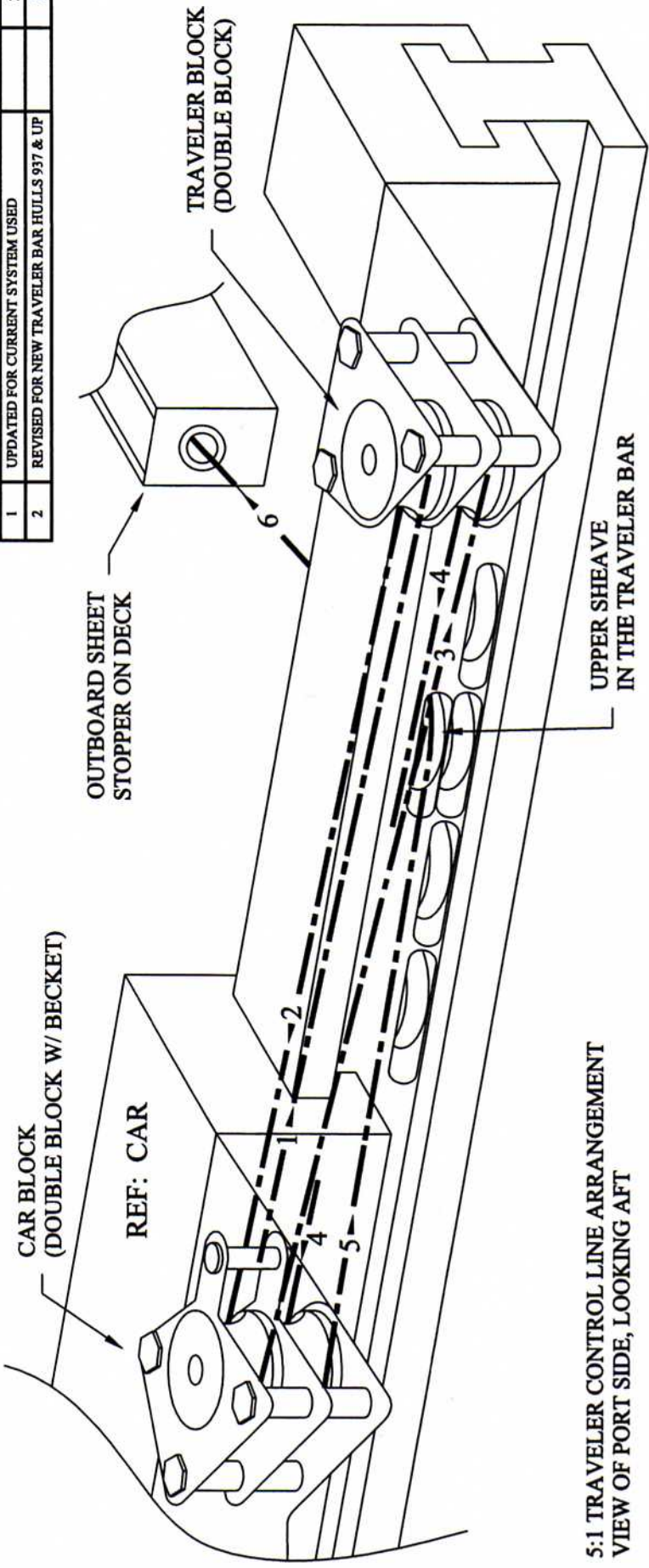
SCALE: NONE	APPROVED BY:	E.W.S
DATE: 7/20/00	REVISED	
TOPPING LIFT ARRGT. FOR DUTCHMAN FLAKING SYSTEM		
BOAT:	CATALINA 320, 34 MKII, 42 MKII	DRAWING NUMBER 420-36005-2

**NOTE: SEE DUTCHMAN OWNER'S
MANUAL IN SAIL BAG.**

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 X.XXX: ±0.005
 SURFACE FINISH: 63/
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REV	DESCRIPTION	APPROVAL	DATE
1	UPDATED FOR CURRENT SYSTEM USED		3/22/02
2	REVISED FOR NEW TRAVELER BAR HULLS 937 & UP		10/11/02



5:1 TRAVELER CONTROL LINE ARRANGEMENT
VIEW OF PORT SIDE, LOOKING AFT

NOTE: ALL LINE LED THROUGH SHEAVES COUNTERCLOCKWISE ON PORT SIDE (CW ON STBD).

SEGMENT (1) LINE EYE PINNED TO CAR BLOCK & LED TO THE TOP SHEAVE ON TRAVELER BLOCK.

SEGMENT (2) LED FROM TOP SHEAVE ON TRAVELER BLOCK TO TOP SHEAVE ON CAR BLOCK.

SEGMENT (3) LED FROM TOP SHEAVE ON CAR BLOCK TO BOTTOM SHEAVE ON TRAVELER BLOCK.

SEGMENT (4) LED FROM BOTTOM SHEAVE ON TRAVELER BLOCK TO BOTTOM SHEAVE ON CAR BLOCK.

SEGMENT (5) LED FROM BOTTOM SHEAVE ON CAR BLOCK TO UPPER SHEAVE IN THE TRAVELER BAR.

SEGMENT (6) LED FROM UPPER SHEAVE IN TRAVELER BAR AFT THROUGH OUTBOARD SHEET STOPPER TO THE COCKPIT.

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SCALE: NONE	APPROVED BY: K.W.N.
DATE: 4/22/02	REVISED 10/11/02

TRAVELER SYSTEM

BOAT: CATALINA 320	DRAWING NUMBER 320-38006-2
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SURFACE FINISH: 63
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BOOM

MAST

MAST
STEP

PIVOTING TANG
AT MAST BASE

3/8" DACRON
LINE SUPPLIED
W/ VANG

(1) SINGLE BLOCK W/ BECKET
AND (1) SINGLE BLOCK
SHACKLE TO LARGE "U"
BOLT ON MAST STEP --
LINE LEADS AFT TO COCKPIT

DOUBLE BLOCK SHACKLES
TO EYE SPLICE ON WIRE

DOUBLE BLOCK

NOTES:

LINE TIED OFF ON SINGLE BLOCK BECKET AND LED TO
DOUBLE BLOCK. THE LINE IS LED BACK DOWN TO THE
SINGLE BLOCK W/ BECKET AND RETURNED TO THE DOUBLE
BLOCK. THE LINE IS THEN LED TO THE SINGLE BLOCK AND
BACK THROUGH DECK ORGANIZER TO A STOPPER.

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APPROVED BY:
K.W.N.

SCALE: NONE

DATE: 10/15/93

REVISOR:
K.W.N.

REVISED 3/25/02

BOOM VANG

BOAT: CATALINA 320

DRAWING NUMBER
320-34004-1

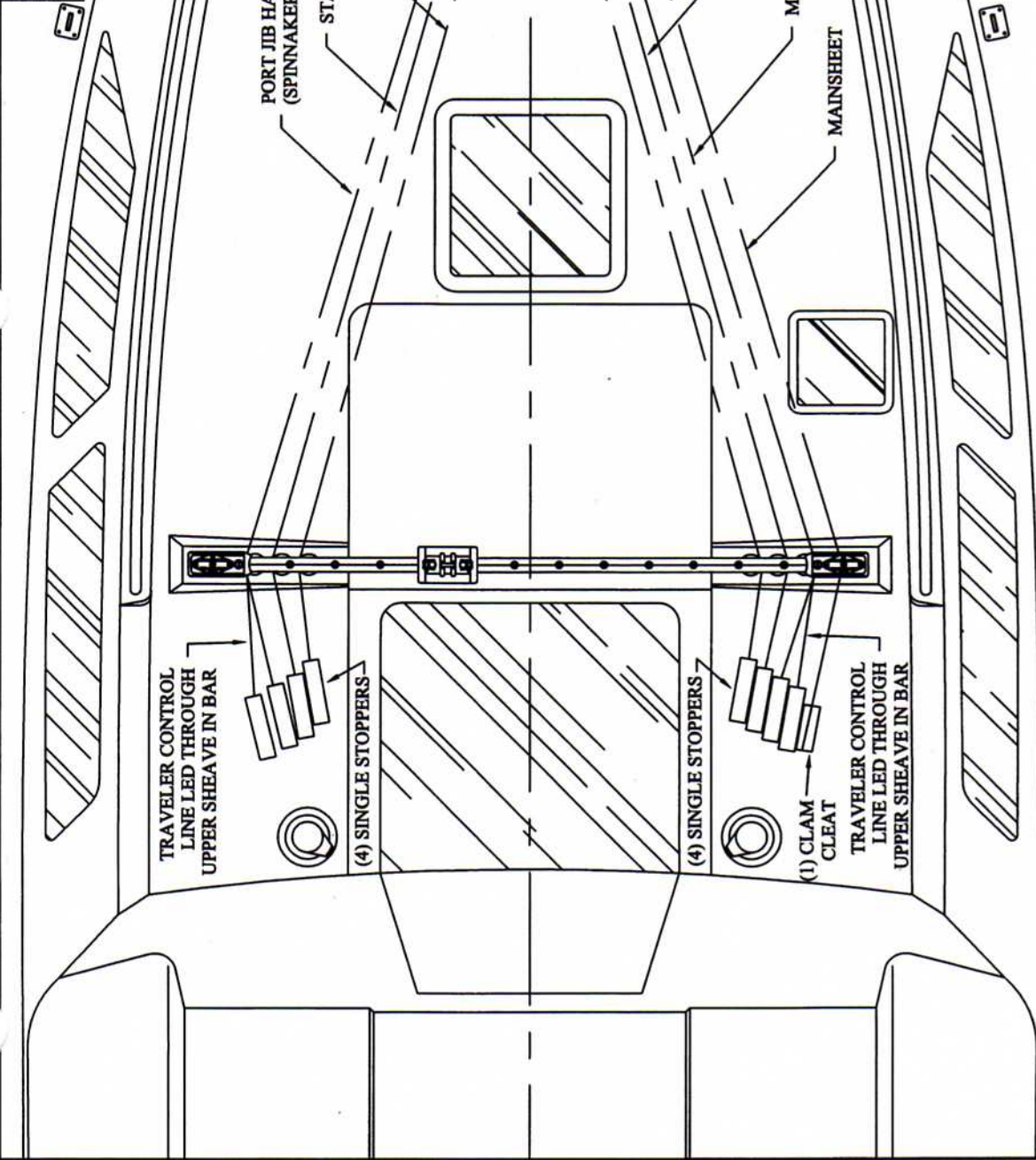
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REV	DESCRIPTION	APPROVAL	DATE
1	UPDATED FOR CURRENT SYSTEM USED		3/25/02

REV	DESCRIPTION	APPROVAL	DATE
3	REVISED FOR NEW TRAVELER BAR		10/10/02
4	ADDED SPINNAKER OPTION NOTE		3/6/03



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 DATE: 2/18/93
 APPROVED BY: K.W.N.
 REVISED: 3/6/03

HALYARDS ARRANGEMENT

BOAT: CATALINA 320
 DRAWING NUMBER: 320-38019-4

HULL #'S 937 & UP

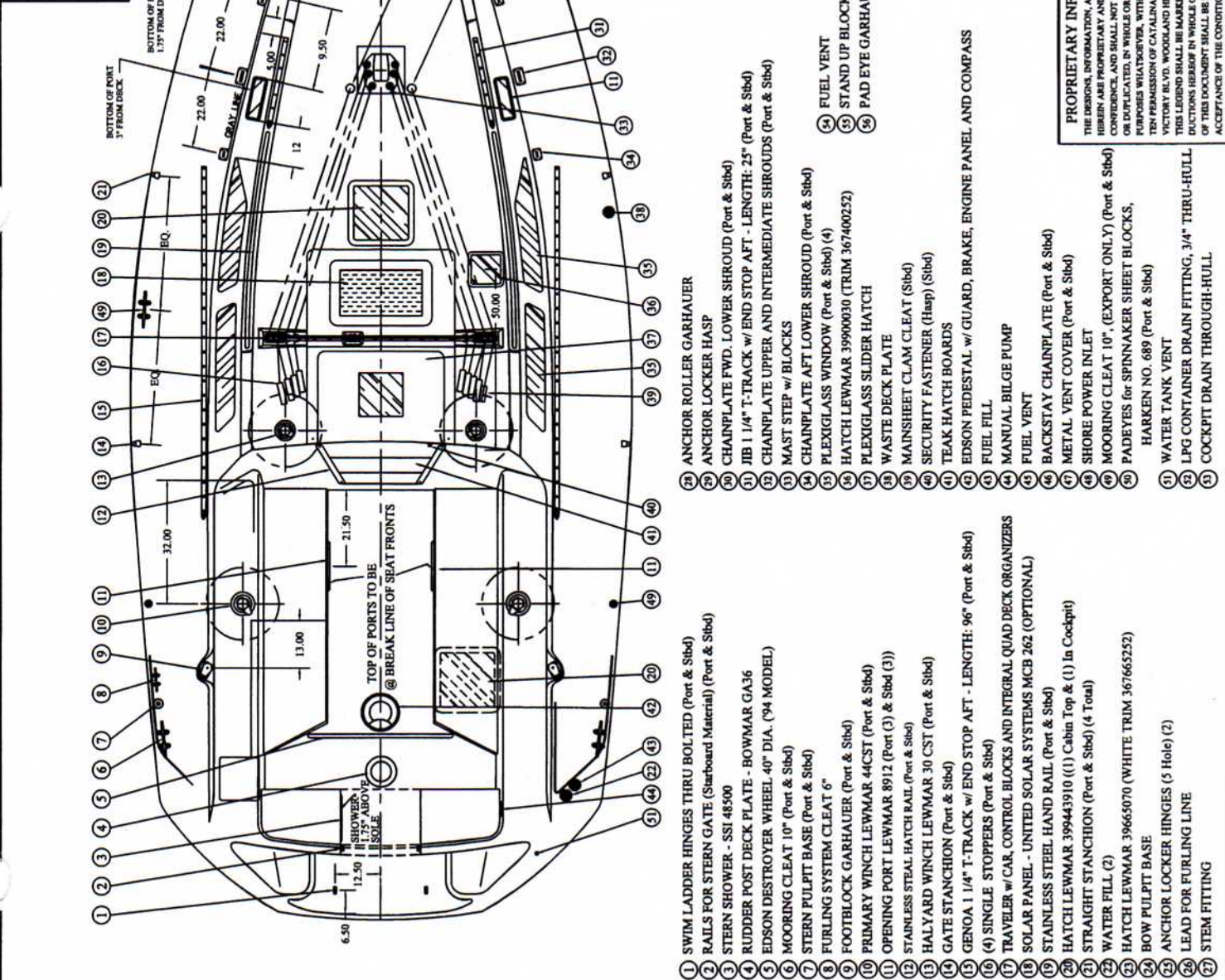
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REV	DESCRIPTION	DATE	APPROVAL
2	CHANGED STERN FITTINGS FOR NMMA REGS.	7/22/97	
3	UPDATED FOR CURRENT PLAN	4/30/02	
4	REVISED FOR NEW TRAVELER BAR HULLS 937 & UP	10/10/02	
5	ALL HATCHES LEWMAR (TRAP & 00 WERE BOMAR)	3/8/04	



