



## TECHNICAL NOTES

**Catalina 310 Technical Editor Bill Lewis**

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wol1@yahoo.com

*I am pleased to have been selected as the new C 310 Technical Editor. Though the basic criteria may have been simply a willingness to accept the position, I am an engineer and a tinkerer and have been*



*around boats all my life. I presently own hull #73 and previously owned an '89 Catalina 22. I have crewed and won many races on a Catalina 30 and a Catalina 27. You may*

*start to gather that I am a Catalina fan. I have sailed in areas around the world, though I have never made a crossing. My hope is to help the owners of the C 310 to improve, maintain and most of all enjoy their boats. Sending me your tips, tricks and improvements, as well as your questions, will allow all of us to benefit. Lets go sailing.*

### Autopilot Installation

Dear Bill:

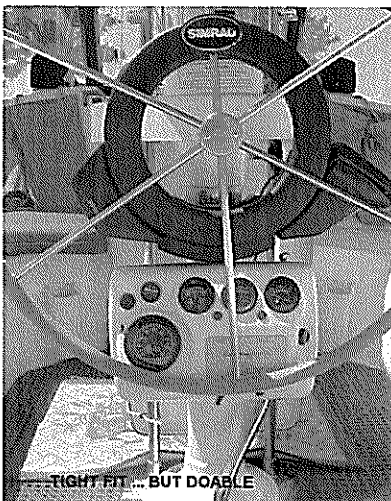
As an introduction I'm Jim Gilmore and the owner of hull # 4 out of Newport, RI. This is my first new boat and being what I consider a "hard core" sailor who doesn't need any of the marvel high-tech electronic devices; I didn't select such options with the purchase of the boat. As a side note, my bride Daisy would wave off the "hard core" comment and just say I was too cheap (but don't believe a word of it). In any event, these marvels of high-tech are slowly finding their way onboard and the installation of an autopilot is a recent addition. I added a GPS/Chartplotter first. Ohhh the guilt I have when I use one, much less both.

Through therapy I'm learning to live with myself and I'm getting to like the ability to kick back and relax on one of those stern rail seats with a cool refreshing drink in hand while having some comfort knowing where I am and where I'm going.

The first task was the selection of the autopilot itself. I considered the SIMRAD WP10/WP30 and the RAYTHEON ST4000. I was looking for something under a \$1,000.00, self-contained (preferably a fully enclosed single unit) and easy to install. My ultimate selection was the SIMRAD unit since it best met my criteria. I chose the WP10 which didn't have the GPS/Chartplotter interface (no not because it was cheaper) because no amount of therapy could rid me the guilt of connecting (interfacing) the two together. You've got to get off of that stern rail seat once in awhile, if for nothing else but to get another cool refreshing drink.

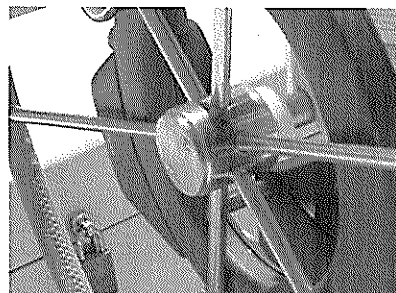
With the selection and purchase of the unit made, now came the "easy to install" part. Unfortunately I ran into a little snag. The pedestal control/instrument panel was in the way, it was too high on the pedestal and needed to be lowered to make room for the autopilot and autopilot mount. Easy enough, I'll just lower it. Then came the next little snag, once lowered the wheel itself rubbed the panel housing. When the panel was higher it didn't have much clearance to begin with (it was tucked in the wheel's spoke area which provided a little more space). Once lowered you loose the clearance because the outer wheel rim sticks out further than the spokes. Bottom line, the pedestal control/instrument panel needs to be lowered approximately 1 1/2 inches and the wheel needs to be pulled out away from the pod approximately a 1/2 inch.

Lowering the panel proved to be easy enough. There was just enough play/movement available with the bottom wiring tube to literally slide the panel down (without having to disconnect wires and cut tubing, etc) and refasten to the pedestal. I only went down as much as I absolutely had to and I didn't physically refasten it to the pedestal until after I installed the autopilot mount.



Pulling the wheel out a 1/2 inch or so was going to be a bit more of a challenge. The way the wheel is configured there's only about a half-an-inch of thread sticking out of the wheel hub for the retaining nut, obviously we wouldn't want the wheel to come off in our hands while sailing. I considered contacting EDSON to see if they made a longer shaft but just the thought of it (expense and work) squelched that idea. My solution: I purchased two white Teflon washers (1" ID x 1/4" Thick) to place behind the wheel

hub to push the wheel out the required distance. I may even have a handful of these washers leftover (several in a package) if someone else is interested in doing this. I took the wheel to a local machine shop and had them drill and tap the hub for two setscrews that I use to secure the wheel to the shaft. Then to dress the project up (without the shiny retaining nut the exposed wheel hub and shaft end looked unfinished) the machine shop made a stainless end cap which was secured to the wheel with two screws (they also drilled and tapped those).



