MARITIME SOFTWARE
There’s an App for That!

BY TODD VORENKAMP
The term “app” has become shorthand for software applications used by millions of people on their computers, tablets and cell phones. For those of us in the marine industry, there is maritime-specific software that can be utilized for just about every aspect of the business – vessel design, construction, insurance, engineering, operations, registration, finance, tracking and more.

Maritime companies are not limited to shore-side software programs to meet their needs as there are established, high-tech, cutting-edge software solutions available to meet any number of maritime-related challenges.

SHIP DESIGN AND CONSTRUCTION
Ringing the death knell of not only the drafting table but also the slide-rule, the computer has been involved in the design and construction of vessels for decades. While there are only two primary platforms used for aircraft design, there are about half a dozen major competitors in the computer-aided maritime design field according to ShipConstructor Software Inc.’s CEO, Darren Larkins.

SSI’s ShipConstructor software is an Autodesk-based platform that provides comprehensive 3D modeling, 2D drafting, and virtual reality functionality. Larkins says that users working with one of the 18 ShipConstructor products will see that when they are designing hulls, piping, machinery, ventilation systems and a myriad of other shipboard elements, the software’s language uses maritime terms – bulkhead, hatch, deck, and more – delivering a “maritime look and feel to the user experience in AutoCAD.”

ShipConstructor software has been used to design vessels of all shapes and sizes from small, rigid-hull inflatables to OSVs and tugs to the U.S. Navy’s newest amphibious aircraft carriers. The program’s versatility allowed it to be used to design pedestrian bridges in Europe. With this kind of track record, Larkins believes that SSI’s product is the “most scalable” platform on the market today.

Siemens PLM Software, a division of Siemens’ Industry Automation Division, has been tapped to provide industry-specific lifecycle management software to assist in the design and engineering of the new Gerald R. Ford Class aircraft carriers. Even with the complexities of a modern nuclear-powered carrier, the software could easily be implemented “as the backbone of the entire vessel construction,” says Director of Marine Marketing Tim Nichols.

Like the SSI software, design is just one part of the PLM package. Nichols adds that the PLM shipbuilding solution “is a comprehensive, seamless suite of software modules designed to offer a shipbuilder a holistic approach to shipbuilding from design and engineering to construction and final assembly and then aftermarket lifecycle management.”

Ship and offshore classification society DNV GL has a comprehensive software portfolio for the maritime industry. For ship construction and design needs, it offers the Nauticus software suite that contains Nauticus Hull, Nauticus Machinery and Nauticus Machinery High Speed, the latter designed specifically for the fast cycle speed of naval vessels.
for medium and high-speed propulsion systems. Its Poseidon software is a structural design and analysis tool.

FLEET MANAGEMENT
AND MAINTENANCE

After design and construction, shipowners are faced with the challenge of fleet management. Thankfully, there is a comprehensive group of software solutions on the market to assist in everything from maintenance and crew management to supply chain organization and financial management.

WheelHouse Technologies offers a fleet management software product that is “turnkey for customers and includes software and support,” says Captain Craig Parkhurst, Vice President of Sales & Marketing. Evolving from the maintenance tracking needs of private yacht operators, the software has expanded into the commercial sector and can accommodate the requirements of a single vessel or a fleet.

Parkhurst says that WheelHouse inputs the initial customer data into the software, often on site, and then the customer takes over. WheelHouse conducts an inventory of equipment and gear and uploads the information into the software database. The fleet management program is entirely Web-based so that customers can access their information from any Internet-connected computer or mobile device. The software was developed specifically for the marine environment and has been adapted to incorporate upcoming USCG 46 CFR Subchapter M requirements and other applicable regulations.

The advantages of the WheelHouse system include reduced in-house IT demand as well as the security of off-site data storage. If the customer experiences a computer crash, all of the data is fully recoverable because the WheelHouse program does not live with the hardware but is Web-based.

With a background in aviation maintenance software, Barry Sinex turned his programming skills to the marine industry and founded Sinex Solutions to create marine maintenance tracking software. He soon discovered that the maritime industry’s approach to maintenance was “more tactical” and less comprehensive than the aviation model, focused on responsive repairs and not preventative maintenance.

With the USCG and IMO starting to require more stringent maintenance procedures, the need for a comprehensive maintenance software system has never been greater. Sinex states that over 50 percent of the commercial vessels in the U.S. use Sinex software to track their maintenance programs. He keeps his “revolutionary software” affordable and supported for over 120 maritime clients while his Web-based, mobile-capable program covers parts inventory, crew management, safety functions and predictive maintenance management.

“It’s like having someone in the company awake 24/7 who knows everything that is going on in the organization,” says Sinex. Exemplifying the flexibility of the program, there are now six airlines using versions of the software and it has even made its way into the railroad industry. Sinex feels his experience with the unforgiving tolerances of aviation maintenance software has made his maritime software better.

ABS Nautical Systems, the software development division of the American Bureau of Shipping, has recently released version 6.3 of its venerable NS5 Enterprise fleet management software. According to ABS, NS5 has been evolving for nearly three decades
and has, at its core, tools for maintenance, supply chain, safety, environmental and workforce management and can produce over 250 customizable stock reports. With an eye on ABS's classification function, there are modules of the NS5 software dedicated to hull inspection, drydock repair and hull maintenance.

Its joint venture company, Herbert-ABS Software Solutions, offers CargoMax ship loading and stability software. Recently, the IMO adopted guidelines pertaining to damage stability reporting following an accident at sea for product tanker vessels. The CargoMax program with the Direct Damage Stability Module is a relatively inexpensive solution to meet these requirements that affect newbuild vessels in 2016 and existing ships by 2021.

**FINANCIAL MANAGEMENT AND INSURANCE**

MarineCFO is a comprehensive financial software program that arose from the needs of offshore companies in the Gulf of Mexico, who initially handled their financial software completely in-house, either using off-the-shelf, shore-based software or by developing their own programs. The burden and cost of organic IT, along with the fact that many of the companies were using software not optimized for the maritime environment, led them to seek out MarineCFO as a way to implement a dedicated marine software solution.

The program covers the financial aspects of traffic management, marine operations, personnel management and fleet maintenance. Laura Martin, Vice President of Client Services, states that the company works closely with its customers to provide a tailor-made solution based on client needs and offers customizable “consoles” for different functions.

Software is also the backbone of today’s marine insurance industry. The Falvey Insurance Group offers proprietary marine insurance software that drives its three divisions – Cargo Insurance, Yacht Insurance, and Safe Harbor Pollution Insurance. Designed and developed by an internal team eight years ago, the software “is an online risk management tool that ties together reinsurers in London and the U.S. to brokers to front clients to all aspects of the maritime insurance world,” says Shawn Kucharski, President of Falvey Yacht Insurance.

The software’s purpose is to permit more insurance policies to be issued to more clients and is currently used to insure operators from towing vessels and workboats to large product tankers and multimillion-dollar mega-yachts. The program takes input from the insurers, owners and brokers and combines it with predictive and raw data on storms, earthquakes, geologic activity, floods, and other natural phenomenon and disasters to provide a more accurate insurance assessment by reducing the number of unknown factors. The system is entirely Web-based, and Falvey grants access to all of its clients, brokers and reinsurers. Underlining its success, some of Falvey’s competitors have purchased leasing rights to the software.

Shipping predates computers by thousands of years, but it is clear that software applications are now at the center of almost every possible maritime function. Whether it’s vessel design for a warship, fleet management for a handful of OSVs, pollution insurance for an oil tanker or galley supplies for the steward’s department, there’s an app for that!

Todd Vorenkamp is a regular contributor to the magazine.