

TRIP WIRED

Around the World in a 40-footer



By Jeff McLaren



What electronics does a boat need to circumnavigate the globe?



David J. Shuler photo



Raymarine
5160 Depth Display



Raymarine L760
Color Fish Finder



Raymarine
300 GPS/Plotter



There's no quantity of caffeine strong enough to focus someone the way Jim was focused. He was running on pure adrenaline, and, even for someone as experienced at cruising under power as Jim, there was an undeniable sense of urgency and responsibility holding him under this electric spell.

Plastic containers with open lids cluttered the floors and countertops awaiting the multitude of spare hoses, pump impellers and other parts that may or may never be needed throughout the trip. Jim's cellular phone rang off the hook with sponsors, crew and press clamoring for a brief word, and, all the while, he was handing me the various discs and paperwork, cables and manuals that I would need to get the laptops up and running.

Jim was running a full-blown operation, with lives and property on the line, and the integrity of his product and his business to be tested in public view. By its very nature, the around-the-world trip will be an adventure, but the point of the trip is to demonstrate the seaworthiness of the vessel and its equipment.

Never Too Prepared

Ironically, Leishman was frantically preparing for the uneventful, as the fruits of his and the team at Pacific

Asian Enterprises' (PAE) labor will only be realized should nothing, save for a safe return, happen. Preparation as a method of prevention consisted of pairing well-regarded products with a well-regarded company to install them — and then packing two of everything anyway.

Leishman is the vice president of Pacific Asian Enterprises, the manufacturer of the eponymous *Nordhavn*, which is a Nordhavn 40. He teamed up with Raymarine and Alcom Marine Electronics of Newport Beach, California to lay out the navigation equipment for the trip.

It turned out to be a two-step process, as the 40 foot trawler took an extended shakedown cruise to Alaska and the crew got a good idea of what

additional gear they might need for the coming 26,000 mile trip. The conclusion was that, while everything worked flawlessly, some redundant systems would add safety and peace of mind on the longer voyage.

The boat was first fitted with two of Raymarine's RL80C 10 inch color liquid crystal displays and two 7 inch displays. A 4 kw open array with 48 mile range and a 2 kw dome antenna with 24 mile range make up redundant radar systems.

Each of the displays also serves as a chart plotter, with split or full screen capabilities. The plotters are fed position data by a RayNav 300 GPS with WAAS correction. Upon *Nordhavn's* return to Dana Point, an additional Ray-120 GPS antenna was

Fully Loaded — Captain Dave Harlow (below) took full advantage of *Nordhavn's* many electronics, which included Raymarine displays at the helm, a TracVision satellite television system and a laptop computer with an Iridium satellite phone (which allows Internet access).



photos courtesy of Pacific Asian Enterprises



installed.

While the boat was still in Alaska, Raymarine introduced HSB2, the upgrade to the company's highly successful High-Speed Bus series of recreational equipment. With a simple software retrofit, *Nordhavn* now has the added benefit of radar overlay on the chart plotter and MARPA, the target tracking aid, which gives the speed, course and collision-avoidance data for other vessels in the area.

One of the most significant upgrades to the navigation system was the addition of a second autopilot. Above all, seasoned voyagers will tell you, an autopilot is vital to not only assure a comfortable journey but a safer one. Time spent staring at a compass and holding the wheel is time that should be spent on watch and plotting a

course.

The second autopilot is often installed in the same way as the primary, with a hydraulic manifold system to switch between the two, should one fail. However, the *Nordhavn* crew is handy enough that the entire second autopilot could be stored away for spare parts.

As with most systems, onboard repairs will be made en route. Raymarine's brand-new G-Series autopilot, with an integral rate gyro-compass, was retrofitted to the primary system, to offer the best course keeping in any sea condition.

A Full Spread

Nordhavn also has an array of instrumentation, including an ST60 analog display with wind direction,

Working as a Team — Jim Leishman (right) and his son, Eric, worked frantically to get *Nordhavn* (left) ready for its circumnavigation of the globe.

water depth and temperature, as well as a boat speed indicator. The L760, one of the 7 inch LCD displays, also serves as a fish finder or a redundant depth sounder. The whole package neatly interfaces with Raymarine's proprietary SeaTalk bus, allowing information (such as a man-overboard alarm) entered into one to be shared among all the displays.

The primary charting system on board is the aforementioned laptop computer. It is interfaced with both SeaTalk and the standard GPS data known as NMEA. We loaded popular Nobeltec software, as well as Raymarine's Raytech software. Both

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Men With a Mission — Nordhavn's crew included captain Dave Harlow, vice president of Pacific Asian Enterprises Jim Leishman, and guest crewmember Georgs Kolesnikovs.

have excellent Vector and Raster charts and are very user-friendly for most people familiar with common Microsoft Windows functions.

Raytech works bi-directionally with the rest of the Raymarine equipment through SeaTalk. Data from any of the other components is easily transferred to the computer and vice-versa.