Presto, control/instrument panel moved down, wheel pulled out and autopilot installed. I took my power for the unit right out of the control/instrument panel (since it was so convenient) which I included an in-line fuse and toggle (on-off) switch. I'm happy to report it's working great. To hell with therapy today, I'm going sailing. -Jim

Dear Jim:

*As I have been considering the SIMRAD WP10/WP30 as well, your instructions are very helpful. I did contact Edson and they will make a custom axle for this application. The price of the part is \$195.00 and the part number is 960-B-273-A2.5. This would be 7/8" longer and can be ordered from Edson or the local chandlery. Edsons web site is [www.edsonmarine.com](http://www.edsonmarine.com).*

### Routine Inspection for Safety

Dear Bill:

There is a bulkhead aft of the engine w/ 3 holes on the port side through which various wires, hoses, etc. pass through. The top hole has the fuel line, return fuel line, and the engine ground (green wire in black cover) coming through. On my boat, Hull No.49, these items, as well as the cooling line which leads to the vented loop were strapped tightly against the 90° Ell which goes from the exhaust manifold to the insulated U riser in which raw water is injected. The problem is the proximity of the wire/hoses to the 90° ell. This ell gets very

hot when the engine is run. I found the cover on the green grounding wire completed melted through, although I caught it before the wire was damaged. Moreover, the raw water cooling hose is burned significantly, although not all the way through. I repositioned all of these wire/hoses to provide ? 1" of clearance from the manifold ell. If I can find some asbestos, unlikely, I will place it below the ell to insulate further. Needless to say, the failure of any of these components while under way, and not immediately discovered, could be extremely serious. —John Richards

Dear John:

This is a very important safety consideration. According to Gerry at Catalina this is a condition that exists on a limited number of hulls, the problem has been rectified in later hulls. I have hull #73 and these wires and hoses are run through a slot well away from the exhaust manifold. Your solution is a good one, however asbestos is a Hazardous Material and the use of it should be avoided. However, heat dissipation around the manifold is preferable and keeping wires and hoses well clear is the best solution.

*Catalina recommends that all owners inspect hoses and wires regularly for wear, chafe and abrasion.*

## Watch Your Fingers

On my boat, Hull #73, I found that with the galley flip out draw opened, and full, there was a tendency for the draw to want to snap shut. A small modification can solve that problem. If you open the draw and look at the upper left corner of the back panel you will find a 1 inch white plastic strip fastened with a single screw. This stop keeps the draw from opening all the way and spilling the contents.

To solve this problem, simply remove the screw and plastic strip. Refasten the plastic strip on the backside of the draw opposite from its current location. This area can be accessed from inside the sink cabinet. This will put the stop behind its original location and allow the draw to open an additional 1/2". This is just enough to let the weight of the contents hold the draw open. Of course this is fairly in effectual on a port tack in 10+ knots of breeze. Be sure to fill the old hole with a little white 4200 caulk to keep the moisture out of the wood.

'Til next time. —Bill Lewis

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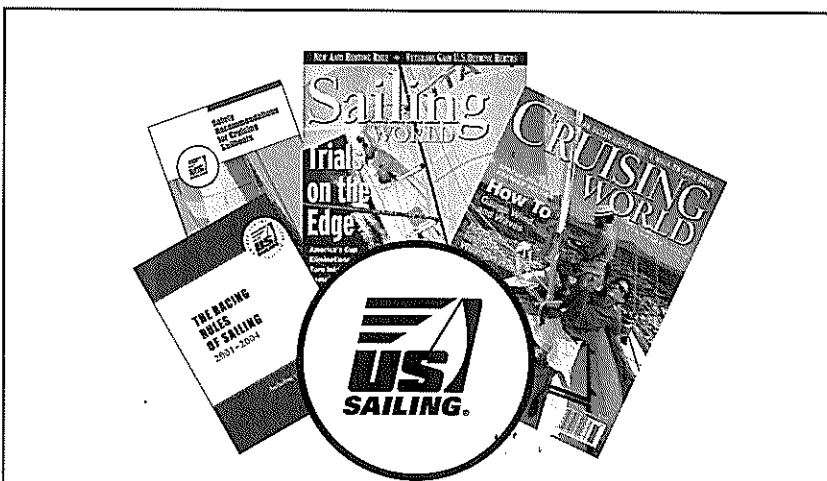
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- *Who Says She Can't Say That* where Mel Neale who tells it like it is from the woman's perspective after years of suffering—er living—aboard with Tom (who said that?)

