



FARR HORIZONS

An inside look at our world of yacht design.

LOOKING TOWARDS THE FUTURE

Farr Yacht Design (FYD) has been established in Annapolis, Maryland for over twenty years and are responsible for designing 40 World Champion yachts and over 350 designs. The original partners, Bruce and Russell, in continuing their good business decision-making history, have begun a process to ensure FYD continues into the future with equal success by expanding the company's shareholding.

There are several reasons to initiate such a process. FYD has enjoyed a stable and consistent staff for a number of years, which has led to the fostering of a core team with the interests and talents to further the company's development. It is important to reinforce this increase in responsibility by allowing the committed staff to obtain a stake in their future.

In addition, Farr Yacht Design's long track record of providing quality designs for its clients has led to very high demand for the company's services. To satisfy the burgeoning desire for a superior Farr design, the company needs to grow and increase its capacity which, in turn, increases the breadth and responsibilities of the leadership and management team.

The first step occurred in 2001 with an expansion of the company's Board of Directors and addition of new share-

holders. Currently the shareholders are Stephen Morris, Jim Schmicker, Patrick Shaughnessy and Britton Ward in addition to Bruce and Russell. Stephen joined Bruce and Russell on the board as a Director and was elected a Vice President at the beginning of 2002.

Since 2001 Steve has been learning the complexities of running Farr Yacht Design and has taken on the responsibilities for financial, legal and staffing direction amongst other duties. He and Russ actively manage many of the company's daily operations, leaving most of Bruce's time free for focusing on important design work.

Jim, Patrick and Britton have also been assigned to new areas of responsibility and subsequent newsletters will focus on their roles.



Stephen Morris - Vice President

FUN WITH BENETEAU

Over the past 15 years, Farr Yacht Design has enjoyed a close business relationship with Beneteau. Recently, we had the opportunity to join in the fun during their 2003 Owner's Rendezvous in St. Michaels, Maryland, sponsored by Annapolis Yacht Sales.

As part of the two day event, Senior Designer, Patrick Shaughnessy and Sales Manager, Dave Millett hosted a match-racing seminar. Four teams were assembled and sailed on identical First 36.7's. Prior to the racing, David held a rules and tactics seminar. Patrick was on board for one team offering coaching tips as needed and Dave umpired the event. Fouls were called, penalty turns were made, and at the end of the day, four happy teams returned to the dock with stories of close calls and what could have been.

Shortly after the Rendezvous, Dave traveled to Charleston, South Carolina for the dealer unveiling of the new Beneteau 57 (our Design #486). Discussions took place about the new yacht and excellent sailing was experienced in 20 knots of breeze on both days with visiting Beneteau dealers and a half dozen prospective clients. Power reaching at 10 to 11

knots, the boat performed marvelously with a full tank of water, half tank of fuel, and 20 guests on board. For more information on the new Beneteau 57, please visit Beneteau's website at www.beneteauusa.com or www.beneteau.fr.



Beneteau USA Dealer Council aboard the new Beneteau 57

FARR YACHT DESIGN ENTERS THE OPEN 60 ARENA



J.P. Dick's Open 60 "VIRBAC"
Photo Copyright Ivor Wilkins

In early 2002 Farr Yacht Design was commissioned by Jean Pierre Dick to develop a state-of-the-art Open 60 design (Design #498) targeted at winning the 2004-2005 Vendee Globe, widely regarded as the most intensive and extreme single-handed around the world race. The Open 60 class, as its name implies, is a development class that has spawned a wide array of new technological developments in yacht design including the use of wing mast spars, PBO & Aramid rigging, canting

keels and water ballast. Our desire was to develop a safe, easy handling design capable of achieving a high percentage of its theoretical performance potential while being sailed single-handed.

Having not designed a modern Open 60, we were starting with a blank sheet of paper in terms of our understanding of the rule space. After a series of debriefing sessions with the client to understand their desires and learn from their experiences with current generation Open 60's, the FYD design team undertook a series of conceptual sessions and identified particular areas of the design where we felt significant design/construction/system or operability gains could be made.

Parallel to the development of these conceptual ideas, we embarked on a significant research program to allow us to analyze designs and predict their relative performance. Modeled after our successful Volvo Ocean 60 research efforts, our research explored seven areas:

1) Critical to optimizing an around the world race boat is developing an accurate performance profile of the boat around the course. Ten years of global weather data files were obtained covering the typical Vendee Globe race period and fleets of designs were then analyzed using custom router software.

