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Westlawn Student Jon Ames Wins
THE PROFESSIONAL BOATBUILDER/WOODEN BOAT DESIGN CHALLENGE

Westlawn’s Students And Alumni Have Won More Design Competitions Than Those From Any Other School!

With a brilliant design, Westlawn student Jon Ames has won the Professional Boatbuilder/Woodenboat design competition, wood category. It is Jon’s second success in a design competition in less than a year. (His power trimaran design was a finalist in the Westlawn/PassageMaker Design Competition, in January 2010.) This continues Westlawn student and alumni successes in design competitions. In addition to Jon Ames’s two wins, these success include:

- The 2008 Cruising World design competition, Keimpe Reitsma, 1st runner-up
- The 2004 Camper & Nicholson/Boat International “New Concepts” competition, Ben Dodaarell winner in the 45 to 60 meter category
- The 2004 Blue Water Sailing competition, Doug Frolich, 1st prize, and Charles Magnan honorable mention

Over the past ten years, Westlawn students and alumni have achieved individual honors in more design competitions than the students and alumni of any other school!

Continued on Pg. 2
Jon Ames ProBoat/WoodenBoat entry competed with 58 entries from professionals, students, and amateurs from all over the world. The ProBoat/WoodenBoat panel of judges for Design Challenge II: More pleasure at 2 Gallons Per Hour was aimed at inspiring less-expensive, more fuel efficient, and seaworthy designs. The entered designs were to be capable of carrying a family on overnight excursions. Entries were to meet the following criteria:

- Must be trailerable for affordable launching, over-the-road transportation, and storage.
- Max beam 8’; max length 40’
- Minimum length 24’, stem to transom
- Trailerable weight (with engine) should not exceed 3,500 pounds
- Must burn less than 2 gallons per hour (7.6 l/hr), maintaining a 10-knot cruising speed in a 2’ (0.6m) chop and 15-knot breeze while carrying 800 lbs/362 kg (family of four). Favorable consideration will be given for continued efficient fuel consumption and good seakeeping abilities at speeds in excess of 10 knots
- Must include at least spartan overnight accommodations (berths, head, galley) for two adults and two children
- Must be a new design
- Submissions should be the designer’s original, previously unpublished work, and include lines, profiles, sections, table of offsets, accurate weight study, cost calculations, and performance predictions.

Winners were selected in three categories based on construction material: composite, metal, and wood. Jon Ames’ 30-foot St. Joseph Sound Launch won the wood category.

Jon Ames describes his winning entry as follows:

On the west coast of Florida there is a nice little piece of water called St Joseph Sound. It has numerous spoil islands, shallows, beaches, parks, wildlife, all within a short cruise from Clearwater or Tarpon Springs. A fuel-efficient weekend boat is just what is called for to enjoy some wonderful family time exploring the sound at a leisurely pace. This boat was inspired by the challenge and the sound.

Of primary importance in this challenge was the fuel consumption, so close attention had to be paid to hull shape and weight. I chose a semi-displacement hull form optimized to operate at a speed/length ratio of 2. This in turn determined other critical aspects of the design. Quarter-beam buttock angle, prismatic coefficient, and center of buoyancy are carefully matched to the S/L ratio. The D/L is very low, a result of limited fuel stores and simple outfitting. At this S/L ratio a round bilge reduces wetted surface and gives a softer ride. Deadrise forward is high for easy entrance into waves, but flattens out aft to reduce displacement. This is not an offshore boat, but should serve comfortably in the bays and sounds of western Florida and the Keys.

Interior accommodations are sparse but sufficient for a small family. V berth forward with porta-potti under, galley with sitting headroom and access to stove, icebox and sink. Two small berths under the bridge deck suit-
able for children or stores complete the layout.

The cockpit and helm are comfortably laid out for relaxed cruising. Two chairs with lounges aft. Far aft is open with room for water activities. A swim platform makes water access easy and serves as rubrail for topsides with ample tumblehome.

I really love wooden boats, so the construction incorporates elements of traditional wood construction, while allowing for the benefits of epoxy. Although exterior and interior glass sheathing are called for in this plan, a slight change in scantlings would allow for a more traditional approach with less glass and epoxy.

In order to confirm performance numbers, Ames did a detailed weight study and then three different speed analysis: Holtrop, Propeller Handbook, and Wyman.

Ames noted, “This challenge created an active topic on our [Westlawn] forum boards. We students enjoyed many an interesting argument discussing aspects of the challenge and its broader implications on society and the boating industry.”

Jon Ames
269 Stoney Point Road
Storm Lake, IA 50588
Email: jonames15@gmail.com
Phone: 712-732-5190

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Jon Ames Wins Design Challenge continued

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St. Joseph Sound Launch Design Particulars

<table>
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<tr>
<th>LOA:</th>
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<tr>
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The Masthead
September 2010  Page 3
Dear Westlawn Students and Alumni:

Every now and then I feel the urge to sound off. Sometimes it’s about things that cause me inner turmoil. But in this instance its because of the great pride I feel regarding ABYC’s relationship with the Westlawn family...which by the way, includes YOU!

I’ve been a colleague of Dave Gerr’s now for almost eight years. During that time I can’t begin to convey to you the tireless energy, drive and conviction Dave has had at ensuring Westlawn remains the best boat and yacht design school, bar none. Dave is not content with the way things are, you need to know that he always has his thinking cap on in search of ways to enrich your learning experience and marketability in our industry. He is innovation, an expert in his field and truly dedicated to ensuring you receive the best education and training available. Your task and challenge is to take advantage of his expertise and that of his instructor team by doing well in your studies. I strongly recommend you take full advantage of his talents. You are in a unique program with a world-recognized designer at the helm.

Behind the scenes making sure your experience at Westlawn is administratively seamless is Patti Schulte. Patti is a true gem who prides herself on keeping the day-to-day administrative arm of Westlawn running like a finely designed racing hull. Again, her major focus is YOU! She will help you every step of the way to ensure you have the modules, the tools and the information necessary to move through the challenging Westlawn curriculum. Also know, she is your link between ABYC and Westlawn. She is a 100 percent team player who strives to be professional and supportive. Are you looking for financial support? A particular book or computer program or do you need a word of encouragement? How about a conduit to others in the organization – yes, talk to Patti.

Speaking of scholarships; we have almost exhausted the Kathy and Gerry Wood Scholarship for 2010. Limited funds are still available, but you need to talk to Patti NOW to see if you qualify for the support. If you missed out on 2010 scholarship support, there’s always 2011 and 2012. The key is to keep informed and to ask questions.

Lastly, if you are attending IBEX, please seek me out and introduce yourself. I remain very proud of our affiliation with Westlawn and its staff and students. I learn much from you and would enjoy the opportunity to speak with you. Please be sure to stop by the ABYC/Westlawn booth area and meet the staff.

Keep the Westlawn tradition and reputation second to none by working hard and enjoying the Westlawn experience.

Sincerely,
 Skip Burdon
President, ABYC

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Westlawn Director Dave Gerr Interviewed By Mad Mariner Magazine

Mad Mariner, the online daily boating magazine, interviewed Westlawn, director, Dave Gerr on July 20, 2010. In this wide-ranging, half-hour radio show, Gerr discusses almost all aspects of Westlawn, including history, operation, student and alumni successes, costs, and more. Click on the links below to listen to the full interview and watch the accompanying slide show of over a hundred boats designed by Westlawn alumni.

Click Here to watch on Windows PC
Click Here to watch on Macintosh
Click Here to watch on an iPhone
Click Here to watch on an Android phone
The 185 foot motor yacht combines smooth and simple styling, with elegant and dynamic lines that enhance proportions of the “sculpture”. The layout is spread out on four decks with accent on comfortable outdoor living and “open deck” feel throughout the boat. The goal was to create a design with minimalistic look, but trying to avoid a military styling usually associated with minimalism, and instead to enhance a Yacht-extravagant feel to it. For interior decoration on this design, we use Milan based studio in Italy “Standby/Marijanaradovic”
Westlawn alumni are invited to submit drawings and renderings of designs for publication in *The Masthead* that are “On The Drawing Board.” Designs & Commentary should be emailed to nnudelman@westlawn.edu

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**Know It All Contest Solution to the June 2010 Question**

**On Power to Carry Sail**

By Dave Gerr, © 2010 Dave Gerr  
(This Issue’s Question, Page 21)

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

**The Question Was:**
You have a well-constructed, fiberglass-composite, 46-foot sailing catamaran, *Two Tranquil*. Beam overall is 26 feet and displacement is 6 tons. *Tranquil’s* cutter rig has a sail area, with 100% fore-triangle, of 1,100 square feet. The mast and rigging are rugged and properly stayed. Chainplates are strong and correctly aligned. Sail-handling gear is well thought out and sized appropriately. The center of effort of *Tranquil’s* sailplan is 29.4 feet above the DWL.