The editorial offices are aboard a 53' motorsailer which voyages around 5000 miles a year in the cruising area it serves. (Its business office ashore has a toll free number: 877 277 4628. The publisher and editor, Tom Neale, creates each issue aboard, underway, and writes for it, as does his wife, Mel. They both began cruising in the 50's, and in 1979 left their shoreside professions and moved aboard to cruise full time. Since then they have been on the go cruising continuously in this area. Tom is also the Editor at Large, On Watch columnist, feature writer, and Boat of the Year judge and Coordinator for *Cruising World Magazine*, as well as Contributing Editor for *Southern Boating* and author of two books. Mel is Field Editor for the *Waterway Guide*. They both lecture extensively on this subject area throughout the US. The many others who write for *Cruising Coast and Islands* are cruising themselves, or going through the experience of preparing for it. **Recommended by *Practical Sailor*. *Cruising World* said, we "love it!"**

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# Catalina 310

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## Draining the Engine Bilge

Dear Bill:

I am concerned over the inability to drain the engine bilge and the following problem of not being able to drain the water upstream of the stringer aft of the main Bilge. The drain tube passing through the stringer is approximately one half of an inch above the hull.

For the engine bilge I suggest drilling a one half inch hole in the forward facing wall of the engine bilge and installing a small valve that would allow for a controlled release of the fluids captured in the engine bilge. This would be mounted as low as practical in the forward wall of the engine bilge.

For the drain pipe in the stringer I would suggest that a hole be drilled below the other existing pipe and a second one half inch pipe be installed allowing all of the water to flow from behind the stringer.

P.S. I have the Raytheon 4000 ST Autopilot.

Dear Ed:

Let's address these issues separately, beginning with the engine bilge. The intent of this separate bilge is to keep engine oils and anti freeze from inadvertently getting into the main bilge and being pumped overboard, as I know you are well aware. If you are getting a significant amount of water in the engine bilge you may want to first check that you have no leaking hoses and that the packing nut on the shaft seal is tightened to the specified drip rate. There should not be a significant amount of water in this bilge. As for adding a hole and a valve you need to consider the fact that you can not easily access the main bilge side of the engine bilge wall so that your valve would have to be mounted on the inside of the engine bilge for access. This may be practical for draining water only or water with oil floating on top, but you can not be certain that there are no contaminants, such as anti freeze, in this water. An alternative may be to pipe the outlet to a convenient location for a container to capture the hazardous fluids and then empty the container.

My personal preference is to drill no holes in the engine bilge, but rather keep a basting bulb (available at any grocery store) handy for use each time you check your engine, which should be daily when in use. The fluid can be easily put into a plastic bottle and disposed of

properly. This is certainly a low cost and simple solution that requires no maintenance and no breaching the integrity of your factory fiberglass.

As for the stringer and the water that collects behind it I would suggest that you do not drill additional holes in this structural component. The existing pipe was glassed into place, not drilled and placed. I would suggest that you first dry and clean the area where water accumulates. Next use a flowable epoxy material and simply fill the small area behind the stringer up to the level of the existing pipe. Because of the curvature of the hull this will be a limited amount of material, will not add significant weight and may improve the strength in this area. I suggest either an epoxy resin or an epoxy fairing compound from your local marine store.

## Design Considerations

Dear Bill:

I have 2 "design" concerns with my hull #147. One is the Sherwood pump on the M-25XP engine. I have not replaced the impeller; but it seems like a difficult job in comparison to either the old Sherwoods or Obendorfers with the flat cover plate. Does anyone consider replacement of this impeller a reasonable task?

The other is the port jib sheet rubbing on the combing and slipping up under the factory dodger on anything but a close hauled course with a stiff wind. With my factory 135% genoa, car needs to be fairly far forward to get the telltales to break evenly up the luff. This pulls the sheet against the foot of the dodger and back over the combing. The bigger boats have turning blocks aft of the winches to fair the approach. Comments?

Dear Peter:

It appears that you are in good company in that a number of owner's consider the water pump arrangement to be less than desirable. However, speaking from personal experience after a 30 minute R/R of the impeller, I did not feel that it was that difficult and required no special tools or tricks.

