

Catalina 470

C470 Association Technical Editor

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Beckoning, #76

Silence!

The gentle burbling of the wake from a powerful Catalina 470 under sail; the steady hiss of the bow knifing thru the water; almost-silent wind powering the boat directly downwind; a ripple of laughter emanating from the cockpit party of rafted-up C470s...these welcome and relaxing sounds compliment and complete the sailing experience.

Our Yanmar turbocharged diesels and Fischer-Panda gensets also produce noise we like to hear...smooth, reliable power providing propulsion and electricity for our boats. A burbling wake, a diesel engine...the former is music for the soul; the latter is noise to be muted.

An excellent product improvement to the C470 has been the factory installed engine compartment sound-proofing. For those with earlier edition boats, the muting of engine and genset noise can greatly enhance the livability of the boat. Overnight passages under power or those days when the wind will not allow sailing become more palatable with the reduction of engine and genset noise afforded by proper application of available noise-reducing materials.

There are two types of sound to be concerned with: airborne noise and structure-borne noise. We will examine solutions to both.

Airborne noise is noise emanating directly from the engine, genset and rotating components. It is produced by the diesel engines, transmissions, asynchronous rotors and exhaust systems. This noise is blunted by the use of

barrier materials and/or absorption materials. Soundown, Inc. headquartered in Marblehead, MA produces a barrier composite insulation which is fire-retardant and encompasses a foam material with a "mass-loaded PVC barrier" for very effective sound reduction. The material is purchased in rolls 54" wide and can easily be cut to fit onto any surface. The material has a plastic barrier sandwiched between two layers of foam which functions as a barrier to sound and, from the author's perspective, is very effective. One side has a rip-stop Mylar aluminum fabric coating which is quite water/oil/coolant proof but still allows the material to be cut to fit snugly in even the most confined areas. This is the weapon of choice against airborne noise in the engine and genset compartments. Application is done with either spray on (messy but very effective and allows for one or two repositionings if you measured only once and cut or your scissors can't cut a straight line!) or brush on adhesives or PSA "peel-n-stick" materials. Aboard Beckoning...I used the spray-on exclusively and can report no separations after initial adhesion.

Installation of soundproofing is time consuming! It will take an owner with helper a full half-day to properly insulate the engine compartment. Cutting and fitting takes the most time

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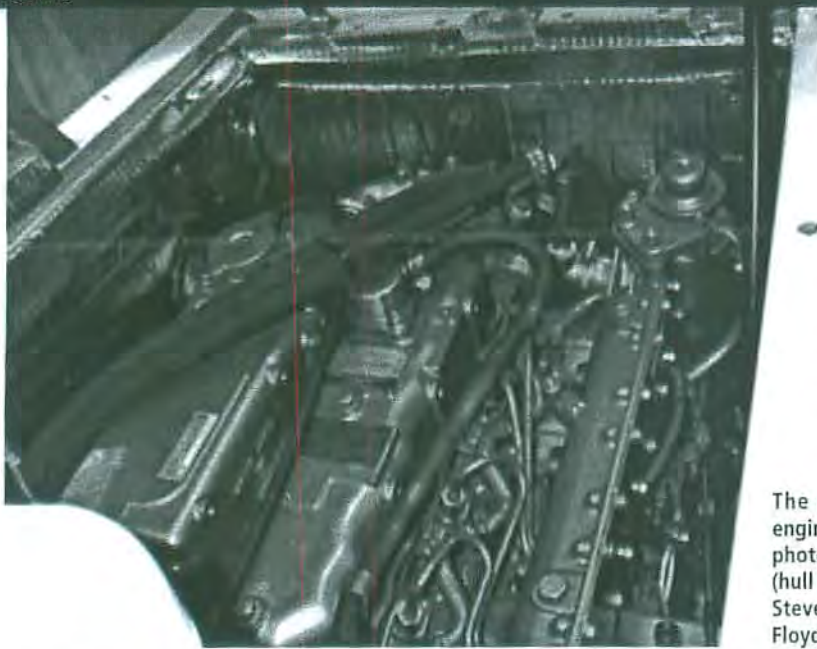
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The accompanying engine compartment photo is of CYGNUS (hull #52) owned by Steve and Mary Jane Floyd of Deale, MD.

and is critical to the effectiveness of the job. Material must cover every surface, be butted tightly together and then taped. The engine bilge is not excepted. Make sure to shave the Sounddown around the bilge weep holes to allow their functionality, then tape with the aluminum tape.

The Fischer-Panda genset itself needs no further soundproofing as the capsule does a fine job. What DOES need further work is the exhaust system. Make sure to wrap the exhaust hoses and especially the water/gas separator box (mounted on

the starboard cabinet bulkhead of the fwd stateroom) with material. The water/gas separator must be removed from the bulkhead, completely wrapped and

remounted with longer screws onto the bulkhead. I am pleased to report that occupants of my fwd stateroom notice nothing more than some gentle vibration when asleep on the fwd berth with the genset operating on those hot and sticky Chesapeake nights requiring air-conditioning.

Structure borne noise is that noise which is produced by machinery vibration and is transmitted directly into the hull then radiates out as airborne noise. This issue is primarily handled by engine mounts and shaft couplers. Several C470 owners have installed these devices with noticeable sound reductions. Sounddown also produces this equipment as do several other manufacturers.

The total sound reduction experienced by owners who have properly installed sound reduction materials in their engine and genset spaces is worth the work and expense. While under power, normal conversations can be held in the main salon, music enjoyed in the cockpit and most importantly, off-watch crew can sleep soundly while our magnificent Catalina 470's take us safely and quietly to the next destination.

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