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Tim Edwards of the Nova Scotia Boatbuilders Association. Photo by Chantel Leturneau.

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your marine market resource

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INSIGHT

BY ANDY ADAMS

What's in a name?

Ontario Government disguises new taxes by calling them "Fees" levied by the new "College of Trades"

PLEASE READ THIS COLUMN CAREFULLY even if you are not a resident of Ontario because this has a potentially huge affect on the number of marine technicians who will want to train and work in our industry.

This April 8th, 2013 the Ontario Government's newly formed "College of Trades" will be sending out information announcing new fees that most Ontario tradespeople will have to pay.

Marine technicians are likely to be among the 157 different trades that this socalled "College" will cover. The primary purpose of the "College" seems to be to gather tradespeople under an umbrella where the government can then raise new funding through fees. We think it's just a new layer of bureaucracy.

To be sure, tradespeople already bear significant costs to be in their trade including buying tools, vehicles, paying for educational updates and courses, paying union dues, paying fees to various associations and other governing bodies. These people are also taxpayers, don't forget.

In conversation with Dana O'Brien, public relations liaison and Sean Reid, Progressive Contractors Association of Canada and Coalition chair, one of the groups that has organized to oppose these new fees, we learned that as an example, the fees an electrician is currently paying, will increase by about 500%!

Reid and O'Brien are part of a movement to oppose this because, just like the marine industry, employers across all of Canada are facing shortages of skilled trades people. Having Ontario set the precedent of creating this so-called "College of Trades" that seems principally organized for the purpose of collecting fees, brings in what is really just another increase in government taxation. Don't you think that this is going to drive more tradespeople out of the business?

The scope of this is very far-reaching. The 157 different trades targeted include such simple and low-paying professions as haircutters, roofers and labourers of many types and yes–marine technicians are likely to be caught in this.

As governments at all levels across Canada scramble to increase their revenues, balance their badly planned budgets and position themselves for success in their next election, they will try and wring revenue out of every source. The Harper Government's Jim Flaherty has recently talked about clamping down on "tax loopholes" and "tax cheats" as a way of gaining more revenue.

Perhaps the new "College of Trades" is a way for the government to tax the "gray market".

If you are a marine technician yourself, and you were forced to pay a significant increase in fees or taxes, could you pass them along to your employers or your customers? How much elasticity is there in your customer's willingness to pay higher bills?

There is something that you can do. Check the Canada Newswire Story at: *http://www.newswire.ca/en/story/1012459/campaign-launched-to-stop-new-mcguinty-trades-tax.*

Contact the organizers. Be willing to contact your Provincial Member of Parliament and let your opinion be heard!

Andy Adams - Editor





Marine Industry careers are posted on the Boating Industry Canada magazine's website and are updated regularly.

Marine Industry Careers in Canada

Boating Industry Canada magazine continues with its support of the marine industry in Canada by posting current marine career postings Canada-wide.

Canada's marine industry needs a growing number of people to enter the business and for many years now, potential employers have posted excellent career opportunities with Boating Industry Canada magazine online. If you know of a bright and dedicated person who is looking for a solid and rewarding future, please share this information with them.

If you are an employer seeking help, Boating Industry Canada's Newsweek electronic newsletter will run your 'help wanted' advertising at NO CHARGE as long as the ads are for marine industry employment in Canada. We do this as a service to the industry.

For their members, Boating Ontario offers a Human Resources tool specifically designed to help the marina manager keep up to date on marine HR best practices, improve effectiveness and employee morale, and consequently have a positive effect on customer satisfaction and overall business success.

This could be a valuable tool for your business.

To learn more about this tool visit:

www.boatingontario.ca. To view marine career postings now

visit: www.boatingindustry.ca.



SAFARILAND GROUP ACQUIRES MUSTANG SURVIVAL

"Together, We Save Lives." Mustang Survival represents Safariland's first acquisition in the marine and aviation industries.

THE SAFARILAND GROUP (the "Company"), a leading manufacturer of protective products and equipment primarily for law enforcement and the military, has acquired Mustang Survival and its related entities, Mustang Survival Inc. and Mustang Survival Mfg., Inc. (collectively, "Mustang Survival").

Mustang Survival is the North American market leader in lifesaving equipment for recreational, military, law enforcement and industrial users in the marine and aviation environments. For more than 45 years, Mustang Survival has been transforming innovative ideas and technologies into high-quality and practical lifesaving products such as inflatable personal flotation devices, flotation clothing, dry suits, anti-g suits and a wide range of products to protect serious users in extreme environments.

"We are excited to be bringing together two companies that are both committed to saving lives as a part of their core mission," said Scott O'Brien, president of The Safariland Group. "Mustang Survival's history of lifesaving marine and aviation equipment has presented unique growth opportunities for our company, especially as we aim to broaden our suite of products that help save lives."

The Safariland Group, acquired by an affiliate of Kanders and Company, Inc. in July 2012, is globally expanding its current brands while pursuing acquisitions aligned with its mission of "Together,

We Save Lives." Mustang Survival represents the Company's first acquisition in the marine and aviation industries.

Mustang President Jim Hartt, who will continue in his current role, commented: "Joining forces with The Safariland Group represents an important step in the global expansion of the Mustang Survival brand. We expect to leverage their resources to further drive our innovation in new product development and to take our products to a new level of performance as we expand the reach of our safety equipment to new customers, markets and applications."

For more information, please visit *www.mustangsurvival.com.* ■

Canadian Manufacturers **Attend Eurasia Boat Show** in Istanbul, Turkey



IN FEBRUARY 2013, NMMA Canada, together with a handful of Canadian manufacturers, including Dock Edge, Scepter Corporation and Canada Metal Pacific attended the 2013 Eurasia Boat Show in Istanbul. The trip was made possible with grant money awarded to NMMA Canada to explore international emerging markets which might present business growth opportunities for Canadian made products.

Turkey has a total population of 70 million people with close to 20 million living in Istanbul. The country's geographic position makes it ripe for boating as it surrounded by a number of bodies of water: The Sea of Marmara, The Black Sea, The Aegean Sea, The Mediterranean Sea and the Bosporus running through the middle of Istanbul. According to the Istanbul Boat Show organizers, the show conducts diligent marketing efforts in the key markets of the Balkans, Europe, the Black Sea Basin, Middle East, North Africa and Western and Central Asia as well as all across Turkey, and setting up professional procurement delegations to ensure a large number of professional visitors to the show. Turkish buyers are known to be very receptive to North American products due to their high quality and sophistication. All of these In this picture from left to right: David Jones, Scepter Corporation, Mark Pocock, Canada Metal Company (in his booth), Michael Szwez, Dock Edge, Sara Anghel, NMMA Canada and Osman Cakiroglu, Trade Commission responsible for Marine with the Canadian Consulate in Istanbul.

factors make Turkey a potential emerging market for recreational boating and Canadian marine manufacturers.

The 2013 show was very well organized with seven halls in total showcasing accessory products, engines, power boats, sail boats and super yachts. There were 300 exhibitors at this consumer show and the array of products was quite diverse.