As for the jib sheet rubbing the combing one suggestion made by another C310 owner is to add an additional jib sheet car that could be use at the aft end of the track. It would need to be fairly tall, and probably not pivoting. A turning block aft and outside of the winch is practical, but would need to be elevated as well.

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## Making Space

It is an ongoing challenge to find more storage space in your boat. Many times it is just minor modifications will provide more storage space or simply better access. Beginning with this issue I am introducing "Making Space" with ideas for getting more out of your C310.

I have hull # 73. Somewhere after hull # 49 and prior to hull #102 Catalina used a single leaf door leading to the forward stateroom. Early models had a bi-fold and the latter models now have a single leaf in a frame, similar to the door to the head. For those of us in the middle I am sure that you have found the single leaf door is always in the way and rubs on the edge of the bed when open. One option is to remove the door. Another option is to buy the early model bi-fold, but I am cheap so I rebuilt the single leaf door into a bi-fold. Here is how it was accomplished.

You will need some carpentry skills, a table saw and a router. Remove the single leaf door from the boat and take it to your shop. Remove all of the Hardware. Recognize that this door is of rail and stile construction, with solid panels as filler. The rails are the vertical edge frames and the stiles are the horizontal edge frames.

Strike a mark from top to bottom along the centerline of the door and carefully cut the door in half as shown in figure 1. Use a good sharp cross cut

blade. On the rail, that held the latch hardware, strike a line from top to bottom 1 1/8" from the panel side of the rail and carefully cut along this line. Set these parts aside and set up the other half of the door for cutting. Strike a line from top to bottom on the rail 1 1/8" from the hinge side of the rail and carefully cut along this line as shown in figure 2. You now have 4 pieces as shown and numbered in figure 3.

Now route slots top to bottom in the panel edge of the latch hardware rail, part #1, and the panel edge of the freshly cut rail from the hinge side of the original door, part #4. The groove should be 1/2" wide, to match the thickness of the panels and about 1/16" deep. The stiles that were cut in half, as a part of the first step of this operation will need to be dado cut to match the groove in the new rails. Reassemble the pieces as shown in figure 4 using waterproof wood glue and 2 finishing nails per stile, counter sunk.

You will now have two leaves to make up your bi-fold door. In order to assemble these you will need to buy a set of hinges that match the original set, and a 3/16" x 1 1/4" carriage bolt and a small plastic knob that will screw on to the carriage bolt as the new door knob. Mount the new hinges in between the two leaves, but do not recess the hinges, surface mount them as you will need to make up some of the door width lost in cutting. Reinstall the handle hardware, but instead of reinstalling the original bulky handle use the carriage bolt through the door handle hole and secure

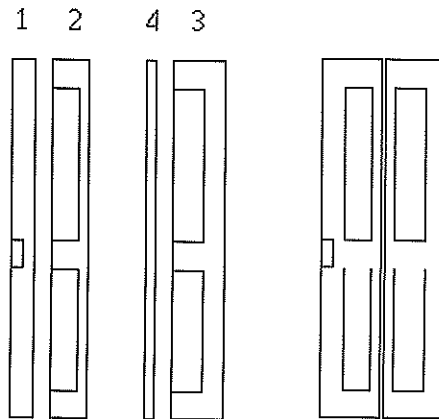


Figure 4

Figure 5

the small plastic knob on the other side. This will allow the leaves to fold tightly together and give you an unobtrusive handle to grab.

Re-hang the door using the original hinges, again surface mounted. Relocate the original tie back hook such that when the door is open and folded the hook will hold the door in position. Apply a Velcro square on the facing surfaces of the door leaves at the top and bottom to hold the leaves together when open.

This will give you a functional door for privacy and better accessibility to the forward cabin and draws.

## Bad Vibrations

Dear Bill:

We recently developed an engine oil leak in our Catalina 310, hull # 115. We had the local Universal/Westerbeke dealer come out and check the engine. He discovered not only a leak from the rear seal, but also that all the hoses to the engine had become dangerously abraded due to the very tight clearances and vibration from the engine. The engine idle was set at 700 rpm, which propels the boat at about 1 1/2 knots, about right for slow steerage way. Upon contacting the regional Universal Representative, my local yacht serviceman was told that the engine rpm's should have been 1000- 1200 rpm to prevent excess vibration and they would not pay to replace the hoses. This speed will propel the boat at about 2 1/2 knots, which is pretty fast when entering a busy marina and considering we have a 8 foot tidal change and approximately 2 knots of current in our area (Hilton Head). If you are going with the current, where are the brakes?

