

# Catalina TECHNICAL SECTION MAINSHEET

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## TECHNICAL NOTES



**Catalina 470 Technical Editor  
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*Past Catalina 470 Technical Editor*

*Tom Garrett:*

*Hi everyone,*

*I hope your summer is going well. I'm sure 470s are sailing to new anchorages all over the world. I know they are taking you there safely and comfortably. I don't have anything new for you this time for this will be my last article as Technical Editor. I have had great difficulty keeping up with all changes and improvements to the 470 because of my location on the west coast. The local dealer, H&S Yacht Sales, has always been very helpful and in all ways cooperative, letting me crawl around on new boats as they come in, but it isn't enough. My knowledge is based mostly on my boat, hull #3, and much has changed. Therefore, I have asked Glen McIntosh if he would take over my duties, and he agreed. He has close contact with the Florida factory, is a very active sailor, and an excellent writer. Thanks Glen for accepting this task.*



*Remember, if you have a problem with your boat, talk to your dealer. If that doesn't work, call Gerry or Frank and they will get the job done.*

*Thank you for your input over the years. I have enjoyed getting to know you. Good sailing, -Tom Garrett*

*New Catalina 470 Technical Editor*

*Glen McIntosh*

*Hello C 470 Friends, with Tom Garrett's farewell as C 470 Technical Editor, I'll be trying to fill his shoes starting next issue. Joyce and I have thoroughly enjoyed Tom's technical contributions both in the C400 and the C 470 for many years now. You can contact me at GlenMC470@aol.com or any of my contact information in the C 470 section. I have had a tough time responding to*

*email this past year due to being over committed, but in trying to fill Tom's shoes, I will make prompt replies a priority. I also read and will try to reply to all messages in the C 470 section on Sailnet and encourage all C 470 owners to log onto Sailnet and join the C 470 owners discussion list found under the Catalina section of discussion lists.*

## Generator Exhaust Failure and CO Detector Problems

I had two of my exhaust hoses fail on the generator at the severe bends into and out of the aqualift muffler. It was a very significant problem in that a fair amount of water as well as raw exhaust was spilling into the bilge. We had been having so much problem with the CO monitors false alarming on battery fumes that we were not using them, so we did not detect the problem until after a couple of crew members got sick one night with diarrhea, nausea, and headache.

I looked over the hose system and the radius of turn into and out of the aqualift as well as out of the water/exhaust separator in the starboard locker. The turn radiuses are much tighter than the hose is designed for. However, due to the installation requirements Panda has, the Aqualift must be below the level of the generator so there appears to be no other place for the muffler than in the bilge where tight turns are necessary to join the muffler. I talked to Warren at Catalina and he says they have not had any other failures than mine. Panda expected eight to ten years life out of the exhaust hoses. Catalina has already started using a 90 degree fiberglass sweep fitting to take the bend out of hose out of the aqualift muffler on newer boats. I obtained three of the sweeps and plan on eliminating all three severe turns in my system. I have over 800 hours on my generator, which is undoubtedly more than any other C 470 so

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far, which explains why mine is the first failure. Nevertheless, I feel the need to warn all early generator owners to examine their exhaust hoses regularly and to always use the CO monitors. I understand MTI has improved the monitors on false alarming, but I installed a new set and either I still have an exhaust leak or they are still false alarming. They will still both go off after a few hours with the battery charger on in a closed up boat. I plan on learning more from Catalina about the best solutions for both the exhaust system as well as battery compartment ventilation and carbon monoxide detectors.

I would appreciate feedback from other owners on line chafing over the toe rail to the deck cleats. It has been a small problem in tying to docks when tide is high and the lines lead over the toe rail down to the dock. However, now that Latitude Adjustment is on a mooring ball where the lines are always under tension and always leading down over the toe rail, chafe is a major problem. When I spent a week on a mooring ball where the winds never dropped below 25 knots and were averaging in the thirty knot range, everything I put on the lines in the way of commercially available chafe protection would wear through in only twenty four hours! Has anyone come up with a line chock or other solution to the toe rail in the area of the cleats? I plan on talking to Garhaur to see if a deck mounted line chock can be designed which will be flush with the top of the toe rail or perhaps take the line completely over the toe rail.

I look forward to hearing from all of you about your boat modifications and ideas. -Glen McIntosh, C 470 #13, Latitude Adjustment.

### A Little Extra Storage in the 470

Almost everyone is looking for some additional storage in his or her boat, especially if it is reasonably easy to get to and not too difficult to build. In the process of



making our boat ready to cruise, we have been finding, and making some relatively easy and inexpensive changes that increase the available storage space. The projects were all easy to do in a few hours with a few simple hand tools and a minimum of materials.