NMMA Canada members attending the show had a series of meetings with various local distributors to determine the future opportunity for Canadian made products. Overall, while it will take a number more years for the market to expand, the potential is significant. NMMA will continue to watch the Turkish market along with many additional markets worldwide for potential opportunities for our members.

100,000 flock to Miami Boat Show

MORE THAN 100,000 PEOPLE from 80 countries and the 50 United States cruised into Miami for the 2013 Progressive Insurance Miami International Boat Show, which ended on February 18th. Attendance was up 1% from last year (102,118 vs. 100,917 in 2012). One of the largest and most influential boat shows in the world, the show garnered hundreds of news features not only locally, but nationally and internationally—increasing awareness for the annual event and recreational boating industry.

In addition to strong attendance, a highlight of the show was an upbeat, buying crowd, with some exhibitors reporting double-digit sales increases over 2012. The show hosted more boats in



all three locations and hundreds of new product introductions. About 17 companies from Canada exhibited at the 2013 Miami Boat Show, and we hope for more Canadian exhibitors in the future. ■

The indoor displays at the Miami International Boat Show are just one of the locations. There are outdoor displays, Strictly Sail at Bayshore and power boats at Sea Isle Marina.

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It's easy to make the switch! Just log on to *tcfif.com* and complete a new dealer application, or give us a call at **877.800.4430**.



NEW PRODUCTS

KANNAD

THE SAFELINK R10

The SafeLink R10, Overall Winner of the 2012 Pittman Innovation Awards and winner of a 2012 Chuck Husick Marine Technology Award, is worn on a lifejacket and activated by sliding off the safety tab and lifting an arming cap to deploy the antenna. The compact, lightweight unit sends alert messages, GPS position and a special

identity code directly to AIS receivers within approximately a four mile radius. A flashing LED light aids location at night.

A unique, built-in, high precision GPS receiver—which updates every 60 seconds—assures accuracy of the data transmitted

The crew aboard *Arbella*, an Oyster 57 participating in the 27th Atlantic Rally For Cruisers (ARC), is equipped with the award-winning Kannad Marine SafeLink R10 SRS (Survivor Recovery System). The fleet of over 200 boats and 1,200 people left Las Palmas in Gran Canaria on November 27, bound for Saint Lucia. from the R10 SRS. With precise location, distance and bearing data, fellow crew members (and nearby AIS- enabled receivers) receive all the information they need to locate the position of the person in difficulty and to enable a speedy recovery. The R10 SRS will transmit continuously for up to 24 hours and has a seven year battery storage life. It is made of ultra durable ABS and is waterproof to five meters. To learn more visit: *www.kannadmarine.com.* ■

SRIPELINK

ECOVERY

YSTEM

H2OUT INNOVATIVE SPACE DRYER FOR YOUR BOAT

Damp outdoor conditions take a toll on the inside of boats and RVs, making mold, mildew and corrosion problems inevitable. H2Out Space Dryers work with heat and natural convection to keep indoor air dry. They remove moisture, eliminate rust, corrosion, oxidation and tarnish on electronics, tools and equipment and protect from mildew, mould and odours. In marine applications Space Dryers capture water vapour before it damages boat interiors. They guard against moisture in carpets, bedding, sails, linens and lockers.

YouTube video with H2Out's Dave Davis: *http://youtu.be/k1s6B1ab5kw.* ■



ICOM AMERICA SHOWCASES MARINE RADIOS AND MARINECOMMANDER™ NAVIGATION SYSTEM AT 2013 SEATTLE BOAT SHOW



Icom America, manufacturer of two-way radio solutions, exhibited its premier line of VHF fixed mount and portable radios, communication systems and black box marine units at this year's Seattle Boat Show.

Seattle Boat Show visitors experienced Icom's newest marine radios, which feature DSC, an intuitive soft–key user interface and active noise cancelling.

Icom's show display at Concourse 2312 highlights the manufacturer's line of award-winning marine radios and automatic identification systems (AIS). Icom will also exhibit the MarineCommander, a complete navigation system with integrated black box options. The MarineCommander[™] integrates various modules such as marine radar, fish finder, AIS and VHF transceivers on vivid, waterproof multi–function displays. Engine and video camera monitoring and C-MAP[™] by Jeppesen compatibility are also available.

NEW PRODUCTS

ANODES: TIME FOR A GREENER CHOICE

When it comes to making environmentally friendly choices, the tradeoff is not always paying more for something that doesn't work as well. Boat owners seeking a "greener" sacrificial anode have an option that works better than the old, familiar zinc versions while costing less: aluminum anodes.

Aluminum is a far better environmental anode choice than zinc. Though zinc is a heavy metal—not particularly desirable to have in excess quantities in water—the big concern is with the percentage of cadmium that zinc anodes must contain in order to work as anodes.

Cadmium is a nasty heavy metal, with its use and disposal becoming increasingly restricted and regulated. In anodes, it's of considerable concern to scientists studying estuarial pollution and its inevitable presence in aquatic life, especially once in the human food chain.

Leading commercial vessel operators

such as Crowley Maritime and Seaspan Container Lines have used aluminum anodes for years. Propulsion system manufacturers such as Mercury Marine standardize aluminum anodes to protect their marine engines, as well as specify them as OEM replacement parts. In the offshore industry, aluminum anodes are the material of choice to protect pipelines and other subsea installations where long term corrosion prevention is essential.

So why do boaters still cling to zincs? Old habits die hard, and most people don't pay anodes much thought, let alone understand how they work. An anode's purpose is to protect expensive metal components from galvanic corrosion. The simple science is that when a boat is in the water, its various metal components are exposed to galvanic corrosion, though not all corrode at the same rate. Those that corrode fastest are "least noble," while the "most noble" corrode most slowly.

This is why relatively low cost, replaceable sacrificial anodes are made from less noble metals. The inexpensive anode is sacrificed, rather than the costly propeller shaft, engine, rudder, engine cooling system, refrigeration condenser, or even the hull.

While anodes may appear to be fairly inert pieces of metal, they are actually sophisticated pieces of anti-corrosion engineering. Their complexity lies in that they are truly alloys, made to an exacting specification in order to sacrifice effectively, but at a controlled rate. Aluminum anodes, for example, contain trace amounts of indium and other components to help them perform properly.

Anodes that wander too far from the specifications won't work, as various forms of surface oxidation will slow, or even halt, the sacrificial process. Anodes have to be cast in a facility capable of maintaining the necessary purity of the materials used and of running the analytic tests needed to make sure that anodes are in spec.



Apart from having the right composition for optimal protection, water salinity will affect the rate at which the anode sacrifices, and its overall effectiveness. In salt or brackish water, the anode material will be zinc or aluminum. While aluminum is superior across a greater range of salinities than zinc, the recommendation for vessels that operate only in fresh water is magnesium.

John Rothermel, VP of sales at Seattle-based Fisheries Supply says magnesium is the right choice, "if the boat is always only going to be in fresh water. If the boat is going back and forth, aluminum seems to be the only answer. Aluminum does lose its effectiveness in fresh water but will begin working again once the boat enters salt water. To provide better fresh water protection, a supplemental magnesium anode called a 'grouper' can be hung over the side of the boat."