2) Exploring variations in beam and displacement, a series of nine base Open 60 designs were developed and evaluated using the VPP and weather model. These designs produced a systematic series from which the effects of various design parameters on the elapsed time over the course could be compared.

3) One of the design areas with the most freedom is appendages and we have spent significant time evaluating the merits of different appendage configurations. The interaction

effects of dagger boards, canting keels and off-center rudders and their impact on the boats' performance can be dramatic.

4) Detailed 3-D modeling of internal layouts, decks and cockpit arrangements allowed us to more efficiently communicate concepts to the client and builder resulting in more accurate weight tracking and the avoidance of interference problems that can plague designs with complex space claims such as this.

5) The sail plan is quite a departure from other current generation Open 60's and reflects detailed optimization studies using the course and weather models. The selection of a conventional carbon rig with PBO standing rigging was the result of internal research studies.

6) Reproducing the design appendage shapes is critical to the performance of the boat, therefore, the keel fin, bulb, rudder and dagger-board surfaces were developed as Pro/Engineer 3D models, which were then supplied directly to the builder.

7) Safety concerns are paramount in the design of a solo Open 60 and, as such, we placed emphasis on access ways throughout the boat. As the Vendee Globe is a no-outside assistance race, significant importance has been placed on survivability in the event of collision. This is reflected in the hull structural layout and in the design of the appendages. The boat is fitted with two asymmetrical dagger-boards that can be inverted and used on the opposite side in the event of damage to one board.

Jean Pierre Dick and team, along with title sponsor **VIRBAC**, recently launched the new Open 60. Team member Nicolas Abiven said, "We could see during these first hours of sailing that what we asked Farr Yacht Design to do had been respected. The boat is very well balanced, she has a great capacity of acceleration in light airs, deck layout is comfortable...We obviously still have a lot of discussion with Farr Yacht Design in the next months to improve the boat, but we do think that Design #498 will be a very good number in the Open 60 Class. Today, we want to thank all the team that has worked on our project, with special attention to Patrick, Steve, Mick, Britton and Russell." For updates on **VIRBAC**, please visit www.jp dick.com.



VIRBAC - Photo Copyright Ivor Wilkins

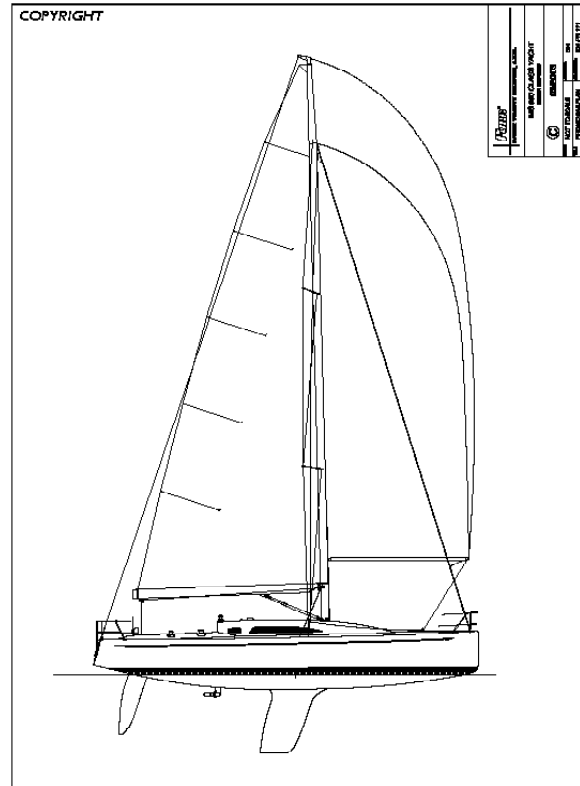
NEW DESIGN FOR THE IMS 600 CLASS

2002 was a year of challenges for Farr Yacht Design and our newest IMS design was no different. Production builder Sinergia Composites of Spain approached us late in 2002 to design a second generation IMS boat for the IMS 600 Class, which is very active in the Mediterranean. Having not designed a pure IMS racing yacht at 41 feet for quite some time, it was another challenge that the team at Farr Yacht Design accepted without hesitation.

