Ask a Marine Technician

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Tip of the Month: *A Dremel with a brass wire wheel (Dremel 535) does an excellent job of cleaning corrosion from the prongs of shore power cords and inlets. But be gentle, the silver color is just plating. Make sure everything you work on is deenergized and wear eye protection!*

Q. What can I do to prevent overloading my shore power cord this winter?

A. Winter can be particularly demanding on marine AC electrical systems due to the use of space heaters. For the common 30 amp, 120 volt systems on smaller boats, just two of the popular oil filled electric radiators will use most of the available capacity. I think it would be wise to not exceed around 80% of the capacity of a 30 amp main AC breaker or 24 amps, with continuous loads. A typical space heater will use about 80% of a 15 amp branch circuit, so avoid other continuous loads on the same branch circuit. Check the specifications of your space heaters for the current draw.

Any area of high resistance between your outlets and the dock pedestal will cause localized heating. For example, if a prong is making poor contact due to strain or corrosion, it is a choke point and will heat up. That small area could get very hot, breaker will probably not trip until there is a short circuit from melting or fire. That small heated area is just like a little space heater to the upstream breakers.

Regularly inspect as much of your AC system as you can safely access. Shore power cords and inlets must be undamaged, without any areas of heat discoloration or melting. Prongs should be free of dirt and corrosion. The boat inlet may only have heat damage where the wiring connects on the back side, inspect there if you can. Always twist after plugging in and always use all locking collars. Make sure boat movement will not strain any shore power cord connections. Damaged cords and discolored cord ends must be replaced.

Some helpful tools to see what is happening are an AC current clamp meter to get an exact current draw measurement and an infrared camera to detect areas of localized heating.

Please send questions and comments to ubbasktech@gmail.com. All emails will be answered.