But what about the cost of aluminum anodes, since it's a more expensive material than zinc? The rate at which an anode sacrifices is controlled by the surface area it presents to the water, and equivalent aluminum and zinc anodes will have the same dimensions. While pound for pound aluminum costs more than zinc, an aluminum anode will weigh less than half of its zinc counterpart and should therefore cost less.

The big payoff, though, is that aluminum anodes have a longer effective life. Cathodic protection specialist Paul Fleury, an ex-U.S. Navy nuclear plant technician and founder of Marine Services in Earlysville, Virginia, says that in terms of protective power, aluminum anodes have 3.5 times the energy of zinc anodes. They also have 20% better self-cleaning benefits, in his experience. ■

KANNAD MARINE SAFELINK EPIRB

The Kannad Marine SafeLink 406 MHz EPIRB (Emergency Position Indicating Radio Beacon) has integral GPS for highly accurate position information. It works on the global COSPAS SARSAT search and rescue satellite system, which is supported by international government search and rescue authorities around the world, so a call for help will be acted upon and fast.



The ultra compact and stylish 406 MHz SafeLink represents the next generation in EPIRB technology. It is the first EPIRB to have an integrated antenna, enabling the compact size—and a user-replaceable battery, making future battery changes easier and more economical for the owner (for non legislated applications only). Waterproof and floats upright, allowing it to be tethered to a life raft and left to transmit.

The signal will continue to transmit for at least 48 hours at temperatures as low as -20°c. The integral high accuracy GPS provides an accurate position, typically +/- 62 meters along with new position updates every 20 minutes for fast recovery. SafeLink also features a 121.5MHz homing signal to further assist with local recovery, while its high-brightness LED flashing locator lights aid visual location.

To learn more visit: www.kannadmarine.com.

MCMURDO SMARTFIND S10 AIS BEACON

Waterproof to 60 meters, the Smartfind S10 Automatic Identification System (AIS) Beacon

is designed to be carried by divers, boat crews or anyone else who spends time on the water for work or leisure purposes. When manually activated, the Smartfind S10 transmits both AIS and GPS data to the vessel the individual has come from and to other AIS equipped vessels within a typical four mile radius to give precise location information to aid the recovery of persons in difficulty at sea. Bearing and distance information is accurately transmitted and displayed on the AIS receiver or plotter, giving potential rescuers all the information they require to carry out swift retrieval of an individual.

To learn more visit: *www.mcmurdomarine.com.* ■



ATTENTION MARINA OPERATORS

Did you know that...

Any of your staff operating a VHF radio at your marina must have a valid VHF license?

Contact your local Canadian Power and Sail Squadron for VHF course dates.

If you cannot locate a local Squadron please contact Lynn Lortie at lynnlortie@kerrwil.com

She can help you find a Squadron who will be happy to assist you.





Britmar Marine is now pleased to offer a new range of inverters, battery chargers and combination units manufactured by Kisae. The inverters are available in both modified and pure sine wave forms.

Pure sine wave produces AC power at or above the quality level of utility grids. Pure sine wave can also help eliminate static lines on television screens and improve the quality of a sound system. Portable tool chargers, light dimmers, laser printers and plasma screens or other equipment that require pure sine wave technology and will not work well with modified sine wave inverters.

Pure sine wave inverters require more electrical components and a more intricate design; therefore, they are more



e more |

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expensive than the modified

sine wave versions. Modified wave form units produce a

stair stepped output and work

well with a majority of kitchen

Kisae offer 3 models of 12V

battery chargers 20amp, 40 amp and 60 amp. All units

are 3 stage chargers capable

of charging up to 3 banks of batteries (Gel, AGM, Flooded

and Lithium). Kisae also produce a home solar kit which

consists of a portable solar

panel, inverter and battery box.

This is a perfect unit for RV use and when loss of power is not an option. Kisae/

Britmar offer a wide selection of solutions for all

customer needs. For more

information please contact Britmar toll free 1-866-401-2288

appliances.

ELECTRONICS

Modern chart plotters are essentially marinized computers and we now get software updates that need to be installed.

This tiny SD card has a 32 gig capacity and it can easily be used to copy the software update to your chart plotter.

Chasing Software

Keep Your Customers Up to Date with Software Updates

STORY AND PHOTOS BY ANDY ADAMS

In this simple sequence, we insert the SD card, it is recognized, the equipment self updates and finally prompts you to "Accept" the terms and the process is complete in mere minutes.



THIS IS A FRIENDLY REMINDER to keep your customers up to date with software updates for their onboard electronics.

There has been a real change in the focus and direction we've seen in marine electronics in recent years. Gone are the standalone equipment pieces, replaced by multifunction devices capable of "talking" to the other electronic devices on board your boat.

To get first-hand information on what is really happening in the field, we traveled to CMC Electronics Esterline and spent the morning with Lead Technical Service Representative, Lorne Spence.

He began by saying that simply incredible advances in capability have resulted from the interconnection of onboard navigation system components. In turn, simply incredible advances in technology are behind these changes and the piece of equipment that used to have a dedicated circuit board of components somewhere inside, has evolved into an actual computer that in many cases, is running an Intel chipset the same as a home computer has.

There's another very important similarity between the new marine electronics and home computing devices. As you know, whether your own computer is a PC, Mac computer, notebook, tablet...you regularly receive software updates via the Internet.

You are used to this with your computer. Your customers are used to this with their computers but for whatever reason, the industry is discovering that many customers have not yet begun to apply the same thinking to their marine electronics.

The result is that at your marina, shop or repair yard, your customers are likely to come in saying that they are having problems with their electronics, especially if they have added a new piece recently.

Modern chart plotters are essentially marinized computers and if the customer has not performed the software updates on their marine plotters and other equipment, they are likely having problems.

Part of the customer resistance, or lack of attention to software updates may be because originally, the purpose of updates was to correct software 'bugs' and to ensure compatibilities between products. Now more and more, we're starting to see significant product upgrades as manufacturers add new features through software updates.

Lorne Spence emphasized that in most cases, these software updates are free. So, the equipment the customer bought a couple of years ago can now stay current through free software updates and actually perform better now than the equipment did when it was new.

You look like a hero for helping and the customer gets a better experience by keeping their software up to date.

You can easily do this service for the customer for a fee, or let them do it themselves. The process is the same and fairly straightforward.

Marine equipment software updates are done by downloading the software from the manufacturer's website. If they registered their Raymarine chartplotter for example, the company will email them when a software update comes available.

As a dealer, you can access this as well and once you have the software on your notebook, you copy the files onto a blank memory card, be it Compact Flash or Micro SD; whatever that piece of marine equipment can read. The new Raymarine plotters have a fully automated update process and it's very easy to do.

Also, owners will often add new equipment to their navigation system over time, ending up with different pieces from different 'generations' of systems. Ensuring they have the latest software can often fix problems you may encounter in connecting "new" with "old" equipment.

For an example of just how fast and frequent these software updates can be, look at the most recent Raymarine 'C' and 'E' series plotter software updates and the list of features that have been added:

VERSION 5.27 - JAN 2013

(current version as of this writing)

• Solution for internal sonar module to be directly connected to a 1KW transducer (600w Output Only).