With regard to stability and sail-carrying power, is *Two Tranquil* suited to offshore cruising, and why or why not?

**And the Solution Is:**

Westlawn people have won. Jim is a graduate and Alfeo is a current student. This may also explain why they are just too darn smart, and, for this good and sufficient reason, have hereby been awarded the distinguished title of Know It All, with all the rights and privileges pertaining thereto.

The answer is yes because both the Stability Number and the Stability Factor are acceptable as follows:

Bruce Number \( = \frac{\sqrt{1,100 \text{ sq.ft. Sail Area}}}{\sqrt[3]{13,440 \text{ lb. Disp.}}} = 1.39 \)

RPI \( = \sqrt{\frac{26 \text{ ft. Beam}}{29.4 \text{ ft. CE}}} \times \sqrt[3]{\frac{13,440 \text{ lb. Disp.}}{1,000}} = 1.45 \)

Jim Lawson and Alfeo Tonellotto both submitted correct answers to the June 2010 question. This is the first time two
Introduction:

In all the years I’ve been drawing boats, and despite many attempts, I have not been able to complete the design of a boat for myself! Even the boats I drew at Westlawn were for the school, or for Mr. Nudelman, or someone, but not for me! It has been easier (and more profitable!) to design boats to clients’ wishes; after all, this is our job as designers.

My wife and I, both having crossed the Atlantic and sailed a lot on a variety of boats, see the ideal cruising boat as one that we can spend a month or two on in interesting cruising grounds. We have both spent time in the Bahamas as well as years Down Island, in the Caribbean and elsewhere, but we keep coming back to the Bahamas as an ideal cruising ground: happy people and the most beautiful, clear, turquoise water in the World. Bimini is only 50 miles from Miami, yet you can easily find an island to yourself. So you need a boat that can sail safely & well in shallow water, and be put on a beach, and we like to go fast between anchorages. This calls for a sharpie of some sort, or a multihull. A sharpie of 30 feet or so is easily trailered without compromise, so you can avoid boat yards and you can maintain it yourself at home if you want to. So this is the choice we made. You can take it anywhere you can go in a ¾ ton truck & trailer.

As usual, events in our lives and our design business led from one to another to allow us the lucky opportunity to have this boat, which we share with another couple we have known for half our lives.

General:

My company, Rodger Martin Design, produces designs for Round-the-World racing boats, fast cruisers and racers as our main work, so there’s a lot of this experience and the efficiency these boats require in the Presto 30 design.

I don’t think a classic American boat type has often, if ever, been given the design development we put into the Presto 30. We ran several hulls through Hydrostatic Comparisons and our Velocity Prediction Program (VPP) to choose the best design. The structure has been designed & built to American Bureau of Shipping (ABS) standards using high-strength, lightweight materials and to meet international Offshore Racing Council (ORC) standards.
Maine builders, Ryder Boats, a division of Union River Boat Co., (URB), has turned this design into a simple, very well-put together, affordable boat. The company is well known in the industry for producing tooling, hulls, decks and parts for such companies as Hinckley Yachts, Morris Yachts and Lyman Morse Boatbuilding.

**History:**

In 2007 Outward Bound commissioned Rodger Martin Design to design a replacement for their aging wooden 30 foot school boats, which led to the design and construction of the Outward Bound ‘Hurricane Island 30’, of which half a dozen of a projected 15 have been built to date.

In Spring 2009, two of these 30-foot open boats, powered only by sail and oar, were sailed 2,500 miles from Florida to Maine in 50 days with stops along the way to raise awareness for OB’s Sea Program! Popular interest in these obviously capable boats led to URB commissioning Rodger Martin Design to create a completely new trailerable sharpie for them to built and market.

**‘Presto’ History:**

If you’re interested in capable shoal-draft boats, Commodore Ralph Munroe’s *The Commodore’s story: The Early Days on Biscayne Bay*, is a captivating book about lifelong experiences sailing and designing many, highly-successful sharpies up to 90 feet long during Florida’s early development as a winter haven. The inherent common sense and safety offered by these designs has been well known for a hundred and fifty years and only racing rules and changing fashion have obscured their once-wide popularity.

‘Presto’ alludes to the famous, fast and able 1885 design by Commodore Munroe, of the same name, and represents a flared, round-bottomed hull with a flattened bottom for taking the ground, and well-shaped ends for wave penetration forward and reduced drag at the stern. These boats are simple, easy to sail, well balanced and fast for their size!

**Sharpie Characteristics:**

The Presto 30 is designed to be trailerable & beachable, thus the very shoal draft (13 inches - 330 mm) and the smooth, clean bottom. The hull is lightweight and relatively narrow, both factors reducing drag. Ballast is internal lead shot, built into the bottom and the split rig is used for maneuverability and for its low - (as in close to the water) heeling effect. The combination of a low-heeling force from an efficient sail plan and a light, slim, low-drag hull make these boats fast and very controllable reaching and running. The deep, high performance centerboard and rudder help the boat go upwind effectively, very nearly as high and fast as a good sloop rig.

The split rig is self-tacking. Crack off 5-10 degrees, and a boat of this size will outsail keel sloops quite a bit longer! This sail plan doesn’t need expensive and difficult-to-set spinnakers to sail at breakaway speeds off the wind. If wanted, a light ‘mizzen staysail’ can be set between the masts and a drifter set at the end of a removable bowsprit but these sails are not needed for normal fast sailing. The sealed, lightweight, free-standing, Hall carbon-fiber masts fit within the length of the boat for trailering and, at under 55 pounds (25 kg) can be stepped or struck by two people with a gin pole.
Safety and stability:

The Presto 30 has a Limit of Positive Stability (LPS) of 145 degrees! This includes the righting effects of her deck, cockpit, deckhouse and sealed carbon-fiber masts. With actual capsize tests done on the Outward Bound HI 30s, it is very hard to capsize & hold these boats down! Her ballast ratio is only 25% of her 4,000 lb light ship displacement, and only 20% of a cruising 5,000 lb weight. The Presto 30 has the same Dellenbough Angle as our high-performance Quest 30 design.

If you run aground in the Presto 30, pull the centerboard a bit and sail off. If you run aground on a falling tide, and lifting the board and rudder only allow you to go further aground, simply keep them both all the way up and the boat will settle on her flat bottom. The usual principles of prudent seamanship apply and one should try to avoid doing this on a lee or rocky/reefy shore! On a boat fitted with an engine you could use it to motor into deeper water if depth allows. A keelboat in a similar situation will soon be stuck aground, lying at uncomfortable and vulnerable angles!

An inlet with unmarked rocks or shifting sandbars can be fatal for a keelboat if it runs aground. Hitting an unseen hazard in a sharpie merely kicks the board by the obstacle. Once past the obstacle the board drops to its previous depth.

Any sailboat can capsize, and though unsinkable, the Presto 30 is not exempted. As explained above, because of her relatively narrow hull and high freeboard the Presto 30™ has a theoretical limit of positive stability LPS (hull to the sheer only) of 103 degrees and a ‘real world’ limit of stability (i.e. including deckhouse, cockpit and spars) of 145 degrees!

Construction:

The Presto’s construction and engineering are much the same as we used for a recent Class 40 design, though infused vinyl ester resin is used instead of epoxy. The scantlings, framing and fiber orientations are the same, but built in a production shop, and with only the addition of a light mat and gel coat on the outer skin. The bottom has extra layers of E-glass biaxial material to stiffen and strengthen the skins. All cores are Core Cell, and no balsa wood is used in the structure. Panels are broken up mostly by ‘structural furniture’, with framing at divisions in the interior.