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SCALE: NONE
 DATE: 5/28/93
 APPROVED BY: K.W.N.
 REVISED: 3/8/04

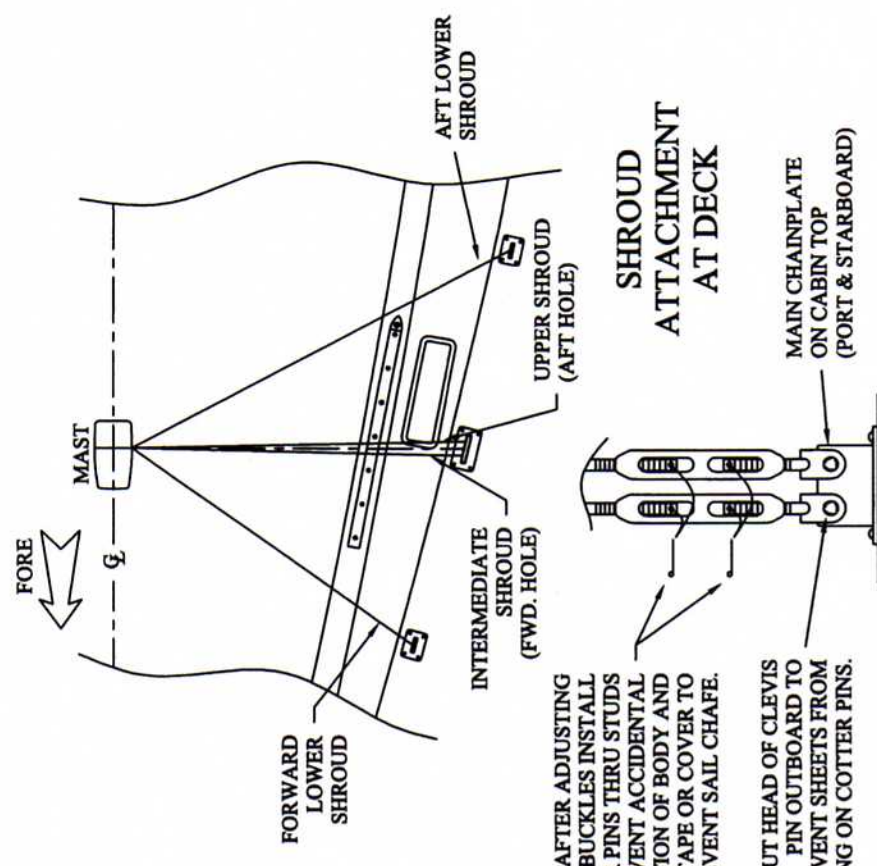
DECK PLAN

BOAT: CATALINA 320
 DRAWING NUMBER: 320-24003-5

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- 1 SWIM LADDER HINGES THRU BOLTED (Port & Sbd)
- 2 RAILS FOR STERN GATE (Starboard Material) (Port & Sbd)
- 3 RUDER POST DECK PLATE - BOWMAR GA36
- 4 EDSON DESTROYER WHEEL 40" DIA. ('94 MODEL)
- 5 MOORING CLEAT 10" (Port & Sbd)
- 6 STERN PULPIT BASE (Port & Sbd)
- 7 FURLING SYSTEM CLEAT 6"
- 8 FOOTBLOCK GARHAUER (Port & Sbd)
- 9 PRIMARY WINCH LEWMAR 44CST (Port & Sbd)
- 10 OPENING PORT LEWMAR 8912 (Port (3) & Sbd (3))
- 11 STAINLESS STEEL HATCH RAIL (Port & Sbd)
- 12 HALYARD WINCH LEWMAR 30 CST (Port & Sbd)
- 13 GATE STANCHION (Port & Sbd)
- 14 GENOA 1 1/4" T-TRACK w/ END STOP AFT - LENGTH: 96" (Port & Sbd)
- 15 SINGLE STOPPERS (Port & Sbd)
- 16 TRAVELER w/ CAR, CONTROL BLOCKS AND INTEGRAL QUAD DECK ORGANIZERS
- 17 SOLAR PANEL - UNITED SOLAR SYSTEMS MCB 262 (OPTIONAL)
- 18 STAINLESS STEEL HAND RAIL (Port & Sbd)
- 19 HATCH LEWMAR 399443910 ((1) Cabin Top & (1) In Cockpit)
- 20 STRAIGHT STANCHION (Port & Sbd) (4 Total)
- 21 WATER FILL (2)
- 22 HATCH LEWMAR 39665070 (WHITE TRIM 367665252)
- 23 BOW PULPIT BASE
- 24 ANCHOR LOCKER HINGES (5 Hole) (2)
- 25 LEAD FOR FURLING LINE
- 26 STEM FITTING
- 27
- 28 ANCHOR ROLLER GARHAUER
- 29 ANCHOR LOCKER HASP
- 30 CHAINPLATE FWD. LOWER SHROUD (Port & Sbd)
- 31 JIB 1 1/4" T-TRACK w/ END STOP AFT - LENGTH: 25" (Port & Sbd)
- 32 CHAINPLATE UPPER AND INTERMEDIATE SHROUDS (Port & Sbd)
- 33 MAST STEP w/ BLOCKS
- 34 CHAINPLATE AFT LOWER SHROUD (Port & Sbd)
- 35 PLEXIGLASS WINDOW (Port & Sbd) (4)
- 36 HATCH LEWMAR 39900030 (TRIM 367400252)
- 37 PLEXIGLASS SLIDER HATCH
- 38 WASTE DECK PLATE
- 39 MAINSHEET CLAM CLEAT (Sbd)
- 40 SECURITY FASTENER (Hasp) (Sbd)
- 41 TEAK HATCH BOARDS
- 42 EDSON PEDESTAL w/ GUARD, BRAKE, ENGINE PANEL AND COMPASS
- 43 FUEL FILL
- 44 MANUAL BILGE PUMP
- 45 FUEL VENT
- 46 BACKSTAY CHAINPLATE (Port & Sbd)
- 47 METAL VENT COVER (Port & Sbd)
- 48 SHORE POWER INLET
- 49 MOORING CLEAT 10" (EXPORT ONLY) (Port & Sbd)
- 50 PAD EYES for SPINNAKER SHEET BLOCKS.
- 51 HARKEN NO. 689 (Port & Sbd)
- 52 WATER TANK VENT
- 53 LPG CONTAINER DRAIN FITTING, 3/4" THRU-HULL
- 54 COCKPIT DRAIN THROUGH-HULL
- 55
- 56
- 57
- 58 FUEL VENT
- 59 STAND UP BLOCK GARHAUER (STBD.)
- 60 PAD EYE GARHAUER (PORT)
- 61 MOUNT DRAIN EVEN W/ THIS LINE

REV	DESCRIPTION	DATE
5	UPDATED FOR CURRENT ARRANGEMENT	3/27/02

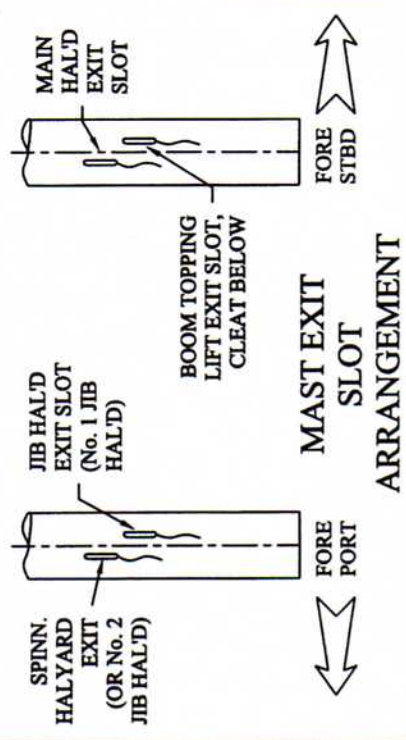
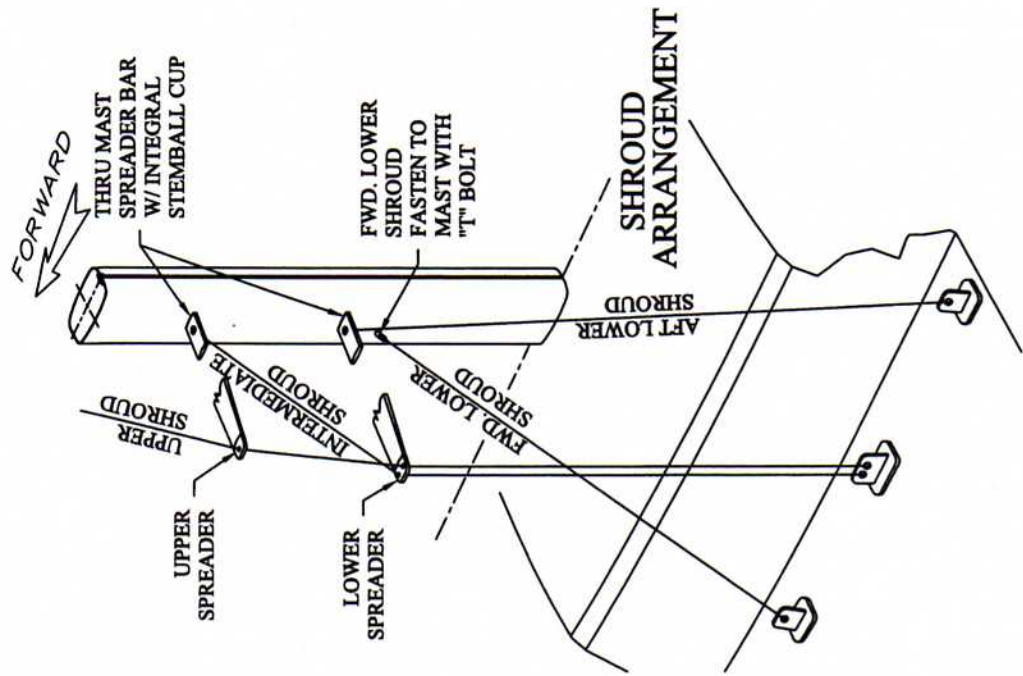


SHROUD ATTACHMENT AT DECK

AFTER ADJUSTING TURNBUCKLES INSTALL COTTER PINS THRU STUDS TO PREVENT ACCIDENTAL ROTATION OF BODY AND TAPE OR COVER TO PREVENT SAIL CHAFE.

PUT HEAD OF CLEVIS PIN OUTBOARD TO PREVENT SHEETS FROM FOULING ON COTTER PINS.

NOTE: ON MAIN CHAINPLATES, ATTACH THE UPPER SHROUDS TO AFT HOLE AND INTERMEDIATE SHROUDS TO FWD. HOLE.



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SCALE: NONE
DATE: 3/5/93
DRAWN BY: K.W.N.
REVISED: 3/27/02

SHROUD / SPREADER ARRANGEMENT

BOAT: CATALINA 320
DRAWING NUMBER: 320-34003-5

4.2.1 BATTERIES:

The electrical system is powered by marine grade 12 volt, deep cycle batteries. Attention should be given to maintaining the proper level of distilled water. DO NOT overfill.

The batteries are provided with a hold down to prevent movement at extreme angles of heel. Be sure these hold downs are fastened securely.

With proper care, the batteries installed in Catalina boats will provide a long and reliable service. Proper care is not difficult if a few basic points are kept in mind.

The battery should be checked periodically for any cracks or breaks in the case or cover and any cracks in the sealing compound. If there is any damage, the battery should be repaired at once.

WARNING: The electrolyte in a battery is a solution of sulfuric acid. If any should enter the eyes, rinse immediately with large amounts of fresh water and seek medical attention. Electrolyte spilled on skin should be rinsed off with fresh water also. Even a small amount of electrolyte spilled on clothing will destroy the clothing.

ELECTROLYTE LEVEL:

The electrolyte level in a battery should never be allowed to fall low enough to expose the plates. The battery's capacity is less when not full and exposed plates cause hardening of the active material resulting in permanent capacity loss.

CAUTION: Only use pure distilled water to replenish electrolyte levels. The water from many city water supply systems is unsatisfactory for battery use.

CHARGING THE BATTERY:

Before adding distilled water, a hydrometer reading of the battery should be taken. If the reading shows the battery to be above 1.225 specific gravity, the battery has a sufficient charge. If the reading is below 1.225, the battery should be removed for bench charge.

Once charged, the battery should have a specific gravity of at least 1.260. If this cannot be reached, a battery supplier should inspect the battery.

The batteries should be checked often to ensure that they do not run down. Check that all the battery cells keep an even fluid level and that the fluid is about 3/8" above top of the separators.

If one or two cells have lower fluid levels, it is a good indicator that something is wrong with the battery, and it should be checked.

DISCHARGED STATE:

Leaving a battery in a discharged state for any length of time can also result in a permanent loss of capacity for the battery. Since it will freeze at relatively low temperatures, leaving it in the cold weather can destroy the battery.

CLEAN CONNECTIONS:

Keep the battery connections clean and tight. A cupful of strong baking soda solution and toothbrush will clean, corrosion from the terminals and neutralize any spilled acid (DO NOT allow any of the solution to enter the battery cells). A coating of petroleum jelly on the battery terminals will inhibit corrosion.

4.2.2 MAIN BATTERY SWITCH:

The circulator battery switch has the markings 1, 2, and "ALL" as well as "OFF." You can selectively charge the battery with the engine alternator. Many experienced sailors use battery #1 for electrical lighting needs and keep #2 in reserve for starting the engine.