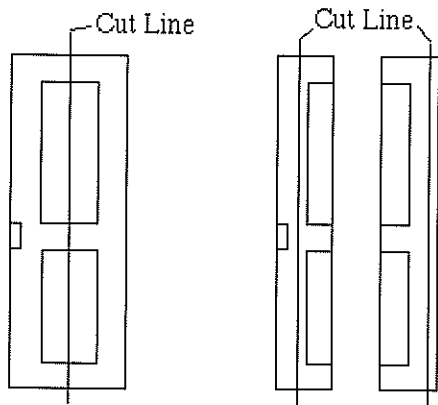


Figure 1

Figure 2

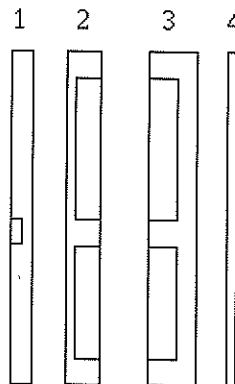


Figure 3

Dear Miss Munley:

This is good information for other boat owners to take note of and check on their own boats. It is regrettable that the RPM's were not properly set, but this reinforces the need for every boat owner to have a working knowledge of their boats. It is also important to point out the most important daily maintenance routine that every boat owner should practice and that is a visual inspection of all the systems on the boat. I pay very close attention to those items that have the potential for allowing water to enter the boat, onboard water system, seacocks, engine hoses and pumps, particularly the bilge pump. That keeps me floating. Next on the list is the rigging, sails, auxiliary and electrical components necessary to propel me to my destination. And last, but not least my safety equipment, anchor, signaling devices, MOB equipment, radio and tools.

I hope that this work gets taken care of to your satisfaction and I will be interested to hear the outcome. Thanks for raising our level of awareness.

As for the brakes, that's the lever on the left and the position marked R.

*Note from Catalina Yachts: The throttle setting are preset at the engine manufacturer and safety wired in place, the low idle is preset at 900 RPMs min. Do not alter these settings, take the engine in and out of gear to reduce speed. -Gerry Douglas*

## Our First Sail on an Almost Ours Catalina 310

The boat is almost ours! The loan company paid the dealer. On Monday after I get the check from the sale of my old boat I will drop by the dealer and finalize everything. Today was to be really our first sail to check out the systems and find out how everything works. Before we left I filled the water tank. We had left the water heater on while we had lunch to see how well it worked. When I came back I turned on the faucet but only a small stream came out.

We left the dock with a full crew including Nancy, my wife and partner, Tim our neighbor and Doug our "teacher", who is a sales representative for Catalina Yacht Anchorage. In the morning, Charlie Segal who sold us the boat showed us where all the thru hull valves were and how things worked. We motored to the fuel dock with me at the helm and filled up with diesel. Heading out the channel we hoisted the main without leaving the cockpit. What joy! On all my other boats, including my last, an Islander 30, you had to go to the mast to hoist the main. Upon reaching the end of the breakwater we put the gear shift in reverse, unfurled the jib and were off and running in about a 12 knot breeze. The boat felt great. The way it sailed reminded us of the 45-footers that we have chartered in the British Virgin Islands. A very solid feel.

Shortly thereafter Doug went into the cabin to get a bottle of water when all of a sudden we heard him yell, S-- we are sinking. He flipped the switch to the bilge pump. We were on the verge of being really concerned when he yelled: the water is fresh! Our friend Tim was given the manual pump handle and instructed how to pump and pump he did. We came about and rolled up the jib and motored back the dealer's dock. After realizing it was not seawater Doug dove into the aft cabin and checked out the hot water heater. The hose had come off. We were relieved, but for a first sea trial the sail was sure eventful.

We have owned 5 boats previously with a Cal 20 being the first. The C310 is the best boat we have ever owned. -Roger Marshutz

*Editor's Note: Roger and Nancy Marshutz did finalize the purchase of C310 hull #164 Zephyr and sail out of Marina Del Rey, CA. When last we spoke they continued to be very pleased with their C310.*

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## Engine Vibration Revisited

*I have received numerous letters indicating that there are a number of C310 owners that have suffered from the fall out of having the engine idle set too low. I want to bring this up again as a warning to all to check your engine idle as the vibration generated from a low idle can destroy a lot of components of your boat. According to Gerry Douglas, Catalina Yachts "The throttle setting are preset at the engine manufacturer and safety wired in place, the low idle is preset at approximately 900 RPMs min. Do not alter these settings, take the engine in and out of gear to reduce speed."*

## Boat Moving

Bill,

I have a C310 with hull # 175. The boat is currently lying at Golden Isle Marina, St. Simons Island, GA. I want to get the boat up to the Chesapeake. I have, however, limited funds. Can you help? Do you have any suggestions? I thank you in advance.

