

RELIABILITY

HULL LEAKS ON DECK

Preventing water from entering the boat is the most important single thing one can do to assure reliability of the electronics. It's insidious. Each time you get a little water in the boat some amount of electronic damage is done. It doesn't take a *Rocket Scientist* to know that.

Until you develop some confidence that leaks are under control, on windy days the boat should be drained between each heat. When you see that you are not draining any, or only a little, water, then you can go a few heats before checking for water.

Our goal should be no water in the boat after sailing all day in breezy, broaching, submarine-ing conditions.

Preventing hull leaks below the deck line was covered in the September - October 1997 issue of the NEWS. The same information is included in the kit by Worth Marine. In each registration package sent to new owners there is a page on the same subject.

Deck Leaks

There are only four primary leaks on deck:

1. The rudder rod opening,
2. The main hatch,
3. The aft common sheet hull exit to the turning block, and
4. The common sheet exit to the cockpit cleat.

There are numerous deck fitting screw holes but these appear not to leak. If you are concerned, simply use Vaseline when installing them. Don't glue them in. You may want to change them sometime.

The **rudder rod exit hole** is a huge leak. Would any of us tolerate a 5/32 inch diameter hole in the starboard side of the hull? Of course not!

But the hole in the cockpit where the rudder rod enters the hull is that big a leak. The large "race track" shaped hole is completely under water when the boat is on port tack on a breezy day. The size of that slot is the same as a round hole 5/32

inch in diameter! It's big!

(One solution is to sail only on starboard tack on windy days.)

My boats use a piece of soft rubber foam ~1/8 inch thick glued to the inside of the hull to cover the hole. The foam has a snug fitting ~1/16 inch hole for the rudder rod. The rod is lubricated with grease. (Don't use Vaseline, it may get too stiff and sticky when it is cold.)

This is effective and easy to do. There is no indication that rod friction is a problem. Just be sure that the hole for the rod is correctly angled in the foam so that it doesn't bind on the rod.

Another solution to this leak is to install a boot as was described in the February 1997 issue of the NEWS, page 6. My experience is that the boot does not have very long life. For the boot to fail and go unnoticed may be worse than other approaches. And it is sort of ugly. I have used it. I don't recommend it.

Somewhere out there an owner may have the perfect solution to stop this big leak. Let us know and it will be published here.

The **Main Hatch** is a large leak because the 17 inch perimeter of the hatch is so long. If the gap around the hatch is only the thickness of paper (0.003 inches), the leak area is equal to a 1/4 inch diameter hole!

Most people have good success using Vaseline, or some kind of waterproof grease, carefully spread around the entire hatch perimeter. It is a good idea to coat the surfaces around the hatch opening *before* sliding in the hatch itself. And then, after it is closed, lay in a fillet at the hatch edges on all four sides.

We should all arrive at the pond with Vaseline to seal up the main hatch.

Class rule: *4.3 Hatch cover material and design are optional.* The intent of this rule is to give freedom in the search for a solution to hatch leaks. Hopefully someone will invent a simple, practicable design that is leak proof without needing

to use Vaseline.

The **common sheet exit hole** on deck at the aft port end of the cockpit is a leak that can't be avoided. Fortunately the hole faces aft so the forward motion of the boat minimizes leakage. We can thank the CR 914 designer, Mr. Kazuo Takei, for this feature.

If the hole has somehow become enlarged, it should be made as small as possible and very smooth on the inside to allow the sheet to run freely.

The **common sheet exit to the cockpit cleat** is a small leak that can be stopped by using Vaseline. Another solution is to terminate the sheet inside the boat and plug the hole. If you choose to do that, carefully think out how to do it. Like all design changes, this one can be done wrong.