VERSION 5.24 - DEC 2012

- Fuel Management
- Expanded Engine Data and Alarms
- Document and Photo viewer (view your product manuals on your MFD)

- Thermal Camera Slew-to-cue integration
- IP Camera Support
- On Screen Zoom keys added to Sirius Weather App (North America only)
- Ability to view NMEA 0183/ SeaTalkNG data statistics and buffer as well as save to mSD card

VERSION 4.27 - FALL 2012

 Addition of four on-screen touchscreen controls, an ACCEPT touch screen button added to Limitations of Use welcome page and improved Power Key shortcuts to Brightness and Capture Screen image options.

VERSION 3.15 - APRIL 2012

 A huge list of more than a dozen enhancements including added support for Raymarine CP450C CHIRP Sonar Module, support for AIS features, limited support for Sirius Marine Weather Module and several more including a Standby / PowerSave Mode and enhanced home screen customize option permitting 9 and 12 inch MFDs to view up to 4 applications on a single page and so on.

V2.10 - SPRING 2012

• Cartography redraw performance has been improved when sharing over the display network, added support to display fuel flow rate and three more valuable features including the ability to manually change the aspect ratio in the video application.

Many of these update features have been driven by customer feedback from individuals just like you, using their equipment out in the real world. Another big driver for change are the technologies coming from other manufacturers.

A great example is the fact that Raymarine was quick to update their software to operate with both iPads and android devices. The benefits and additional capabilities available by connecting a mobile device into a marine navigation system was well documented in the "iPad Onboard" article by Mark Bunzel in the March 2013 issue of Canadian Yachting, starting on page 34.

Another huge advance in marine technology, in safety and in end-user convenience has been the introduction of thermal imaging cameras from companies like FLIR. Some of the new software updates enable you to control your FLIR thermal imaging camera using your iPad with its many quick and convenient touch and zoom controls.

An advance that we think is wonderful is the recently added ability to view a PDF on the various screens on board a boat. More and more manufacturers [Ravmarine is one] are putting detailed user manuals into digital PDF form so when users need information to do an unfamiliar task, they can put the information up on the multifunction display, digitally move from the index to the article and find out what they need to know without having a printed manual on board. Again, it enhances the customer's experience and eliminates problems that you might later have needed to deal with.

Adding more user excitement, we expect that video capabilities will also be coming soon.

All of this is impressive and yet the software update process is simple. When talking to Lorne Spence at CMC Electronics Esterline, the exclusive Raymarine distributor in Canada, he emphasized that even if your customers let their systems get out of date, there's a good chance you can take them straight to the latest update and get the latest and greatest.

If the consumer isn't comfortable doing software updates themselves, offer to do it for them. We think customers will be happy to pay for what may be a fast route to greatly enhanced performance.

Understandably, Lorne was focused on the product lines that CMC Electronics distributes, but he wanted to emphasize the importance of keeping software up-to-date no matter whose equipment we are talking about. Introducing great new capabilities and embracing advances in user convenience and safety is an industry-wide thrust.

MANUFACTURING & FABRICATION – FIBERGLASS

Can You Give **New** Life To An **Old Mold? New Technology Might Just Do It!**

STORY AND PHOTOS BY ANDY ADAMS

VENTUALLY, EVERY SHOP, repair vard or marina will face the task of doing some composites work. Maybe it's because an owner wants to replace old navigation electronics with units that won't fit the old holes, maybe a hatch cover has been lost or damaged, or maybe you just need a new part for an old boat.

Restoring an old mold might be the most direct way to get the part you need—assuming you have an old mould. It happens that we did.

Moulds can be big parts and even for smaller moulds, not many businesses have the shop space, or the storage space to keep old moulds indoors and out of the weather. It's very common for old moulds to get left "out back" in the outdoors.

Twenty years ago, a deck mould was created for a little outboard powered runabout and after a few parts were pulled, the mould was no longer needed. It got moved outside. One way or another, this mould wound up flat on the ground, with its working surface exposed to direct sun, rain and snow, falling leaves and debris and bird droppings too. It got hit with everything over the years.

When we found this mould and got the idea of putting it back into service, one look told us that it had really taken a beating. But, that didn't mean it could not be brought back with some effort. The question was, would it be worth the effort?



If we had to create a new deck mould, the project would not be viable for both timing and financial reasons, so we decided to see if we could restore the surface and get our deck mold back into good enough shape that we could pull at least a couple of parts from it.

Even if we had to build new tooling, at least having a new part from the old mould would give us a head-start and save money. Here are the steps we took.

To begin with, the mould was lying outdoors behind a shop in Peterborough, Ontario and our first step was to haul it back to Composite Tooling in Sutton, Ontario where Chris Whitney was able to evaluate the overall condition.

The mould had been built with only very light framing or reinforcement to begin with and the decades of storage

outdoors had definitely distorted the shape. The good news was that it had been skillfully made in the first place and it was light and flexible enough that we felt confident it could be pushed, or stretched back into its correct shape. So, knowing that, we could move on.

The next step was to check the mould for porosity. Chris examined it very closely and determined that the surface was not irreparably damaged. It was not great, but he believed it could be used.

Clearly though, it was in rough shape. The black tooling gelcoat had been badly oxidized, stained and also scratched in places.

Some areas of the mould had a complex shape in the corners. These were places where the gelcoat had puddled and cracked during its original construction.



↑ Chris Whitney's reflection in his shop lights at Composite Tooling in Sutton, Ontario shows how far this old mould has come in just a day's work. Here Sam from Chem-Trend in Michigan came up to demonstrate what could be achieved with the Chem-Trend Chemlease product family. This very close shot shows a damaged area that we wet-sanded and buffed out. It can be filled with putty later and the Chemlease 75 EZ mold release will get the part out successfully.



The buffing process would reveal the damage. Some other areas suffered physical damage through the years of outdoor storage and the freeze thaw cycle.

To get the process of restoration started, Chris thoroughly cleaned all of the mould with detergent and water using a soft bristle scrubbing brush to loosen the years of accumulated debris.

Chris started by wet sanding the worst areas, especially the cracked or damaged spots, then he got going with a heavy cutter buffing compound using the power buffer to take away the top layer of oxidized gelcoat.

Then, moving to a lighter buffing compound, he carefully buffed out the mould to restore the gloss. The nice thing about a tool that was built with black gelcoat is that all the flaws and imperfections are easy to spot, especially using a straight edge. At this stage we could more clearly judge the porosity over the entire surface as well.

Again, a mould cleaning products was used to wash away any dirt or abrasive contaminants left on the surface after buffing, before we got started with the Chem-Trend products.

Then, we took this old mould through a three-step process:

- 1. Chem Trend Mold Cleaner EZ
- 2. Chem Trend Mold Sealer 15 Series EZ sealer
- 3. Chem Trend Mold Release 75 EZ release agent

Although we tried using paper toweling for application and removal, that did not work. We needed clean, new, lintfree cotton buffing cloths once we got to the Chem Trend Mold Sealer 15 Series EZ mould sealer.

That product went on very easily and after a few seconds for the solvent to flash off, it buffed out with very little effort. At first, we found that doing a space perhaps 18 in by 18 inches was the easiest to work with. We did a fair area with minimal physical effort, then moved along.

