Inside This Issue

- Reducing Education Costs Pg. 1
- Did You Know? Pg. 3
- ABYC Standards Update Pg. 4
- Splashes Pg. 5
- Life on the Ocean Wave Pg. 6
- We Get Mail Pg. 8
- Know It All Contest Pg. 9
- Westlawn Profiles Pg. 10
- News & Views Pg. 12
- Marine Metals—Part 1 Pg. 14
- Continuing Education Pg. 19
- Training Links & Events Pg. 20
- Back Issues Pg. 22
- Design Competition Pg. 22

Welcome

Dear Students, Alumni, and Friends,

In order to encourage talented potential students to prepare now for future opportunities as boat and yacht designers, the American Boat & Yacht Council is sponsoring a grant program to help to partially defray tuition expenses. ABYC’s continued commitment to supporting the boating industry and marine education is invaluable and greatly appreciated.

See below for details

Norm
Norman Nudelman, Editor
nnudelman@westlawn.edu

WESTLAWN DRIVES DOWN COSTS!
Students Can Save Thousands Of Dollars!

- ABYC Grants to help reduce tuition
- Tuition Held at 2008 Levels
- Zero-Interest Tuition Payment Plan
- Low Interest Tuition Financing
- Free AutoCAD & Deep Discounts on 3D Software

Westlawn has made a number of strong moves designed to help lower education costs and assist students to follow their dreams and attain their goals. These moves include controlling tuition costs and finding ways for students to obtain otherwise expensive design software at little or no cost.

ABYC Grants For New Enrollments in Westlawn Courses

The American Boat & Yacht Council (ABYC) has generously sponsored a new-student grant program for enrollment in Westlawn’s entry-level courses: Module 1 of the four-module Professional Yacht & Boat Design Program, and Elements of Technical Boat Design (formerly Yacht Design Lite). ABYC’s grant will award $250 for each student enrolling in Module 1 or in Elements. This is a great opportunity to start your Westlawn study with added financial support. Take advantage of this soon. The combined ABYC sponsored funds are limited. The grants are available to all, but only until all funds are expended.

Tuition for all courses will continue at 2008 levels through September 2009.

Westlawn is now offering a ZERO-INTEREST tuition payment plan for all four modules of our professional diploma program, Yacht & Boat Design, as well as for our short course, Elements of Technical Boat Design.

In addition, we continue to offer students two low interest options for financing for the four-module professional Yacht & Boat Design Program and for Elements of Technical Boat Design. With interest rates from 3% to 9%, students have the flexibility to choose the payment plan that best meets their needs. Students moving on from Module 1 to advanced modules can continue to finance their tuition by rolling over any balance due as they progress in their study.

Continued on Pg 2
This tuition-financing program is available through TFC Credit Corporation, which has been financing student tuition for over 35 years. In that time, TFC has financed over 250,000 students at over 1,500 schools. With full-service operation centers in both New York and San Francisco, TFC Credit Corporation is a leader in education-financing. TFC’s web address is www.tfccredit.com.

Download, Westlawn’s catalog and enrollment forms, from the Westlawn website to read complete details of the zero-interest tuition payment plan as well as tuition financing through TFC Credit. Click here for enrollment forms and Click here for the Westlawn catalog.

**FREE Student AutoCAD!** Westlawn has arranged for active Westlawn students to download AutoCAD online directly from Autodesk. This is a full version of AutoCad Mechanical student release. It is not a trial version. Active Westlawn students can log into the designated sign-up page through the Westlawn student forum. This is the lowest cost for full AutoCad ever—no cost! The commercial price of AutoCad Mechanical is $3,999, an enormous savings.

**Orca3D Hull Modeling and Rhino General 3D Modeling Software at Deep Discounts!**
In addition, Westlawn has arranged with DRS C3 Advanced Technology Center for deep student discounts on the Orca3D hull modeling plug-in software for Rhino, plus Rhino in addition, if needed.

Orca3D Level 1 (hull design and fairing with intact hydrostatics and stability) is $1,390 commercial but just $125 for Westlawn students, a $1,265 savings!
Orca3D Level 2 (all of Level 1 plus speed/power analysis and weight and cost tracking) is $2,780 commercial but just $250 for Westlawn students, a $2,530 savings!

Orca Level 1 is all that’s required to complete Westlawn studies, but it makes sense to take advantage of this student discount to get Level 2, which will make your advanced work go more quickly and will serve you well in your career.

You need the general-purpose Rhino (Rhinoceros) 3D modeling program to run Orca3D. If you don’t already own Rhino, DRS C3 Advanced Technology Center has arranged a special Westlawn discount package price for Orca3D plus Rhino, as follows:

- Orca3D Level 1 & Rhino **$288** (commercial price $2,385)
- Orca3D Level 1 & Rhino/Flamingo/Penguin/Bongo **$558** (commercial price $3,085)
- Orca3D Level 2 & Rhino **$401** (commercial price $3,775)
- Orca3D Level 2 & Rhino/Flamingo/Penguin/Bongo **$671** (commercial price $4,475)

**Savings over the full commercial prices range from $2,907 to $3,804 depending on the package!**

To take advantage of these deep discounts for Westlawn, students must follow the student-purchase procedure on the Westlawn student forum. You must be a currently active Westlawn student.

**The basic CAD software required to complete Westlawn is AutoCad plus Orca3D Level 1 and Rhino.** So the total cost of the required CAD software to do all of Westlawn is now just $288! This is the lowest cost for required CAD software ever!
Continued from Pg . 2

Students looking to further enhance their skills and do more advanced work will find the additional software (Orca3D Level 2 and Flamingo, Penguin, and Bongo) a worthwhile long-term investment.

Flamingo is a photorealistic rendering plug-in for Rhino
Penguin is a sketch/cartoon/illustration plug-in for Rhino
Bongo is a design animation plug-in for Rhino

**Maxsurf For Hull Fairing at Zero Cost for Students!**
One of the most widely used and most fully-featured suite of hull-fairing and marine-design software packages is Maxsurf, from Formation Design Systems. **A three-surface, full-feature version of Maxsurf’s, internationally acclaimed design software is available free of charge to Westlawn students!** With over 3,000 users worldwide, Maxsurf has been an industry leader for twenty-five years. Maxsurf designs can be saved as Rhino documents and open seamlessly with Rhino version three or four. Maxsurf designs can also be exported as DXF or IGES documents for further development in many other CAD programs including AutoCAD and MicroStation.

Maxsurf offers students unprecedented support via access to their academic web site [www.formsys.com/academic/Maxsurf](http://www.formsys.com/academic/Maxsurf). In addition to software, the site provides student forums, tutorials, design articles, sample designs and answers to FAQ’s, all free of charge.

Many, if not most, Westlawn students will find the free three-surface Maxsurf software the only hull-design program needed to complete their coursework. However a six-surface version of the program is offered to students for $940, one half the commercial price of $1,880.

**ProSurf at Low Student Pricing**
Westlawn also has special student pricing on New Wave Systems’ ProSurf ($295), which we sell directly to active students. Though not as up to date as some of the other hull-design software packages, it is still a powerful, effective program, and many students find it the easiest to learn and to use.

**Did You Know?**
When a car hits another car or a boat hits another boat, it’s a collision. But, what do you call it when a boat strikes a dock, or a day marker, or some other fixed object? Is it a collision? No. A collision is when two moving objects strike each other. When a moving object strikes a fixed object, it’s properly called an allision. A boat that has struck a fixed object (such as a piling) is said to have allided with the object, not collided with it.

