

Sat, Nov 18, 2017 11:49 AM

Electrical



From: Michael Wolf <disperser.wolf@mail.ru>

To: pedro@clubcantamar.com

Pedro,

I need to point out some major problems with the electrical on the docks. Some of these problems are obvious, but I was not aware of others, including a significant fault that could have caused a fatality! I have attempted to convey these and other concerns to staff unsuccessfully. Going forward, I will convey my concerns directly to you and bypass the staff as they have not adequately or accurately conveyed my previous concerns.

On the branch of electrical I am connected to, the circuit breaker for which is closer to the marina (the line for the liveboards), the white wire is not connected to shore but is however connected to and serving as ground for the receptacle with meter, and your staff have connected grounds to it assuming it was an actual ground. My electrical is connected to it, and not having ground means my boat's skeg, rudder shaft, engine, and generator are all corroding because there is no way to return stray current to ground, as is required of all marina electrical systems. I was told yesterday by Rodrigo and several other staff that your system does not have and they insisted does not need ground. This is false. Ground is necessary for 220V systems, Neutral is optional. Ground is required on all electrical systems, and is especially important on marina electrical systems due to the severe damage that can be inflicted on ship's hulls by stray current that would otherwise be taken care of by a proper ground, as has been the case with my ship which, despite being cement, does have steel components.

Two or three days ago, Jay, on the Freedom50 in the next slip, was electrocuted, his ship's electrical system severely damaged (he lost all batteries, inverter, and I don't know what else) because of this miswiring, as his neutral and ground were tied to this unconnected ground wire on the same receptacle I use. This meant that his ground and neutral went through my ship, specifically through my galvanic isolator, which I will need to check for damage. Being improperly grounded and going through my ship's electrical means that every time I used my AC, it was causing back-current through Jay's boat. I noticed that something was wrong because I could hear the isolator transformer buzzing in synch with the air compressor that was being used on Jay's boat (the use of which also damaged his electrical system due to the miswiring.) I disconnected the electrical service because of the safety issues and the damage it was causing to mine and Jay's boats.

Also, the hot lead for Jay's boat is tied to my hot line, meaning we share a circuit breaker. These must be isolated. If another branch needs to be added, it should be added to another circuit breaker, not the same one. Also, welders should not be connected to these lines without separate circuit breakers for the same reason, which was done by the liveboards this summer. My equipment on my ship has not been damaged because I have a very expensive computer backup power system which isolates all of my sensitive equipment. However; that equipment itself is vulnerable but so far appears undamaged.

I was wrongfully told by your staff yesterday that a ground is not required on a 220V electrical system. I was also told not to touch the electrical panels. Given the situation, I respectfully request that you correct this matter and inform the staff that if I see an issue which is a matter of safety or causing damage to my ship, that I will correct it immediately if necessary and possible. A ground is most certainly necessary for the marina. For now, the white wire should be connected to a physical ground on shore. These and all other connections should be soldered, not just taped (for now, soldering is not acceptable in a proper system).

For you and your staff's benefit, I have provided links to guides and regulations regarding electrical to docks. The first one is quite long and tedious. The second is excellent overall, but is in English. There is a surveyor in town who can assist as well, Marina Beey. Cecil Lange, the founder, is an expert in marine electrical damage to

boats. I have a copy of his paper on the subject if you are interested for the liveboards.

US Army Corps of Engineers Dock Electrical Systems:

<http://www.swl.usace.army.mil/Portals/50/docs/beaverlake/Dock%20Electric%20Systems.pdf>

English Marina Electrical Guide:

<http://www.pcmarinesurveys.com/Marina%20Electrical%20Safety.pdf>

Mexico electrical regulations (Article 555 covers marinas)

www.cimej.org/pdf/06_NOM-001-SEDE-2012.pdf