We were impressed with the low odour feature of the Chem-Trend products. It made the task a lot easier compared to other products we had used in the past.

We started at one end of the mould and worked our way back doing two coats of Chem Trend Mold Sealer 15 Series EZ sealer before moving on to the ChemLease 75 EZ release agent.

Coming back for the second application avoided missed places and over-lapped the edges of sections we had completed. The old mould was staring to look pretty good, but looks aren't everything!

Once we got the Chem Trend Mold Release 75 EZ release agent going, the buffing cloth would practically fly across the surface. There was little or no friction, indicating a very smooth surface and promising that at least the first part out of the restored mould would release properly. The manufacturer recommends three, five, five is for a green or virgin mold.

We did a tape test as well, using a piece of masking tape to measure what the release performance will be.

The speed with which we were able to get the weathered old mould into shape for pulling apart was really pretty impressive.

This was a rough looking mould and we suspect that many people would have written it off as being too far gone. Ignoring the development costs of building new tooling, the time that process would have taken would have made the project impractical.

So, we are encouraged by our results here and hope that you will look into some of the new products from companies like Chem-Trend then next time you face a challenge that an old mould might be able to solve. It really reminds us that fiberglass is amazing stuff!

Tim Edwards and the Nova Scotia Boatbuilders Association

BY GLEN CAIRNS

The Sarah Lynn III built for an American client by Big Pond Boat Shop, shows what can be done with a standard commercial fishing boat hull. While she has the fit and finish of the best high end yachts she retains the solid seaworthy characteristics of a semi-displacement fishing boat hull. **N SEPTEMBER 29TH** of last year a completely rebuilt *Bluenose II* was lowered, ever so slowly, into the waters of Lunenburg Harbour. Among the thousands of spectators who watched in the steady drizzle was Tim Edwards, Executive Director of the Nova Scotia Boatbuilders Association (NSBA). As someone who has been at the centre of efforts to promote the province's diverse boat builders for the last 15 years, it was a proud moment for Tim and a good time to reflect on past accomplishments and the challenges ahead. Fittingly, Tim was witnessing the re-launch on the water in a dinghy he had built himself.

So just how did a British naval architect, whose early career was spent dealing mostly with the Royal Navy's submarine program end up steering an association for small and medium sized boatbuilders in Nova Scotia? When I asked Tim this question he remarked how his life of "simply messing about in boats" to quote Ratty, began as a small child literally in the same area of the River Thames that inspired Kenneth Graham's classic Wind in the Willows. His family always had a boat of some sort and early on Tim caught the "boat disease" - a disease many of us in the industry will recognize. After graduating as an engineer and naval architect (he is a member of the Royal Institution of Naval Architects) Tim began his career with the British Admiralty submarine program before immigrating to Canada in 1979, where he continued to work with commercial shipping and submarines. His career path took a major turn in 1991 when Tim accepted a position as the head of the Centre for Marine Vessel Design & Research at the Technical University of Nova Scotia or TUNS as it

was known at the time (now a part of Dalhousie University). It was Tim's work at TUNs that brought him into contact with the small yards building commercial and recreational boats throughout Atlantic Canada. There were efforts underway at that time to modernize the fishing fleet and the test tow tank at TUNS was an important part of this process. While travelling the Maritimes promoting this R&D facility to boat builders Tim gained a broad perspective on the various yards, their capabilities and the challenges they faced.

Tim already had experience with the hardships faced by the UK recreational boat building business. Not the least of these was the Labour government of 1973 imposing a 25% VAT on many luxury goods, including boats. Perhaps it was because the previous Conservative Prime Minister Ted Heath was a noted yachtsman, who knows? Much like the Luxury Tax in the US, this punitive VAT had a devastating effect on Britain's recreational marine industry. The Labour government backtracked on the tax after a couple of years when it became clear the burden was falling, not so much on the rich, as on the workers who were losing their jobs by the thousands. Instrumental in getting the tax reduced was the British Marine Federation-a venerable association formed in 1913. This demonstrated to Tim the advantages to be gained by having the industry work together, to pool its resources and get the attention of government. All governments have an endless chorus of groups before them demanding attention and without an organized front the boatbuilders did not stand a chance.



When ever he gets a chance you can find Tim Edwards sailing his Nova Scotia built Bluenose Class sloop on the waters of St. Margaret's Bay.



The *INO* (Greek goddess of the sea) utilizes a similar hull to the Big Pond boat but sticks much closer to her commercial roots. This 40 footer was built by Samson Entreprises for a Quebec couple who knew just what they wanted and got it.



The NSBA is born out of necessity

In 1997 Tim was able to secure funding for a study entitled "Strategic Plan for the Revitalization of the Boatbuilding Industry in Atlantic Canada", a rather long title for a study which concluded there was an urgent need for a boat building industry association. The earliest attempts to form an Atlantic provinces-wide association ran afoul of the four provincial government bureaucracies. It became clear that forming a Nova Scotian industry association was the more practical approach. Two main elements came together to get the association launched. First was the agreement of seven leading builders to give it a go with the primary aim of diversifying the industry into new markets. Second was the Federal and Provincial governments co-operating through the Economic Diversification Agreement to fund the hiring of an Executive Director. The NSBA was formed in 1998 and Tim was appointed Executive Director. Tim's career had taken another turn, one he continues to enthusiastically pursue through thick and thin.

Adapt or perish

It is not like Nova Scotia boat builders had no experience with change. From sail to power, from wood to fibreglass and more recently to resin infusion and advanced composite construction, builders always looked for ways to survive. The consultants' report had made clear the need for diversification and at that time the obvious market was the eastern seaboard of the US where the economy was on a roll after the recession of the late 80's.

The NSBA's first big push was to get the Nova Scotian boats in front of the American market. The association's marketing strategy focused on what people already knew about Maritime boats with the slogan "Nova Scotia Boats...Built for the Sea!" To gain a profile with potential US customers Tim organized NSBA exhibits, sometimes with boats and sometimes just with a booth, at the major US boat shows such as Newport, Maine and the US Power Boat show in Annapolis. His conversations with thousand of American boaters have given him a unique perspective on the challenges and opportunities available the NS builders. All this effort has paid tangible dividends. Between 2004 and 2008, \$14 million in sales can be attributed to NSBA contacts and leads passed on to members.

Apprenticeship Training

You can't build high quality boats without a skilled workforce. Surveys conducted by the NSBA showed the average age of the workers was rising rapidly. From the beginning Tim and his Board had recognized the importance of attracting and training young people if the industry was to survive, let alone prosper. From the outset skills training was the other major impetus in the creation of the NSBA. Tim did extensive research into training and apprenticeship programs around the world and settled on the New Zealand model as being the best fit for Nova Scotia. However it wasn't simply a matter of signing up, the NSBA needed to show the New Zealanders they were serious and in 2005 Tim led a group of NS builders to New Zealand for meetings with the their Marine Industry Training Organisation (MITO) and a tour of the country's major yacht builders. Tim recalls how just half an hour into their first meeting, while the Kiwis were still pitching their program, Arthur Theriault, President of A.F. Theriault & Sons, one of NS's largest yards, announced to the group that he

was onboard. Having an industry leader like Arthur give his enthusiastic endorsement really helped Tim convince others to join the effort. The NSBA signed a licensing agreement with the MITO in 2005. The NSBA administers and promotes the Boat Builder apprenticeship program in partnership with the Province of Nova Scotia through an agreement with Nova Scotia Labour & Advanced Education.