We also incorporated an Iridium satellite telephone into the computer,

for e-mail and Internet access. Iridium is an international telephone service supported by 66 satellites, which make voice and data available virtually anywhere on the planet.

Stratos Global of Toronto, Canada provides the airtime and Internet package at reasonable rates. E-mail is sent and received using Microsoft Outlook, just like any dial-up connection on land.

The crew has been sending daily updates to PAE's *Nordhavn* "Around the World" Web site, with detailed descriptions of the trip as well as vital statistics of the vessel's fuel use, time and distance to the next landfall. The crew is even entertaining a question and answer forum at www.nordhavn.com, with feedback for armchair cruisers around the world.

There's a debate among cruisers —

sail and power alike — about the importance of a single sideband (SSB) radio. With the proliferation of satellite phones and the relative complexity of SSB, many people are forgoing the radios altogether. However, after going without it on the initial shakedown trip, we decided to install an Icom M710RT for the circumnavigation.

We figured that, in an emergency, a rescue is most likely to come from another ship, and the only way to get in contact with that ship, outside of VHF range, is with SSB. It is still widely used by commercial vessels around the world and may be the only way to call for help.

Since we had the laptop and SSB available, we added a Pactor 2e modem and a service called Sail Mail to back up the satellite-based Stratosnet e-mail. Sail Mail is a nonprofit cooperation of radio operators, who offer the service for an annual membership fee of \$200. All of the money goes to keeping the system running. It's slow and somewhat cumbersome, but the folks who run it are helpful, and there is an excel-

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lent and hilarious Sail Mail Primer available online to explain how it works (www.sailmail.com).

Lessons Learned

I phoned Jim a few days after he arrived back from the first leg between Dana Point and Hawaii, to ask him what he would do differently as far as the electronics. He said, "I would add air conditioning, and I'm addicted to the weather downloads through the Raytech software."

I have a feeling he was getting a pretty good thrashing from the sweaty crew who succeeded him after Hawaii, because, although it's not exactly in the realm of navigation and communication, the air-conditioning dilemma seemed to weigh heavily on his mind.

As far as weather forecasting, he simply gets online and downloads a weather map a few times a day, which is then superimposed over the NOAA-based Raytech vector chart. The software can suggest the vessel's optimum course based on that weather forecast, along with typical swell and wind data.

Navigating the open sea using a mix of high-tech gear and decades-old methods is part of the lure of an ocean crossing.

As a pure safety precaution, *Nordhavn* is loaded with a full assortment of paper charts. Although, it's not equipped with a sextant, by the time the trip is over, I'll bet someone from the revolving crew will sneak one on and proclaim all the electronics unnecessary.

Old salts and new ones will agree, though — should the worst happen, the key to survival is to stay out of the water and to call for help. A GPS-integrated emergency position-indicating radio beacon (EPIRB) and a Switlik six-person life raft are two items the crew hopes to never use.

There is the misconception that a dinghy is sufficient — especially in the tropics. However, if the weather is bad enough to take down a 40 foot full-displacement yacht, a light flat-bottomed dinghy will go over soon after.

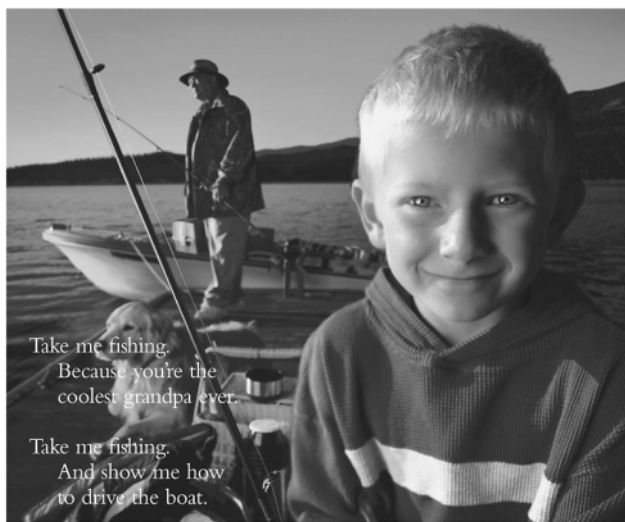
Life rafts are ballasted to withstand heavy weather while keeping survivors off the water. Even in the tropics, the

ocean temperature is far below your body temperature and long exposure will lead to hypothermia.

The frantic weeks leading up to the day *Nordhavn* cleared Dana Point Harbor have given way to months of slow and steady progress. Every few weeks, one of the crew details the list of repairs necessary before the next leg. They have all been minor, much to the relief of all those who lent a hand preparing the yacht, and to the crew relying on its various systems.

For now, Leishman's only regret is that the others have the technology on board to harass him by phone, SSB, e-mail and the Internet about the lack of an air conditioner ... and they do so repeatedly. ☺

On November 3, 2001, a Nordhavn 40 began a six-month, 23,000-plus-mile circumnavigation of the globe. This is Part II of a series of articles following that journey. At press time, Nordhavn had reached Singapore. For more details on the voyage and a link to the daily cruise updates, go to www.goboatingamerica.com



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