Jerry,

Trucking your boat, assuming you have a wing keel is going to cost about \$1,000 plus the haul out, breakdown, haul in and setup. This does not include wear and tear or your time, but this is the most expeditious. You can find any number of reliable haulers in the sailing rags and yellow pages.

A less expensive way to go may be to have the boat delivered by a captain or better yet, advertise for sea worthy crew and sail the boat to it's new home. You can find reliable captains and or crew in your favorite sailing rag or by advertising. Make sure you interview and check references regardless of which way you go.

## Making Space

The four drawers located under the forward berth provide a large volume of space. However, the drawers have limited access due to the fact that they only open about six inches. I retrofitted the slides on mine with 12" slides. This modification allows the drawers to open to nearly 10" while remaining very sturdy.

The slides that I used were ordered from the on line hardware store at [www.wwhardware.com](http://www.wwhardware.com), model kv84000 full extension draw slides. To retrofit the slides simply remove the drawers one at a time and remove the old slides from the drawer and the cabinet. Install the new slides with the lower edge of the slide aligned with the lower edge of the drawer. Using the slotted holes in the slide install 3/8" # 4 Flat Head SS wood screws, do not use the screws that are supplied with the slides. Locating the receiving slides inside the cabinet is an exercise in patience as the space is cramped and the cabinetwork is likely to be less than square. With some trial and error you will be able to fasten the receiving slides to the cabinet. Again, using the slotted holes in the slide install 3/8" # 4 Flat Head SS screws, do not use the screws that are supplied with the slides. Using the slotted holes allows for some fine-tuning to achieve proper alignment. Spray the slides with WD-40 when you are satisfied with the fit. This will help protect them and make them operate smoother.

Having completed the first drawer you can move on to the next three with increasing speed as you get the methodology worked out. When complete you will have improved the quality and longevity of the hardware as well as increased the usefulness of the drawers.

## A Reminder

Bill,

We have had three or four instances here (one of which was mine) where the steering cables rubbed on the water heater or locked up on something when the clamps slipped. It may be worthwhile reminding owners to check the play in their cables, making sure there are two clamps with lock nuts (my suggestion) on each end of the steering cable, and the clamps are facing in the proper direction. Hope you are out sailing!

Ron,

Installing two clamps on the cables is a good suggestion. Nuts should face out away from sheaves. At risk of being repetitious it comes back to the need to inspect and be aware of the condition of the boat. A failure at sea will not have any different outcome whether caused by the owner's error or something not properly done by the factory or dealer.

## Helmsman's Seat

Bill,

I have Hull No. 049, which came with closed cell cockpit cushions. The helmsman's seat that is part of the set created a very uncomfortable situation when trying to lean back against the swim ladder. The step pads on the ladder present a very sharp surface right in the back. I purchased a Sport A Seat, but as it came, the bottom protruded so far out that it was difficult to stand behind the wheel. I had my canvas man cut off the excess for a modest cost. I secure the back of the seat to the swim ladder with bungees. While not a perfect solution, it is a vast improvement over the former. I single hand with the Autohelm 4000+ most of the time, but still spend considerable time behind the wheel, since I have my 510 Chart plotter and RL 70 Radar pod mounted above and behind the compass. I will send you some pictures in the spring.

## Next Month

Do you have any advice for the refrigerator leaking condensation?

I am very interested in the AC installation - - maybe even a split arrangement with two air handlers, am trying to get info on that also.



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# Catalina 310

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## Air Conditioning Installation

Bill,

I bought the AC unit from Flagship Marine in Florida. Tom was great to work with; he cheerfully answered all my questions and is a neat guy. I would recommend buying from him. The Catalina dealer in St. Louis has installed lots of different brands including Marine Air, Mermaid etc. He said this was the best unit by far that he has seen. It is very well built. In fact Flagship supplies the US Coast Guard with all their AC units. Flagship charges slightly more for their units, I think, but they are very well put together, and worth it. Flagship's number is 800-316-6426, ask for Tom, and tell him that Dr. Quade from St. Louis sent you. I think you'll like them.

The unit I used, the 16,000 Btu, even though the 12,000 Btu would have worked fine, fits nicely in the port lazarette locker, in the forward aspect (Photo 1). I ordered mine with resistance heat since the lake water in the Midwest is very cold in the winter. You can also get reverse cycle heat from Flagship for use in warmer waters. I mounted it on a piece of plywood that I covered with epoxy for water resistance. I used 5200 to glue and seal it onto the floor of the locker. The return air grate/filter was cut into the floor of the locker as far outboard as possible. It sucks return air through the aft birth to keep it cool (Photo 7). I insulated the inside of the lazarette locker so that the outside of it, the part in the cockpit, would not condense water on the surface. I sealed the locker from the hull liner with spray foam. I also made a bulkhead from polyisocyanate board to section off the part of the locker that contains the AC unit from the rest of the locker.

