HOW WE TESTED

Comparison focused on stability and ease of use, not bells and whistles.

Software quality, usability, and stability are often sacrificed in the race to provide the greatest number of features. And some software makers carry copyright security to extremes. For consumers, the result is like buying a car that has every imaginable option but requires seven keys to start and is stuck in first gear.

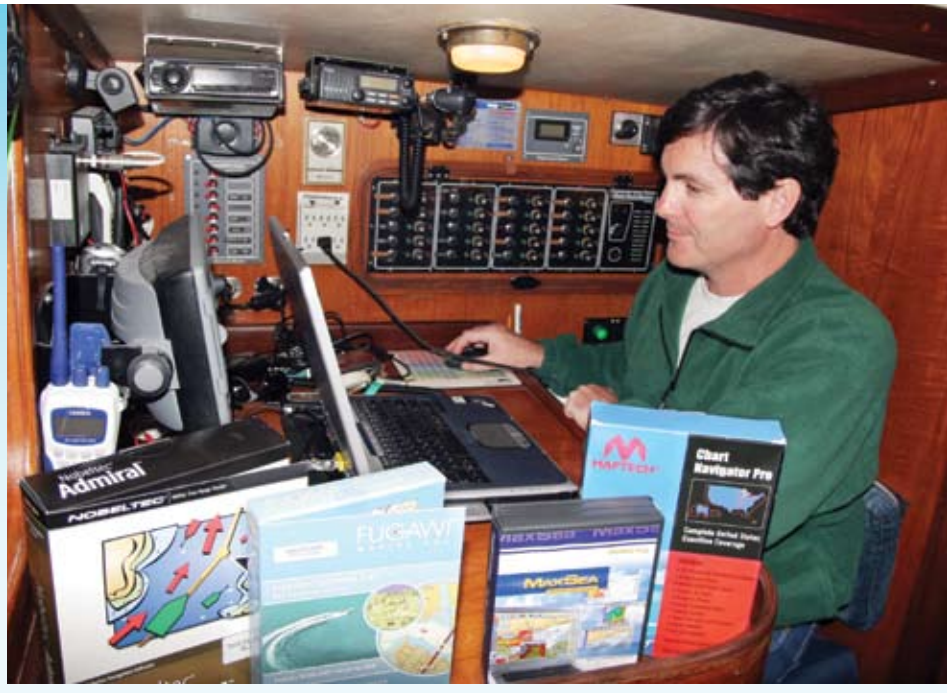
For this test, *PS* emphasized stability, ease of use, and features, before focusing on specific features. We found a wide variation between the products at all price points. Here are the basic questions that our test addressed:

1. Does the software install quickly and easily?
2. Does copy protection cause awkwardness?
3. Does the software crash frequently, or is it reliable?
4. Is it obvious how to use the product for basic tasks?
5. Can the software product interoperate with other programs?
6. Can the software product interoperate with a wide variety of devices?

PS also contacted tech support anonymously at least three times for each manufacturer. Again, there was a wide range of experiences.

Although user-friendliness is inevitably subjective in any comparison of this nature, the differences in stability and usability were clear. Some of the products crashed a lot and were more awkward to use. If a software slowed our laptop down, we checked the amount of computing power it was demanding from our CPU by using the Windows Task Manager.

In our opinion, many of these products would be greatly improved by following the best practices for software engineering, including more complete usability analyses. Poor user-interface design forces navigators to think like programmers, and users end up poring over manuals and making repeated calls to technical support.



For evaluating the Windows-based software, PS used a three-year-old HP Pavilion laptop with 1GB RAM and a 40GB hard drive.

Our test platform was an HP Pavilion ze4420 (a three-year-old laptop) with 1GB RAM, a 40GB hard drive, and 1024 x 768 resolution, which is the minimum that should be used with any marine software. Most charts come on DVD, so a DVD drive is important. Interfacing with instruments is typically done with a serial port and/or a USB port; a USB hub is often necessary. Although lots of memory is important when you are manipulating large images, 512 MB RAM would normally be sufficient for most navigators.

The laptop had two USB ports and one serial port, useful when connecting to NMEA devices. We used a low-speed USB 1.1 hub to connect all the USB devices. (None of the USB devices we tested transmitted data fast enough to require USB 2.0, but if you have a video camera attached to your computer, you should use USB 2.0.)

We used a product manufactured by NASA Marine and distributed in the U.S. by SI-TEX to test how each software handled Automatic Identification System (AIS) functions. This "black box receiver" is an inexpensive receive-only (Class B) unit for recreational boats and light ships. Under SOLAS regs, all ships meeting a certain criteria are required to transmit and receive AIS data on specified VHF frequencies. This includes a ship's position, identity, type, course, speed, and more. The NASA AIS receiver does not display all vital transmitted information such as call signs of other vessels.

This is important because if you know the call sign of a large ship that is on a collision course with your boat, including the ship's call sign when hailing it with a voice broadcast on VHF is much more likely to get a response. Small boats would be much more visible if they installed an AIS device that transmitted as well as received (Class A), but these cost quite a bit more.

Our Black Box cost for $245 through *www.cascademarinenavigation.com*. Nobeltec distributes the same AIS receiver under the name "AIS 100" at a list price of $330. This receiver is not very sensitive, but for consistency we used it on all tests.

The primary test vessel was a 1985 Beneteau First 435, equipped with a Raymarine C-80 radar chartplotter, a Pathfinder smart heading sensor for MARPA (Mini Automated Radar Plotting Aid) support and two older Garmin GPS units. A Noland NM42U NMEA multiplexer was used to combine the NMEA signals and deliver them over USB. The other instruments were not connected onto the NMEA bus. For our AIS antenna, we used a Shakespeare model purchased from West Marine and mounted on a rail.

For the Macintosh software, we used avid racer Greg Nelsen's four-year-old Macintosh, a PowerBook G4 667 with 512MB RAM and Macintosh OS/X v10.4.