When the engine is running, NEVER pass through the "OFF" position to change from one battery to the other or else the alternator diodes will be burned out.

If both batteries are of equal charge, keep the selector switch on "ALL" position, and use "ALL" to start the engine if both batteries are low.

4.2.3 ELECTRICAL SYSTEM:

The Catalina is equipped with a standard 12 Volt DC system and 110-115 Volt AC system. The wiring is run to prevent chaffing or contact with water, where possible, and is supported as needed. We recommend that you check all the connections at least once a year for corrosion, loose fittings, etc.

DC – 12 VOLT SYSTEM:

Deep cycle batteries power the DC system.

MAIN DC CIRCUIT BREAKER:

Operating switches for lights and accessories are located on the main switch panel. The main circuit breaker will automatically trip to the OFF position in the event of an overload to the circuit. If the breaker trips to OFF, the cause should be determined and any necessary repairs should be made before repositioning the circuit breaker to ON.

Before purchasing any electrical accessories for your boat, ensure that they are compatible to a negative ground system.

The electrical panel is located above the chart desk on the port side.

WARNING: Be sure to disconnect the batteries and the AC shore power cord before opening the panel, or severe injuries may result.

All wires, terminals and connections should be checked periodically for loose connections or corrosion that could cause high resistance, electrical sparks or fires. The engine accessory wiring should also be checked at this time.

NAVIGATION LIGHTS:

Navigation lights should be used in accordance with the rules and regulations of the waters in which you intend to sail.

Generally, navigation lights should be used from dusk to dawn in all weather conditions. It is advisable to use the navigation lights any time visibility is poor.

Your Catalina is equipped with the following navigation lights:

- a) Red and Green 112.5° combination running lights mounted on the bow pulpit.
- b) White 135° stern running light mounted on the stern pulpit.
- c) White 225° steaming light mounted on the mast.
- d) White 360° anchor light mounted on the masthead.

(a) and (b) are wired to the running light switch on the panel. (c) is wired to the steaming light switch, and (d) is wired to the anchor light switch. When underway by sail, the bow running light and stern running light must be used. When underway by power, the steaming light, bow and stern running lights must be on. At anchor, the anchor light should be on, the running, (a) and (b), and the steaming light should be off.

NOTE: Boats built for use outside the USA may have different navigation light arrangements.

AC – 110-115 VOLT SYSTEM:

The 110V AC power system depends upon the boat being connected to 110V – 30-amp shore power connector.

IMPORTANT: TO MINIMIZE SHOCK AND FIRE HAZARDS:

1. Turn off the boat's shore connection switch before connecting or disconnecting the shore power cable.
2. Connect the shore power cable at the boat first.
3. If the polarity-warning indicator is activated, disconnect the cable immediately.
4. Disconnect the shore power cable at the shore outlet first.
5. Close the shore power inlet cover tightly.
6. **DO NOT ALTER THE SHORE POWER CABLE IN ANY WAY. SEVERE INJURY MAY OCCUR.**

Care should be taken to support the shore power cable at both ends to allow sufficient slack to avoid pulling. Remember to allow for the tide.

The master breaker switch is a 30 amp, two-pole type (see 110V schematic). Be certain that all 110-volt appliances, other than lamps, have an adequate grounding connector. Wet feet or moist atmosphere increases the potential shock hazard.

There is a reverse polarity indicator on the panel. With the switches off, attach the power cable to the inlet. Next, attach the power cable to the dock outlet. If the reverse polarity light comes on **DISCONNECT THE CORD IMMEDIATELY!** This indicates a reverse polarity situation that is very dangerous.

WARNING: DO NOT open the electrical panel for any purpose with the shore power cable connected to the dock. 110 volt wiring is exposed when the panel is open. Contact with the 110-volt wiring can cause electrocution. Electricity is dangerous. Even when safety devices are present, handle with care and use reasonable caution.

GROUND FAULT INTERRUPTER:

G.F.I. receptacles are designed to provide protection against electrical shock hazards due to line-to-ground faults. Although the G.F.I. receptacle does not limit the magnitude of the fault current and, therefore, cannot

prevent electrical shock, it does limit the duration of the shock to a period considered safe for normal healthy persons. G.F.I. receptacles will provide protection against ground faults only. They will not protect against overload or short circuits. There is no known device that will guard against the electric shock hazard resulting from contact with both the “hot” and “neutral” wires of the electrical circuit.

The G.F.I. receptacle protects the 110V AC outlets in the Catalina. If there is a power failure that does not affect the fuse or breaker serving these outlets, unplug all cord-connected appliances from the protected outlets and restore power by pressing the red RESET button on the receptacle. Push the RESET back in and reconnect the appliances one at a time.

Any defective appliance will trip the button and should be repaired at once.

If the appliances are all disconnected, and the RESET button will not stay in, call a qualified electrician. If the RESET button does not pop out when the blue TEST button is pressed, PROTECTION IS LOST. DO NOT USE any of the outlets and determine the cause of the problem before using the system.

IMPORTANT: Your Ground Fault Interrupter Circuit should be tested regularly. Use the following steps:

1. Push the blue TEST button. The red RESET button should pop out. Power is now out at that outlet indicating that the circuit is operating properly.
2. If the button does not pop out when testing, do not use that outlet. Protection is lost and a qualified electrician should be called.
3. To restore power, push the RESET button.

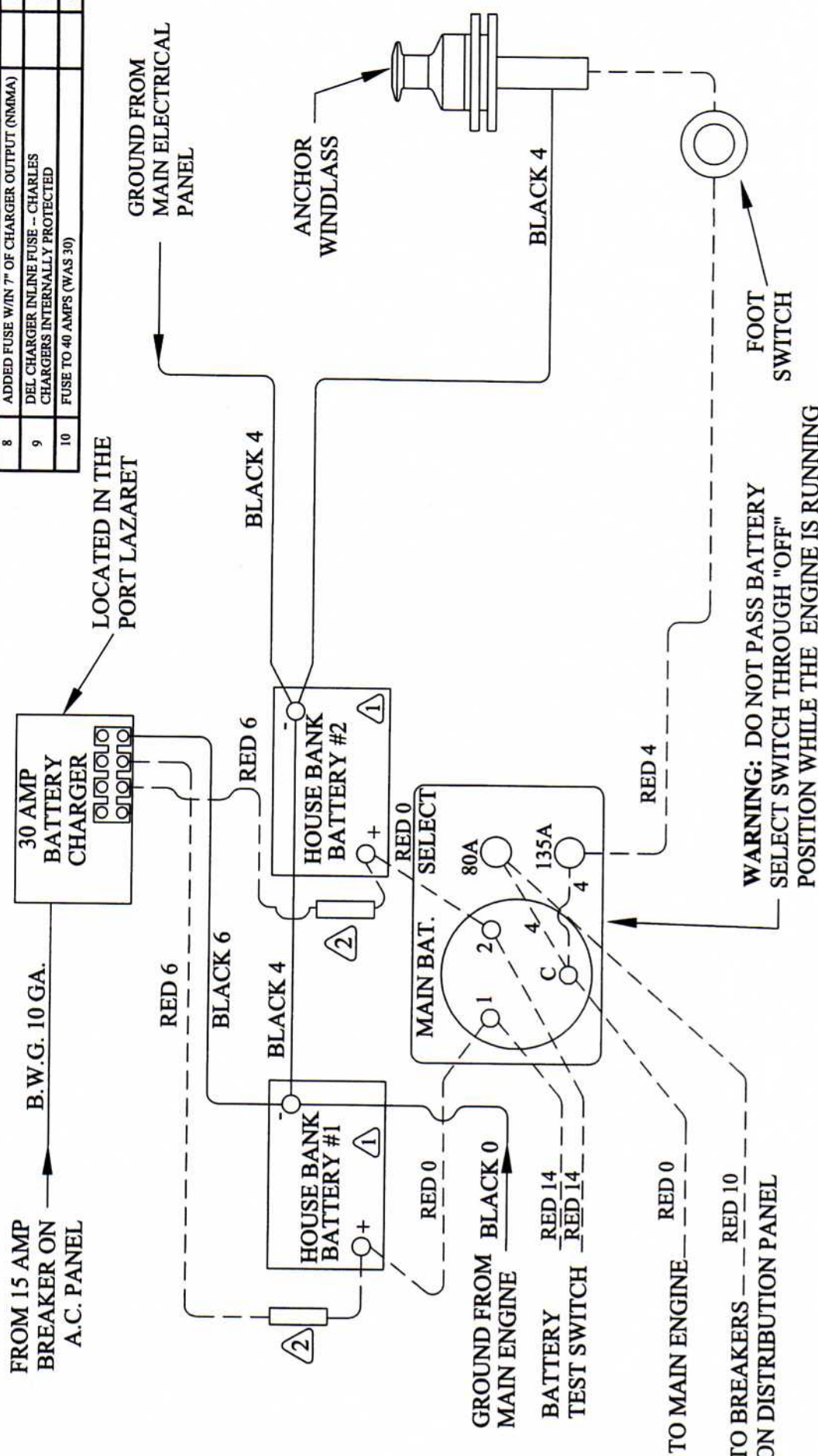
PREVENTATIVE MAINTENANCE:

This consists of periodic inspection and protection against any damage created by the elements. Electrical systems are adversely affected by moisture and salt-air environment.

The system can be protected by the application of aerosol sprays such as WD-40 or CRC. All wire harnesses and connections should be checked periodically to ensure that fastenings are secured and everything is clean with no sign of damage or corrosion. It is extremely important that all connections be kept clean.

WARNING: DO NOT perform any maintenance or repair on a live circuit. DO NOT turn the main DC switch off while the engine is running. This could cause damage to the alternator.

REV	DESCRIPTION	APRVL	DATE
7	UPDATED FOR CURRENT SYSTEM		4/1/02
8	ADDED FUSE W/IN 7" OF CHARGER OUTPUT (NMMA)		3/10/03
9	DEL. CHARGER INLINE FUSE -- CHARLES CHARGERS INTERNALLY PROTECTED		3/20/03
10	FUSE TO 40 AMPS (WAS 30)		6/7/04



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 91367 -- (818) 884-7700

SCALE: NONE
 DATE: 3/26/93
 APPROVED BY: K.W.N.
 REVISED: 6/7/04

12 V.D.C. POWER DISTRIBUTION SYSTEM

BOAT: CATALINA 320
 DRAWING NUMBER: 320-71003-10

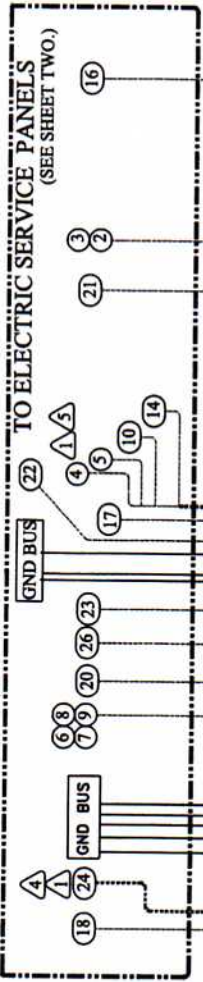
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 GENERAL TOLERANCES
 ANGLES : ±0.5°
 X.X : ±0.1
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 X.XXX : ±0.005
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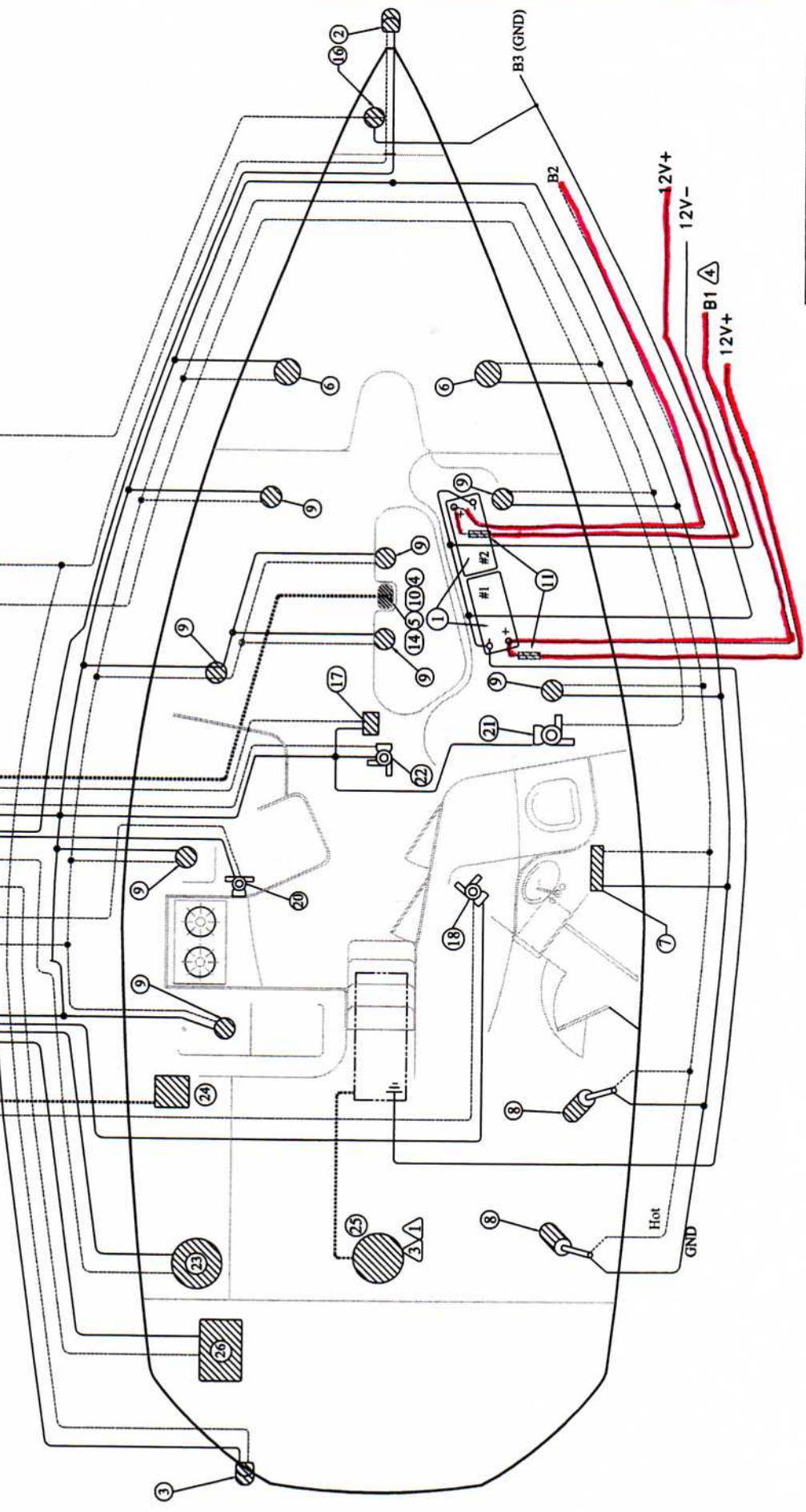
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- NOTES:
- ① BOTH BATTERIES LOCATED IN STARBOARD SETTEE / SEAT
 - ② 40 AMP FUSES WITHIN 7" OF EACH POSITIVE TERMINAL ON BATTERIES.