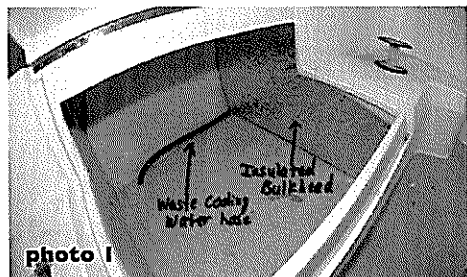


photo 1

I ran, and I did a lot of the work on the installation, the water supply hose through the outboard aspect of the locker floor, down into the storage cabinet in the aft birth, and into the bilge area aft of the engine. I bought the deluxe installation kit because it had better components, including a very nice strainer. I installed the water supply pump and the strainer in the area that Catalina installed the strainer for the engine (Photo 2). I put it right next to it, that way everything is together for winterizing. I put the water intake through-hull next to the other through-hulls that are accessed from the head access panel. That way they are all together. Another good place for the intake through hull would have been next to the engine through-hull. The water waste hose was run to the port aft area to a through-hull in the far stern. I placed a Tee in the head sink drain for the condensate line to drain into. That way I would not have to drill another hole into the side of the boat.

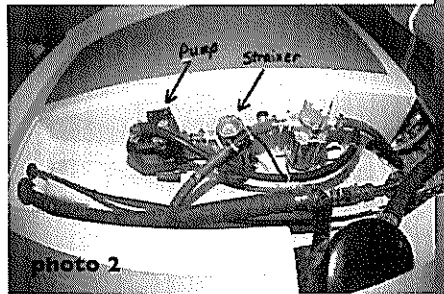


photo 2

I used a 2" duct into the head (special order), I just ran it through the forward locker wall and ended it under the medicine cabinet so that shower water would not enter it, and it really is not visible (Photo 3). The other reason I put it there is so that AC air would not blow the shower curtain open while showering. The air just goes under the cabinet and into the head area rather nicely.

I ran the duct forward to the vee birth down through the outboard aspect of the floor of the locker, into the storage cabinet underneath and behind the head (that board comes out for access). It

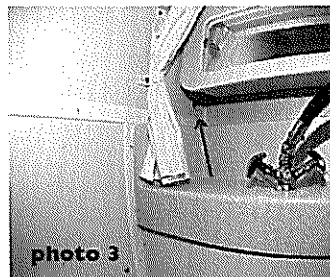


photo 3

continued through the vanity cabinet (Photo 4), through the bulkhead and into the battery area (Photo 5). Heading forward I ran the duct through the port settee (Photo 6), and then into the locker in the eve birth. There I cut a hole in the front of the locker and used a directional vent to aim the air up into the birth (Photo 7).

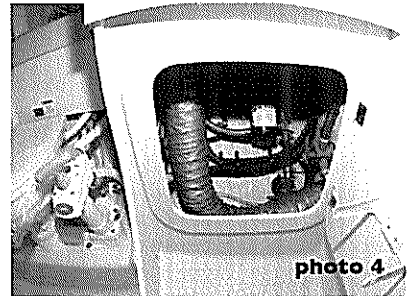


photo 4



photo 5



photo 6



photo 7

For the salon supply I bought a 4" PVC fence post (do not laugh until you see it, it was neat) from Home Depot to be used as a nice looking air duct since it will be visible (Photo 8). I ran two 4" duct hoses just through the floor of the lazarette and left a couple inches sticking through the ceiling of the aft birth. I

glued them in place. I cut two 4" holes in the top of the fence post and mounted it on the ceiling of the aft birth to connect with the two protruding 4" hoses. The fence post ran toward the starboard side, and stopped at the bulkhead cutout, where the curtain is cut to close the cutout, behind the engine. I cut two 4" holes in the front of the duct and mounted two directional vents (Photo 9). The air blows from the vents, under the top step of the engine cover, and into the salon. It has enough velocity that you can slightly feel it at the vee birth bulkhead. I used some Starboard to close the ends of the fence post/duct. You could use just about anything to close the ends though. Home Depot even had fence post caps. I decided the duct would look too much like it belonged on a farm if I used the caps.



