DESIGNING THE REDUNDANT SYSTEM

The two top-tier products we reviewed—Nobeltec Admiral and MaxSea—can be redundantly configured. This means that should a navigation computer fail, another will be available, connected to all the same devices as the first. Each company took a somewhat similar but proprietary approach to providing redundancy, based on Ethernet. The NMEA 2000 protocol was also designed to provide redundancy, but both companies push their proprietary solutions instead of embracing the NMEA 2000 standard.

Furuno makes a variety of devices (radar, GPS, sounders) that communicate using the NavNet protocol over Ethernet. These devices are less likely to fail than PCs. If you had two computers with MaxSea connected to a NavNet system, you could unplug the dongle from the failed computer and attach it to the working one. However, with only one dongle, you would need to synchronize the route between computers every time you make a change in order to ensure historical track information (such as track).

Nobeltec takes a similar approach to redundancy, except with Nobeltec, a PC is required to bridge between the GPS and the Glassbridge network of devices (radar, sounder, etc.). If you have two PCs connected into the network (Nobeltec allows three licenses per user), one is a "master" and the other is a "slave." Should the master fail, you would have to reconfigure the network in order to be up and running. This would likely require rebooting, and again you would be limited to using Nobeltec devices.

The key to redundancy is to have two separate systems. Lots of boaters buy handheld GPS that they can connect directly to the computer. That way, if the network fails (unlikely), they could still have position on the computer thanks to the little GPS. Some users set up two separate NavNet networks. That way, if one network fails (perhaps due to a failed switch or hub), connectivity could be restored by unplugging the computer from the failed network and plugging it into the other network; a manual switch could also be used for this purpose.

We will explore the topic of device connection in the next article of this series with a look at interfacing and NMEA 2000.