It may be hard to believe, but Nova Scotia is still the only province to have Boat Builder as a certified trade. Work on complimentary trades training continues at the NSBA with efforts to establish a Marine Service Technician trade.

New directions?

As anyone connected with recreational boat building industry knows the last few years have been challenging to say the least. We still don't really know the shape of the industry that will emerge. Tim believes it is in developing and refining the traditional seaworthy designs of the East Coast and not in replicating what is already being done by mass production builders in the US or Europe, that builders will find success.

The ongoing problems with the US economy have definitely had the effect of refocusing Tim's attentions on the Canadian market. It is probably true that Nova Scotia built boats are better known and understood in New England than they are in Ontario and Tim sees this as the next big challenge for the NSBA. While the commercial fishing industry is still and will be for the foreseeable future the core of Nova Scotia's boat building industry, Tim believes that the potential to expand to new markets is still not being fully tapped. The challenge is to get boats to where they can be seen and appreciated by potential customers. As Tim says when discussing the Ontario market "people can only see what they see". The fact that maritime style boats would actually perform better in many cases than some of the mass market boats is something that needs to be demonstrated. Looking at the thousands of bays and islands in Georgian Bay or the North Channel of Lake Huron for example one, is struck by the similarities to the rocky coast of Nova Scotia, but with less fog.

The rebuilding of *Bluenose II* has created positive publicity for the Nova Scotian industry and the NSBA sees this marketing opportunity. Tim and the NSBA staff are currently working on the idea of showcasing the industry from a new "Nova Scotia Marine" branded pavilion at a few established shows. Tim adds, "Perhaps the NSBA can coordinate with the sailing schedule of the re-built Bluenose II at one or two in-water shows, and use her as a Nova Scotia Marine pavilion? That would certainly be uniquely Nova Scotian."

Tim Edwards would be the first to admit that coordinating the actions of a group of independent minded boat builders is a bit like herding cats. It is no criticism of the business owners to say that someone less phlegmatic and diplomatic than Tim might well have had their head explode, but through it all Tim keeps an English cool, and a great sense of humour. Still, after 15 years on the job, if you want to get him really excited, just start talking about Nova Scotia built boats!



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PRODUCTS INNOVATION CCI

When the CCI team is not hard at work at the shop, you can find them on the water!



Competition Composites Incorporated, CCI, and Phil's Foils

Rapid growth founded on problem solving and performance.

STORY BY ANDY ADAMS | PHOTOS BY JEAN LEVAC / THE OTTAWA CITIZEN

ave you ever seen a sailboat without a rudder?

We have one-the rudder just rotted inside and dropped off into the depths of the lake last fall, never to be seen (or measured again).

The otherwise very serviceable Siren 17 is out of commission until a replacement can be secured and it was a similar situation that prompted the founding of Phil's Foils-now widely known as Competition Composites Inc., in Ottawa, Ontario, Canada. We include 'Canada' because this small local business that started just a few years back, has grown into a global supplier of specialized foils to the sailing and marine industry...and beyond for that matter.

Today, Dave Bradly is the president and Phil Locker is now the chief operating officer. Specifically, Phil founded the business 11 years ago; started out in his basement, and had been mainly working on his own, with one or two employees. Dave joined about six years ago from a services background in high tech. The year after Dave joined, the business was incorporated as Competition Composites Incorporated, CCI. The Phil's Foils name has stayed as a brand name for their rudders and daggerboards.

Phil saw a niche for replacement dinghy center boards and rudders and believed that a small but unfilled need existed. Phil had been with Nortel as a

corporate software engineer and, as you probably know, Nortel went down, but they had a wealth of valuable patents and design achievements to their credit as a corporation. Phil received an exit package that gave him the opportunity to acquire a CNC router and he was in business

THE MARKET – UNFILLED NEEDS

Phil identified an opportunity to supply foils to the dinghy market because frankly, he needed parts for his own boat and he discovered that they were difficult or impossible to acquire domestically. His solution was to design and create his own part.

He wasn't alone.

Many people had discovered that when their rudder or center board got old and failed, no replacements were available. Individual people, repair shops, yards and chandleries were regularly faced with the task of re-creating a rudder or other part that had simply rotted and failed.

In many cases, the boat might still be sound but like our Siren 17, without the essential pieces like rudders and centre boards, the boat is useless. Adding to the challenge, if they just drop off into the briny deep as ours did, you have no opportunity of using your old part as a pattern.

Word started to get around that Phil had used his computer design skills and CNC router to create a new rudder for his boat and right away, the requests started coming in.

As he went along, he discovered more needs. It wasn't just racers' dinghies that needed new parts. Larger boats had larger needs. In many cases older 25 to 35 foot production keel boats often had rudders that were not well made in the first place. When those parts fail, especially suddenly like after suffering an impact or ice damage, coming up with a replacement part that performs well was a challenge.

There's also a surprisingly vibrant market for foils for home-built boats ranging in size from Opti prams to vessels like 60 foot catamarans. Over the years, Phil and Dave have discovered that although skilled individuals may be willing to build their own boat, the foils are specialized parts. People may be willing to build a whole boat but not the foils. So, more and more requests came their way.

Over time, the company began shipping their specialized foils globally and the business has continued to grow 'organically' largely through word-of-mouth and personal recommendation. Phil's Foils and, later, Competition Composites Incorporated became the 'go to guys' for specialized replacement parts.

THE CUSTOM MARKET ATTRACTS OEM ATTENTION

Today, some of the top builders start off with parts from CCI. Even builders like Gunboat, Melges, MAT Yachts »



Partners Phil Locker (left) and Dave Bradly (right) owners of CCI work closely with their customers to ensure that the solutions provided are tailored to meet their unique needs and challenges.



CCI has been selected to fabricate a licensed design upgrade for the Beneteau 10R, (also known as the 32.7), and most recently for the Farr 395, as drawn by the Farr design office.



CCI has a roster of 600 design files for any size foil projects. Here a fabricator is fitting a carbon fiber post to a rudder for a 70 foot sailboat designed by Dieter Empacher Designs for Brooklin Boat Yard, Brooklin, Maine.

PRODUCTS INNOVATION CC





Not only does CCI operate a custom shop but they are also the OEM builder of rudder systems for the MAT 1010 sailboat, the Melges 20 and 24. Here a carbon fiber post is fitted in the MAT 1010 mold.

CCI has developed a rudder for the E-Scow with input from the mid-west scow community. They comply fully with current class rules and are a great upgrade.

(Turkey) and J-Boats prefer to come to CCI as performance foil specialists rather than building their own foils.

REPLACEMENT MARKET CATALOG

A steady stream of requests over the years has helped the company to build a catalog that is growing all the time and now includes more than 600 designs. Sometimes patterns are available, other times a fresh design is needed.