photo 8

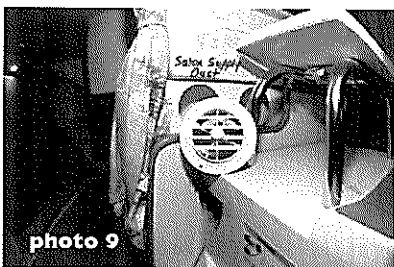


photo 9

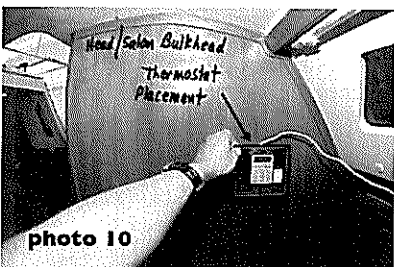


photo 10

I put the thermostat on the head wall by the port settee, next to the louvered cabinet door, slightly inboard (Photo 10). The whole system is silent. The only way a person would know if it were running, is that cold air is moving around the cabin. -Dr. Kevin Quade, *Hydrophilic*, #191.

Kevin,

This looks like a great solution, I have seen several and was beginning to pull together the good parts of each, but yours is by far the best. The only item I might suggest for an improvement is running the condensate line to a tee in the drain line coming from the port propane locker instead of the sink drain in the head. Some people run the AC all the time and this would leave fewer through-hulls open. -Bill

### Refrigerator Condensation Bill,

I have hull number 77 the refrigerator needs was much more work. The first problem was that the top loading door did not fit very well and allowed a lot of air to enter the refrigerator, which condensed on the inside of the top loading door. The fix was to use some weather stripping to seal the door. This was latter replaced using polysulfide caulking and some waxed paper to make a perfectly fitting seal.

The second problem was the seal between the metal frame on the front loading door and the fiberglass counter that the refrigerator sits in was missing. With a little coaching, this was replaced by the dealer. The last and most annoying problem is that the metal frame on the front loading door gets quite cold and condensation forms on it. This condensation drips on the cabin sole and is a source for mildew. I have come up with a solution. I hung a clear plastic curtain on the inside of the main refrigerator. This keeps the cold air away from the metal frame and it seems to sweat much less. - Maitin Rhode and Jessica Otto, *Hannalee*, #77

Maitin,

I have not experienced the condensation nearly as much as you have and I sail on Lake Lanier in the humid climate of Georgia and have no AC. There is an isolating neoprene gasket on my door-frame. I was considering a spray on foam to better insulate the area between the refrigerator and the wall next to the range. Others have reported improvement by using Maitin's method. The newer hulls have a fiberglass door and a latch that sounds like the one on the meat locker. I have not seen this unit myself so I do not know if it will be a retro fit option or not. -Bill

### Fuel Filter Bracket

Bill,

I would just like to make everyone aware of a potential problem, and ask

all to check it out. While cruising this past month with another C310, it's skipper found the fuel filter hanging by it's hoses. The L bracket that held the filter to the engine had broken. I then checked mine and found a hairline crack along the score mark, they use to bend the bracket. Both brackets have been replaced by Universal under warrantee. The fuel filter is located on the Starboard side of the engine, just forward of the Oil Dipstick. Bob & Kathy Mino, *KateSea*, # 110

### Making Space

Having a cutting board and more counter space was essential for my wife, the gourmet chef. I am probably the only 31-foot sailboat with a galley outfitted with All-Clad pans and Stubai Knives. The solution was the purchase of a Boos 18"x24"x11/4" cutting board, which I purchased at Williams-Sonoma. Any cutting board of similar dimensions will due, but it should be at least 1" thick.

The board will need to be cut to fit over the gimbaled stove. Carefully measure the opening in the counter over the stove using the front edge of the stove square to the front edge of the cutting board. Allow 1/8" of clearance on the 3 sides abutting the counter and cabinetwork. The board can be easily cut on a table saw, the edges chamfered with a file and sanded.

Once the fit over the stove is checked and satisfactory, measure from the outside edge of the stovetop to the edge of the cutting board on all four sides. Mark the board on the underside with the dimensions measured and draw the square that would be the outside edge of the stovetop. Using a 1/2" router bit in your router follow inside the line drawn on the board and route a 1/2" deep slot all the way around. Now when the board is placed routed side down on the stove it will be nearly flush with the counter and well seated on the stovetop. With this seating I have not had any problems with the board falling out of position on a 35° heel.

For storage of the cutting board, when the stove is in use, affix 2 L-brackets to the hull liner behind the stove. The horizontal of the L should be located a distance below the top of the stove equal to the width of the cutting board. A brass 2"x2" L bracket will work fine. Before installing the L bracket bend half of the horizontal leg up 90°. Once installed the cutting board can be slid lengthwise behind the stove and rest on the brackets. -Bill