Presto 30’s Layout:

Cockpit: The Presto 30 has a huge cockpit, 10’-6” (3.2 m) long! The cockpit seats are over 7’-6” long for comfortable sleeping, and there is plenty of space for a full
family or group of friends, secure inside the high cockpit coaming, for sailing or dining. There is a generous cockpit locker on each side. The port cockpit locker fits an Igloo cooler, while the starboard locker holds the fuel tank for an outboard motor in the well behind the deckhouse. The third boat has an electric motor option.

The after part of the cockpit is open for stowing a folded inflatable dinghy and is private for sunbathing and a good place to clean fish or use a Sun Shower. A transom door which can drop down to become a swimming platform with an attached ladder is an option. Tiller steering is standard and wheel steering is available.

**Interior:** The cabin top has an optional sky-top that can be raised at anchor to give 6’-6” headroom throughout the main areas of the interior. This allows 360 degree visibility and excellent ventilation. The sides of the Sky Top are Sunbrella with large, screened openings with roll-down, velcroed plastic windows.

Once below 6’-6” long settee/berths to port & starboard are standard. There is fold-up table on the starboard side. The galley is to port as you enter the cabin. This slides away under the cockpit when not in use. Hulls number two and three have a different arrangement with a fixed galley to port and the head opposite. The settees then slide forward to the V-berth ring frame, with a seat joining their forward ends, and a table around the forward end of the centerboard trunk. The top of the trunk is removable and the 220-lb. board can be inspected or removed from above if needed. A 5:1 tackle leads to the engine box in the cockpit, handy to the helm.

On Presto, the first hull, there is a head to port forward of the saloon/galley area, with a large canvas clothing locker, with a hanging area opposite, to starboard. Curtains fore and aft of this head & locker area provide simple, lightweight privacy, and you can stand up in the open hatch to dress or command the harbor!

Forward of the V-berth there is a watertight bulkhead which supports the foremast and makes for a generous, open anchor locker, an idea we used for the Outward Bound 30s and liked.

**Optional Engine Systems:** While the boat doesn’t require a motor there are several options for mounting one.

With the retractable outboard option, a 9.9 hp hi-thrust outboard is mounted in a well behind the cabin and can be lowered to power the boat. When down, a fairing above the cavitation plate closes off the well for efficiency. When the outboard is raised by a tackle, a fairing below the outboard’s skeg makes for a flush hull. Engine controls are remotely located on the cockpit side in the conventional manner. The outboard’s alternator charges the boat’s two 80 ah AGM batteries.

A second option is a Belmar electric motor, with power equivalent to a 9.9 hp gas outboard. This is lowered & raised like the gas engine.

A third option is a small, transom-hung outboard.

**Deckhouse & Foredeck:** To go forward from the cockpit you can either move down the narrow side-deck, within the low bulwark, holding onto the handrail on the deckhouse or, if weather is rough, go through the cabin and get to the foremast or bow via the fore hatch. Another alternative is to step on the coaming up to the cabin top and go forward that way with the sprit or wishbone as a hand hold.
**The Masthead**

**The Sail Plan:**

Square-topped sails work very efficiently when combined with a wishbone boom, almost as if they were made for each other. Wishbones are used for the powerful vanging effect needed to control the twist (power) of the square-topped sails. They do not touch the masts, so they make for a very quiet sail, and rotate the masts in their tubes as they are eased and trimmed. The sails can be eased forward of the beam to sail well by the lee. Gybes (Jibes) are so quiet as to be almost unnoticed! Downhaul and snottor (wishbone/outhaul control) lead aft to the cockpit. This sail plan has 400 sq. ft. in the main and fore. There are no winches. A staysail can be set between the masts for added reaching power.

**Why two masts?** The two masts allow more maneuvering and balance control than a sloop rig on any point of sail and, when reefed, provide very stable steering. The fact that the sails are small (185 and 215 sq. ft) (17.2 and 20 sq. m) and low, generates more driving power than heeling force, which helps keep the boat on its feet. Lazy jacks are light three light lines on each wishbone, slung from one side to the other. When the sail is dropped it falls into these slings like a blind and that’s it! Ready for sail covers. There is great virtue in looking at cruising rigs that derive from the common sense of work boats and not mom and pop versions of racing sloops!

**Centerboard & Rudder:**

The Presto 30’s fiberglass centerboard and rudder are essential to the safety and function of these boats. The basic tenet is that if you can reduce the area of the sails (reef) the sails you should be able reduce the area of the ‘keel.’ It is logical that when caught in unpredicted rough weather, as long as there is sea-room (or lake room) to leeward, partially lifting the centerboard to reduce its area will allow the boat to slide easily to leeward without tripping over a deep-rooted fixed keel. The board also makes these boats practical cruisers by allowing easy launching and retrieval by trailer. It also removes the stress of going aground; especially in muddy or sandy areas. The board is lifted and lowered by a 5:1 tackle with the tail coming to the cockpit. The rudder has both up and down lines located on the tiller.

**Summary:**

The Presto 30 is ideal for sailors ranging from novice to experienced. It is ideal for any sailor looking for a fast, versatile 30’ boat and is particularly attractive to kayakers, canoeists, board-and-kite sailors who want to share the adventure with their families. The economy of not being tied to a boat yard for launching, hauling, maintenance or storage is a great attraction. The 8.5’ (2.6 m) beam means the boat is trailerable in all
50 states without permits, which opens up a variety of cruising grounds unavailable to any other boat in its comfort and performance level. We’ve had Presto 30s sail at 12-13 knots frequently while cruising and day sailing!

The rig makes ‘easy to sail’ an exaggeration for any sloop, self-tacking or not.

The Presto 30 is a new interpretation of a classic sailboat for an independent generation of sailors unencumbered by the trappings of ‘yachting’ and its expensive, complicated, high-maintenance boats requiring deep water docks and costly marina services

Rodger Martin
Newport

CLICK HERE to learn more about Rodger Martin Design and the boats that Rodger Martin Designs.
My career in boat building began in the fishing industry, building and repairing dinghies, nets and working on trawlers, game boats, monohulls and building multi-hulls. Deciding to have a break, Debbie and I and our young family decided to head west and go mining (underground) as a miner. A few years later, we decided to move to Townsville and build our own 42-foot catamaran, which was to become our family home for the next 11 years. (To read about the Bowdidge family’s Life on the Ocean Wave, click on the March 2009 and June 2009 issues of The Masthead).

Back into boatbuilding and our business established again, we began cruising the Australian coastline and overseas logging over 30,000 nm in coastal and offshore passages, finding work as we cruised. Debbie and I began building, repairing and rigging and after gaining our commercial coxswains license, began delivering boats for both the pleasure and commercial fields.

It was on our last ocean passage through Asia that we decided to act on an interest I had in designing. Not content though with being “just another amateur designer,” on returning back to Australia from Malaysia, Singapore, and Indonesia, I decided to enroll with WESTLAWN, in the study of Small Craft Naval Architecture and Marine Engineering for vessels up to or 60 metres (197 ft.) length overall, with the full intention of a change of career from boatbuilding to yacht designing.

During my 2nd year of studies, I was honored as an "Owen Scholar" and awarded the Owens Scholarship for “excellence in the study of small craft naval architecture and marine engineering, based on both academic achievement, creative ability and on design presentation.” (The scholarship was funded by the generous donations of Norman G. Owens, former president of the once internationally recognized Owens Yacht Company of America. When the Owens Yacht Company was sold to Brunswick, it was the second largest boat manufacturer in the world.)

In 2007, I entered the "Cruising World Magazine" design competition with a 57ft racer/cruiser catamaran, the "OCEANSKY 57," with minutes before the official closing date. Of the 70 overall designs submitted worldwide for the competition, of which 30 were multihull designs, the Oceansky 57 was the only Multihull to make it into the top ten.
Being offered a position as a full time contract designer for TOM FEXAS YACHT DESIGNS prompted us to open our yacht design office - BOWDIDGE MARINE DESIGNS. We began working on new luxury power boat designs by Fexas for companies such as Mikelson, Krogen, Morgan, Carmargue, designs whose length overall exceeded 55 ft or 17 metres.

In addition, we offer boat plans of my design (yacht designs, catamaran designs and power designs) in all sizes from the 12ft Mushulu Dinghy stitch and glue yacht tender to the Oceansky 57 catamaran. We design timber boats, plywood boats, strip plank boats, fiberglass composite boats, steel and aluminum boats to very modern styling for both monohull designs or multihull designs, powerboat or sailboat and in round bilge, multi-chine or radius chine hull forms.