It’s technically correct to use this terminology when talking about cars and trucks, but it’s usually neglected. It is, however, required proper terminology when describing or reporting on marine accidents.
ABYC Announces the Largest Revision to Its Standards & Technical Information Reports

The American Boat & Yacht Council (ABYC) announced that 16 of its 66 Standards and Technical Information Reports have gone through their review cycle, have been updated, and will now be available as part of the 2008 – 2009 edition of the ABYC Standards and Technical Information Reports for Small Craft. These 16 standards total 322 pages of revisions and represent almost 25% of the documents.


As part of ABYC membership, all current and future ABYC members will be receiving a new soft cover archival manual on an annual basis that includes a complete set of all the ABYC Standards. Members will no longer have to spend time updating the previous three-ring binder format with the revised documents. Members with outstanding membership dues are encouraged to renew as soon as possible, so they can be included in this mailing.

John Adey, ABYC’s Technical Director stated, “Our Electrical Standard alone (E-11) is 73 pages long. The total number of pages, number of revised standards and the scope of work on these documents makes this one of the largest revisions to the ABYC Standards that our Technical Department has undertaken. We would like to thank all of our committee members for their hard work and participation, which made this possible.”

Skip Burdon, ABYC President said, “By providing members with a complete set of standards each year, we are providing more value for their dues dollar, while also ensuring that everyone has the latest complete edition of the standards to work from. For those members who have let their membership lapse – this is the time to rejoin! With the number of documents that have been updated, you can’t afford not to have the 2008 – 2009 edition. It is simply a wise business decision and risk mitigator.”

ABYC has been developing, writing and updating the safety standards for boatbuilding and repair in the United States for 55 years. ABYC is actively involved with the International Organization for Standardization (ISO) as well as education and certification programs for marine technicians. These standards are available on CD-ROM, online (Web-STIR and the ABYC Standards Powered by Rulefinder.net) and in printed form. Membership and general information can be requested by visiting the ABYC Web site at www.abycinc.org

For more information on Rulefinder, and a free one-week trial subscription see page 12.

Source: Caroline Chetelat, ABYC, cwilliams@abycinc.org

Frame Locations — The Reference Face of the Frames

The frames on a wooden boat are beveled to accept the angle of the planking running over them. For this reason the frame locations are determined by the aft face of the frame forward of midships and the forward face of the frame aft of midships. This is the reference side or reference face of the frame. In this way, the frame is cut to the shape inside the plank at the location of the frame’s designated face and then beveled in from that, forward or aft as appropriate.

If you did it the opposite way, you would have to add shims to the frame to make it match the plank angle. In order to keep the structure of the frame balanced about the frame’s designated reference face, the floors and deck beams are fastened to the reference side of the frame. Accordingly, the deck beams and floors for the frames of a wood boat are fastened to the aft face of the frames forward of midships and to the forward face of the frames aft of midships. Be careful to follow this practice on any wood or wood-epoxy boats.

On welded metal hulls, it’s exactly the opposite. Since you weld the shell plate to the frames, you want the outside corner of each frame or bulkhead to be exactly at the inside of the plate, without having to grind off a bevel.
Doug Zurn (Westlawn alumnus class of 1993) designed the MJM 40Z for MJM yachts. Here is what Bob Johnstone, CEO of MJM Yachts, has to say about Doug's design:

"What a boat!

Sea trials were conducted with Volvo technicians. Top speed was 39.1 knots (45 mph). That was with 10 big people on board and 350 gallons of fuel. The pics were taken after sea trials when the sun came out...like a summer day!

Scale weight on the travel lift, with 50 gallons of fuel on and no water (e.g. dry), was 16,000 lbs. Doug suspects they're weighing light by about 500 lbs. We added 2,400 lbs. of diesel and 2,000 lbs. of bodies (+30%) to displace close to 21,300 lbs. for the trials.

A sweet spot seemed to be 3,000 rpm at 4.8 degree bow rise, doing 32.4 knots and burning 27.3 gph or 1.2 nmpg. Dropping 3,000 lbs. (15%) from that payload (for 1/2-load displacement), redistributing some weight forward (didn't want 100 gallons of water turning to ice in the tank under the main saloon), getting some hours on the engines, and a 1/10th or two from the more efficient standard stern drives should put fuel efficiency numbers pretty close to the target 1.5 nmpg in the 25 knot range for the standard sterndrive program with twin 300s.

The IPS control system is something to experience! Makes the bow and stern thrusters seem medieval. What's more, the IPS program is a lot quieter. In docking, you are working with one joy stick instead of two and the throttle/gear control. Steering is lighter than on the 34z... more like the 29z only more directionally stable. You can run idle forward with only 1 engine at close to 3 knots which is nice in marinas. At speed, the boat takes waves nicely and carves into turns at the proper angles so you don't feel you are being pitched one way or the other. Interceptors (like trim tabs) work fine, but are not needed at higher speeds.

Hull number one will be in Miami while number two struts her stuff at the New England Boat Show.

For more information contact Doug Zurn at www.zurnyachts.com or Bob Johnstone directly at www.mjmyachts.com.
“Quick Tarsha, let’s jump in the dinghy and go exploring.” Grabbing our gear, we jumped in, and hoisted our sails. We were off, seeking another adventure.

My name is Cheree Bowdidge, currently 17 years old and this story is a record, in brief, of my 11 years of an adventurous childhood aboard Inflight, our 42-ft. catamaran, from my point of view.

When Mum and Dad said we would be moving onto a yacht and cruising, I had mixed feelings of leaving my friends, but looking forward to new and exciting adventures at the same time. I thought I could imagine what it would be like, but I was 6 years old, and had no idea what I was in for. I also imagined it being a slightly lonely life, but in fact it was quite the opposite. Even if you wanted to have a quite Christmas or New Years away from the crowd of the marinas, in a quite anchorage...think again!

I remember Christmases, Easters and New Years were of the most social times, everybody that was in that anchorage got together, and if you can imagine My Big Fat Greek Wedding all packed onto one Catamaran, this is how I remember my life on our yacht! For New Year’s Eve, my sister and I wanted to see the fireworks...and that we did, we had front-line view of the fireworks on the esplanade from our yacht, once again surrounded by friends. Even friends we just met that day!

In addition, I remember the cyclones! Over the years, nine in all past over or near us, as we had our boat tied in the mangroves in preparation for their arrival. One cyclone in particular had the feeling of our yacht being sucked out of the mud, as it was low tide and we were beached surrounded by mangroves. It went from deafening winds to silence, and when we looked up in the sky we could see the stars above us in the clear eye of the cyclone. I remember feeling completely excited about it all, although everyone else was a little concerned. We never had a problem with our boat, however when we went into town to go shopping, we could not believe the mess the cyclone had left in town.

In addition, I’m sorry but I have to mention this, I had to do it, so you have to hear about it...my correspondence schooling. This is for the parents who are contemplating taking their children on a yacht and out of the normal schooling curriculum. Believe it or not, it’s actually fantastic...you only have to work half a day! My sister and I could easily keep ahead of schedule as well as maintaining good grades, the only problem with correspondence schooling on a yacht was the health and physical education tasks, which required a little...imagination.
The work isn’t hard, in-fact the teachers are very helpful, sending out extra library books we didn’t order for personal reading, and wanting letters on all our adventures. However, the work becomes a little time consuming once you reach year 11 and 12, as my sister did year 11 while we were travelling overseas. The great thing about correspondence schooling is the fact that it prepares you for the difficult tasks ahead. When we moved back ashore, my sister won many academic and swimming awards during her year 12, due to the many years of correspondence and our life on a yacht.