REV	DESCRIPTION	APPROVAL	DATE
0	ORIGINAL RELEASE		6/28/93
1	UNKNOWN		-
2	ONE BATTERY TO STD		3/20/94
3	UNKNOWN		-
4	DELETE LIGHTING SUB - PANEL		6/1/97
5	NEW SERVICE PANEL		2/2/99
6	REV VOLTAGE PER ECH C146		6/23/99
7	UPDATED FOR CURRENT PLAN		3/20/02
8	NEW SERVICE PANEL, BATTERY/WINDLASS		3/20/02
9	ITEM 11 WAS A 30 AMP INLINE FUSE		1/18/05



- NOTES: (UNLESS OTHERWISE SPECIFIED)
- 1 MULTIPLE CONDUCTOR CABLE.
 - 2 AC WIRING SHOWN ON DWG. 320-73002, 115VAC WIRING DIAGRAM W/CHGR.
 - 3 SEE DWG #W2787-GX
 - 4 SEE DWG #320-72003, 12VDC PWR DIST SYSTEM.
 - 5 SEE DWG #320-72002, MAST LIGHT WIRING.



Catalina Yachts
 21200 VICTORY BLVD.
 WOODLAND HILLS, CA
 91367 - (818) 864-7900

SCALE: NONE APPROVED BY: K.W.N. REVISED: 6/7/04
 DATE: 6/28/93

ELECTRICAL PLAN, DC

BOAT: CATALINA 320 DRAWING NUMBER: 330-72001-9 Pg. 1/2

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 GENERAL TOLERANCES
 ANGLES: 30° 45° 60° 90°
 XXX ±0.01
 XXXX ±0.005
 SURFACE FINISH: ✓

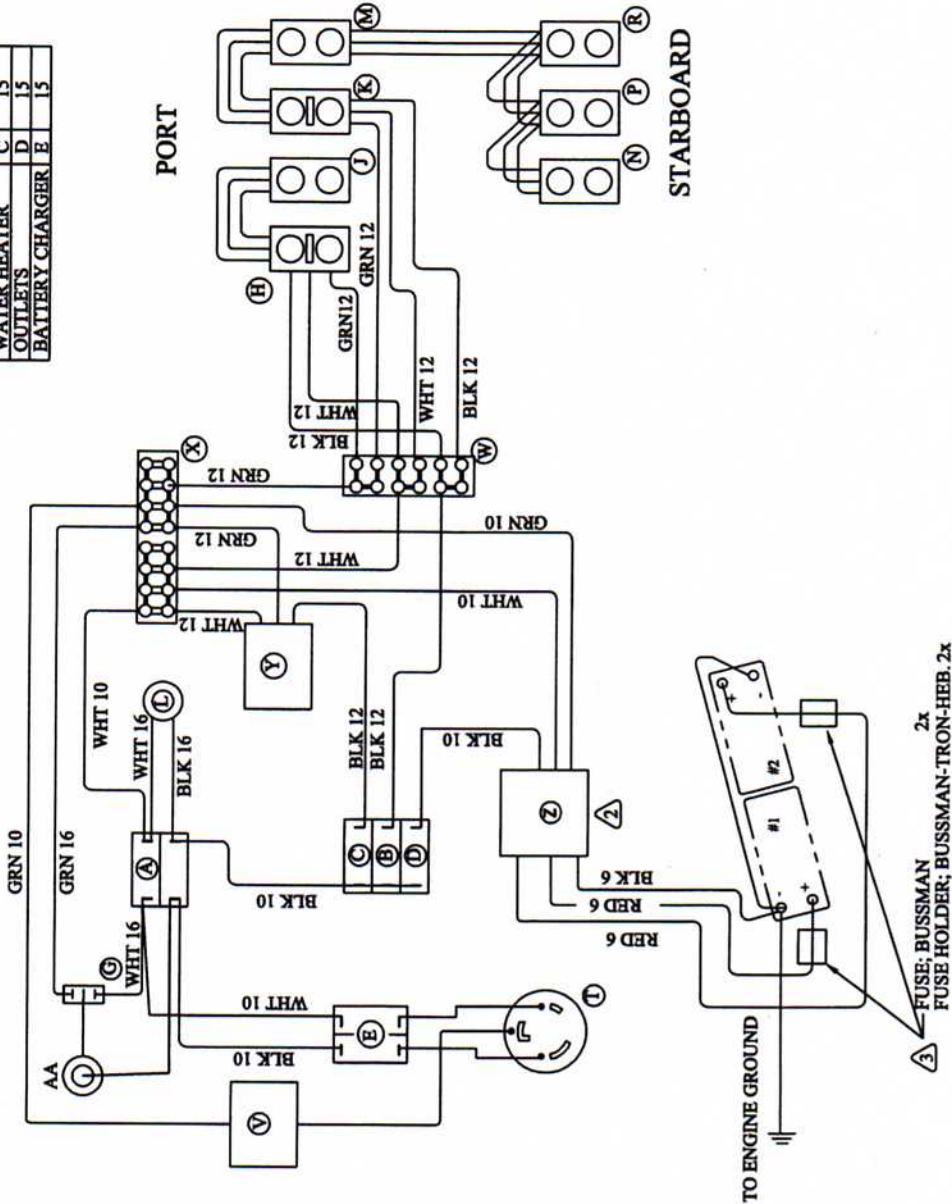
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NOTES: (UNLESS OTHERWISE SPECIFIED)
 1 DC WIRING SHOWN ON DWG. 320-72001
 2 SEE DWG #320-72003
 3 FUSES MUST MATCH CHARGER OUTPUT AND BE INSTALLED WITHIN 7" OF TERMINAL ON BATTERY.

BREAKER SCHEDULE

BREAKER	AMP
TRANSOM	A 30
MAIN AC	B 30
WATER HEATER	C 15
OUTLETS	D 15
BATTERY CHARGER	E 15



REV	DESCRIPTION	DATE
0	ORIGINAL RELEASE	3/26/93
1	REVISED	12/17/94
2	ADD GALVANIC ISOLATOR & BATT FUSE	2/19/99
3	REV BREAKER LD. PER ECN C13X	8/13/99
4	ADD REV. POLARITY TEST	2/3/00
5	UPDATED FOR CURRENT SCHEME	4/1/02
6	ADDED NOTE (4) FOR NEW NMMMA REGS	3/13/03
7	DEL NOTE (4) - CHARLES BATTERY CHARGES ARE INTERNALLY PROTECTED	3/20/03

ITEM	DESCRIPTION	MANUFACTURER	PART NO	UNITS	QTY	COST	EXT.	ON
						BA.	CB.	CA.
CC	FUSE, BLU/SEA MAX 601M, 30A							
BB	FUSE HOLDER, BUSSMAN-TRON-HEB.							
AA	LIGHT, LED, "REVERSED POLARITY", RED							
Z	CHARGER, BATTERY							
Y	HEATER, WATER, 6 GAL							
X	TERMINAL BLOCK, BREAKERS							
W	TERMINAL BLOCK, OUTLETS							
V	ISOLATOR, GALVANIC							
U	INLET, SHORE PWR							
R	OUTLET, SALOON							
P	OUTLET, HEAD							
N	OUTLET, AFT STEM							
M	OUTLET, FWD STEM							
L	LIGHT, LED, "AC OK", GREEN							
K	OUTLET, NAV STA, GPCC							
J	OUTLET, GALLERY							
H	OUTLET, GALLERY CABINET, GPCC							
G	SWITCH, TEST							
F	CIRCUIT BREAKER, TRANSOM, 30A							
D	CIRCUIT BREAKER, CHARGER 15A							
C	CIRCUIT BREAKER, WATER HEATER 15A							
B	CIRCUIT BREAKER, OUTLETS 15A							
A	CIRCUIT BREAKER, MAIN AC 30A							

PARTS LIST

Catalina Yachts
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SCALE: NONE

DATE: 3/26/93

APPROVED BY:

K. W.N.

REVISED 3/20/03

115 VAC WIRING SCHEMATIC

BOAT: CATALINA 320

DRAWING NUMBER
 320-73002-7

UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES
 DATE ANGLES : ±0.5°
 X.X : ±0.1
 X.XX : ±0.01
 X.XXX : ±0.005
 SURFACE FINISH: Ⓟ
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4.3.1 MARINE TOILET OPERATION:

USING THE HEAD:

1. Read the instructions supplied by the toilet manufacturer for operating your marine toilet. These instructions are also printed on the toilet pump housing. Be sure everyone who will be using the head is familiar with these instructions.
2. Immediately before using the head, the inlet valve, 'A', must be opened. This provides flushing water to the toilet. The valve should be kept closed when the head is not in use, preventing water from flooding the boat if the valve in the toilet pump should fail.
3. Waste will be pumped directly into the holding tank when the bowl is emptied. A minimum amount of water for every flush should be used in order to take best advantage of the tanks capacity between pump-outs.
4. The condition of the holding tank should be checked from time to time. Overfilling can cause the tank to burst.
5. Use hot water and soap to clean the head. High strength cleaners may cause damage to the valves and seals in your pump system. If there is any problem with the head, it should be corrected immediately.

EMPTYING THE TANK THROUGH THE DECK DISCHARGE PLATE:

1. The holding tank should be emptied via the deck discharge plate only when at an approved shore based pump-out station.
2. Remove the cap from the deck discharge plate. The threads on the plate cap should be periodically coated with silicone spray or petroleum jelly to insure a good seal.
3. The pump-out station suction hose should form a seal at the deck plate.
4. Be sure inlet valve, 'A', is closed when the tank is being emptied.
5. After the tank is empty, you may wish to open the inlet valve, 'A', and pump water through the toilet and into the tank to dilute residual sludge and rinse the tank and lines.
6. Close all valves after the tank is emptied and re-cap the deck plate.

EMPTYING THE TANK USING THE MACERATOR PUMP:

1. Read the macerator pump operating instructions supplied by the pump manufacturer.
2. Close the inlet valve, "A".
3. Open the through hull valve, "B".
4. Turn on the pump with the switch on the 12-volt panel.
5. The pump will change tone after it becomes primed; it will resume the higher pitched tone after the tank is emptied.
6. You may wish to rinse the tank, hose lines, and macerator pump by pumping clear water through the head, then repeating the procedure for emptying the tank.
7. Close valve "B" immediately after emptying the holding tank.

4.2.2 MACERATOR PUMP AND TROUBLESHOOTING:

PROBLEM 1: The macerator pump motor starts then stops.

- A. Check the breaker: it should be "IN" or "ON".
- B. Check the valves: "B" valve must be open.
- C. Check the vent line. If the boat has been sailed at extreme angles of heel, fluid may be clogging the vent line. Disconnect the vent at the tank and empty the hose into a disposable container.
- D. Sludge may have formed in the bottom of the tank. This should be diluted as much as possible. The tank should be emptied regularly to prevent sludge build-up.

PROBLEM 2: The head toilet pump has excessive backpressure and will not evacuate.

- A. Refer to the toilet manufacturer's specifications and operation instructions.
- B. Check the holding tank; if it appears to bulge each time the pump handle is depressed, the tank is overfilled, or the vent is clogged.

PROBLEM 3: The macerator pump, when on, makes a high-pitched sound but does not empty the tank.

- A. Impeller in macerator pump is faulty and must be replaced.
- B. The vent is clogged and the pump cannot pull a prime against the vacuum in the tank.
- C. The hose into the pump may be clogged.
- D. The pump may be drawing air through the deck plate preventing a prime. Check the seal at the deck plate marked waste and lubricate threads.

4.3.3 INSTRUCTION FOR SANITIZING POTABLE WATER SYSTEM:

To assure complete sanitation of your potable water system, it is recommended that the following procedures be used. This applies if it is a new system, one that has not been used for a period of time, or one that may have become contaminated.

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

The above recommendations conform to Section 10.8 in the A119.2 code covering electrical, plumbing, and heating of a recreational vehicle. The solution is approved and recommended by competent health officials.

4.3.4 MANUAL BILGE PUMP:

The manual bilge pump is located in the cockpit. Insert the handle through the watertight fitting in the cockpit to operate the pump. The pump intake hose is in the keel stub under the main cabin sole.