CLICK HERE to learn more about Mark Bowdidge and the boats he designs.

CONTACT INFO:
Bowdidge Marine Design
Address: Bundaberg, QLD Australia
Phone: (07) 4156 1708
Skype username: markbowdidge
Email: m_dbowdidge@bigpond.com
Web: www.bowdidgemarine designs.com

CLICK HERE to visit Mark’s Boatbuilding Forum to see how amateurs build their dream boats from Mark’s plans.
Cranse Iron:

A cranse iron (or cranze iron) is a fitting on or close to the forward end of a bowsprit which provides attachments for stays and sail tacks. It is usually made of iron or mild steel and can be a simple section of pipe with welded on ears, or a more elaborate affair consisting of tapered pipe to match the taper of the bowsprit, a cone which can be attached to an extendable bowsprit, or a cap to match the end of the bowsprit. It can also be made of cast bronze as well as stainless, or aluminum, and it can be integral to a metal sprit.

Westlawn and ABYC will be at the Mets 2010 show.

Amsterdam RAI Convention Centre
Europaplein - 1078 GZ Amsterdam - The Netherlands
www.metstrade.com/nl/en

Opening hours METS 2010
Tuesday, November 16  10.00 - 18.00 hours
Wednesday, November 17  10.00 - 18.00 hours
Thursday, November 18  10.00 - 17.00 hours

This is THE trade show for Europe, and the first time Westlawn and ABYC have attended. Be sure to come visit us!
MARINE GROUPS ERGE SENATE LEADERS TO OPPOSE E15

Thirty-six environmental and industry groups signed a letter that went to the majority and minority leaders of the Senate Monday urging opposition to any amendment to the upcoming energy bill that would authorize the sale of gasoline with more than 10 percent ethanol.

While the ethanol industry is seeking approval in Congress to increase the amount of ethanol in gasoline by 50 percent - from the current 10 percent to 15 percent, Marine industry groups including the National Marine Manufacturers Association, American Sportfishing Association, American Watercraft Association, Association of Marina Industries, Bass Anglers Sportsmen Society/ESPN Outdoors, BoatU.S., National Association of State Boating Law Administrators, National Boating Federation and the Personal Watercraft Industry Association signed a letter that went to the majority and minority leaders of the Senate Monday urging opposition to any amendment to the upcoming energy bill that would authorize the sale of gasoline with more than 10 percent ethanol.

The text of the letter reads as follows:

“The undersigned organizations urge you to oppose any amendment to the upcoming Senate energy bill that would authorize legislatively the introduction into commerce of ethanol blends higher than 10 percent (so-called mid-level ethanol blends) for use in conventional gasoline-powered engines. Such an amendment would short-circuit existing two-year joint Environmental Protection Agency (EPA), Department of Energy and industry research projects designed to insure that mid-level ethanol blends do not harm gasoline-powered engines, defeat emissions control devices, pose safety risks to consumers, or increase emissions from these engines.

Sound science, environmental protection and consumer safety - not politics - must guide this important decision. Section 211(f) of the Clean Air Act mandates a detailed scientific review before new fuels, additives, or fuel blends are introduced into commerce. EPA is in the midst of carrying out this review, including soliciting public comment from all stakeholders on the introduction of mid-level ethanol blends. This review must be allowed to continue and must not be pre-empted by Congress.

We collectively urge you to reject any attempt to attach a mid-level ethanol authorization amendment during the Senate’s consideration of energy legislation in the coming weeks and months. Such an amendment would be bad for consumers, bad for safety, bad for the environment and, by placing politics over sound science, bad public policy.”

Source: Trade Only Today
July 27, 2010

Some Good News from Brunswick

On July 29th The Brunswick Corporation reported total net sales of $1.01 billion, up from $718.3 million in the same period last year. Net earnings of $13.7 million, contrasted with a net loss of $163.7 million, for the second quarter of 2009. This represents a 41 percent gain in total net sales for the second quarter of 2010, with both the engine and boat segments reporting large increases.

Brunswick Chairman and CEO Dustan McCoy noted that this is the company’s first net profit since the first quarter of 2008. Operating earnings of $55.7 million, a $201.1 million improvement from the prior year, were also reported.

"The continued successful execution of our strategic initiatives over the past several quarters was a key factor in our improved second-quarter results," McCoy said in a statement.

"Historically low marine dealer inventories as we entered the year led to improved wholesale shipments. This, combined with significant fixed-cost reductions achieved over the past two years, enabled us to report our second consecutive quarterly operating profit. In addition, during the first half of 2010, our cash balances increased by $93 million and net debt declined by $120 million."

McCoy noted that industry-wide demand for fiberglass boats continues to decline, although the demand for aluminum boats increased slightly in the second quarter.

Source: Trade Only Today
July 29, 2010

ATLANTIC HURRICANE UPDATE

The Atlantic Basin remains on track for an active hurricane season, according to the scheduled seasonal outlook update issued today by NOAA’s Climate Prediction Center, a division of the National Weather Service. With the season’s peak just around the corner – late August through October – the need for preparedness plans is essential. NOAA also announced today that, as predicted last spring, La Niña has

Continued on Pg. 17
formed in the tropical Pacific Ocean. This favors lower wind shear over the Atlantic Basin, allowing storm clouds to grow and organize. Other climate factors pointing to an active hurricane season are warmer-than-average water in the tropical Atlantic and Caribbean, and the tropical multi-decadal signal, which since 1995 has brought favorable ocean and atmospheric conditions in unison, leading to more active seasons.

“August heralds the start of the most active phase of the Atlantic hurricane season and with the meteorological factors in place, now is the time for everyone living in hurricane prone areas to be prepared,” said Jane Lubchenco, Ph.D., under secretary of commerce for oceans and atmosphere and NOAA administrator.

Across the entire Atlantic Basin for the whole season – June 1 to November 30 – NOAA’s updated outlook is projecting, with a 70 percent probability, a total of (including Alex, Bonnie and Colin):

- 14 to 20 Named Storms (top winds of 39 mph or higher), including:
  - 8 to 12 Hurricanes (top winds of 74 mph or higher), of which:
  - 4 to 6 could be Major Hurricanes (Category 3, 4 or 5; winds of at least 111 mph)

These ranges are still indicative of an active season, compared to the average of 11 named storms, six hurricanes and two major hurricanes; however, the upper bounds of the ranges have been lowered from the initial outlook in late May, which reflected the possibility of even more early season activity. “All indications are for considerable activity during the next several months,” said Gerry Bell, Ph.D., lead seasonal hurricane forecaster at NOAA’s Climate Prediction Center. “As we’ve seen in past years, storms can come on quickly during the peak months of the season. There remains a high likelihood that the season could be very active, with the potential of being one of the more active on record.”

Be prepared for the hurricane season with important information available online at hurricanes.gov/prepare and at FEMA’s ready.gov.

NOAA’s mission is to understand and predict changes in the Earth's environment, from the depths of the ocean to the surface of the sun, and to conserve and manage our coastal and marine resources.

Source: National Oceanic and Atmospheric Administration
Aug. 5, 2010

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**Vessel Comes to the Quick Aid of Rig Workers**

In his 20 years as a boat captain, Dan Shaw had never tried to rescue an entire crew out of the water. But on Thursday, he received a radio alert that 13 workers from an oil platform that caught fire in the Gulf of Mexico were bobbing in the water not far from the flames.

His boat was 25 miles away, one of the nearest to the scene of the emergency, and he volunteered to find the floating workers, the New York Times reports.

"We wanted to get to them as fast as we could and make sure we didn't lose anybody," said Shaw, 59, one of four workers aboard a 100-foot service vessel, Crystal Clear.

By the time he arrived at about 11 a.m., Shaw said, the men had been floating for two hours and had been swept a mile from the still-flaming platform.

They were wearing protective wet suits and life jackets and linking arms. The Coast Guard said that fortunately the surface temperature was 86 degrees about 80 miles off the Louisiana coast.

The men were pulled into Crystal Clear, then transported to a nearby oil rig and flown by helicopter to a hospital in Houma, La., the newspaper reports.