I have so many funny memories, all of which can’t be listed. However, one of them was the first time we sailed out to the Great Barrier Reef to go snorkelling. This happened to be my first encounter with sharks. After snorkelling for half an hour, and seeing the breathtaking sea life and amazing colours of the reef, we were swimming over the edge which dropped off into the abyss. We happened to notice something moving in the depths...getting ever so closer. When we realised it was six or more sharks, the race was on for the dinghy. Dad had no trouble throwing me into the dinghy, I was the youngest. However, I was laying there in hysterics watching the rest of the family trying to clamber into the dinghy all at once. It was so funny to see, and in the end everyone broke up laughing so hard, no one could get in anyway.

I remember the first time I sailed my very own small sailing dinghy with my sister, which my parents had built for us, which to us at the time, seemed like being handed our first set of car keys! So, when my dad pushed the dinghy off and told us to go for a sail in our newly built dinghy, everything was going great. We were flying through the waves, the wind in our sails, and the sun on our faces, everything was fun...until we started going too fast. We were still nervous about being in charge of our new dinghy and didn’t know what to do. The dinghy started to lean over so far from the wind pushing us, and we were going so fast, we didn’t think to simply take down the sails! As we flew down the channel, we saw a cruise ship coming toward us up the channel. We started to freak out, so as we tried to get out of the channel, while seemingly hitting every single pylon on the way! As the tears and screaming started, we heard Dad yell out to us “take down the sails...” why hadn’t we thought of that before??? As amusing as the situation was, when we saw Dad laughing at us, we were quite angry, as we were thinking he didn’t care that we were all going to die!!!!!

Travelling up and down the Australian coastline and the trip to the tip of Australia, I remember we went ashore and the race was on. Who in the family could make it to the tip of Australia first? I remember my sister was a faster runner than I was, and she wanted to be the first. But, just before she got there, my Dad grabbed her and let me win the race. I was the first in my family! He inevitably had to make her last of course!!! I remember sitting at the tip and feeling so excited about the trip ahead! If I had a choice between living on a yacht and going overseas or, living on shore and seeing the same kids’ day in day out, I choose the sea in a shot! It’s a great life!

However, this was only the beginning, the real adventure started when I was turning 13 and my parents decided, “To hell with this, we’re off to Singapore for a new adventure!” It was 12 months outside Australian waters, filled with excitement and adventure, it was most certainly the most unforgettable and amazing experience I ever had!! I say that because, many families would probably be unsure of whether to take their kids with them on ocean trips, but I was turning 13 and I had the best experience of my life. Sure, it was scary at times, but it was all a part of the adventure, and what an adventure it was!
Life on the Ocean Wave (continued)

Leaving Australia going to Indonesia I had never seen so many dolphins!!!! There were so many! The most amazing part about ocean sailing is the nights. The passing squalls would stir up the phosphorus, lighting the water up like a Christmas tree. It was as the whole ocean lit up a green-yellow glow. The dolphins at night were like torpedoes in the water, racing at the hulls of our yacht, and seconds before they hit, they'd leap out of the water like glowing sparkles from the phosphorus. With the boat on autopilot, we all sat on the bows and tramps, trying to reach out to touch them. With clear skies and the moon above, surrounded by dolphins, it was so bright and magic! In the day, the ocean was bluer than any kind of blue I could imagine and going on forever! I mean, I've lived on a yacht nearly my whole life and yet, still never seen anything quite like this. Everyday and night the dolphins would sing together and when we whistled, they'd sing back. Nights were the best. I remember the amount of stars were more than I had ever thought was possible! Every 2 minutes it seemed, a meteor would streak the sky. It was so clear, we could even see the pieces that broke off and burnt up in the atmosphere! It was as if there were more stars in the sky than grains of sand on a beach! I never knew there were so many until we got completely away from the city lights and further off shore.

This is the end of Part 1.
The adventure continues in Part 2 in the June 2009 issue of The Masthead.
Join Cherre and Natasha as they explore Malaysia and Singapore.

We Get Mail

Sent: Sunday, December 28, 2008
To: info@westlawn.edu
Subject: performance predictions

I have been active in small boat design and construction for over 30 years. For several years I have been working on the design and development of a trimaran power yacht.

Can you help me with developing a performance prediction calculation? The one in the Westlawn books are for monohulls and I'm not quite sure they are giving me accurate results.

Thank You for your help.

Dave's Answer
January 06, 2009
Good to hear from you. Multihull speed and powering calcs are still a bit hard to come by. Here are two approaches:
1) Take a look at the Wyman speed formula in the June and September 2008 issues of the Westlawn newsletter, The Masthead.
June 2008: http://www.westlawn.edu/news/WestlawnMasthead06_June08.pdf
This method seems to give good results on multihulls and monohulls.

Continued on Pg. 9
We Get Mail (Continued from Pg.8)

By the way you should find other issues of *The Masthead* of interest. You can see all back issues at: http://www.westlawn.edu/news/index.asp#newsletter

You can subscribe by clicking on the link on the bottom left of the front page of any issue of *The Masthead*.

2) Kellsall's multihull speed formula is:
For slender-hull, "displacement"-type multihulls, you can use Kellsall’s multihull speed formula for a reasonable approximation of speed:

\[
kts = (\text{DWL, m} \times \text{bhp} \div \text{disp, tons})^{0.5}
\]

Where:
\( kts \) = boat speed, in knots
\( \text{DWL, m} \) = waterline length, meters
(To convert feet to meters divide feet by 3.2808.)
\( \text{disp., tons} \) = displacement in metric tons
\( \text{bhp} \) = total installed engine rated brake horsepower all engines (not shaft horsepower)

Remember, these slender hulls can be driven at well over so-called monohull hull-speed (1.34 x the square root of the waterline length in feet), as long as there is sufficient power installed.

Hope these are useful.

Happy New Year!

Cheers,

Dave

Know It All Contest Winner!

of the December 2008 Issue

The *Know It All* questions and correct answers are important design tips for students as well as marine professionals. We suggest that you file them away for future reference.

The question from December 2008 issue was:

You have been asked to survey the 62-foot ketch, *Sunbeam*, with a 120-hp diesel engine driving a feathering propeller when under power. *Sunbeam* is fitted with 112.5 degree red and green running lights (side lights) port and starboard, and a 135-degree white stern light. An all-around white light is located on the masthead. The boat also has a pair of spreader lights under each of the masts and a powerful, handheld, 12-volt searchlight.

Does *Sunbeam’s* complement of lights meet the requirements for navigation lights for ocean voyages? If not, what light or lights are missing?

I’m happy to say that there were quite a few erstwhile Know It Alls for this contest, many of whom submitted the correct answer. Per the contest rules, the first three correct answers were sent in by: Paul Silka, Shawn G Bartnett, and Susan Canfield. All three are now distinguished with the august title of “Know It All” and will receive a Westlawn tee shirt and cap, as well as their Know It All certificate.