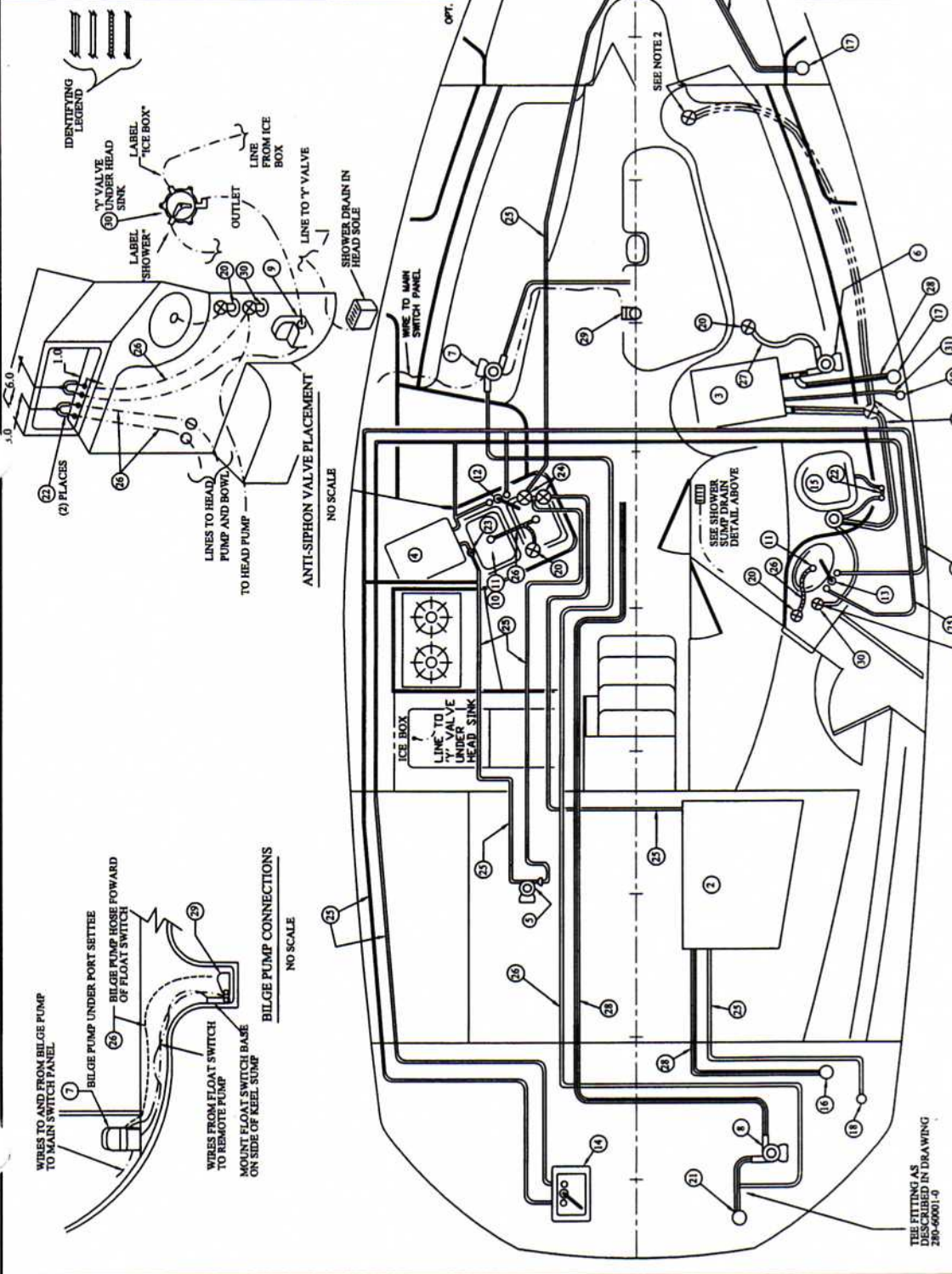
4.3.5 SEACOCKS:

All underwater through hull fittings are equipped with seacock $\frac{1}{4}$ turn valves. It is good practice to close all seacock valves when leaving the boat, especially for long periods of time.

To close seacock valves, turn handle perpendicular to flow. To open, turn handle $\frac{1}{4}$ turn to parallel.

It is good practice to operate the seacock valves at least once a month to keep the seals lubricated.

31	VALVE, "Y" VALVE	
30	SEACOCK DOUBLE, FLUSH 3/4"	R.C. MARINE
29	SWITCH, FLOAT	RULE 35
28	HOSE, REINFORCED 1 1/2"	
27	HOSE, REINFORCED 1"	
26	HOSE, REINFORCED 3/4"	
25	HOSE, REINFORCED 1/2"	
24	VALVE, BALL, 1/2"	
23	VALVE, CHECK, 1/2"	SHURELO
22	VALVE, ANTI-SIPHON, 3/4"	R.C. MARINE
21	THRU-ROLL, MUSHRM 1 1/2"	R.C. MARINE
20	SEACOCK, FLUSH 3/4"	R.C. MARINE
19	FITTING, WASTE TANK VENT	
18	FITTING, WATER TANK VENT	
17	FITTING, WASTE DECK PUMP/OUT	BOMAR
16	FITTING, WATER DECK FILBOMAR	
15	TOILET, MARINE	JABSCO
14	FAUCET, THRU-DECK	
13	FAUCET, HEAD	GROHE
12	FAUCET, GALLEY	GROHE
11	DRAIN, SINK	
10	SINK, DOUBLE RECTANGLE	
9	PUMP, SHOWER SUMP	JABSCO 37202
8	PUMP, BELGE, HAND	WHALE
7	PUMP, BELGE, ELECTRIC	JABSCO 37202
6	PUMP, MASERATOR	JABSCO



ITEM	CAT #	No	DESCRIPTION	QTY
5			PUMP, WATER PRESSURE	SHURFLO
4			HEATER, WATER, 6 GAL	SEAWARD
3			TANK, WASTE	RONCO B-348
2			TANK, WATER	RONCO B-349
1			TANK, WATER	RONCO B-115

Catalina Yachts
 21200 VICTORY BLVD.
 WOODLAND HILLS, CA.
 91367 - (818) 884-7700

APPROVED BY: K.W.N.
 REVISIONS: 1/18/05

SCALE: NONE
 DATE: 6/28/93

PLUMBING PLAN

BOAT: CATALINA 320
 DRAWING NUMBER: 320-60002-9

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 X.X : ±0.1
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REV	DESCRIPTION	APPROVAL	DATE
9	FRESH WATER MANIFOLD MOVED UNDER GALLEY SINK		1/18/05
8	UPDATED FOR CURRENT PLAN		4/2/02
7	ADDED ICE BOX/SHOWER SUMP "Y" VALVE TO DRAWING		8/30/01
6	MODIFY HEAD PLUMBING		10/22/96
5	MOVE POTABLE WATER PUMP UNDER AFT PORT BERTH		5/15/96
4	ADD REMOTE BILGE PUMP FOR KEEL SUMP		4/18/95

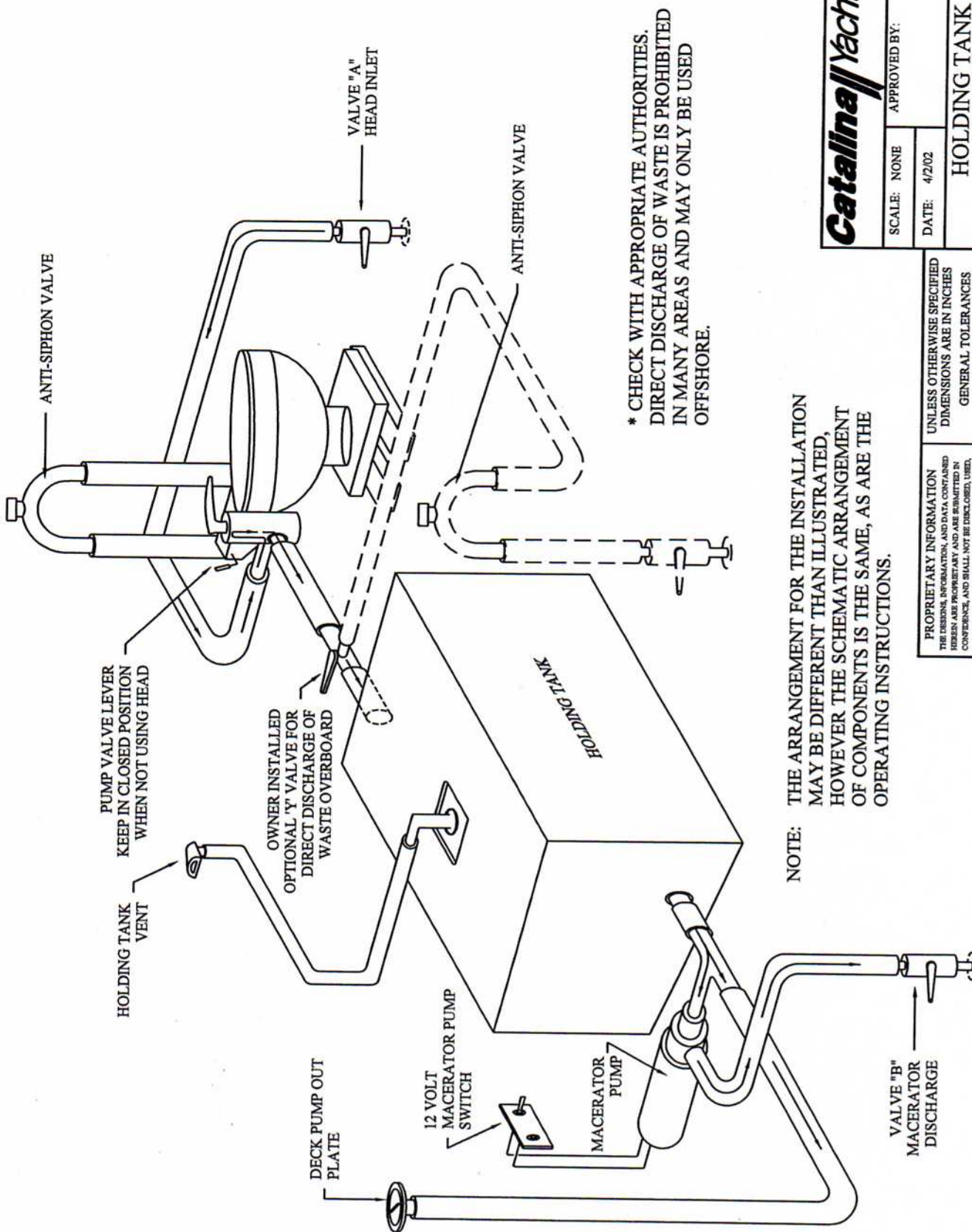
Catalina Yachts

21200 VICTORY BLVD.
WOODLAND HILLS, CA.
91367 -- (818) 884-7700

SCALE: NONE APPROVED BY: K.W.N.
DATE: 4/2/02 REVISED: 2/28/06

**HOLDING TANK AND
MACERATOR SCHEMATIC**

BOAT: CATALINA 320 DRAWING NUMBER: 320-60003-1



*** CHECK WITH APPROPRIATE AUTHORITIES.
DIRECT DISCHARGE OF WASTE IS PROHIBITED
IN MANY AREAS AND MAY ONLY BE USED
OFFSHORE.**

**NOTE: THE ARRANGEMENT FOR THE INSTALLATION
MAY BE DIFFERENT THAN ILLUSTRATED,
HOWEVER THE SCHEMATIC ARRANGEMENT
OF COMPONENTS IS THE SAME, AS ARE THE
OPERATING INSTRUCTIONS.**

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X.XXX : ±0.005
SURFACE FINISH: **✓**

DO NOT SCALE DRAWING

4.4.1 GENERAL ENGINE INFORMATION:

WARNING: DO NOT open engine compartment doors when engine is running. Contact with hot or moving engine parts can cause serious injury.

For a complete description of your engine, please consult the guide supplied by the engine manufacturer. This can be found in your owner's packet.

Two points are worth special attention. Firstly, marine engines work under conditions tougher than those conditions of automotive engines. Your marine engine faces constant torquing not encountered on the highway. For this reason, you must change your engine's crank oil as recommended in the engine manufacturer's guide. Secondly, before using your engine, the shaft coupling must be adjusted within a tolerance of 0.003 of an inch after launching. This is done during commissioning of the yacht. Be sure that your dealer has made this adjustment before using the engine.

Change the oil in accordance with manufacturer's recommendations. Keep spare filters and alternator belts on hand. Keep your fuel tank full whenever possible to prevent water condensation in your fuel tank.

To retard electrolysis, we recommend installing a zinc collar immediately on the propeller shaft and additional zinc as may be required in your mooring area.

4.4.2 SHAFT PACKING BOX (STUFFING BOX):

The packing gland is located aft of the engine under the aft berth.

A properly adjusted shaft-packing gland should drip slightly with the engine off. Too loose of an adjustment will allow too much water into the bilge and engine operation will spray water from the shaft. Too tight of an adjustment will rob the engine of power, and the lack of water lubrication in the packing gland can generate enough heat to damage the gland and/or score the propeller shaft.

ADJUSTMENT:

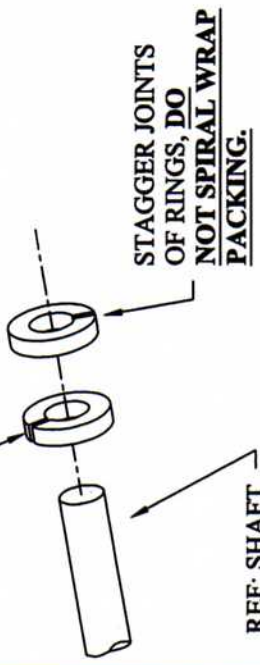
1. While holding the packing nut with one wrench, use a second wrench to loosen the lock nut. Turn the lock nut far enough to keep it from interfering with the next adjustment (2 or 3 turns).
2. Tighten the packing nut to obtain 2 to 3 drops per minute. Hand tightening of the packing nut is often sufficient to obtain this

adjustment. If this is not the case, an additional $\frac{1}{4}$ to $\frac{1}{2}$ turn with the wrench should produce the desired result.

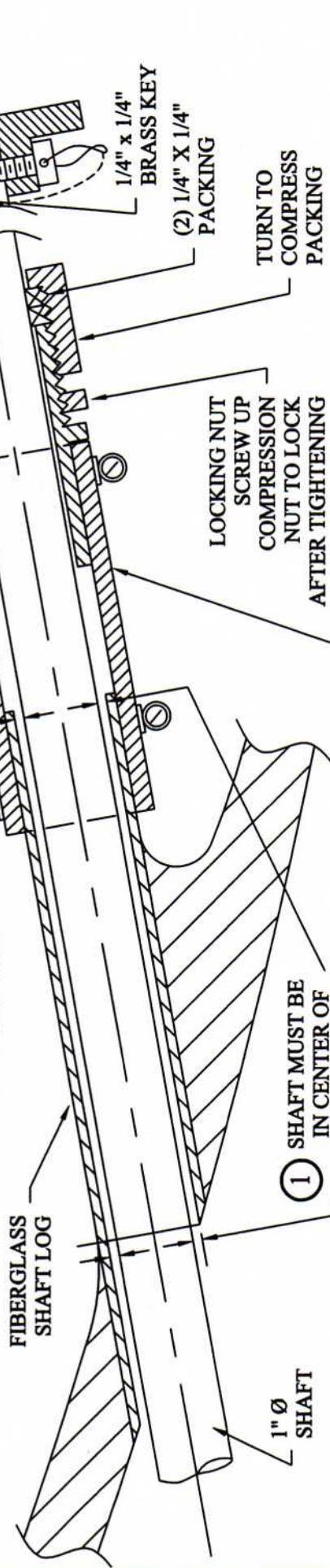
3. Hold the packing nut in place with one wrench, and use the second wrench to bring the locking nut securely against the packing nut. Make certain that the locking nut is tight. Failure to do this could allow the packing nut to back off when the engine is operating.
4. Operate the engine at slow speeds in forward and reverse and use a light to check for excessive water at the packing nut. Shut off the engine and recheck packing for proper drip.