The most convenient of the projects is additional usable space under the galley sink. This is obtained by placing a simple plywood cutout over the access space for the three thru hulls: for the sink, refrigerators drain, and sink seawater pump. Although this space has the large drain hose from the sink running through it, the width of this space is just right for dish soap bottles and the many other spray bottles and cans of interior cleaning supplies used several times a day to keep things in reasonable order. As can be seen in photo #1, this is a simple modification. Just take the rough measurements, the width and length, of the space. Using a simple hand jigsaw, cut that shape blank from some scrap 1/2 "or 5/8" plywood and radius the corners. Slide the blank into the space (it won't lay flat at this point, but that's ok, because you only want to mark a position) and mark the blank on either side of the drain hose. Measure the approximate depth you need to remove from one side to accommodate the drain hose. Make the cutout and round the corners. Check the fit. You may have to do some minor shaving of the corners, but you want a tight fit. Finally, knock off the rough edges with sand paper and paint or seal. This additional storage is a real convenience since the upper shelf is too short for most spray bottles or cans and is already full of other important stuff anyway. Access to the thru hulls is not a problem since we don't go there very often and it only takes a few seconds to set the bottles and cans



on the floor, remove the plywood, reset the thru hull and put everything back in place.

Another real find was the bulk storage space available above the bilge. In C'est Tout, there are three "open" bilge spaces starting forward of the gray water sump. The rounded shoulders of the bilges provide the support for the drop in storage floors. See Photo # 2. This is space that can be utilized for storing heavy items such as canned beverages, canned food or other bulky items that you only need infrequently. Again, this is a simple and easy project. Although each of our bilge compartments have some equipment in them such as A/C pumps, fuel filters, or hose lines, these are all mounted so that by making cutouts to accommodate them, the storage floors fit in just fine. You do end up with some odd shapes! A loose fit is desirable and necessary, as you will have to rotate the floor section through several angles to get them slip into place. Construction is straightforward. Take the rough dimension of the compartment, length and width (you may want to make it a 1/4 inch undersize). Cut out each blank with your hand jigsaw. I recommend using at least 1/2" or 5/8" plywood for this application, especially if you plan heavy item storage in this space. Note: the compartments sometimes taper and one end may be an inch or more different from the other. Do double-check this before cutting. Measure the approximate size of each cut out you will need to make around the edges of the floor blank to accommodate the equipment in that compartment and make those cutouts. Be generous here. This is a "cut to fit bend to suit project" so expect to make two or more passes at getting the cutouts and fit just right. Again, round corners, sand the rough edges and finish by sealing or painting. You could, if you want, add a "finger hole" in the center to help with removal and insertion, but we found that we have enough gaps and spaces around the edges that we didn't really need that feature. These three compartments are each approximately 22" x 21" and are about 14" deep, give or take a little, and yield somewhere between 10 and 12 cubic feet of additional storage depending on how much space the equipment in each section takes. For small and medium sized items, plastic storage containers are recommended since there will be numerous open spots resulting from the cutouts.

Our most recent project was the deep lazarette storage in the stern. Catalina provides the drop in bags for the lazarette lockers. They are OK for immediate need stuff, but there is still a considerable volume of usable space below them. The problem is that this space is not divided or separated from the rudderpost, quadrant,

## TECHNICAL NOTES



autopilot and rudder angle indicator sensors so that they are protected from anything falling into them and possibly causing a jam or malfunction. At the same time access must be maintained to this area for servicing the equipment. To solve this problem and make this space more usable, we've added removable partitions, which are attached to the two supports that go from the underside of the swim platform down to the hull and to the aft section of the hull liner. This creates port, starboard and center compartments at the bottom of the lazarette. See Photos 3 and 4. The first step is to make a cardboard template for the plywood cutout. We climbed in to the lazarette, took the interior dimensions and then made the template. After double checking that the template fits, we cut out the plywood dividers, marking them port and starboard. Depending on what equipment is in place, such as the drains for the propane lockers, you may have to notch the after edges of the dividers to allow for propane locker drain hoses and other obstacles. Next, we drilled two holes through each of the aft vertical supports and the dividers and attached them with 3/8" bolts and wing nuts. The original plan was to glass two vertical stringers of 1"X1" about 10" to 15" long to the aft end of the liner to stabilize the forward end of each divider. This would allow the panel to be slipped between them and then bolted with wing nuts to the swim platform supports aft of the rudderpost. Ultimately, we decided glassing was messy and over engineering and so epoxied two shorter blocks, about 3" each, to the aft end of the liner up high. There are reinforcing struts for the rudderpost at the bottom, rather than over engineer this too, we just made a rough cut to fit around them, leaving a little space at the bottom should water somehow intrude. On the port side divider, we cut out a window area, about 4" x 8", to allow the autopilot arm to rotate freely. You will want to test mount the divider and mark it

for your cutout after you see more accurately where the autopilot arm will actually contact the divider. At full wheel stop our autopilot arm sticks through the opening about 2". There is of course some very, very small risk that something could become jammed in the opening. If that is a concern, a simple wood, plastic, or sheet metal guard could be made to cover this area. After everything has been fitted and tested, sand and paint or seal. For these dividers, which may be more likely to get wet, we would use a sealer on the plywood followed by a coat or two of enamel.

These projects are all pretty simple and no more complicated than measuring, cutting, drilling, gluing and painting. The most difficult task for any of these three projects is getting into and out of the lazarette. When you've been down in the bottom of the lazarette compartments, as many times as we have, you will know all about the real meaning of contortionist!  
*-Jack Holcroft, C 470 #43, C'est Tout.*



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