The rescue contrasted with the April evacuation of the Deepwater Horizon oil rig in the Gulf, when an explosion killed 11 workers and triggered the largest oil spill in U.S. history. In that disaster, witnesses have testified, life rafts became tangled and panicked workers could not find knives to cut themselves free.

Source: Soundings Trade Only Today September 3, 2010
Why are the Forward Perpendicular (FP) and Aft Perpendicular (AP) shown at different locations on different hull lines drawings? On some drawings they are shown at the extreme ends of the design waterline (DWL). On other drawings, they are at the extreme ends of the hull structure at the stem and the transom.

The reason for the differences is that these terms have their origin in the days of wooden boatbuilding. As ships changed to iron and then steel, Naval Architecture adjusted. Today, the FP is at Station “0” at the forward end of the bow at the design waterline. The AP is located either through the rudder post, or relative to the rudder post, based on the design standards and classification society rules. Alternately, the AP is the vertical line through the DWL where the stern cross the waterline.

Whenever the length between perpendiculars (LBP), or any dimension or measurement is required for calculations involving the perpendiculars, it always refers to the perpendiculars located at the ends of the waterline.

Westlawn has been teaching boat design since 1930 when almost all boats were made of wood. Some of the old drawings of wooden boats show the AP and the FP at the extreme ends of the stem and transom. Most boat builders were accustomed to seeing the perpendiculars at the extreme ends of the hull for many years. This is why some of these wooden boat drawings show the perpendiculars at the extreme ends of the hull structure.

To be consistent with modern design terminology and avoid confusion, the perpendiculars at the extreme ends of the hull structure should be renamed: “B” for BOW and “S” for STERN. This will allow the use of AP and FP at the ends of the DWL (as indicated on the drawing) if calculations are required involving the “Length Between Perpendiculars,” or for classification societies.

For your information:
- Length between perpendiculars LBD is used for large pleasure boats and small ships. LPP is used for large ships.
- Navy ships: The placement of the perpendiculars is at the ends of the DWL (Summer Load Line.)
- Merchant ships: The FP is at the forward end of the DWL at the stem. The AP is through the rudder post, or relative to the rudder post.
- Transom hung rudders: The AP is at the “Pintle” for transom hung “Pintle and Gudgeon” arrangements.
- Classification societies: The AP and FP control the locations of the first and last frames in metal boats, depending on the size of vessel and classification society.
- Longitudinal Stability calculations for large vessels utilize the modern AP and FP at the ends of the DWL.
- There are no standard regulatory or class association calculations using the term “LBP” between an AP and FP located at the extreme ends of the hull. This is in fact the LOA (Length Overall), and this term is used throughout the marine industry.
Whatever you’re involved with in the boating world, you’ll see copious references to our main product; our Standards and Technical Information Reports for Small Craft. The “Standards” as they are generally referred to are used both to defend the quality or integrity of the boating industry as well as attack it. One month a writer will be using the Standards to explain a proper installation, while the next month a writer chooses to analyze an accident (actual or in many cases, hypothetical) based on the lack of Standards or missing content within a Standard. I have a stack of magazines sitting here on my desk with dog-eared pages and yellow sticky notes indicating areas that may warrant a response from my office or need some follow up at some point. My computer has many half completed letters to the editor regarding some error or misconception found in any number of articles. It seems a good idea that I take some time and spell out what standards are and how to use them. My first introduction to the standards writing world began with this quote from an instructor from the American National Standards Institute (ANSI) “Standards are like sausages, everyone likes the end result but no one wants to see them being made”

That said, let’s discuss a bit about why and how we rely on voluntary standards in the US. Unlike Europe, the US economy has adopted a survival of the fittest attitude when it comes executing capitalism. Voluntary standards are born from this “cowboy” mentality as my European friends constantly remind me. Our desire as a country to be less regulated has created a huge network of voluntary standards writing organizations. From the swimming pool industry, to outdoor power equipment to cars and office furniture there are standards writers in the background working with industry and all affected to produce a standard that offers a “reasonably safe product.” This phrase may sound calloused, but consider the alternative (we’ll discuss that later on). The concept of a voluntary standard was used to counter government regulation through cumbersome, virtually unchangeable laws. The 1950’s saw a boom in expendable income, boats were coming into their own and mainly built by very small
The USCG began to track accidents and realize that something needed to be done. Working with industry and boaters the ABYC came into being in 1954, followed by minimum safety standards to prevent mainly sinking, explosions and fire. The industry safety record began to rise and more boats were on the water. The success of the ABYC standards resulted in bare-minimum laws in the Federal Boat Safety act, which exists today in the form of the US Code of Federal Regulations Title 33. We have found a harmony in safety with Federal Laws supplemented by voluntary standards; a valuable partnership.

Enough background for now, let’s fast forward to 2010 and the current use and production of the ABYC standards. A couple key points to consider before we jump to detail:

1. The ABYC is a non-profit entity supported by membership and grants, this is what keeps the lights on. Interestingly enough, less than a third of our membership is in the manufacturer category.

2. The standards process is an OPEN and TRANSPARENT process. According to our rules (available to anyone for the asking) EVERYONE who is materially affected by the standard can participate and NO ONE sector (e.g. boaters, manufacturers or surveyors) can dominate the consensus voting body.

We have a third-party responsibility to ANSI (American National Standards Institute), we must turn over all the voting, comments and paperwork generated by the review of a standard, they confirm that we have followed the process and have addressed every comment submitted and allow us to produce an American National Standard (ANS/ABYC)

Common claims about the ABYC process include phrases such as “owned by industry”, “how big of a body count does there have to be before a standard is changed”, etc. I have to say that 100% of these comments are made by folks who have never been involved in the process. Let’s revisit my previous statement on cowboy capitalism: You don’t participate, you have no idea what changes are coming up and no influence on the discussion . . . simple. For marine businesses to survive, they must send someone from their organizations to each and every meeting. This process would simply grind to a halt without the buy-in and participation of the manufacturers. The manufacturers influence on the process is limited by the balance of voting members on a committee, a group of manufacturers (should they ever agree on the same thing!) could never fail or pass a document through a committee vote. What I find more disconcerting than manufacturer influence is the presentation of theoretical accidents to the committee; the dreaded “what if” scenarios. This situation addresses both the “body count” statement and the “reasonably safe product” discussion I alluded to earlier.

Put yourself in a room full of industry experts from all areas of knowledge. A well meaning individual has submitted a comment regarding scantlings, for instance. The comment is derived from his experience dealing with the ISO scantlings standards (7 parts and still not complete) and designing boats. The comment surrounds the lack of scantlings in US standards and that ABYC should mimic the ISO documents in this area. The commenter insists that there are multiple safety issues in the US boating market because of the lack of scantling standards. We commence with hours of discussion until someone in the room hits the key point; show me the data. The fact is that there is no evidence based on the USCG Boating Accident Report Data (or BARD) that accidents are occurring due to issues with hull thickness, stringers and rudder construction; in fact, not one that I have found can be contributed to lack of initial construction strength. One has to stand back and look for a moment; does the cost of initiating a scantlings program in the US justify the end
result? The end result is ultimately saving lives (which incidentally for lawmaking purposes is worth $3 million per life). What we can end up doing, if we are not careful, is slowly adding cost to the boat for no safety justification. Adding cost reduces the number of participants which eventually reduces the size of our industry which eventually ends up putting a number of people out of work (our well meaning commenter included). This is big picture stuff here, but something we all must consider when creating a standard.

While no formula exists like the governments cost benefit analysis, when data is presented, the ABYC acts. Take for instance the latest version of E-11 AC & DC Electrical Systems on Board Boats. A USCG grant studied issues surrounding in-water shock. Accidents were analyzed, data was collected and tests were conducted. The information was presented to the ABYC committee and subsequently a device called an Equipment Leakage Circuit Interrupter (ELCI) has been added to E-11 2008. This was done over a 2 year time and will result in lives saved. Bottom line is, even if you don’t get what you want, the process works and has been proven for over 50 years; more boats on the water, less accidents. I used the term “reasonably safe” product. No one can foresee abuse or misuse of a product. When a boat is put hard aground on a rock jetty at 20 knots, something on the boat will fail and people will be injured, it’s a fact; can we write standards that prevent injuries and damage in this situation? I think we can all agree that it would be a technical & financial infeasibility to standardize all hazards in a product, thus the term, “reasonably safe.”