REV	DESCRIPTION	APPROVAL	DATE
0	ORIGINAL RELEASE		3/25/86
1	SHAFT ALIGNMENT NOTE ①		12/5/86
2	ADD COUPLING INSTRUCTION		12/30/88
3	ADD "S.S. WIRE"		10/21/94
4	CHANGE TO (2) 1/4" PACKING RINGS		4/2/02

INSTALL COUPLING FLUSH W/ FWD. END OF SHAFT. DRILL SHAFT MIN. 1/8" DEEP (2) PLC'S FOR SET SCREWS. SAFETY WIRE SCREW HEADS TOGETHER AFTER INSTALLATION.



S.S. HOSE CLAMPS (2) EACH END, BARREL SCREWS, OPPOSITE SIDES TYP.



NOTES:

- 1) SHAFT MUST NOT CONTACT GLAND OR LOG, SHAFT MUST BE IN CENTER OF LOG AND GLAND.
- 2) MAINTAIN CLEARANCE BETWEEN ENGINE COUPLING AND PACKING GLAND FOR REMOVAL AND REPACKING OF GLAND.
- 3) PACKING GLAND SHOULD NOT BE OVERTIGHTENED. ONE OR TWO DROPS PER MINUTE IS NORMAL.

1 5/8" ID X 5" REINFORCED HOSE.

LOCKING NUT SCREW UP COMPRESSION NUT TO LOCK AFTER TIGHTENING

TURN TO COMPRESS PACKING

Catalina Yachts
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SCALE: NONE
 DATE: 3/25/86
 APPROVED BY: K.W.N.
 REVISED 4/2/02

PACKING GLAND / COUPLING ASSEMBLY

BOAT: INBOARD MODELS
 DRAWING NUMBER: 250-50006-4

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 X.XXX : ±0.005
 SURFACE FINISH: 6/

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4.4.4 SHAFT ALIGNMENT:

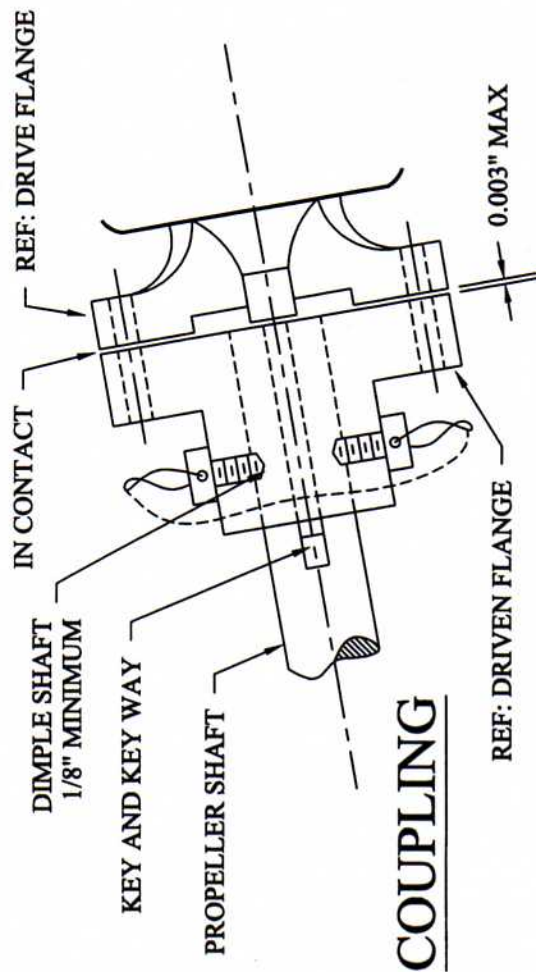
For proper operation of the engine, the propeller shaft and engine must be aligned.

Alignment is gauged at the engine and shaft coupling. Alignment procedures must be done with the boat in the water after the mast is stepped and the rigging is tuned.

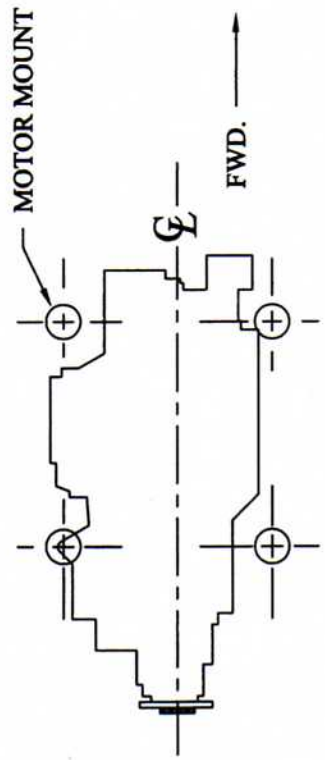
1. Remove coupling flange bolts and check propeller shaft for clearance. Adjust stuffing box so that excessive seepage is prevented, while allowing the shaft to spin freely.
2. Slide shaft away from engine and check coupling mating surfaces. The surfaces must be clean.
3. Slide shaft forward to connect the coupling surfaces. Pilot on transmission flange must align with recess in shaft coupling flange. This is an indication of correct axial alignment.
4. With the coupling flanges in contact, measure the gap around edge of coupling with a 0.003" feeler gauge. The maximum allowable gap at any point is three thousandths of an inch. Take this measurement several times rotating shaft $\frac{1}{4}$ turn each time. Any gap in excess of 0.003" must be corrected by changing the engine position, especially fore/aft tilt. For example, excessive gap at the bottom of the coupling (see drawing) indicates engine is tilted too far aft (front too high). Using a 15/16" open-end wrench, loosen lock nuts on forward motor mount(s). Lower the front of engine by clockwise rotation of the motor mount nuts. Remeasure gap at coupling. A gap at the top of the coupling would require the raising the front of the engine (counterclockwise rotation of motor mount nuts).
5. Pull shaft backwards as in step (2). Again slide shaft forward, rechecking axial alignment as in step (3).
6. Repeat steps (4) and (5) until alignment within tolerance is achieved.
7. Tighten motor mount lock nuts and install coupling bolts.

NOTE: Alignment should be checked yearly, or whenever any excess vibration is noticed. The alignment can also be affected by changes in rigging tension.

REV	DESCRIPTION	APPROVAL	DATE
0	ORIGINAL RELEASE		4/4/02



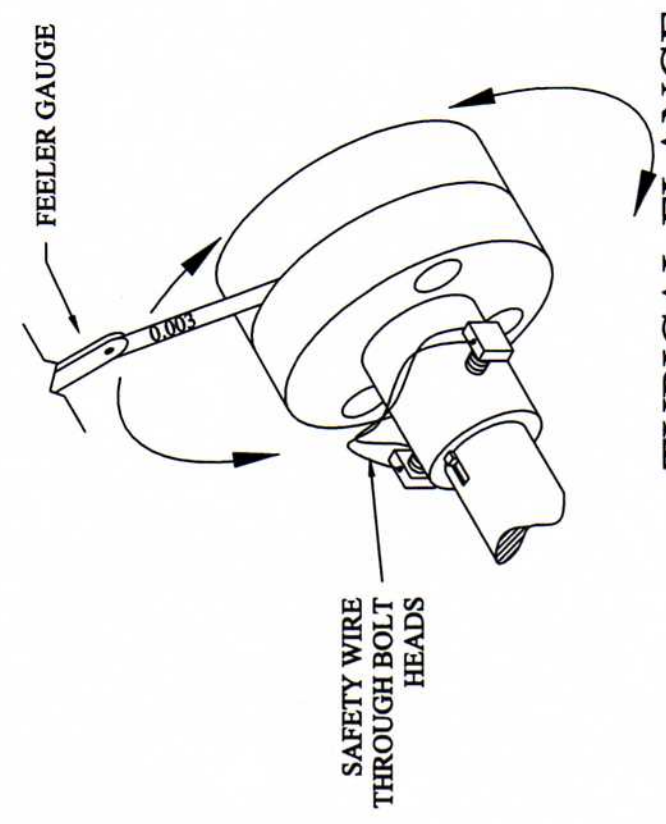
COUPLING



ENGINE PLAN VIEW

NOTES:

- 1) CHECK CONCENTRICITY OF SHAFT AND THE FIBERGLASS LOG BEFORE ALIGNING THE ENGINE TO THE SHAFT COUPLING.
- 2) MEASURE GAP BETWEEN MATING FACES OF COUPLING FLANGES. MAXIMUM ALLOWABLE GAP AT ANY POINT IS 0.003" WHEN ANY POINT OF COUPLING FACES ARE IN CONTACT. TAKE THIS MEASUREMENT SEVERAL TIMES, ROTATING SHAFT 1/4 TURN EACH TIME. THIS MEASUREMENT MUST BE MADE WITH COUPLING BOLTS REMOVED.



TYPICAL FLANGE

Catalina Yachts
 21200 VICTORY BLVD.
 WOODLAND HILLS, CA
 91367 - (818) 884-7700

SCALE: NONE DRAWN BY: K.W.N.
 DATE: 4/4/02 APPROVED BY: [Signature]
 REVISED

SHAFT ALIGNMENT ILLUSTRATION

BOAT: INBOARD MODELS DRAWING NUMBER: 270-58001-0

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
 GENERAL TOLERANCES
 X.XX : ±0.1
 X.XXX : ±0.005
 SURFACE FINISH: 6/

DO NOT SCALE DRAWING

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4.4.6 FUELING:

The fuel system of a Catalina consists of an aluminum fuel tank, fuel feed and return lines, a secondary fuel filter (on engine), an electric fuel pump (on engine) controlled by the engine key switch, a deck fill plate, and an overboard vent through the transom (see schematic).

Refer to the engine manual provided for recommended fuel type. A diesel engine does not require an ignition system and is superior to a gasoline engine in dependency.

Diesel engines depend on a clean supply of fuel because of the close tolerances required by the engine's fuel delivery system, which is intolerant of dirt or water contamination. The engine is supplied with primary and secondary filters that prevent contaminants from reaching the engine where they could cause damage. A fuel and water separator is installed before the engine filter. Check the clear bowl in the water separator filter because, if too full, it can stop the flow of fuel to the engine causing it to stop. Keeping the filters free of dirt and water is critical.

BEFORE FUELING:

1. Extinguishing all smoking materials and check around the fueling area for other sources of spark or flame. Remove any that are found.
2. Shut off the engine and any electrical accessories or devices.
3. De-energize all electrical equipment by turning the selector switch to the OFF position.
4. Close all hatches and ports.
5. Make sure that a fire extinguisher is readily available.
6. Insure that the proper (diesel, not gasoline) hose is about to be used.

WARNING: Do not fuel during an electrical storm. Besides the obvious hazard of lightning, the possibility of static discharge is greatly increased along with the potential for contaminating the fuel.

FUELING PROCEDURE:

1. Remove the fill pipe cover using a proper tool.
2. Place nozzle of fuel hose in the fill pipe. Keep the nozzle in contact with the deck plate rim during fueling to avoid the possibility of a static spark.

3. Fill slowly. DO NOT overfill. If it is not possible to see the meter on the fuel pump, the attendant or crewmember should call out the gallonage from the fuel dock. Filling the tank to only 95% of capacity will avoid overflow problems on a hot day.
4. Replace cover and clean up any spilled fuel. If any rags, etc., were used for this purpose, dispose of them ashore.
5. Check below decks for presence of fumes or fuel leakage. Check bilge, engine space, and main cabin. If fumes or evidence of leakage are found, determine the cause, correct it, and clean up any spillage before proceeding.
6. Open all hatches and ports to ventilate the boat.
7. Switch on battery.
8. The engine should be started only when it is certain that no potentially hazardous conditions exist.

4.4.7 FUEL SANITATION: BACTERIAL CONTAMINATION:

Bacterial contamination of the diesel fuel can cause problems. The bacteria need both water and fuel to exist, and thrive at the fuel/water interface in the fuel tank. As they multiply, they form more water and a filter choking brown slime. Their presence will not be known until rough weather churns up the fuel tank causing clogged filters at the worst possible time. Keeping water out of the fuel will prevent the problem entirely. However, a certain amount of water, due to normal condensation in the tank, is to be expected. Large particulate contamination of the fuel may cause clogging of the screen at the end of the pick-up tube inside the fuel tank. To access and clean the screen, remove the plate at the pick-up tube (attached to the petcock) on top of the tank and withdraw the tube.

FUEL ADDITIVES:

Fuel additives or fungicides provide another means of combating contamination. Additives break the water down to a molecular level, dispersing it throughout the fuel and allowing it to pass harmlessly through the fuel system. Several brands of this product are available at marine stores.

4.4.8 EXHAUST SYSTEM MAINTENANCE:

In-board engine installations on sailboats differ from engine installations on powerboats. The primary difference is that the engine is installed below the waterline of the vessel.

The benefits of these locations are that the weight of the engine is where it will not adversely affect trim and that the shaft is at an efficient angle for powering and minimum drag when sailing.

Engine installations below the waterline require special attention to the design of the exhaust system. The discharged cooling water must be exhausted above the waterline to avoid excessive backpressure on the engine and prevent seawater from traveling up the exhaust line and entering the engine.

To exhaust the engine above the waterline, the discharged cooling water and exhaust gas must be “lifted” to a level above the through hull fitting on the transom.

In a Catalina, the exhaust cooling water and exhaust gas are lifted above the waterline by an “aqua-lift” type muffler. The aqua-lift muffler performs three jobs:

1. It mixes engine exhaust and water to cool the gas and lower exhaust line temperature.
2. It baffles and deadens engine exhaust noise.
3. It creates the pressure required to lift and expel cooling water.

