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MAINSHEET

Catalina 470

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Lightning Protection... or what is a boat owner to do?

Previously this forum addressed the physics of lightning, then the boat building and electrical codes and how they apply to our boats. This final article will hopefully serve to tie all the information together and provide further information, some technical and some passed down by generations of boaters, on a most complex and frustrating subject.

The hard truth is that there exists today NO hardware system which will

consistently and reliably prevent a boat from being struck or, in the event of a strike, always route the voltage safely out of the boat with no damage. Practical techniques used daily to minimize the dangers and give the boat owner the maximum "warm and fuzzy" that all reasonable precautions have been taken to protect his boat are available. For the rest, we trust to luck. Good luck!!!

The area of interest is: creating a lightning ground system enabling the boat to have ZERO electrical potential and thus lessen the chances of attracting a strike plus a good possibility of routing lightning energy safely out of the boat. Let's look at, in theory, how a boat can be rendered electrically neutral.

Grounding the rigging: Attaching a #4 (yes, a big, thick battery cable) wire from the mast to the nearest keel bolt provides a ground for the mast.

Compression-post mast systems as we have on the C470 are no different than keel-stepped mast systems, electrically speaking. To add to your comfort factor for grounding, a #6 wire can be run from each shroud chain plate, the forestay and backstay chain plate(s) to the keel bolt. For those with insulators on a backstay for HF antenna usage, that specific backstay need not be wired to ground. Significant to note is that any inadvertent or unknown connection of this system to any electrical device (masthead light, deck lights, VHF radio, etc.) will render it useless. The path that all the grounding wires take inside the boat to the keel bolt should be as straight as possible (per code) with only gentle bends for changing direction. In theory, this will produce a mast/shroud system that is exactly the same electrical potential as the ocean around the boat.

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