

Ask Steve – February 2015

Hey Steve

I hope all is well and you had a great Christmas and new year. I just had a quick question. What is your opinion of DZR sea cocks, fittings and other accessories? I know you talked extensively about not using brass for boat systems. Is this DZR any better for marine use? I ask because a lot of European boat brands use this in their boats.

Many regards

Frank C Londono

Frank:

Dezincification, a process wherein the zinc is removed from brass, is an especially nefarious sort of corrosion. Zinc is one of the alloying elements of brass, the other primary one being copper. Zinc is anodic to copper, i.e. it will corrode when the two are connected and immersed in an electrolyte, and nearly all other metals, which is why it's used as a sacrificial anode. Regardless of what it's called by a manufacturer, naval bronze, or manganese bronze for instance, when zinc is used as an alloying element with copper, the result is brass, not bronze, and strictly speaking brass is not suitable for sea cocks or raw water use. There is an exception of sorts, traditionally brass may be used in raw water applications if zinc content is limited to 15%. Leaded red brass, an alloy from which many pipe nipples are made, typically contains between ten and fifteen percent zinc. The challenge is knowing how much it does contain, I've never encountered a leaded red brass nipple that was marked to show zinc content, and I have seen many suffer and fail from dezincification. This article explains in greater detail the dezincification process
<http://www.cruisingworld.com/how/down-brass-tacks>

In an effort to stem the flow of inappropriate metals into the world of boat building, the DZR, or 'dezincification resistant' designation was created. Seacocks that carry this designation are supposed to be made up of alloys that resist this phenomenon, although they may contain as much as, or in some cases more than, 30% zinc. I haven't encountered a failure in a DZR seacock, however, there are comparatively few out there as this is a relatively new protocol. If one does corrode, I would expect word to travel quickly within the professional marine community. Why use zinc at all? It makes copper alloys easier to machine, and it's less expensive than copper.

Still, given the choice I'd prefer a seacock with little or no zinc content, and for raw water use, I remain uncomfortable with alloys that contain more than 10% zinc. Regardless of the DZR designation, seacocks that meet ABYC/UL standards will be labeled as such. Avoid using seacocks that do not comply with this standard.

I wrote an article about seacocks for Boat US's Seaworthy publication. In it I covered the DZR debate. You can access it [here](http://www.boatus.com/seaworthy/magazine/2014/april/whats-below-your-waterline.asp)

<http://www.boatus.com/seaworthy/magazine/2014/april/whats-below-your-waterline.asp>.

S D'A

Hello Steve,

I completely agree with your remarks about AGM and similar batteries. I only recommend AGMs for dedicated batteries installed adjacent to an electric bow thruster. I don't know anything about Distributed Power, except as it relates to freight train, and Googling didn't help. Would you provide

some information in one of your newsletters?

All the best

John Mardall

John:

Thank you for your comments, as always.

The following is an excerpt from a review I recently wrote about the new Fleming 58, which utilizes 'Distributed Power", also known as "Digital Switching".

"Another leap of faith was decided upon by the design team, that of embracing the growing trend of digital switching. In brief, digital switching enables most of a vessel's electrical gear, lights, pumps, inverters, shore power, etc. to be controlled from central command screens, tablets, or phones if you wish, rather than via traditional circuit breakers. There are many advantages to this concept, (and a few potential pitfalls, they are complex); however, the most notable is a reduction of large copper cables that must be strung throughout a vessel, particularly a systems-rich one like the F58. Instead, very small gauge control cables take their place, saving weight and reducing the size of wire bundles. Additionally, a host of systems can be easily and routinely monitored, as well as for fault finding and troubleshooting, both onboard and remotely. An SMS text feature also allows the system to send important alerts to multiple users, for among others high water, low voltage or smoke."

While the concept remains somewhat controversial, it does offer many advantages. I believe it's best used in production applications, where the vessel manufacturer uses the same systems again and again, in the same design, and agrees to support it for an extended period of time. Established builders, like Fleming, are in a better position to evaluate systems like this, and support them in and out of warranty.

S D'A

Hello Steve,

I have 3 questions to ask you.

1) I have my boat at a shipyard in Dania FL. and need to have the shaft ailment checked as the starboard shaft is very hard to turn compared to the Port. I had replaced the cutlass bears and shafts about 300 hours of run time ago and it did not feel correct than. I believe the problem is with the bearing in the haul.

My question is, could you recommend a good company to check the alinement?

2) In the seven and a half years I have owned my boat it has been broken into twice and ransacked. And the last time (last week) the thieves tried to leave the dock. I always close all sea strainers, this apparently stopped them from getting away.

My question is, what should I check for damage besides my water pumps? I have been out of the country and have not seen the condition the boat is in now.

3) Do you have any recommendations for security alarms or cameras?

When I leave my boat I feel safer with everything off and shore power disconnected. That is the reason I have not installed cameras that might drain the batteries.

Thanks in advance for any recommendations or advice you can offer me.

Kind Regards,

Lee Schoenmeyer

Lee:

You've posed some important questions. I'm afraid, as a non-client, I'm unable to recommend specific service providers. Whomever you do choose for this service, they should be capable of carrying out laser or precision optical alignment. Try Googling 'optical scope alignment marine' for those who offer this sort of service.

If the engines were run without raw water and they overheated, then significant damage could have been done to both the engines and the exhaust system. A careful visual inspection of the exhaust system should be carried out first. If you have no exhaust system temperature alarm, damage can and often does occur before the engine overheat alarms sound. Hoses should be carefully checked for overheating damage. If the thieves disregarded the engine overheat alarm, if it sounded, then damage may have also occurred to the engines. After the exhaust system is inspected the raw water pump impellers should be replaced by a competent mechanic, and any impeller pieces retrieved from the heat exchanger, where they will have accumulated. The coolant level should also be checked. Once the engines are started, the vessel should be sea trialed, again, under the watchful eye of a skilled, experienced mechanic who is familiar with your engines.

As far as cameras are concerned, you can easily and inexpensively purchase common domestic Wi-Fi cameras on line. These may work provided your marina has Wi-Fi service. Alternatively, you could chose a more sophisticated, and expensive, system such as that offered by Maretron, which allows you to monitor the vessel visually via a cellular modem. Such a system could also incorporate an alarm that will text you should the vessel be entered, shore power

disconnected, low battery voltage, high water alarm, or a variety of other events.

Ask Steve questions should be addressed to asksteve@stevedmarineconsulting.com. Please include your full name and home port. Concise questions are more likely to be answered. For more information on the Ask Steve column, please visit www.stevedmarineconsulting.com/ask-steve/.

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