The fact of the matter is that voluntary standards work. They have the ability to adapt based on safety and technology and have the teeth of being used in court during lawsuits. The ABYC process is open and transparent and subjected to comments from anyone affected by the contents of the standard. Membership in ABYC is not required for participation in the process. If you take the time to read and comment on a standard under review, ABYC is required to keep you in the loop and inform you of the committee decision and your rights to appeal. All Project Technical Committee meetings are open, anyone may attend and participate. Special interests (e.g. promoting a single product through standardization) are firmly dealt with and not tolerated within the standards process. I would encourage any who might feel the process is flawed to participate and learn how we have evolved over the years to become one of the country’s most active consensus standards bodies. Criticism is empty without participation.

Who Will Be The Sept. 2010 Know It All Winner?
Email your answer to: nnudelman@westlawn.edu

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.

Hodge Podge is a strongly built 52-foot fiberglass motorsailer. A well-designed ocean voyager, Podge is fully fitted out with extensive systems, including hydraulic bow thruster, watermaker, A/C, even a small Jacuzzi. During a recent haul-out the owner noticed that one of the bronze seacocks for engine intake was severely corroded and discolored and in danger of failing. With easy access inside the engine compartment, changing the seacock out isn’t a big job, but the owner rightly wants to know if this is likely to happen again. What is the probable cause of Hodge Podge’s seacock corrosion problem?
The NMMA Boat and Yacht Certification Program
By Thomas Marhevko
Vice President
NMMA Engineering Standards Department

History, Effectiveness, Importance
On just about every boat you jump into today, you see a yellow and black label near the helm with an easy-to-read (and understand) message: Maximum Capacities: xx persons and yy pounds. Just like the capacity plate in elevators, this label tells you the number of people you can safely have in the boat and the total pounds the boat can safely carry. OK, you get that. But what else does the label say? Closer inspection of this label reveals that the boat has been certified by the National Marine Manufacturers Association (NMMA). So what does this mean? I will answer that for you. But first, the beginning.....

The Early Years
Recreational boat certification started in the early 60’s with the Outboard Boating Club (the forerunner of the NMMA) and then later with the Boating Industry Association (BIA). I still see BIA certification labels on older boats. The early program would pick and choose various ABYC standards and various parts of standards. In the early 70’s the program incorporated regulations stringed to the Federal Boating Safety Act of 1971. The NMMA continued the program of certification of recreational boats in the mid 80’s. The early NMMA certification programs were also separated into programs for boat (under 26’) and yachts. The 80’s also brought a start to the component Type Accepted program (more on that later). That brings us to ....

Today
Today the NMMA Boat and Yacht Certification program has over 225 boat builders participating and this amounts to about 80% of the boats annually built in the U.S. That’s an impressive number. The program also has a global reach with NMMA certified boat builders in Canada, Europe, Australia and the Far East. Following the need, NMMA has inspectors in each of these areas.

The late 90’s brought the certification program into modern times. The boating industry established closer ties with both ABYC and the U.S. Coast Guard Office of Boating Safety. The certification program included additional ABYC standards and began educational programs for both builders and inspectors.

The real impetus for certification program growth happened in 2004 when the NMMA Board of Directors declared that a condition of NMMA membership was product certification of recreational boats. Up until then, NMMA certification was a voluntary program, with about 100 members participating. The Board also declared that a required Customer Satisfaction program would be part of certification. The first mandatory year for certi-
The masthead certification as a condition of membership was 2007.

So what are the mechanics of Certification Program?

**The NMMA Certification Program**
The basis of the program is very simple: build your boat to applicable ABYC standards and U.S. regulations, have your boat inspected by NMMA inspectors, correct all variances noted at the inspection, and build the remaining boats according to the “corrected” version. The builder must also use only NMMA Type Accepted components in a certified boat.

NMMA’s part of this contract is to provide builders with the necessary knowledge (through standards and seminars) to build a certified boat, provide educated and certified NMMA inspectors, review and verify all submitted boat information, including persons, weight and power capacities, and ultimately determine the final certification.

The goal of the program is to inspect and certify every model of recreational boat built by the certified builder. This is done annually.

After a boat model has been certified, the builder is authorized to label and advertise that the boat is “NMMA Certified Using ABYC Standards.”

**Type Accepted Components**
There are eight boat components that must be tested to ABYC standards and U.S. Regulations for the boat to achieve certification:

- Fuel tanks
- Fuel hoses
- Navigation lights
- Steering systems
- Steering wheels
- Horns
- Bilge pumps
- Bilge Blowers

Test reports of all Type Accepted components are reviewed, approved and filed at NMMA. Comprehensive lists of all Type Accepted components can be found on the NMMA website.

**Why Certify?**
We always like to say that there are five reasons to certify: safety, safety, safety, safety and safety. But there are also other reasons to certify:

- ABYC standards are more comprehensive than the CFR;
- Certification gives you product liability strength, unbiased third party quality control and market competitiveness;
- Insurance discounts are available to builders who certify;
- The Commandant of the CG has endorsed the certification program
- and finally, (we think) certified manufacturers build better boats.

**The Value of Certification**
But is there quantitative value to certification? Yes! Both an older study and a relatively new study verify the value of certification to both builder and consumer.
An early CG study, in 1985, concluded that a non-certified boat was 5 times more likely to be involved in a boating accident than a certified boat.

A newer, joint CG/NMMA study in 2005 concluded that a non-certified boat was 7 times more likely to be recalled than a certified boat.

**What Certification is Not**

As good as it is, the NMMA Certification program isn’t everything to everybody. Some of the items that we don’t certify:

- Boat designs
- Quality; As an old friend Tom Hale used to say, “a boat that doesn’t float can still be built to ABYC standards and still be certified.”
- Standards not in the program.
- The structural components of a boat. There are no ABYC scantlings standards – yet!
- Old or used boats – God created surveyors to do that.
- Market evaluations - See above
- Marine engines
- Sound testing

**Other NMMA Services and Programs**

To go along with certifying boats, NMMA also offers a variety of products including boat capacity plates, various warning labels, safety brochures and generic owner’s manuals. Each of these products is provided to both members and non-members on a non-required basis for a nominal charge.

**Summary**

NMMA Boat and Yacht Certification continues to provide a valuable service to both boat builders and consumers. The program is just one piece in the puzzle of providing safe and fun boating. Isn’t that what boating is all about?

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**Know It All Contest Solution** - continued from page 6

\[
\text{Stability No.} = \frac{1.45 \text{ RPI}}{1.39 \text{ Bruce}} = 1.04
\]

\[
\text{Stability Factor} = 8.24 \sqrt{\frac{0.5 \times 26 \text{ ft. Beam} \times 13,440 \text{ lb.}}{1,100 \text{ sq.ft.} \times 29.4 \text{ ft. CE}}} = 19.1 \text{ knots}
\]

**Stability No. to be ≥ 1.0**

**Stability factor to be ≥ 19 knots**

This boat has acceptable stability in regard to its rig as the Stability Number is greater than 1.0. At the same time, the Bruce number is reasonably high. This indicates an acceptable offshore cruiser, with a good turn of speed for a catamaran. If the hulls are long and slender at the waterline, this boat can achieve very high speeds safely.

The Stability Factor is also over 19 knots, indicating again that the rig is acceptable for offshore cruising use, with regard to stability.

Note the formulas assume low angles of heel, under 9 degrees, which applies quite well to essentially all catamarans that don’t fly a hull and to most trimarans that don’t fly a hull. A few trimarans may sail well in heavy air at over 9 degrees without flying the vaka out of the water. In this case the “beam” in all the multihull stability formulas above should be replace with:

“Beam x cos heel angle, in expected sailing trim.”

In most instances; however, the heel angle will be under 9 degrees and the difference is then 1% or less--too small to be worth calculating.

Note that many unlimited offshore racing multihulls have Stability Numbers lower than 1.0. These craft can be exceptionally fast, but they are not safe for offshore cruising. This was clearly demonstrated in a recent Round Britain Race, where all but two of the unlimited-60 tris competing either capsized or had catastrophic structural failures.
Westlawn graduate David Martin has spent a lifetime designing all types of boats. His new book, *The Book of Dave Martin Designs*, is available on CD from Amazon.com. The Masthead will feature excerpts from this fascinating new work over the next few issues.