A major driver for the company's growth is that they can offer performance improvements through newer technologies leading to updated shapes. The ever-growing specialized knowledge about foils and performance can improve on the original parts.

Comparing "foils" to rudders is a matter of seeing things differently. Like the old lee-boards in ancient designs compared to new hydrodynamic shapes, there is a lot to be gained. Their new foils can provide lift, move faster through the water or even adjust performance characteristics with asymmetrical designs. Sophisticated foils have a lot to offer.

The product innovation behind their foils has broader application too. They create parts like centerboards for dinghies, keel fins, dagger boards, and also powerboat rudders and other parts.

The innovation aspects have lead them to do things like replacing the 200 lb steel post on an old C&C rudder with a new carbon fiber part that is lighter and stronger. Surprisingly, the new carbon fiber post actually was less expensive to make than the stainless part and by controlling the design and manufacture to consistent Quality Process, they achieved a better fit as well.

Then, it was a natural progression to include the bearings and they began to work with Jefa. Their line includes bearings, sleeves, steering systems, and wheels, so again, CCI progresses and grows.

They learned that a composite tiller can be lighter and stiffer. Those manufacturing skills opened up the door to making spars, spinnaker poles, bowsprits, whisker poles, masts and booms.

CCI has evolved from making sailboat parts to being an innovator-a problem solving organization open to new requests and new thinking.

The military came looking for high-strength foam cored fiberglass flat panels and that project inspired a boat application comparable to the old "stitch and glue" plywood construction methods but with far higher strengthto-weight performance.

All great foils start here at our CNC station! CCI has a two, three axis milling machines on a 8'x4' flat bed table to allow us to mill many different products. We work in RhinoCAD 3D software, and can accept designs in almost any format from 'back of the napkin' to DXF files.

We interviewed Dave Bradly and he explained that there was a very high demand for composites and that CCI will continue to explore "market verticals" but he emphasized that the marine industry remains very much their core business.

The skills at the company have lead them to produce radomes for Honeywell, parts for the Canadian Department of Defense and National Research Council. car parts, geo-survey drones that are towed behind helicopters...all manner of custom design projects.

Still, many of the products and innovations at CCI come directly from a shared passion for boats and performance.

Dave Bradly remarked to us with a chuckle, that it's such a Canadian thing that you are not a major success at home until you are a major success in global markets. Well, CCI is really enjoying that global success now and that passion for boats and performance is clearly behind it.

They have a corporate motto that, "If you can imagine it, we can build it in composites". That certainly makes the story about CCI a great Canadian products and innovation story.

For more information or contact info, visit: www.fastcomposites.ca.

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Boats in the **Post-Minority era**

BY JOHN MORRIS



HERE WAS A TIME, not long ago, when visionaries in the Canadian boat industry saw "ethnic marketing" as the answer to the industry's woes. Just market to the Asians and other visible minorities and our problems are resolved. New boaters were just a minority ad away.

Basically, very few marketers took any steps in that direction. In November 2010, I reported in these pages on the state of ethnic marketing documenting Charley Zhou's efforts in the Asian community, Henry Nguyen's rocketing career selling boats at Legend and the few other initiatives.

Less than three years later, the light has gotten brighter but its focus is already quite a bit different. We are now in the post minority era. Why, because we are all just citizens of this great country—you know that but it has never been as true as today.

Dentists have long been enthusiastic boaters, right? Want to see what a visible minority looks like? I grabbed this shot from the cover of the UofT Alumni magazine—new dental students in their sharp new lab coats. I don't really see any minorities. I do see a lot of dental students who will soon be affluent dentists looking for leisure activities. Men women, Canadians from various walks of life, persuasions, beliefs, sexual orientations all united by one thing—a love of drilling teeth and making money doing so. Putting it completely crassly, these are the boaters of the future—do we care about their hair colour or the colour of their money? ← LEFT: Modeling the target demo for Minis at the Toronto Car Show. ↓ RIGHT: Who cares about enthnicity? These U of T dental students will soon be affluent dentists looking for leisure activities..

Lately—as lately as the Industry Breakfast at the Toronto Boat Show,—I have heard demographers and pundits suddenly awakening to the truth that has been staring them in the eyeballs for 20 years, here in Canada anyhow. The indigenous Baby Boomer population is getting too creaky to climb on board. Suddenly they are recommending putting minorities in your ads and targeting ethnic media. Fact is, that while ethnic publications continue to exist, their days are numbered as communities forsake the telenovela for How I Met Your Mother. Won't it be ironic



when their only advertisers in non-English publications are boat companies?

The mosaic here in Canada has dissolved. In the areas where immigration occurs, the immigrants quickly become the community and the whole landscape evolves. Do you see Italian newspapers are sold in Little Italy—not much. Go to Brampton and check what proportion of pizza takeout is by the Indian community—it is the Canadian way of life, n'estce pas? Immigrant communities, especially the kids have embraced it without condition. In short, who cares? Once you get past the first generation—and often even before that,— Canadians integrate themselves.

What's happening is the passage of time. As noted by every imaginable study and pundit, older, more affluent generations are riding the demographic bubble into the sunset while the boating industry has been ignoring the next generation. You can suggest that the next generation has a different cultural heritage than the outgoing one and you would be right but that isn't the point. Boating's task is to stay relevant, exciting and welcoming to the people who could buy boats. Period.

Our advertising and marketing must reflect our community as a whole and see them all aboard boats, rather than the current boat owners who no longer speak for the larger community. Yes, change. Colour and ethnicity isn't the focus of marketing—accessibility, affordability, exhilaration and fulfillment are. ■

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- 3. Include safety articles (free at www.smartboater.ca) on your website and in your customer newsletters, and post information on required safety equipment.
 - Arrange a date to have a Pleasure Craft Operator Card course provider be on site.
 - Run a weekly safety quiz on your website, at your marina or in your newsletter and offer boating safety related prizes.
 - Post and distribute a Vessel and Operator Preparedness CHECKLIST (available at www.smartboater.ca)

Taking some time to make your customers more aware of what is required will help keep them safer out on the water and can also contribute to your bottom line.





The International Maritime Organization (INO)

What it is and why we care

BY BOB MARKLE

HE ORGANIZATION now known as the International Maritime Organization was formed by treaty in 1948, and held its first meeting in 1959, after the treaty was ratified by the required number of nations. It is a specialized maritime body of the United Nations, headquartered in London, now with 170 member nations and three associate members. Numerous other international non-governmental organizations and international organizations participate in its work. Its purposes are "to provide machinery for cooperation among governments in the field of governmental regulation and practices relating to technical matters of all kinds affecting shipping engaged in international trade; to encourage and facilitate the general adoption of the highest practicable standards in matters concerning maritime safety, efficiency of navigation and prevention and control of marine pollution from ships."

IMO is best known as the body responsible for the Safety of Life at Sea Convention (SOLAS), the international treaty that had its origin in the aftermath of the sinking of the RMS Titanic, just over 100 years ago. The general application of SOLAS is to cargo ships 500 gross tons and above, and pas-

senger ships on international voyages. But even if you don't own or operate a merchant ship operating on international voyages, SOLAS and the other work of IMO does affect you as a mariner.