As shown in the illustration, the inlet tube into the aqua-lift is short and the outlet tube is long, near the bottom of the tank.

As water accumulates in the bottom of the tank, exhaust gas pressure builds in the top of the tank. This forces the cooling water up the exit tube and through the exhaust line overboard.

The system requires exhaust pressure in the tank to function. When the starter motor is turning over, before the engine fires, water is being pumped through the cooling system by the belt driven cooling water pump. It is very IMPORTANT not to operate the starter motor for more than 30 seconds if the engine does not fire. Should it be necessary to operate the starter motor more than 30 seconds, water must be drained from the aqua-lift by opening the drain at the base of the aqua-lift. The drain valve may be opened until the engine fires, if desired.

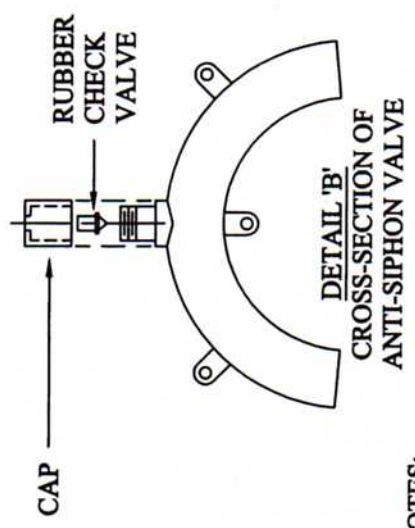
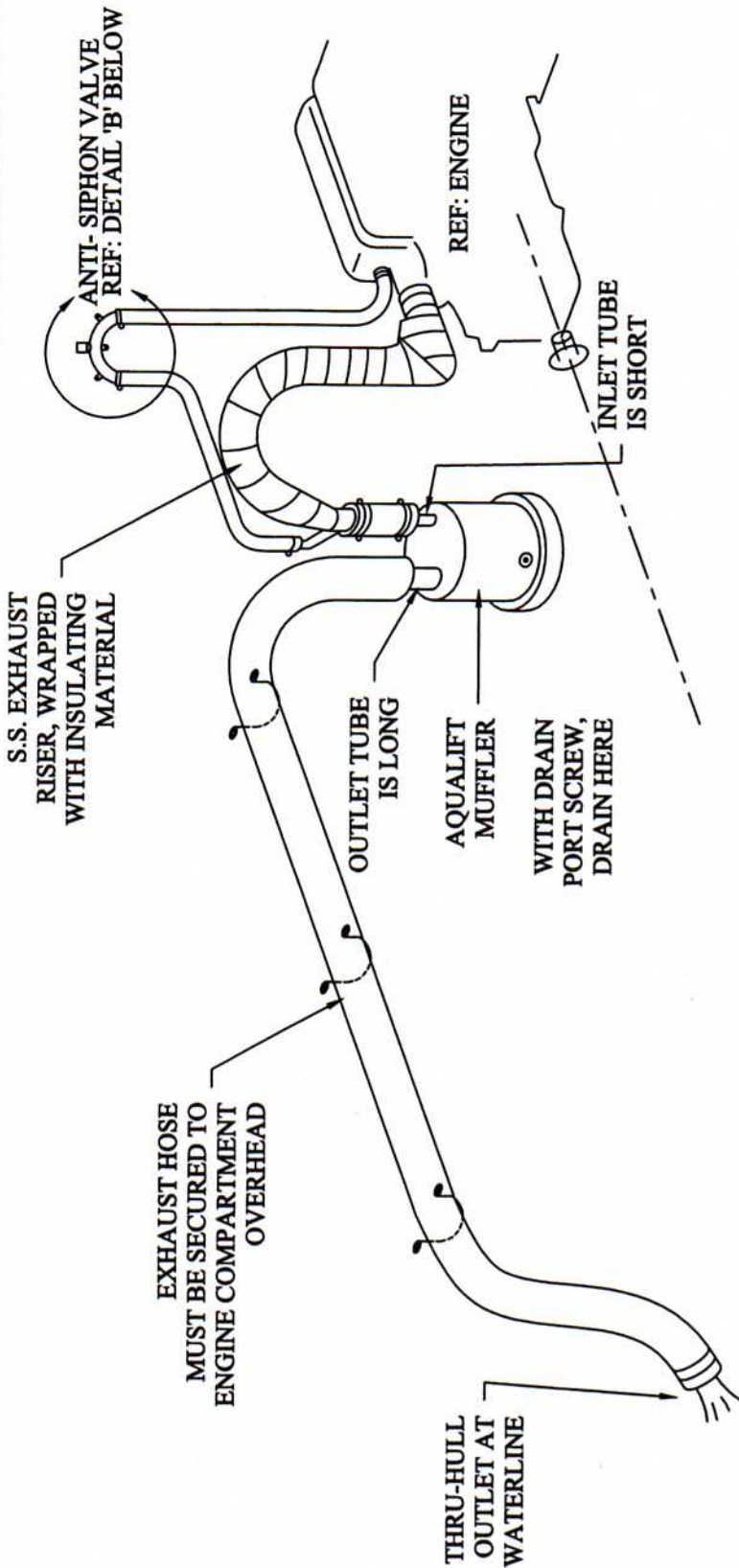
All Catalinas are equipped with anti-siphon valves as an additional precaution to prevent cooling water from entering the engine. Refer to illustration "B" for a detail drawing of the anti-siphon valve. The anti-siphon valve prevents cooling water from being siphoned through the through-hull valve and engine cooling system and into the aqua-lift muffler when the engine is not operating.

WARNING: If the muffler were to fill completely with water, the water would travel up to the inlet tube and enter the engine block.

The Catalina exhaust system is basically simple and will provide trouble free service if you perform regular maintenance and inspection. The important points to remember are:

1. Close the engine cooling water through hull valve when you are not operating the engine.
2. DO NOT operate the starter motor for more than 30 seconds without draining the aqua-lift muffler.
3. Periodically disassemble the anti-siphon valve. Be sure the valve is not fouled with salt deposits and that it opens freely under cap.
4. Check the operation by removing the valve and:
 - A. Put a finger over one large hole and blow through the other. Air should not escape through the cap.
 - B. If you suck through one large hole with a finger over the other, air should enter the valve through the cap.

REV	DESCRIPTION	APPROVAL	DATE
0	ORIGINAL RELEASE		4/9/02



NOTE: THIS IS A PERSPECTIVE SKETCH INTENDED TO ILLUSTRATE THE APPROXIMATE RELATIONSHIP OF COMPONENTS. IT IS NOT TO SCALE.

NOTES:
1) INSPECT AND CLEAN ANTI-SIPHON VALVE MONTHLY.

Catalina Yachts
21200 VICTORY BLVD.
WOODLAND HILLS, CA
91367 - (818) 884-7700

SCALE: NONE
DATE: 4/9/02
DRAWN BY: K.W.N.
APPROVED BY: REVISED

EXHAUST SYSTEM ILLUSTRATION

BOAT: INBOARD MODELS
DRAWING NUMBER: 270-59001-0

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
GENERAL TOLERANCES
ANGLES : ±0.5°
X.X : ±0.1
X.XX : ±0.01
X.XXX : ±0.005
SURFACE FINISH: 6/

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4.5.1 EMERGENCY TILLER:

It is recommended that the skipper and crew become familiar with the emergency tiller and its use.

The emergency tiller should be stored in a convenient location, known to everyone operating the boat.

A dry run of the system will minimize confusion in an emergency:

1. Locate the emergency tiller.
2. Remove the wheel. Keeping a wrench handy for this purpose is a good idea.
3. Insert the emergency steering tiller in the rudder post cap.

NOTE: The emergency steering tiller moves the whole steering, including cables and quadrant. These elements must be free to move in order to steer the boat.

4.5.2 MARLINE RUDDER BEARINGS AND PACKING GLAND:

The non-metallic bearing system is designed to operate with no lubrication other than water.

- Specifically, no lubricants such as: petroleum grease, WD-40, aerosol, or paste, silicon gel, Teflon gel, or lanolin paste. ONLY WATER.

In the event that leakage occurs around the rudder shaft at the packing gland, it is time to take-up on the packing. Observe the following procedures:

1. Over-tightening the take-up will result in stiffening the steering system.
2. The take-up must be equal at the bolt locations around the shaft. If not, stiffening will occur.
3. The proper amount of take-up should permit an occasional drop or two to weep out when the shaft is being turned.

4.5.3 PEDESTAL STEERING ASSEMBLY AND MAINTENANCE:

See the two (2) pages supplied by Edson International in the owners packet.

1. PEDESTAL STEERING ASSEMBLY (pg. 1)
2. PEDESTAL STEERING MAINTENANCE (pg. 2)

4.6.1 GALLEY STOVE:

There is a provision for a gimbaled stove with oven in the galley area. A two burner LPG stove with oven is a factory standard installation. It comes with an operation and maintenance booklet provided by the stove manufacturer. The standard LPG gas bottle is located in a vapor-tight container. The container is fitted with a drain and vent fitting on the transom. Keep these clear at all times.

A few additional points of operation for the standard LPG stove are below:

It is recommended that every time the LPG tank valve is opened for use, the operator close the valve and watch that the gauge needle remains constant. The gauge should read approximately 110 PSI. If you detect the pressure falling over a 15 minute period of time, there is a leak. LEAKS CAN BE DANGEROUS.

In the event of a leak:

- a. If a leak occurs, check all appliance burners to see if they are in the "OFF" position.
- b. Make sure the oven is in the "OFF" position.
- c. Check all fittings with a soap and water solution.
NEVER USE A FLAME TO CHECK FOR LEAKS.

If you cannot find the leak, contact the stove manufacturer promptly.

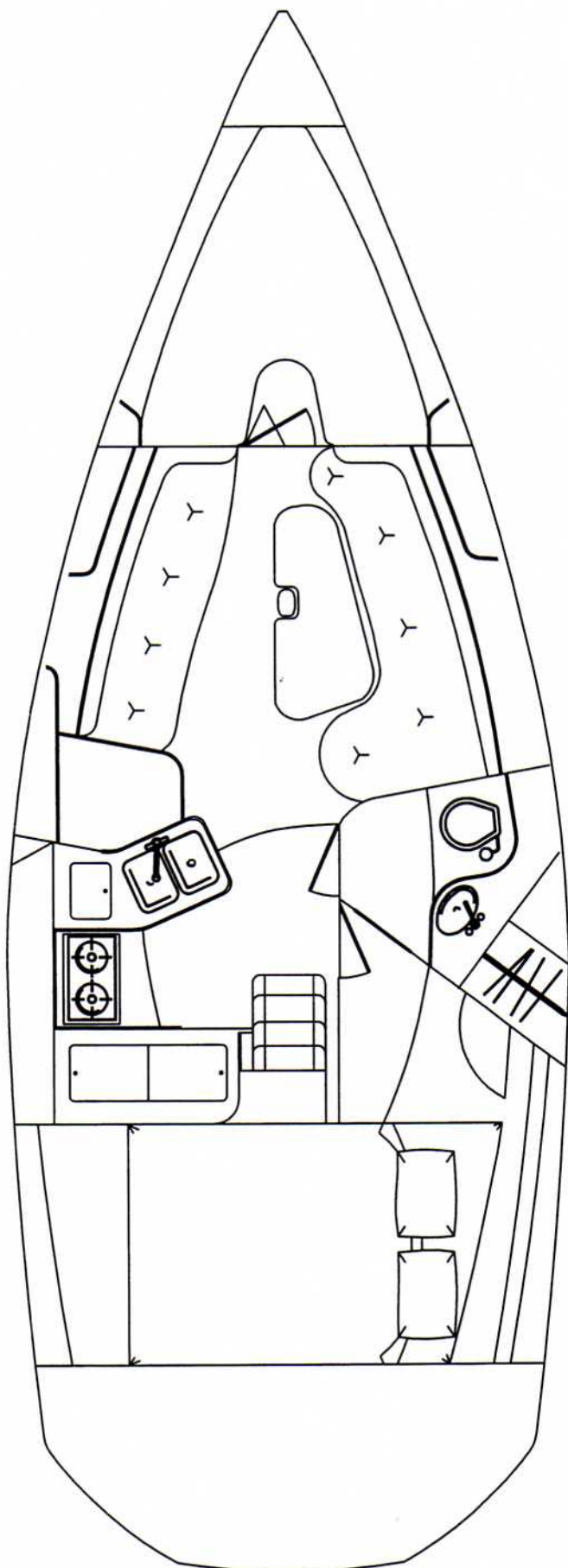
To light the oven: light the right front burner to bleed air from the system for at least one (1) minute. Turn the temperature control knob from the "OFF" position to the "PILOT ON" position. After this has been done, light the pilot in the oven (constant pilot).

After the oven is lit, turn the oven temperature control knob to desired temperature.

Notes on Solenoid: The solenoid must be turned on to test gauge for leaks. Both the solenoid and the tank valve must be turned on to receive fuel. The solenoid is an electrical device for turning on or off the fuel from inside the cabin at the electrical panel.

Points to remember: All stoves have been safety tested, however, it is wise to remember to never leave the boat when oven or burners are on. Turn off the tank when you leave the boat for more than one or two days. Always blow out the pilot light when you will be away from the boat for more than two days and check for leaks when you open the tank.

REV	DESCRIPTION	APPROVAL	DATE
0	ORIGINAL RELEASE		4/10/02



ACCOMMODATION PLAN CATALINA 320

Catalina Yachts
 21200 VICTORY BLVD.
 WOODLAND HILLS, CA
 91367 -- (818) 894-7700

SCALE: NONE
 DATE: 4/10/02

DRAWN BY: K.W.N.
 REVISED

APPROVED BY:

ACCOMMODATION PLAN

BOAT: CATALINA 320
 DRAWING NUMBER: 320-40001-0

UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES

GENERAL TOLERANCES
 ANGLES : +0.5°
 X.X : +0.1
 X.XX : +0.01
 X.XXX : +0.005

SURFACE FINISH: ϕ

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5.1 WINTERIZING YOUR ENGINE:

LAYING UP:

In cold climates where yachts are decommissioned during the winter, your Catalina may be safely stored in the water, provided adequate measures are taken to prevent ice damaged to the hull. Check with your yard to determine the feasibility of storing in the water.

When the boat is to be stored on land, the mast may be left stepped on the deck. However, it is recommended that the mast be removed at the time of hauling for a thorough inspection and preparation for the next season.

