The AOC monitor (left) pivots on a homemade arm. The enclosure (right) is larger than necessary (compare to cassette player).

The Mini-PC Gets a Sea Trial

Recently, *Practical Sailor* featured an article on the advantages—and disadvantages—of using a custom mini-computer based on the VIA EPIA-M mini-ITX motherboard (*"The Custom Marine Computer,"* August 2006) to handle on-board nav-comm chores. In that article, a mini-ITX "built-in" computer system was weighed against the more typical laptop computer. Here, contributor Andy O'Grady presents his sea-trial findings of the mini-ITX approach.

System: Three years ago, I assembled a PC using a VIA EPIA-M mini-ITX Mainboard (1Ghz). I used an off-the-shelf enclosure that houses a standard CD/DVD and hard drive. I left the 110/220-volt power supply in place for use onshore and added a 12-volt supply. I have a small wireless keyboard and mouse.

Monitor: After much hunting for a unit that would simplify direct connection to the boat's 12-volt supply, I settled on an AOC LM520 15-inch LCD monitor, which I mounted on a homemade extending arm. It has served well.

Functionality: For three years, this unit has sailed from South Africa to the U.S., Greenland, and Europe. Using Windows XP home edition, it runs navigation software, shows movies, and edits high-resolution digital photos.

Power consumption: The set up consumes about 3.5-4 amps. With a 450 amp-hour battery bank, we don't have any problems.

Radio frequency interference (RFI): The computer produces less interference than an ordinary inverter, but it is not as quiet as a laptop running off batteries. Most noise comes from the monitor.

Speed: We have 960 MB of memory and are happy with performance. Nevertheless, I am thinking of upgrading to a 1.3Ghz processor on a new VIA motherboard that is said to be much faster.

Enclosure: Ours is about twice as big as it needs to be; there is loads of wasted space (see photo above), but smaller ones are readily available.

Power supply: We have problems when the engine is charging our batteries as the computer won't tolerate more than 14.3 volts without turning itself off. We plan to try one of the power supplies intended for use in an automobile that are said to have a high tolerance to voltage fluctuations, such as the Carnetix P1900 (*www.carnetix.com*), suggested in the August *PS*.

Networking: We have intermittent interference via the NMEA 0183 multiplexer, the device that lets us integrate the computer with ordinary marine electronics like our GPS. To eliminate this, I must disconnect the NMEA cable and restart the computer. I still have not tracked down this problem. (*PS* will be taking a look at NMEA multplexers in an upcoming issue.)

Hard drive temperature: Custom mini-ITX-based PCs are offered with or without a cooling fan. The cooling fan increases power consumption. However, we have had a problem with the hard drive overheating. Standard drives (as opposed to laptop drives) spin fast and produce a lot of heat. Under "Power Options," Windows allows you to automatically turn off the hard drive when it is not being used and that helps a little. We installed a nice piece of software (*www.siguardian.com/*) that measures drive temperature. I've also added a large cooling vent and fitted an external fan that is manually activated.

Sources: Google "mini-ITX mini," and you'll plenty of sources. We used *www.mini-box.com*.