55 Ft. Ocean Yachts

Efficiency Under Power

Back in 1968, I began dreaming of a practical seagoing pleasure boat that would have the efficiency of a hydroplane. The Westlawn speed graph showed that a hydroplane would go 38 M.P.H. at 30 Lbs. per H.P., while a fast vee-bottom boat would only do 32 M.P.H. at the same 30 Lbs. per H.P. Arno Apel was a frequent visitor to my offices both at Atlantic City and at Pacemaker. In fact, at the time he worked for Pacemaker and was in charge of international sales, Arno noticed my preoccupation with the Westlawn speed charts. One morning he walked into my Pacemaker office and handed me a speed and power graph prepared by professor George Crouch of Webb Institute of Naval Architecture. Crouch’s chart showed plots of a few practical seagoing planing hulls that had already exceeded hydroplane efficiency as stated on the Westlawn Speed charts. Arno had made his mark on the chart with *My Sin*, a three point hydroplane at about 106 M.P.H. Arno’s greatest accomplishment, Sir Malcolm Campbell’s *Blue Bird*, at 141 M.P.H., did not fit on the chart. The boat that intrigued me the most on the chart was the 55 Ft. British C.M.B. shown. Crouch’s chart also appears in the story about the 47 Ft. Pacemaker.

The C.M.B., by U.S. government report, made 43.4 M.P.H. for two hours at 34 Lbs. per H.P., well over both the Westlawn Hydroplane Curve and the Crouch Hydroplane Curve. There it was, documented by a Webb professor and the U.S. government. Proof that what I was striving to do was not only possible, but was already accomplished by a British genius in 1914.

The C.M.B. was a torpedo boat carrying two stern torpedoes operating in the English Channel. At night, these boats would cross the channel, make a U-turn in front of the German U-boat pens, and fire torpedoes out the stern. German anti-aircraft guns were firing skyward at what they thought were the airplanes that fired the torpedoes. The British C.M.B. probably had the longest production run of any boat in world history, having been in production from 1914 to 1939 when orders were filled for the Chinese Navy.

With information that proved that it was possible to design a seagoing boat that could equal or exceed hydroplane efficiency, I decided to try to do it. All sorts of model configurations were designed and built, many hydroplane models tested. They were more efficient at high speeds but at realistic cruising speeds they had more resistance than my existing designs. Bob O’Donnell and I towed the models from an outboard boat. We towed two models at a time from a yoke. One model was of an existing design about which we had real world performance figures. The other model was a new experimental design. The boats were tested at scale speeds using...
the speed-length-ratio formula. Both models were weighted to the scale designed displacement before towing. We had holes in the yoke and brought the towline of the harder towing model closer to the fulcrum until both ran side by side. By comparing the fulcrum distance, the resistance difference could be measured. With this information we could...
calculate how much less power would be needed to provide equal speed to the existing design, if we were successful. For nine months and $20,000 worth of models, we were unsuccessful. Finally on a frigid morning in February 1970 came success. The Coast Guard had broken the ice in Clam Creek. We towed a 38 Ft. Alglas model converted to a single step hydroplane against a standard 38 Ft. Alglas hull. The hydroplane was more efficient at the top end, but had more resistance at cruising speed. Suddenly the conventional model hit a chunk of ice, the brick bounced aft, and the conventional model leaped ahead of the hydroplane. A close examination showed that the conventional model had distorted some while it was curing in it’s fiberglass mold. This distortion, combined with a higher running angle caused by the brick bouncing aft, caused her to exceed hydroplane efficiency. My contract with Pacemaker ended in June 1970. Eight years later, the new owners of Pacemaker laid off Jack Leek. They allowed him to buy a 38 Ft. Alglas hull for use in altering it, to go in business building a few 40-footers. He got me to draw up the 40-footer and incorporate the lessons learned with the model tests. The exact changes were made to the hull plug that accidently occurred during the model curing process. On trial runs she was several knots faster than the Pacemaker 40-footer with the same engines. Next winter a 40 Ft. Pacemaker was hauled out and sat right next to a 40 Ft. Ocean Yachts. Lots of people looked at both boats trying to find out what I had done to make the Ocean faster. Nobody could see any difference between the two boats, so imperceptible were the changes. Three thirty seconds of an inch in the right place was the difference.

In the spring of 1979 Jack Leek gave me an order for a 53 Ft. design which we lengthened to 55 Ft. The hull plug was built by Bob O'Donnell, who was now President and one-third owner of Marko Custom Boats. Bob was with me during the model tests and knew just how the 38 Ft. model had distorted, and was very careful to get that same critical area configured just right. Three thirty seconds of an inch was the difference between outstanding or average efficiency. Launching day was in typical Leek fashion. Jack’s mother knitted the cover of the Champaign bottle as she always did. Jack’s wife, Bea, christened her as she descended down the travel lift well. A nice party was enjoyed by all, as Fast Freddy Metz fired up the Detroit 8 92, 650-H.P. engines emitting a dense smoke screen engulfing the party. The engines were racing in neutral, so I went up to the bridge and closed the throttles. Suddenly Fast Freddy is screaming at me "SPEED IT UP DAVE, SPEED IT UP". He was standing on the aft deck, hidden by smoke from the crowd, as he was taking a number one. Hidden, that is, until I closed the throttles and the smoke subsided leaving him standing there in full view of Jack Leek’s mother with a group of women standing on the dock.

Fast Freddy, now in the engine room, told me to stick around because he and young John Leek III had it cooked up to run speed trials in the dark on the river. John, Vernon Warker, and his wife came aboard and we snuck out the river slowly hoping John’s father, Jack, would not notice. In the pitch dark, with young John on the bridge at the wheel, he opened her up. All I could see was the lit up knotmeter reading 35 knots. I could also see the strong possibility of all of us winding up 200 Ft. in the woods. Everybody was very happy as the engines went right up against the governors. Vernon and his wife were overjoyed. After all, they had mortgaged their house to the hilt to invest in this company. Back and forth we flew up and down the river in the darkness. John apparently took several ranges on some house lights on the river. I hoped the people in the house we were heading for did not turn out the lights and go to bed. Anyway after six passes, I told John about the time I had put the sinking 48 Ft. Alglas on the beach in Atlantic City. John fortunately headed in with the boat still in one piece.

As we tied up, John looked extremely upset as he said, "My old man is going to kill me for this!" I said, "Don't worry John, just follow me up to Jack’s house and I will take care of everything." Off we trudged, up the little road a few hun-
dred feet from the marina to Jack’s house, with John and Fast Freddy trailing along after me. John’s mother opened the door. I said to Jack sitting in his easy chair, "John ran trials on the 55. I knew it would be alright, as you would have done the same thing when you were his age. She went 35 knots. The whole thing works. I plotted the weight at the trial and we are more efficient than a hydroplane. We can duplicate this efficiency on any size new design."

The boat’s owner and his wife were there the next day and stayed with the boat until they left for the Bahamas. I was concerned, as every time they discovered an empty space, they went to the store and bought stuff to fill it up. Finally, the day Doug Schriver, of Boating Magazine tested her, she was loaded to a displacement of 59,000 Lbs. by my flotation line measurement right after the test. She tested at 35.8 M.P.H., well over the step hydroplane curve on Professor Crouch’s Speed graph.

CLICK HERE to purchase the complete Book of Dave Martin Designs on CD, from Amazon.com.
METAL CORROSION IN BOATS
(Course No: TT500)

This comprehensive distance-learning course will provide you with a firm foundation in the causes of metal corrosion and the current practices in its prevention, reduction and cure.

Topics include: galvanic corrosion, electrolytic corrosion, wastage, pitting, velocity effects, and cathodic protection. The causes and mitigation of corrosion of stainless steel, copper and nickel based alloy, aluminum, iron, and steel are studied. Special consideration is given to problem areas underwater, on deck and aloft, and in engine and fuel systems.

CLICK HERE for a detailed syllabus
CLICK HERE for more details and enrollment information on this and other Westlawn essential continuing education courses

Advanced Fuel Systems in Boats (Course No. TT501)

This comprehensive distance-learning course provides instruction in safe, reliable, and practical fuel systems for both diesel- and gasoline-engine boats.