This allows plenty of time over the winter months to order and replace the shrouds or rigging parts needed, avoiding any delays in spring commissioning.

AFTER HAULING:

1. Wash bottom, removing growth (where permitted by environmental regulation).
2. Wash topsides, deck, and all other exterior fiberglass surfaces. Wax all except the nonskid surfaces.
3. Remove all sails. Follow sail maker's instructions, in regard to cleaning. Schedule any repairs required and store in a dry place.
4. Remove all sheets and lines; clean and store in a dry place.
5. If the mast has been removed from the yacht, remove all stays and shrouds from the mast. Wash the entire stay or shroud assembly, using fresh water and a stiff brush. Dry thoroughly, and coil into large non-kinking coils, and put in a dark colored plastic bag to protect them from sunlight if storing outdoors. Lash them to the mast. Store the mast either inside or outside with adequate support along its length.
6. If the mast is to be left in place, remove the boom, clean and store as described before. Clean shroud/stay end fittings, toggles, etc using fresh water and a stiff brush. Apply a light coat of silicone grease, paying particular attention to the end fittings where they connect to the stays and shrouds.
7. Clean and lubricate all deck hardware that contains moveable parts. Follow manufacturer's instructions on winches.

8. Remove all gear such as books, documents, bedding, PFD's, and anything moveable that is subject to rust, corrosion, or mildew.
9. Remove all food supplies from lockers or ice chest. Wash out ice chest interior with a weak solution of Clorox. Leave ice chest lid open.
10. Stored batteries should be fully charged, and both positive and negative terminals should be disconnected. The batteries may be either left aboard or stored in a cool, dry place. Sub zero temperatures will not harm a fully charged battery. A bilge pump should be provided power if wintering in the water.
11. Close all manual shutoffs for the stove fuel system.
12. Winterize the head system in accordance with the manufacturer's instructions.
 - A. Empty the holding tank and flush it out with fresh water several times. Add a holding tank chemical.
 - B. Pump all the water out of the head.
 - C. Shut off the head intake through-hull.
 - D. Remove the head intake line from the through-hull. Put it in a container of potable water and pump it through the head. (Do not use ordinary anti-freeze.)
 - E. Reconnect the intake line to the through-hull.
 - F. Shut the discharge through-hull (if applicable).

IMPORTANT: Always follow the manufacturer's instructions whenever possible for winterizing the head system.

13. Hot and cold water system:
 - A. Empty the water tanks as much as possible. (There will always be a small amount of water left.)
 - B. Add a potable water anti-freeze, sold in marine and RV stores (DO NOT use ordinary anti-freeze, it is toxic), to water tank and a small amount of water. Pump this water/anti-freeze through the water lines to all faucets. DO NOT forget to pump some from both tanks, if the boat has two. Also drain the pumps.
 - C. Close the sink drain through-hull, or plug the sink, if the through hull is above the waterline.

IMPORTANT: Always follow the manufacturer's instructions whenever possible for winterizing the hot and cold water system.

14. Remove all electronic gear that may require servicing during the winter.

15. Remove fire extinguishers for weighing, checking, and any necessary recharging. If an automatic fire extinguisher system is installed, return the cylinders to the yacht and reinstall as soon as possible.
16. If cushions are left aboard, bring cockpit cushions below and place all cushions on edge to encourage ventilation.
17. Leave all interior lockers open to encourage ventilation.
18. Insure that cockpit and deck scuppers are open and free.
19. If the boat is to be covered, insure that cover is installed in such a way as to provide adequate ventilation and that the cover is not permitted to chafe against the hull or deck.
20. If the boat is not covered, ensure that mechanisms, such as winches and steering pedestals, are provided with adequate covers.
21. If the mast is to remain stepped, snug all shrouds and halyards to minimize noise and wear.

GENERAL NOTES:

We recommend the following procedures be followed when storing the yacht for prolonged winter months. Begin by consulting your authorized dealer about storing the boat in or out of water in freezing climates. If at all possible, the manufacturer recommends keeping the yacht in dry storage for severe winters.

All through-hull fittings should be drained and closed off. Water in the sanitation system and other tanks should be pumped out. Fill the lines and fittings with anti-freeze to prevent water from running in and freezing or expanding and cracking the lines and fittings.

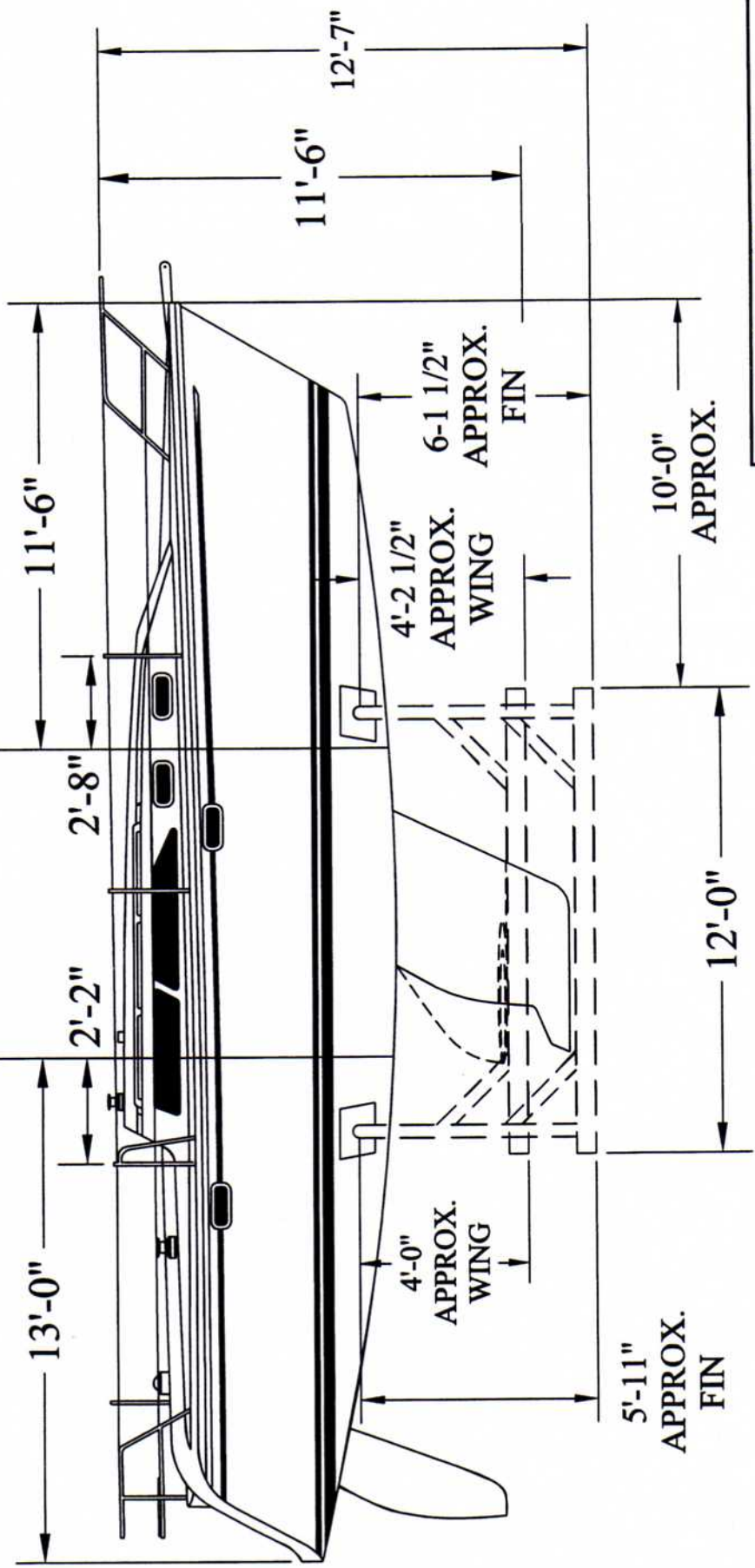
For diesel engines, consult the manufacturer's manual for special instructions.

Unless the manufacturer's manual states otherwise, drain the block, disconnect the water hose from the through-hull fittings, attach an additional length of hose, and place the end of this hose in a bucket of anti-freeze. Run the engine until straight anti-freeze comes out of the exhaust line. Stop the engine at this point, plug or cap the exhaust line, and remove the additional hose and bucket.

REV	DESCRIPTION	APPROVAL	DATE
0	UPDATED DRAWING		4/19/02

LIFT
HERE

LIFT
HERE



Catalina Yachts
21200 VICTORY BLVD.
WOODLAND HILLS, CA.
91367 -- (818) 894-7700

SCALE: NONE
DATE:

DRAWN BY: K.W.N.
REVISED 4/19/02

APPROVED BY:

LIFTING LOCATIONS

BOAT: CATALINA 320
DRAWING NUMBER: 320-90002-1

UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES

GENERAL TOLERANCES
ANGLES : ±0.5°
X.X : ±0.1
X.XXX : ±0.005
SURFACE FINISH: 6/

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NOTES:
1) CRADLE DIMENSIONS ARE APPROXIMATE
AND WERE MEASURED FROM THE BASE
OF THE CRADLE TO THE APPROXIMATE
CONTACT POINT OF THE PAD WITH THE
HULL.

6.1 GENERAL SAFETY TIPS:

1. DO NOT venture out when the weather conditions are unfavorable or are predicted to become so. Listen to weather forecasts, check with your Harbor Patrol office, and look out for small craft warnings.
2. Be especially careful in areas where there may be commercial shipping traffic. Keep well away from shipping channels. Keep a sharp lookout when crossing the shipping channels.
3. Learn to follow the rules of the road. All other sailors will expect that you know them and abide by them. The U.S. Coast Guard (BBE-2), 400 S. Eleventh Street, SW, Washington, DC 20590, will supply free literature on this. Your local branch or Harbor Patrol office may have it available too.
4. If your boat has a Genoa sail that obscures the helmsman's vision, have a dependable person in the crew keep a sharp lookout under the Genoa sail for traffic.
5. When sailing at night or in heavy weather, provide safety harnesses for yourself and your crew, and tie these lines to the boat. Use approved harnesses.
6. Purchase all Coast Guard required safety equipment and learn how to use it.
7. Enroll in a Coast Guard class or other certified boating and sailing class. You will learn a lot and enjoy sailing even more.
8. Do not take more than a safe number of persons aboard your boat when sailing.
9. Marine insurance is worth every penny you pay for it. Take out insurance from the start. See your dealer for a recommended marine agent if you do not have one.
10. Keep all seat hatches and main hatch closed during rough weather or gusty winds that could unexpectedly strike the boat and cause a knock down.

CAUTION: The aluminum mast and the metal parts conduct electricity. Coming in contact with or approaching an electrical power line can be fatal. Stay away from overhead power lines and wires of any kind when launching, underway, or when stationary.

6.2 REQUIRED SAFETY EQUIPMENT:

FIRE EXTINGUISHER:

It is wise to have a minimum of three, approved for marine use, fire extinguishers on board, one for forward of the galley, one behind the galley, and one below the cockpit hatch. Should a stove or engine fire start, you can always reach a fire extinguisher.

For example, you do not want to locate all of your extinguishers in the bow area because if you were located in the cockpit, you would have to get by the danger area to reach them.

Dry chemicals extinguishers should be inverted occasionally to prevent the contents from packing. Extinguishers should be recharged yearly or after each use, according to manufacturer's recommendations.

LIFE VESTS:

Keep a Coast Guard approved life vest aboard for each crewmember. Wear them during rough weather and night sailing. Children should wear vests at all times no matter how much they may object.

HORN:

Your yacht should be equipped with a horn capable of producing a blast that can be heard for a distance of one mile.

FLARES:

The law requires that your yacht be equipped with a minimum of 3 day/night flares.

6.3 SUGGESTED SAFETY EQUIPMENT AND SAFETY PACKAGE:

MEDICAL KIT:

A basic medical kit is a wise investment for any boat owner. Suggested items include: Motion sickness pills, aspirin, bandages, etc. We recommend that you personalize your medical kit with supplies for you and your crew's specific needs.

TOOL KIT:

A varied arrangement of tools is, again, a wise investment to have on your boat. Tailor your toolbox for the conditions in which you sail. For local sailing, with professional help just a phone call away, you only need a small array of tools. However, for long range cruising, a more extensive supply of tools will be needed.

6.4 SAFETY PACKAGE, FACTORY OPTION:

Package Includes	Description
1 EA	West Marine TR-22 Anchor
20 Ft.	Acco 5/16" Galvanized Hi-test Chain
1 EA	New England 1/2" x 250' Anchor Line
2 EA	3/8" Galvanized Anchor Shackle
2 EA	Taylor 8" x 20" Big B Fender
2 EA	New England 3/8" Fender Line (2 x 7')
1 EA	Sterns USCG app. White Throwable Cushion
1 EA	Aluminum Folding Radar Reflector
1 EA	Orion Star Tracer Meteor Flare Kit
1 EA	Orion Red HH Flare – 3 pack
1 EA	Tempo "Nature Safe" Signal Horn
2 EA	Kidde 10BC Fire Extinguisher
1 EA	First Aid Kit
1 EA	Halogen Flashlight w/ Batteries
6 EA	Kent USCG app. Type I Foam Life Vest
1 EA	Chapman's Piloting & Small Boat Handling
4 EA	New England 5/8" x 25' Dock Line
1 EA	Beckson Yacht Log Book

(Contents, manufacturer, and model are subject to change at any time, without notice)

6.5 ANCHORS, ANCHORING, AND MOORING:

The manufacturer suggests an anchor in the 22-pound range to be used as a bow anchor in ordinary conditions. Under adverse weather conditions, a heavier bow anchor could prove necessary. The Neilsen Maxwell windlass installed on your Catalina 320 is designed for ACCO 5/16 inch high tensile chain spliced to 1/2 inch three strand nylon line. Inquire in your local area about anchoring procedures relative to the place you plan to visit. Get the opinions of several experienced people and always play it on the safe side in "making up" your anchor and in using it. DO NOT forget to wire all shackle pins so they cannot come loose under water.

REMEMBER: Lighter anchors are made more effective by increasing the scope, i.e., the ratio of length of line and chain to depth of water. A 7:1 ratio is recommended. This means using 7 feet of anchor line for each foot of water depth.