Got to page 18 to read the correct answer to last issue’s *Know It All* question and to see the new *Know It All* question for this current issue.
Kevin Dibley was born in Canada but arrived in New Zealand at the age of 18 to further his dream of working in the marine industry. He went to Canterbury University in Christchurch and during holiday breaks he worked at Ian Franklin, Boatbuilders who built racing yachts in Christchurch, New Zealand.

“I was exposed to quite a few Laurie Davidson [America's Cup Designer and design guru] designs at Ian Franklin’s yard, and one day I had my epiphany - I knew I wanted to be a yacht designer. So I enrolled for a four-year distance-study course at the Westlawn Institute of Marine Technology, in the U.S.”

Dibley moved north to Auckland eventually and worked for a variety of marine related businesses and boatbuilders until Garry Banks of Eagle Yachts hired him to update their existing drawings. It was here he got his first break.

“I was alone in the office one day when a chap walked in wanting to speak to a senior designer about a new idea. Give me a week, I said, and I’ll come up with something. That was Jono Gravit - he became my first client - and the boat I designed was Supergroove.”

The 8m yacht was an immediate sensation, and won the New Zealand Trailer Yacht Championships five times in quick succession (1996, 1998, 1999, 2001 and 2002). Two years later, a sister ship was built (Springloaded) and she too has notched up an impressive racing record.

Supergroove paved the way for new commissions. Another client - impressed with the boat's performance, ordered a 14m sloop. Mac’s Out (now More Witchcraft) has had a successful racing career, and is currently doing the circuit in Sydney, Australia. She had a podium finish in the 2006 Rolex Sydney to Hobart Race and has won numerous races and series over in Australia.

In 1995, Dibley struck out on his own, and Dibley Marine was born.

Dibley Marine’s first commission as a new company was a 6.5m Sportsboat, Stealth. Like Supergroove before her, Stealth quickly developed a reputation for speed. She grabbed Overall line honors for the 2003 South Island Trailer Yacht Championships, as well as the 2003 Canterbury Twilight Series. Out of the Blue - another Dibley 8m like Supergroove and Springloaded (but with a new rethink on hull shape and sailplan) notched up an even more spectacular record. In 2002, she was the line and handicap winner of the Hogg’s Breath Race Week, in Queensland. A year later, she was line and handicap winner of the Cairns to Fitzroy Island & Return Race, the 2003 Cairns Festival Regatta, and the 2003 Cairns Cruising Yacht Squadron Ladies’ Race.

The commissions got bigger. Babe (10m) was designed for a client who wanted it for the two-handed Melbourne-to-Osaka race. “At the time,” says Dibley, “it was the smallest boat that could qualify for the race’s regulations. The Melbourne-to-Osaka race never happened (for a variety of reasons) but Babe proved her abilities.
Westlawn Profiles / Kevin Dibley (Continued from Pg. 11)

winning line and handicap honours in the 2003 Offshore Melbourne to Port Fairy Race. A bigger racing yacht - the 11.8m Widowmaker - is currently under construction in Tauranga.

Dibley acknowledges that it’s impossible to design everything himself, and so contracts in specialist expertise as required. “Working in a partnership of specialists is great for the client, because he gets the most up to date technology and ultimately the best solution.” In similar arrangements, Dibley has worked extensively with America’s Cup designer and boat-design guru, Laurie Davidson. Projects include full design support for the 2001 Norwegian Volvo 60 Campaign (Djuice), for an American Transpac 52 Racing Yacht (Alta Vita), a 35' Racing Yacht (Jive Talkin’) which took out the Auckland Suva Race a few years ago, Two Australian 58’ racing yachts (Another Duchess and Aftershock) and for Pendragon IV - the first of the Transpac 52’s out of California. Dibley is currently working with Laurie Davidson on the newest Pendragon [VI] which is a 69-foot racing yacht for the Transpac Race to Hawaii. Launching due in 2009.

Like most boat designers, Dibley spreads his creativity around all forms of the boat industry . . . “To survive, you have to be flexible.” He has designed a number of luxury performance cruisers, including the Dibley 52 Marnico and Dibley 66 Lasca (formerly Knight Commander). Marnico has chocked up thousands of ocean miles in the Pacific and is based in Australia. Lasca is currently enjoying cruising in the Med. Despite the luxury, both have a strong racing pedigree, and feature lightweight, composite construction. Lasca has been clocked at 22 knots off Bream Head.

Dibley, alongside a separate company, Commander Yachts—as part of a drive into the superyacht market—has developed the concept drawings for an 80-foot and a 110-foot high performance cruising yacht. Both feature a retractable keel (to enable them to get into the marinas in the Mediterranean while also allowing top performance and power).

He has also been involved in the design and refurbishment of large powerboats. Asteri, for example was an old, 150-foot European work tug. The new owner wanted her transformed into a pleasure yacht. Dibley did the initial interior design and the new superstructure. She’s unrecognisable as a former work tug.

A current project is a 170-foot traditional schooner that’s being built in Russia. She’s built from Siberian oak, and the hull and deck are complete. “I’ve finished interior drawings and a new rig. The new rig features carbon fibre masts.”

An executive member of the NZ Marine (the NZ Marine Export Group), Dibley was chairman of the 2005 Yacht Vision Symposium held in Auckland. He was a member of the steering committees for the previous two Yacht Vision events, as well as the steering committees for the first two Millennium Cups Superyacht Regattas.

Click Here To learn more about Kevin Dibley and Dibley Marine.
The American Boat & Yacht Council (ABYC) has recently launched the enhanced version of the ABYC Standards Powered by Rulefinder.net. This innovative product provides boatbuilders, component manufacturers and other industry professionals with an online, single-source library of global boat building standards. The ABYC Standards Powered by Rulefinder.net is available to ABYC members only, and includes: access to the most current ABYC Standards on the Rulefinder.net platform; access to the USCG Rules & Regulations for Recreational Craft; all five USCG Compliance Guidelines; access to the ABYC Standards revised in 2003, 2004, 2005, 2006 and 2007; and ABYC Comparison Reports that highlight the differences between the new and old ABYC Standards.

In addition to providing ABYC Standards on this platform, Rulefinder.net provides industry professionals with the opportunity to purchase additional global standards to include ISO (International Organization for Standardization) standards, the EU (European Union) directives, guidelines for CE (European Conformity) marking, and the recently added Australian/New Zealand standards in a web-based platform. Users of this product are in essence opening the door to a fully digital, global standards library that runs online.

Created using XML (Extensible Markup Language), a simple yet powerful and flexible program, no other industry provides this type of multiple standards accessibility and utility, while saving the user time and money. For a FREE five day demo, please visit www.abycine.org and click on the “Online Standards Access” menu button.

Source: ABYC

Emirates Team New Zealand wins the Louis Vuitton Pacific Series Cup with Three Wins Against Alinghi

Auckland - 14th February, 2009
The Swiss boat Alinghi, defender of the 33rd America's Cup, congratulated Emirates Team New Zealand on winning the inaugural Louis Vuitton Pacific Series Cup in Auckland, New Zealand today. Alinghi won the first match of the best of five series, but ETNZ took the next three to claim the LVPS Cup. The event has been a great opportunity to get back to some racing and the caliber of the teams – most of them 33rd America's Cup challengers – has been high for the three week event on the Waitemata.