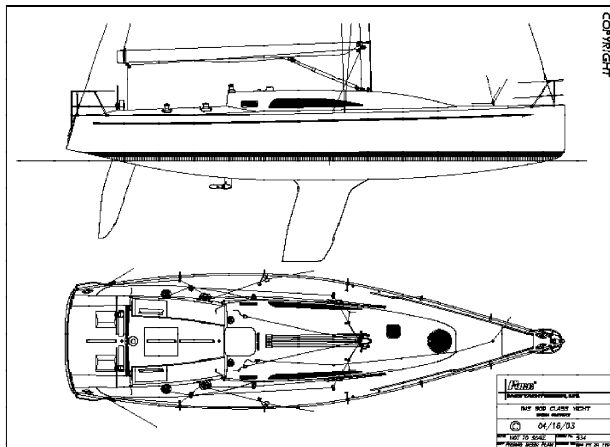
With a number of boats racing in the Class, our first task was to establish who was being successful and why. Our next task was to develop a formula for victory. An IMS 600 Class yacht must rate between a GPH 595 and 615. The client also wished for a boat that could easily move into faster classes with a minimum of change and so it was decided that our target rating for the yacht would be GPH 595.

In order to achieve this, we have drawn upon our successes in larger IMS yachts and created a hull shape that is narrower with less displacement than most in the Class. We have also designed a taller rig and larger sail plan. These features should give our new IMS 600 design (D. 534) a clear starting line advantage and produce good speed downwind especially in the more moderate conditions found in the Mediterranean.

The rig will have swept back spreaders, a large mainsail and non-overlapping headsails. No running backstays will be needed and the cockpit area will feature twin wheels and an enclosed transom.

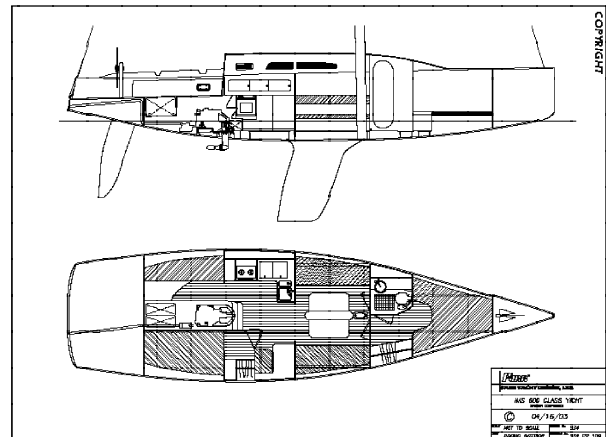


At the same time this design began, a production builder in Russia (Non Commercial Partnership 40 Feet) contacted our office and commissioned the same IMS 600 design. The builder has claimed this will be Russia's first production racing yacht and 10 confirmed orders have been placed to date. For more information please contact Dmitriy Mikhailov at tag_yacht@mail.ru or Fax +7 8634 383 909



The interior of the yacht will meet IMS minimum requirements and will be suitable for extended family cruising with an enclosed stateroom aft, enclosed head forward, full navigation station and full galley. Additional cruising options will be offered by the builder.

Sinergia Composites have projected the launch of their first IMS 600 Class boat in June and intend to produce about 5 more by the end of the year. For more information, please contact Miguel Vazquez at Miguel@sinergiacompositessl.com or Fax +34 96 854 0805.



TRANSPAC 52 MAKES A SPLASH



Karl Kwok's new TP52 goes for its first sail.

Another new design from our office is the recently launched Transpac 52 (Design #495), *BEAU GESTE*. Karl Kwok commissioned this state of the art design making this his third new commission from Farr Yacht Design's drawing boards.

The Transpac 52 Class started about two years ago as the brainchild of U.S. West Coast sailors looking for a fast boat without the constraints of a One Design Rule. They created the Transpac 52 box rule with input from owners, sailors, designers, and the Transpac Yacht Clubs' Board of Directors. The box rule sets a number of parameters for the boats with the defining parameter of no more than 52 feet in length. As a speed comparison, a typical 52' IMS yacht has a General Purpose Handicap (GPH) of approximately 520 or slower. The TP52 has an approximate GPH of 475. In general terms, this means a TP52 is about 45 seconds a mile faster on a windward leeward course. These boats were designed with a fair amount of offshore sailing in mind though, and almost all of this difference is in the downwind performance of the boat. The speed off the wind should allow a TP52 to come very close to a 7 day elapsed time for the Transpac Race if the wind conditions are

optimal. The current record for a boat in the 50' class is 8 days and 6 hours. TP 52's are very capable of bettering that time by 24 hours.

The TP 52 Rule sets the overall length of the yacht, a beam range and vertical center of gravity requirements. These parameters gave our designers the freedom to experiment with waterline, overhangs and transom immersion to obtain a good balance between upwind and downwind performance.