The original 1914 version of SOLAS established radiotelegraph requirements for passenger ships. Today, one of the most important parts of SOLAS is the radio-com-

munication requirements forming the Global Maritime Distress and Safety System (GMDSS). The GMDSS was adopted as part of SOLAS in 1988 and began to be phased in from 1992. In February 1999, the GMDSS became fully operational. Emergency Position Indicating Radio Beacons (EPIRB) are part of GMDSS. GMDSS brought Digital Selective Calling (DSC) and the red distress button to your VHF and single sideband radios. Now any vessel with a DSC radio that is in distress can summon assistance even if there are only a few seconds available to push the button, as the distress message will be transmitted automatically. With the vessel's nine-digit MMSI (Maritime Mobile Service Identify) properly entered into the radio, and connected to a GPS, responders automatically know what to look for and where. DSC allows programming other vessels' MMSIs into the radio so that calls can be made from a "phonebook" directly to the other radio. IMO is now undertaking a project on "Modernization of the GMDSS." There will not be any radical

changes as a result, but we expect that some recent technological developments will be able to be incorporated.

The Automatic Identification System (AIS) is another contribution from SOLAS. Using VHF channels, information is exchanged between vessels on their identification, course and speed, as well as other information. This information can be displayed as text, or graphically on compatible radar or electronic chart systems. Originally conceived as a navigation aid, its

"IMO is the body responsible for the Safety of Life at Sea Convention (SOLAS), that had its origin in the aftermath of the sinking of the RMS Titanic"

> international adoption at IMO was accelerated in the early 2000s when it was seen as a maritime security tool. Now operators of all types of vessels are embracing AIS for its original navigational safety purpose.

SOLAS requires merchant ships to carry a suite of navigational equipment and to meet certain requirements for visibility from the bridge and also lookouts in certain circumstances to ensure that large ships operate in the places where they are supposed to be. SOLAS also requires member governments to provide navigational warnings, meteorological services and warnings, coastal search and rescue (SAR) services, hydrographic services, and the establishment and operation of aids to navigation. A separate IMO treaty, the International Convention on Maritime Search and Rescue, divides the world's oceans into search and rescue regions that different governments volunteer to be responsible for. An International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual maintained jointly by IMO and the International Civil Aviation Organization (ICAO) standardizes SAR procedures globally, and is carried aboard merchant ships for reference in case they are called upon to assist in a rescue.

Another IMO treaty, the Convention on the International Regulations for Preventing Collisions at Sea, establishes the system of navigation lights and the Rules of the Road that are used worldwide. Your safety in shipping lanes shared with large ships depends

on safe ships and well-trained crews. IMO's International Convention on Standards of Training, Certification and Watchkeeping for Seafarers and the International Safety Management Code ensure that the commercial ships you encounter are crewed by competent mariners, and that owners and operators are responsible for their safe operation and management.

The International Convention for the Prevention of Pollution from Ships governs oil pollution measures, the control of noxious liquid substances, sewage, garbage, and most recently air pollution. There is now an International Convention for the Control and Management of Ships' Ballast Water and Sediments that helps prevent non-native invasive marine species from being introduced into the water through their transportation in ships' ballast water.

We often hear about the United Nations' inability to get governments to work together for a better world, but IMO as one of the UN agencies is clearly a success story. Although it is not without its disagreements and problems, IMO works remarkably well. Yes, nations that have their border disputes sometimes make political statements at IMO meetings, but just as often we see governments that are at geopolitical odds come together to agree on issues that make the world's oceans safer and cleaner for everyone that uses them. ■



The American Boat & Yacht Council and The Kathy and Jerry Wood Foundation Fundamentals of Marine Service Technology is a first for the marine service industry.

Fundamentals of Marine Service Technology Now Available

BY ED SHERMAN-ABYC DIRECTOR OF EDUCATIONAL PROGRAMMING

AFTER SEVERAL YEARS in development the ABYC is thrilled to announce their first self-published book is now available. *Fundamentals of Marine Service Technology* is much more than a first for the ABYC, it's a first for the marine service industry as a whole, so the book's publication represents a real milestone.

The full-color, 318-page volume is comprised of 14 chapters that are written with the assumption that the reader has little or no experience, or formal training in marine service. The book targets the needs of anyone who is either starting out or trying to learn what is needed to know, to begin a career in either small boat service or manufacturing. To give you an idea of the scope of the coverage, the chapter titles are as follows:

- Introduction to boat handling and safety
- General shop safety and practices
- Internal combustion engine theory

- Marine electrical system theory
- Outboard engine maintenance and troubleshooting
- Gasoline fueled the inboard engine maintenance and troubleshooting
- Marine electrical system installation and troubleshooting
- Diesel engine maintenance and troubleshooting
- · Drive systems for import and outboard engines
- Servicing boat trailers
- Marine electronic equipment installation
- Marine plumbing systems
- Marine materials: wood, metal and compasses
- Customer service skills

In designing the content and specific materials presented Tim Murphy, my co-author spent a considerable amount of time analyzing the DACUM [develop a curriculum] materials that >



are associated with all of the ABYC's certification programs. You see, within the DACUM data, which is generated by content knowledge, experts from each discipline represented, needto-know items and prerequisite knowledge items are clearly identified. So, by focusing on the prerequisite "need to know" items we were able to target the entry-level skills that industry employers expect new hires to have.

We didn't stop there. We carefully analyzed the Skills USA "Workforce Ready" exam material that the ABYC had helped to develop for that group several years back. This exam is the first standards-based exam created for entry-level marine service students in the US. By design, it is comprehensive, as was demanded by Skills USA to satisfy the requirements outlined in the grant that funded the project. The idea here was simple: they wanted to identify skills for entry-level new hires that would qualify individuals for employment anywhere in North America versus merely satisfying the needs of local employers in a specific geographic region.

So, the content of *Fundamentals of Marine Service Technology* is based quite heavily on the industry-vetted needs already identified by both the ABYC via its world recognized certifications, and Skills USA with its Workforce Ready exam and programming.

The book is going to answer another need that we get a lot of questions about in the ABYC Education department. We

constantly field e-mails and phone calls with questions about help in developing curriculum for schools all over the US. Well, we have done it. If you are running a high school or a post-secondary marine tech program, you need this book. It is the curriculum that will serve your students best.

The book answers several other known needs within the marine trades. One is the lack of funding for programs and the resultant shortage of good demonstration equipment at the classroom level; another is the visual and hands-on needs of our typical learners.

The book contains hundreds of full-color photos and illustrations that help explain things that get discussed in the text. Further, through the use of QR codes found in each chapter, the reader can get brought directly to the ABYC website and video catalog that will provide actual demonstrations of the various tasks being performed that are mentioned in the text. We see this as having extreme value to the teacher with limited time and resources and the advantage to the student is that they can review the demos as many times as they need.

Finally, the book is available in both the hardcover print version for \$139 USD plus shipping and handling for ABYC members and \$169 USD plus shipping and handling for non-members as well as in a downloadable digital version for \$89 USD for ABYC members or \$129 USD for non-members. ■





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