Next for these 33rd America's Cup teams are the pre-regattas scheduled for July and October this year, followed by the Spanish Challenger of Record's annual regatta in November. “This has been a great fun event, with hard competition on the water and a great atmosphere ashore,” said Brad Butterworth, team skipper and four-time America's Cup winning tactician. “We look forward to getting on with the multi-challenge America's Cup now in Valencia, starting in July this year and culminating in 2010 with the 33rd America's Cup Match.”

Emirates Team New Zealand remains one of the most powerful challengers entered in the 33rd Cup: “There is no doubt, they are a very strong team and we look forward to our next match with them – hopefully in the lead up to the 33rd America’s Cup. They have managed and run a very good event here in Auckland alongside Louis Vuitton," said Butterworth.

Source: Cupinfo: All About the Americas Cup

Continue on Page 13
Lawsuit Alleges New Gasoline Blended with Ethanol Destroys Boat Engines

Ft. Lauderdale, FL – Exxon, Chevron, Conoco Phillips, BP, and Shell, all defendants in a proposed Florida class action lawsuit, were dealt a huge blow yesterday when a federal court in the southern district of Florida issued an order denying their joint motion to dismiss a lawsuit filed by three Florida residents, Erick Kelesceny, John Egizi and Todd Jessup. The plaintiffs allege that the world’s largest oil companies failed to warn them, as well as all Florida boat owners, that the gasoline they purchase at the pump, which is blended with ethanol, may destroy fiberglass tanks and tends to absorb water and phase separate, which could cause damage to all boats, regardless of whether they have a fiberglass tank.

The lawsuit was filed by consumer protection lawyers, Jeffrey Ostrow, David Ferguson and Jonathan Streisfeld of The Kopelowitz Ostrow Firm, P.A. (TKO), a litigation firm in Fort Lauderdale, Florida. The oil companies argued that the proposed class action lawsuit is preempted by federal and Florida law. By denying the motion to dismiss, the court has allowed the plaintiffs to proceed with their lawsuit.

The basis for the court’s ruling is that federal law encourages, but does not require, the use of renewable fuels such as ethanol, while Florida does not require it be used by boat owners. If successful, the oil companies will be forced to place a warning label on all pumps at all gas stations in Florida, notifying the boating public that usage of gasoline blended with ethanol may be hazardous to their boats.

Further, the plaintiffs seek compensation for all Florida boat owners who have been damaged as a result of the oil companies’ failure to warn of the destructive tendencies of fuel blended with ethanol when used in boats. Boat owners have been forced to spend thousands to tens of thousands of dollars to repair their boats.

“Denial of the motion is a significant step toward redressing the wrong perpetrated on Florida’s boating population," said TKO Managing Partner, Jeffrey Ostrow. "Florida is the boating capital of the world and it is reprehensible for oil companies to enjoy significant profits while knowingly paralyzing Florida’s boaters. We hope to have the opportunity to represent all aggrieved boaters throughout Florida.”

Denial of the motion is particularly notable in light of the fact that a similar lawsuit in California was previously dismissed at the same stage.

Source: Trade Only Today Jan. 22, 2009

New Design Rules for the 33rd America’s Cup

Valencia Spain: Cup defender Alinghi and 18 other syndicates have decided on new design rules for the 33rd America’s Cup series even while the future of the event remains in limbo until a New York appeals court rules whether Desafio Espanol is a legitimate challenger of record.

The organizers agreed to develop a yacht similar in cost to the one used in the last Cup, however the new yacht will be lighter and have improved downwind performance. The yachts will have a maximum length of 26 meters, a draft of five meters and a displacement of 17.5 tons.

According to Tom Schnackenberg, the designer who is coordinating the development of the new design, "The boat is slightly longer than the ACC Version 5.0 boats and several tons lighter, with a similar sail area and righting moment. It promises to have similar upwind speed and to have sparkling downwind performance."

Source: The Associated Press, January 30, 2009

19th Chesapeake Sailing Yacht Symposium, March 20-21, 2009

An international symposium dedicated to advancing the art and science of sailing yacht technology, the Chesapeake Sailing Yacht Symposium (CSYS) originated in 1974. Held on odd-numbered years, this symposium has evolved to become recognized worldwide as the source to refer to for information on sailing yacht technology. Authors of papers from around the globe attend these symposia, present papers and exchange ideas on sailing.

Papers on sailing technology are available to designers, students and sailors. The original papers can be obtained in bound photocopied form, or in their original bindings if available in that form. A CD version of the entire set of volumes will be available by the time of the 19th CSYS in March of 2009.

Breaks between sessions allows attendees the opportunity to meet with old friends and new acquaintances and presenters to talk about sailing and sailing technology.

To Learn more about this event and for registration information, go to http://www.csysonline.com/about.php
whether you’re running a full-service yard or marina, surveying boats, or supervising new construction, these days—more than likely—if you think of fabricating or purchasing a piece of strong (high-strength) metal hardware for a boat, you’ll think stainless. stainless is, in fact, a superb alloy. it’s certainly strong and appears corrosion resistant. it’s also widely available. as we’ll see, however, stainless steels have some serious and not well understood drawbacks.

the common stainless alloys for marine use are listed in the composition table below.

all these stainless steels contain about 2% manganese and 1% silicon. they also all have between 17% and 20% chromium. in fact, the steels in this group are often referred to as “18-8 stainless” because they’re roughly based on adding 18% chromium and 8% nickel to steel to reduce corrosion and increase strength. you can see from the table, however, that more corrosion resistant alloys have higher nickel contents. properly, only 302 and 304 are true 18-8 stainless. the better stuff (316, 317, 321) has more nickel, also molybdenum, and even titanium. (well look at aqualoy 22 later.) engineers—always fond of catchy terms—refer to this whole group as “austenitic” stainless steels. this just means that they are alloyed with nickel and chromium and are thus non-magnetic and corrosion resistant. (the term is in honor of sir william chandler roberts-austen, a british metallurgist.) whatever they’re called, 302, 304, 316, and 317 stainless all have a tensile strength of about 75,000 psi and a tensile yield of 30,000 psi—a high average for structural metals.

302 and 304
sadly, a large portion of the stainless fittings and hardware you buy will be made of either 302 or 304 (plain 18-8 stainless). these alloys work fine for interior hardware. they really have no other place on a boat,
however. Both 302 and 304 stainless are subject to rust spotting. In fact, on two of my boats—a 42- and a 50-footer—custom bow and stern rails were made up from 302. The result was that—in mere days—they showed rust staining and spots—not exactly “stainless!”

This brings us to another drawback with stainless steels: How can you tell which alloy of stainless you have? I’ve never found a good answer to this question. The builders of these boats had specifically ordered 316 for these rails per my instructions. Nevertheless, somehow, the fabricator had used 302. Of course, new all-316 rails arrived as replacement at no cost, but all this is unwanted hassle.

Still, rust spots are merely a cosmetic problem. 302 and 304 stainless also suffer from potential structural failures. Indeed, all stainless alloys can potentially suffer from pitting and crevice corrosion underwater—severe pitting and crevice corrosion.

**Stainless and Oxygen**

The reason for this is stainless protects itself from corrosion by interaction with the oxygen dissolved in seawater. This forms a protective oxide film. By comparison, bronze, Monel, copper, and copper-nickel corrode very slightly faster if they lose this film, but will still remain extremely corrosion resistant.