Topics include: Applicable standards; fuel-system piping and filter requirements; fuel-piping manifolds; anti-siphoning protection; access and fastening requirements; diesel-specific fuel piping considerations and day-tank piping; fuel-transfer pumps; return-oil coolers; fuel-line valves; calculating fuel consumption; calculating tank capacity and weight; specifying fuel hoses, hose clamps, and piping; tank fastening; considerations in tank location; protection against corrosion; restrictions and recommendations for location of openings in fuel tanks; tank-vent requirements and installation; fuel fills; fuel take-offs; common problems related to spills at vents and fills; tank construction; choice and selection of tank materials; requirements and recommendations for baffles and baffle openings; fuel-tank labels; tank pressure tests; flexible bladder tanks.

CLICK HERE for a detailed syllabus
CLICK HERE for more details and enrollment information on this and other Westlawn essential continuing education courses

ABYC Courses and Schedule for 2010

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 2010. 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 Next Page

*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 & Events Schedules

### Current In-Class ABYC Training Courses

For a course description or to register, [CLICK HERE](#).

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<tr>
<th>DATE</th>
<th>EVENT NAME</th>
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<tr>
<td>Oct 05, 10 - Oct 07, 10</td>
<td><strong>EL200 - Basic Marine Electrical</strong>, Portland Oregon</td>
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<tr>
<td>Oct 05, 10 - Oct 07, 10</td>
<td><strong>EL200 - Basic Marine Electrical</strong>, Mystic CT</td>
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<tr>
<td>Oct 12, 10 - Oct 15, 10</td>
<td><strong>DE400 - Diesel Engine &amp; Support Systems Certification</strong>, Tampa FL</td>
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<td>Oct 19, 10 - Oct 22, 10</td>
<td><strong>EL400 - Electrical Certification Course</strong>, Long Island, NY at Kings Point</td>
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<td>Nov 02, 10 - Nov 05, 10</td>
<td><strong>EL400 - Electrical Certification Course</strong>, Toronto Ontario</td>
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<tr>
<td>Nov 02, 10 - Nov 05, 10</td>
<td><strong>MC400 - Marine Corrosion Certification</strong>, Portland, OR</td>
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<tr>
<td>Nov 09, 10 - Nov 11, 10</td>
<td><strong>EL200 - Basic Marine Electrical</strong>, Albany, New York</td>
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<td>Nov 09, 10 - Nov 12, 10</td>
<td><strong>EL400 - Electrical Certification Course</strong>, Annapolis Maryland</td>
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<tr>
<td>Nov 16, 10 - Nov 18, 10</td>
<td><strong><strong>MMTA</strong> AC400 – AC and Refrigeration Certification</strong>, Thomaston, ME</td>
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<td>Nov 16, 10</td>
<td>Fall &quot;Proctored Testing Program&quot;, All Locations</td>
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<td>Nov 19, 10</td>
<td>**<strong>MMTA</strong> EP200 – EPA Coolant Certification Class</td>
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<tr>
<td>Dec 07, 10 - Dec 09, 10</td>
<td><strong>SC400 - ABYC Standards Certification</strong>, Jacksonville, FL</td>
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<tr>
<td>Dec 07, 10 - Dec 09, 10</td>
<td><strong>SC400 - ABYC Standards Certification</strong>, Costa Mesa, CA</td>
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<tr>
<td>Dec 14, 10 - Dec 17, 10</td>
<td><strong><strong>MMTA</strong> GE400 - Gasoline Engine &amp; Support Systems Certification</strong>, Thomaston, ME</td>
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<tr>
<td>Dec 14, 10 - Dec 17, 10</td>
<td><strong>EL400 - Electrical Certification Course</strong>, Tampa FL</td>
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<tr>
<td>Dec 14, 10 - Dec 17, 10</td>
<td><strong>MS400 - Marine Systems Certification</strong>, Mystic Seaport</td>
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<tr>
<td>Jan 18, 11 - Jan 20, 11</td>
<td><strong>EL200 - Basic Marine Electrical</strong>, Miramar FL</td>
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<tr>
<td>Jan 25, 11 - Jan 28, 11</td>
<td><strong>MC400 - Marine Corrosion Certification</strong>, Tampa, FL</td>
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</tbody>
</table>

For a course description or to register, [CLICK HERE](#).

## Westlawn Distance Study

Click on Topic for more information:

- **Professional Yacht & Boat Design**, 4-Module Program
- **Elements of Technical Boat Design** (Formerly Yacht Design Lite)
- Continuing Education
- Applications & Enrollment

All Westlawn Courses are nationally accredited by the Accrediting Commission of the DETC.

## 2010 NMMA Boat shows

### 45th Tampa Boat Show

September 10 - 12, 2010
Tampa Convention Center
Tampa, Florida
[www.tampaboatshow.com](http://www.tampaboatshow.com)

### 35th Norwalk Boat Show

September 23 - 26, 2010
Norwalk Cove Marina
Norwalk, Connecticut
[www.boatshownorwalk.com](http://www.boatshownorwalk.com)

### 25th Nashville Boat & Sportshow

January 6 - 9, 2011
Nashville Convention Center
Nashville, Tennessee
[www.nashvilleboatshow.com](http://www.nashvilleboatshow.com)

### 81st Chicago Boat, RV & Outdoors Show

January 12 - 16, 2011
McCormick Place - North
Chicago, Illinois
[www.chicagoboatshow.com](http://www.chicagoboatshow.com)

For a Complete listing of NMMA shows [CLICK HERE](#)
The Masthead

Training Links & Event Schedules (continued)

RINA
The Royal Institution of Naval Architects

2010 Conference & Training Programme
FUNDAMENTALS OF CONTRACT & CHANGE MANAGEMENT FOR SHIP CONSTRUCTION, REPAIR & DESIGN
13-15 October 2010, London, UK
http://www.rina.org.uk/Fundamentalsoct2010

SYSTEMS ENGINEERING IN SHIP & OFF-SHORE DESIGN
21-22 October 2010, Bath, UK
http://www.rina.org.uk/systemsengineering

PRESIDENTS INVITATION LECTURE
30 November 2010, London, UK
http://www.rina.org.uk/presidentsinvitation2010

ICSOT 2010: DEVELOPMENTS IN SHIP DESIGN AND CONSTRUCTION
11-12 November 2010, Surabaya, Indonesia
http://www.rina.org.uk/icsot2010

THE WILLIAM FROUDE CONFERENCE
24-25 November 2010, Portsmouth, UK
http://www.rina.org.uk/Williamfroude

THE DAMAGED SHIP
26-27 January 2011, London, UK
http://www.rina.org.uk/damageship2011

For more information on any RINA event then please contact the events department: 10 upper Belgrave street, London, SW1X 8BQ. Tel: 44 (0)20 7235 4622, Fax: 44 (0)20 7259 5912, email: conference@rina.org.uk

Westlawn students are eligible for student membership and Westlawn graduates are eligible for graduate membership in RINA. CLICK HERE for details.

IBEX, The International Boatbuilders’ Exhibition & Conference, is the largest and most complete technical trade event for the recreational boating industry in the world. Co-produced by Professional BoatBuilder magazine and the National Marine Manufacturers Association, this trade-only event is a great learning laboratory for yacht and boat design students, designers, boatbuilders, surveyors, and other marine professionals.

In Just 3 days you can...
- Discover thousands of new marine products
- See live boatbuilding demonstrations utilizing new methods
- Attend FREE Exhibitor Workshops
- Attend the world renowned IBEX Seminar Series

Westlawn students receive a 50% discount on seminars if they pre-register. Admission is FREE with a valid student ID card or trade business card. Be sure to stop by the Westlawn/ABYC booths to meet our staff.

CLICK HERE for full information on all events and pre-registration information.
ATTENTION WESTLAWN ALUMNI ONLY

- You are invited to submit photos and commentary of recently launched boats of your design for publication in The Masthead.
- You are also invited to submit drawings, renderings, and commentary of your designs that are “On The Drawing Board,” for publication in The Masthead.

SUBSCRIBERS

Currently, we have over 7000 subscribers to The Masthead, Westlawn’s quarterly E-Journal. Our readers are yacht and boat designers, boatbuilders, marine techs, surveyors, boat design students, and members of the boating public.

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 is listed as an accredited school by the U.S. Department of Education and by the Council for Higher Education Accreditation.

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.