We began with a series of 4 beam variation hulls to explore the TP52 rule space. Bruce Rosen of South Bay Simulations using his SPLASH Computational Fluid Dynamics (CFD) software analyzed these hull variations. Results from SPLASH were integrated into our Velocity Prediction Program (VPP) to develop performance profiles for each variation and then combined with a series of race models for the Transpac to select final sizing parameters. Research is always very enlightening and the final decision differed from our earlier expectations. The light displacement and powerful sailplan places a premium on stability, especially in the reaching conditions that predominate in the Californian coastal and Transpac races.

Performance profile for this design focuses on reaching and downwind racing, therefore, we opted for a minimal wetted surface area appendage package. Utilizing our latest CFD technologies and 3D modeling capabilities, we created an optimized keel and bulb design for minimum drag. The rudder incorporates our proprietary foil designs for solid handling in tight maneuvers while using a minimal area plan form to produce a low drag solution.

Although this design is targeted toward a series of particular events, care was taken during the design process to allow for the possibility of re-modifying the boat for more in-shore events. With the addition of a larger planform keel and some adjustment to mast rake and balance, we anticipate Design #495 will show formidable pace in the round the buoys arena.

The deck layout is simple with longitudinal jib tracks featuring purchase based forward and aft adjusters and in-haulers. Both primary and mainsheet winches are pedestal driven. The deck camber is designed to keep weight low and allow for ease of movement by crew. Geometry of the deck with the shape of the cabin top and long open cockpit are designed to meet minimum IMS requirements.

In accordance with the maximum dimensions specified in the TP52 rule, this design has a 7/8's fractional rig with swept double spreaders and removable forestay for gybing ease. Down below the interior features two fixed and two pipe berths, galley and food/gear storage, all the amenities required to meet minimum IMS requirements.

For more information, please contact Dave Millett at dmillett@farrdesign.com or Fax 410 268 0553.

ON THE DRAFTING TABLE - SLEEK, HIGH PERFORMANCE 86' CRUISING YACHT

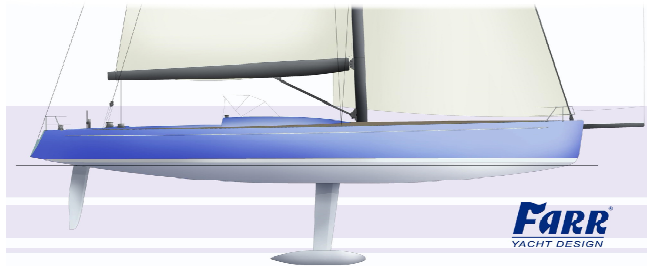
Farr Yacht Design is better known for racing designs and probably less well known for its fast cruising designs. In fact, we have a long history of creating successful fast cruising yachts under the labels of prestigious yards such as Baltic Yachts, Beneteau, CNB, Jeanneau, Nauta Yachts, Southern Wind Shipyard, Wally Yachts as well as an extensive list of custom design.

The latest custom project came earlier this year when an Italian client and his project manager presented us with a directive, "create for us a fast yet elegant performance cruising and racing design of approximately 86' in length". The result is our Design 535.

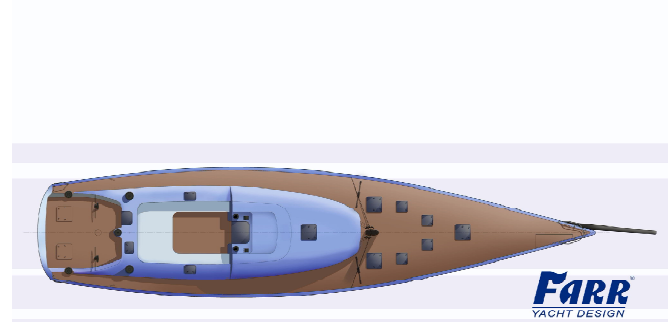
Although there have been many examples by others of this size and type of yacht, our client felt most of these designs lacked elegance above the waterline. The client's vision was a design not divided by coamings or an overly aggressive deck saloon style prevalent in today's arena.

Sleek, simple, and elegant are the parameters and the staff at Farr Yacht Design is eagerly assuming the challenge. The developments thus far promise a yacht of uncompromising beauty, not only sailing in front of the fleet but at the dock as well.

Key features of the design will include a lifting keel with a minimum 2.9-meter draft, a five stateroom layout and a signature Farr Yacht Design hull shape that guarantees performance.