Stainless steels, on the other hand, rely almost entirely on this oxide film to protect them from corrosion. When stainless is in clean flowing water containing plenty of oxygen, it has no difficulty generating and retaining its protective oxide film. In this condition, it’s highly cathodic (noble)—a state that’s also called passive—and is highly corrosion resistant. If you deprive stainless of a regular supply of oxygen, however—for instance, pressed against a rudder bearing; smothered by barnacles; or enclosed in a stern tube—it loses its protective oxide film. In these conditions, without the protective oxide film, it becomes “active,” and can suffer badly from pitting and crevice corrosion.

**Stainless Welding Concerns**

Another problem with stainless occurs during welding. Most of 300-series steels have a moderately high carbon content—from 0.08% to as high as 0.25%. The trouble with this—for marine use—is that, when the steel is heated in welding, the carbon mixes with the chromium to form a chromium carbide. (Sounds like we’re getting deep into chemistry here, but hang on for a moment.) The result is you end up with a welded metal fitting with two sub-alloys formed inside: chromium carbide and chromium depleted stainless right next to it. These alloys are different enough to corrode each other (they form a galvanic couple in seawater).

This is why you should not “strengthen” a stainless steel rudder stock by welding a pipe sleeve round the outside to make it thicker. Visually, the increased outside diameter makes such a rudder stock appear much beefier and more robust. In reality, the welds are all too likely to suffer from pitting corrosion due to the internal chromium carbide formation. Such pitting corrosion has lead to some truly spectacular failures.

Further, most stainless rudder stocks have steel plates or fingers welded to them and embedded in the rudder-blade’s core. The purpose of these structures is to transmit the torque from the rudder stock into the blade itself. Of course—as long as the weld is sealed away from seawater inside the stock it’s fine. If any water seeps in, though—and this happens more often than...
not—you have exactly the worst possible situation in terms of stainless corrosion—stainless in stagnant seawater with little oxygen. The welds can suffer from amazing pitting and fail.

**Low-Carbon Stainless**

One solution is to reduce the amount of carbon in the alloy. This is what the “L” stands for in 304L and 316L stainless—for “low carbon.” You can see from the composition table (page 14) that these alloys have 0.03% carbon content or less, thus higher resistance to corrosion after welding. Another slightly more exotic approach is 321 stainless. 321 has titanium added. The titanium mixes with the carbon more readily than the chromium, which prevents the formation of chromium carbide.

If you have to use stainless underwater—especially a welded fitting—be very sure to use only 316L or 317L. Though you may hear otherwise, none of the other 300 series (18-8) stainless is up to the job. Stainless steel fuel tanks must be of only 316L or 317L, and welded with the TIG process, per ABYC. An even better alloy (not ABYC approved) is 321 stainless. ABYC has now approved stainless steel for diesel, not for gasoline fuel tanks. The one exception is that ABYC does permit stainless gasoline tanks if they are less than 20 gallons (75 l), are of cylindrical construction, and have domed ends. I personally can’t see any reason to use such small stainless gas tanks. Polyethylene tanks are available in many shapes in this size range and are much superior for this application.

**Special Stainless Steels**

There are marine stainless alloys that don’t fit in the standard 300 series. Probably the best known of these is known as Aquamet 22, Aqualoy 22, or as Nitronic 50 (nearly all the same composition). These are proprietary steel alloys. They are steel alloyed with about 21% chromium, 12% nickel, and 2% molybdenum. Aquamet 22 or Aqualoy 22 have almost become the “standard” prop shaft material for top-quality installations. They are very corrosion resistant and have a tensile strength of over 100,000 psi. I have a slight preference for Monel shafts—especially—with a bronze or NiBrAl propeller, but Aquamet or Aqualoy is darn good stuff, and I’m happy to see it installed on any boat. Under the Nitronic 50 name, this basic alloy is the standard material for much of the rod rigging installed on performance sailboats. Aquamet-22 also make a reliable rudder-stock material as well as excellent keel bolts.

Other special stainless—usually used in high strength rigging components—are alloy 17-4 and 17-7. These are stainless with 17% chromium and 4% to 7% nickel. With tensile strengths over 170,000 pounds, these are high-strength alloys indeed. Nitronic 50 and the 17-4 or 17-7 stainless in a fitting are a sign of the utmost in high-tech engineering.
### The Galvanic Series

#### ANODIC OR LEAST NOBLE END (Active)

<table>
<thead>
<tr>
<th>Material Description</th>
<th>Millivolts (mV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium (Mg)</td>
<td>-1730</td>
</tr>
<tr>
<td>Magnesium (2% Manganese (Mn))</td>
<td>-1670</td>
</tr>
<tr>
<td>Magnesium (9% Aluminum (Al), 1% Mn, 1.5% Zinc (An))</td>
<td>-1580</td>
</tr>
<tr>
<td>Galvanized Iron (hot dipped)</td>
<td>-1140</td>
</tr>
<tr>
<td>Zinc Electroplating</td>
<td>-1130</td>
</tr>
<tr>
<td>Cadmium (Cd) Zinc Solder (71%/29%)</td>
<td>-1120</td>
</tr>
<tr>
<td>Zinc (Zn)</td>
<td>-1050</td>
</tr>
<tr>
<td>Cadmium (Cd)</td>
<td>-860</td>
</tr>
<tr>
<td>Cadmium Plated Steel (Cd 0.001 in.)</td>
<td>-860</td>
</tr>
<tr>
<td>Aluminum (Marine Alloys 5086, 5083, 6061)</td>
<td>-820</td>
</tr>
<tr>
<td>Mild or Structural Steel (A36)</td>
<td>-790</td>
</tr>
<tr>
<td>Alloy Steel</td>
<td>-740</td>
</tr>
<tr>
<td>Aluminum (forged alloy)</td>
<td>-730</td>
</tr>
<tr>
<td>Stainless Steel (316, 317, 321, 347, 302, 304 — active, oxygen starved)</td>
<td>-550</td>
</tr>
<tr>
<td>Tin (Sn)</td>
<td>-500</td>
</tr>
<tr>
<td>Manganese Bronze, CA-464 Naval Brass (58%Cu, 39%Zn, 1%Alum, 0.25%Mg)</td>
<td>-450</td>
</tr>
<tr>
<td>Naval Brass (60% Copper, 39% Zinc)</td>
<td>-450</td>
</tr>
<tr>
<td>Yellow Brass</td>
<td>-450</td>
</tr>
<tr>
<td>Admiralty Brass (70% Copper, 29% Zinc)</td>
<td>-360</td>
</tr>
<tr>
<td>Copper CA-110 (Cu)</td>
<td>-340</td>
</tr>
<tr>
<td>Brass (60% copper, 40% zinc)</td>
<td>-330</td>
</tr>
<tr>
<td>Gunmetal (88% Copper, +Tin)</td>
<td>-310</td>
</tr>
<tr>
<td>Silicon Bronze (96% Copper, 1.5% Silicon)</td>
<td>-260</td>
</tr>
<tr>
<td>Tin Bronze</td>
<td>-260</td>
</tr>
<tr>
<td>Lead (Pb)</td>
<td>-240</td>
</tr>
<tr>
<td>Copper/Nickel (CA-715 - 70% Cu, 30% Ni)</td>
<td>-200</td>
</tr>
<tr>
<td>Aluminum Bronze (90% Copper, 10% aluminum)</td>
<td>-150</td>
</tr>
<tr>
<td>Stainless Steel (316, 317, 321, 347, 302, 304 — passive, oxygenated)</td>
<td>-150</td>
</tr>
<tr>
<td>Monel 400 &amp; 500</td>
<td>-110</td>
</tr>
<tr>
<td>Titanium (Ti)</td>
<td>-100</td>
</tr>
<tr>
<td>Silver (Ag)</td>
<td>-80</td>
</tr>
<tr>
<td>Graphite and Carbon Fiber (C)</td>
<td>(+250)</td>
</tr>
<tr>
<td>Platinum (Pt)</td>
<td>(+260)</td>
</tr>
</tbody>
</table>

#### CATHODIC OR MOST NOBLE END (Passive)

- All measurements taken relative to a silver:silver chloride (Ag/AgCl) electrode, at 77 ° F.
- The sign of potential applies with the negative (black) probe of the voltmeter connected to the reference electrode, and positive (red) terminal connected to the fitting being tested.
- If using a zinc reference electrode, add 100 mV to the potential. For instance, silicon bronze is -260 mV, then + 100 mV = -160 mV.
- Average variability of potential is ±40 mV for alloys with iron and/or nickel. ±20 mV for copper-based alloys without nickel.
- Readings 200 to 400 mV more negative (more anodic) than given indicate the material is protected.
- Readings at or near those given, up to 200 mV above those given, indicate the material is unprotected and freely corroding.
- Readings over 400 mV more negative than given indicate overprotection.
- Stray current corrosion is indicated by metals reading more cathodic (more positive) than indicated on the table.
And the answer is . . . No. These lights are not sufficient. A sailboat with a propulsion engine must also carry the same lights as a powerboat of the same size. The power lights must be displayed when under power, including when motorsailing.

The spreader lights are not required under the navigation rules and do not apply. The all-around masthead light will serve as an anchor light. It cannot be used under power and should not be used under sail. When under power, the boat must display a 225-degree “masthead light,” a forward white light (this is sometimes called a “steaming light”) at least 9 feet above the gunwale or deck at side and at least 3.3 feet (1 meter) above the sidelights. Note that the all-around masthead light and the steaming light must be on separate switches. Under sail alone, you use only the sailing lights (the side lights and stern light). Under power or motorsailing, the steaming light is switched on in addition. At anchor (outside special anchorage areas), all the other running lights are switched off and the all-around masthead light turned on.

Boats over 12 meters (39 feet) must have all lights visible for 2 nautical miles or more, which applies to our 62-foot ketch. If the boat is under 12 meters (39 feet), it may have sidelights visible only 1 mile.

A boat under 39 feet could use a single all around masthead light plus the two sidelights, with no stern light, but the 62-foot Sunbeam in this question is well over 39 feet.

Who Will Be The March 2009 Know It All Winner?

Want to see how much you know? Want to show everyone else how much you know? The first three people to submit the correct answer to the following question will win a Westlawn tee shirt and cap, and will also receive a Know It All certificate. The answer and winners to be published in the next issue of The Masthead.

You are working on the design of a fin-keel sailboat, and need to start the structural design of the fin keel and it’s attachment to the hull. The fin keel is of welded mild steel plate with internal steel framing, and the ballast bulb at the bottom is of lead as pictured in the drawing.

Your calculations indicated the steel fin will weigh 1,994 pounds, and the torpedo/bulb is cast of solid lead, of 7.17 cubic feet volume. The lead contains 4% antimony, for a density of 702 lb. per cu.ft., giving a total bulb weight of 4,960 lb.

Referring to the drawing of this keel on the right, showing the geometry and the location of the center of gravity of the steel fin and the ballast bulb, what is the maximum bending moment on the fin keel, and where does the maximum bending moment occur?

E-mail your answers to Norm Nudelman at nnudelman@westlawn.edu

The first 3 correct responders will be the winners.
### Essential Continuing Education

**For Marine Surveyors, Boatbuilders, and Small-Craft Designers**

#### Elements of Technical Boat Design (Course No: Elements)

A comprehensive introduction to the fundamental concepts in yacht and boat design, for marine professionals. Note: Graduates of Elements may continue on to complete the full Professional Westlawn Yacht & Boat Design Program, receiving credit for all the subjects passed in the Elements course. (Elements was formerly called Yacht Design Lite.)

Topics include: Hydrostatics, Vessel Stability, Principles of Resistance, Drawing of Hull Lines, Ergonomics and Interior Design, Fiberglass Boat Design and Construction. [Click here for a detailed syllabus](#).

[CLICK HERE](#) for more details and enrollment information on this and other Westlawn essential continuing education courses.

[CLICK HERE](#) to learn about ABYC member and Corporate Multiple-Enrollment Discounts.

#### Interior Design Methods for Yacht Design and the Boat-building Industry—NEWLY UPDATED (Course No. ID201C)

This design-thesis challenge course®* meets a critical need within the marine industry for detailed, updated instruction on the disciplines of ergonomics and interior design.

Among key design issues cited are physical access, storage, stairway and lighting design, berth, galley, dining, and head layouts. What distinguishes the accompanying text from others is that the author never loses sight of physical imperatives—wave motion, heeling, drainage, ventilation and vessel structure—as factors in determining a boat's interior spaces.

*This course is designed for the mature learner. Students study the Westlawn text (the only one of it's kind on this subject) and then complete an extensive design-thesis challenge exam to graduate. (Strong manual drafting or CAD skills are required.)

For more information on how the design-thesis challenge method of study works, E-Mail us at info@westlawn.edu

[CLICK HERE](#) for more information Westlawn Continuing education courses.

#### ABYC Courses and Schedule for 2009

The ABYC Education Department has been providing industry certifications, training, high school and college curriculum, and industry seminars for over twenty years. They are providing the marine industry with the skilled workers required to build and maintain modern small craft of all types.

ABYC is currently scheduling on-site factory training for 2009. Please call ABYC for custom tailored, flat rate, instruction by top industry trainers at your facility (410-990-4460, Ext. 31).

The Marine Technician Certification Program developed by ABYC with *NOCTI Certification*® has proven to be the industry standard. ABYC continues to provide the highest quality marine education and training throughout the country and throughout the year. For course dates and descriptions [Click Here](#) or see listing on Masthead Page 20.

*NOCTI (National Occupational Competency Testing Institute) is a regular provider of the assessments on which many certifying bodies depend for measures of applicants’ standards-based knowledge and skills. Certificates benefit employers by showing that applicants have acquired specific skills. The status of having a certified staff can lead to higher sales and customer satisfaction.*
### Training Links - For Current In-Class ABYC Courses

To register for an ABYC Education Program, click on the event name you would like to attend.

<table>
<thead>
<tr>
<th>DATE</th>
<th>EVENT NAME (CLICK FOR DETAILS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mar 24, 09 - Mar 27, 09</td>
<td><strong>MMTA On-Site</strong> DE400 - Diesel Engine &amp; Support Systems Certification</td>
</tr>
<tr>
<td>Mar 24, 09 - Mar 27, 09</td>
<td>ELC400 - Electrical Certification Course, - Jacksonville, FL</td>
</tr>
<tr>
<td>Apr 07, 09 - Apr 10, 09</td>
<td>ELC400 - Electrical Certification Course, - Annapolis, MD</td>
</tr>
<tr>
<td>May 05, 09 - May 08, 09</td>
<td>SC400 Standards Certification Course, - Mystic, CT</td>
</tr>
<tr>
<td>May 12, 09 - May 15, 09</td>
<td>MS400 - Marine Systems Certification, - Miami/Ft. Laud, FL</td>
</tr>
<tr>
<td>Jun 03, 09 - Jun 05, 09</td>
<td>SC400 Standards Certification Course, - St. Pete, FL</td>
</tr>
<tr>
<td>Jul 13, 09 - Jul 15, 09</td>
<td>**MMTA On-Site Train The Trainer - High School Educators</td>
</tr>
<tr>
<td>Sep 08, 09 - Sep 11, 09</td>
<td>**MMTA On-Site MC400 - Marine Corrosion Certification</td>
</tr>
<tr>
<td>Sep 08, 09 - Sep 10, 09</td>
<td>SC400 - ABYC Standards Certification - Annapolis, MD</td>
</tr>
<tr>
<td>Sep 15, 09 - Sep 18, 09</td>
<td>MS400 - Marine Systems Certification - Seattle, WA</td>
</tr>
<tr>
<td>Sep 22, 09 - Sep 25, 09</td>
<td>MC400 - Marine Corrosion Certification - Jacksonville, FL</td>
</tr>
<tr>
<td>Oct 06, 09 - Oct 09, 09</td>
<td>EL400 - Electrical Certification Course - Philadelphia, PA</td>
</tr>
<tr>
<td>Nov 03, 09 - Nov 05, 09</td>
<td><strong>MMTA On-Site</strong> GE400 - Gasoline Engine &amp; Support Systems Certification</td>
</tr>
<tr>
<td>Nov 03, 09 - Nov 06, 09</td>
<td>MC400 - Marine Corrosion Certification Cost - Ft. Laud, FL</td>
</tr>
<tr>
<td>Nov 03, 09 - Nov 06, 09</td>
<td>MS400 - Marine Systems Certification - Nashville, TN</td>
</tr>
<tr>
<td>Nov 10, 09 - Nov 13, 09</td>
<td>DE400 - Diesel Engine &amp; Support Systems Certification Course - Annapolis, MD</td>
</tr>
<tr>
<td>Nov 10, 09 - Nov 12, 09</td>
<td>SC400 - ABYC Standards Certification Course - Mystic, CT</td>
</tr>
<tr>
<td>Nov 17, 09 - Nov 19, 09</td>
<td>EL200 - Basic Marine Electrical - Mystic, CT</td>
</tr>
</tbody>
</table>

FOR MORE ABYC COURSES & DATES [CLICK HERE](#)
Royal Institution of Naval Architects 2009 Conference & Training Programme

**FUNDAMENTALS OF CONTRACT & CHANGE MANAGEMENT FOR SHIP CONSTRUCTION, REPAIR & DESIGN**
March 2009, London, UK
http://www.rina.org.uk/fundamentalsmarch09

**SUPER & MEGA YACHT DESIGN**
April 2009, Genoa, Italy
http://www.rina.org.uk/superandmegayachts

**SAFEDOR CONFERENCE**
27-28 April 2009, London, UK
http://www.rina.org.uk/safedor2009

**ANNUAL DINNER**
30 April 2009, London, UK
http://www.rina.org.uk/annualdinner2009

**BASIC DRY DOCK TRAINING COURSE**
11-14th May 2009, London, UK
http://www.rina.org.uk/drydock2009

**INTERNATIONAL CONFERENCE ON SHIP MANOEUVRING IN SHALLOW AND CONFINED WATER**
13-15 May 2009, Antwerp, Belgium
http://www.rina.org.uk/bankeffects

**SURV 7 – SURVEILLANCE SEARCH AND RESCUE CRAFT.**
27-28 May 2009, Poole UK
http://www.rina.org.uk/SURV7

**WARSHIP 2009**
June 2009, London, UK
http://www.rina.org.uk/warship2009

**ICCAS: INTERNATIONAL CONFERENCE ON COMPUTER APPLICATIONS IN SHIPBUILDING**
1-3 September 2009, Shanghai, China
http://www.rina.org.uk/ICCAS

**INTERNATIONAL SYMPOSIUM ON SHIPBUILDING TECHNOLOGY**
September 2009, Osaka, Japan
http://www.rina.org.uk/ISST2009

**HISTORIC SHIPS**
October 2009, London, UK

**ICSOT: ICE CLASS SHIPS**
October 2009, Busan, Korea
http://www.rina.org.uk/ICSOT2009

**INTERNATIONAL CONFERENCE ON SHIP AND OFF-SHORE TECHNOLOGY**
December 2009, Kharagpur, India
http://www.rina.org.uk/icsotindia2009

If you would like to receive any further information on any RINA event then please contact the events department: 10 upper Belgrade street, London, SW1X 8BQ
Tel: 44 (0)20 7235 4622,
Fax: 44 (0)207259 5912
Email: conference@rina.org.uk

**Westlawn students are eligible for student membership and Westlawn graduates are eligible for graduate membership in RINA. See Westlawn forum for details.**
Westlawn/Passagemaker Design Competition
Sponsored by Imtra Marine Lighting — Deadline May 15, 2009

Designs have already started to arrive for the Westlawn/Passagemaker design competition, sponsored by Imtra Marine Lighting, with matching funds from ABYC. This is an exciting challenge to see who can create the most interesting, useful, attractive, and cost effective trawler yacht design.

Complete details were in the September 2008 issue of The Masthead. Remember, to enter, mail your design to: PassageMaker Design Competition, Westlawn Institute of Marine Technology, 613 Third St., Suite 10, Annapolis, MD 21403. All entries must be postmarked no later than May 15, 2009.

Be sure to read the complete design competition details in the September issue of The Masthead, or on the PassageMaker website.

Who We Are
Westlawn is a not-for-profit educational affiliate of the American Boat and Yacht Council (ABYC). Our School is nationally accredited by the Distance Education and Training Council (DETC), and approved by the Connecticut Department of Higher Education.

Our Mission
Founded in 1930, the mission of the Westlawn Institute of Marine Technology is threefold:

- To provide our students with the skills and knowledge required to build a rewarding career in the profession of yacht and small-craft naval architecture.
- To support continued growth of the recreational and small-craft marine community through the development of well-trained, safety-oriented, boat designers developing better products for the benefit of the boating public.
- To provide continuing education to marine-industry professionals.

Ship's Store
Click here to visit our ship's store for Westlawn caps and tee-shirts, bronze spline weights (see picture below), and a selection of marine books.

Back Issues of The Masthead
Click on the Back issue that you would like to read:
- **April 2007** Tech. Article: Passenger-Compartment Ventilation Fundamentals
- **June 2007** Tech. Article: Stability is the Key – Part 1, Initial Stability
- **Sept. 2007** Tech. Article: Stability is the Key – Part 2, Reserve Stability
- **Dec. 2007** Tech. Article: Basic Criteria for Powerboat Stability
- **Mar. 2008** Tech. Article: The Concepts and Applications of Tons and Tonnage
- **June 2008** Tech Article: Practical Speed and Powering Calculations
- **Sept 2008** Tech Article: Speed and Powering Update & Conducting Speed Trials
- **Dec. 2008** Tech Article: Quiet Science (Noise Control)

Nordic Tug by Westlawn Alumnus Lynn Synour