*Design #535 Side Profile
Rendering created by Design Unlimited*



*Design #535 Deck Layout
Rendering created by Design Unlimited*

The deck in profile is sleek and well blended with its parent hull shape. Clean rounded shapes enclose two cockpit areas while maintaining common styling character throughout the deck areas.

At the front of the yacht we created a stem slope and knuckle shape derived from basic proportions of our recent racing boat projects. Combining this stem shape with an aesthetically pleasing and elegant sheer line that achieves the interior target headroom dimensions.

Moderate deck camber, which balances well with the basic curvature of the hull topsides, forms the foundation of the deck styling. Added to that camber is a sleek and simple cabin geometry intended to house dodgers, halyard line tunnels, hydraulic headsail control systems and other equipment, keeping the surrounding deck area as clean as possible. The cabin's geometry is composed of aggressively sloped sides and generously rounded intersections producing a clean and modern surface. We have echoed those same themes in a character coaming, which encompasses the deck's two cockpit areas with a stylish and functional surround. The forward cockpit area has been sized for ample seating room is recessed to provide a cushioned seating surface which continues seamlessly into a centrally located sunbathing area.

The anticipated launch date is scheduled for June 2004. The yacht will be sailed in the Mediterranean as well as frequent trips to the Caribbean.

THE MAKING OF A SUCESSFUL AMERICA'S CUP DESIGN AND RESEARCH TEAM

Farr Yacht Design, as the principal designers for Oracle BMW Racing (OBR), have enjoyed 2 ½ years of intense research and design work culminating in the design of FYD's third Louis Vuitton Cup Finalist, USA-76. FYD's sixth excursion into the world of America's Cup competition featured a number of milestones that mark it from our previous experiences.

Long time client, Larry Ellison, approached FYD presenting an AC syndicate that would be operated as an extension of the successful SAYONARA Farr ILC Maxi program. Bill Erkelens ran the program for Mr. Ellison for 6 years which resulted in five World Championships.

Mr Ellison's motivation leaned towards giving his team an op-

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America's Cup continued...



OBR'S US 76 Photo Courtesy Max Ranchi

portunity to win the supreme trophy rather than a desire to have a full day-to-day involvement that some other syndicate heads prefer. A decision to join forces was made and an America's Cup team had to be assembled in a very short time frame. The first priority was recruiting experienced people. FYD assumed the responsibility of assembling the appropriate resources for research, development and design work and boat construction. FYD recruited specialists and consultants in many areas to compliment our existing research and design team in Maryland. Additional office space was rented alongside our Annapolis location and FYD's infrastructure proved ideal for supporting the extended design team. Our organized email and filing systems enabled everyone in the Annapolis based R&D team to communicate productively and the existing servers were supplemented to provide a secure storage area for design data. Bobbi and Jennifer, later assisted by Ann, provided early administrative organization and then supported the team throughout the 30 month effort.

Dave Fornaro enlarged his responsibility for FYD's computers to include the extended computing resources used by the team as a whole. Under his careful management, fiber optic links between servers and secure connections from Annapolis to the HP supercomputer and the sailing base in Auckland were set up and maintained to maximize the team's efficiency.

The overall yacht design and hull shape development was led by Bruce and Britt working with many highly skilled designers. Luke and Jim also played roles in working on developing new shape generation techniques and progressing the design development to attain the high targets set by the team. Tank testing and hull model building facilities were engaged leading on from FYD's extensive experience in this field from Volvo and previous America's Cup campaigns. The resulting data assisted in making design decisions and validating our computational analyses.

Significant effort was applied to developing accurate and highly refined techniques for configuring design alternatives for analysis. These methodologies allowed the OBR design team to complete unprecedented numbers of computational experiments enabling a large number of hull and appendage shape variations to be evaluated and their performance

benefits examined using race modeling software.

Steve led a team of designers, theoreticians and researchers developing the keel, bulb, wings and rudder for the new designs. The team placed extensive reliance on parametric models generated by Dave, Steve, Luke and Alon using ProEngineer to make rapid design progress. CFD codes and ProE were linked together using sophisticated gridding software to enable efficient turn around time for computational analyses. The resulting keel shown at the Louis Vuitton Finals unveiling in January caused a lot of comment for its innovative and detailed design.

FYD's structural design resources led by Russell and supplemented by Graham, Mick, Dave and Alon worked with a team of additional structural designers and Finite Element analysts. The efforts of the structural and build team achieved a number of construction firsts and produced one of the fairest and most durable boats in the 2003 competition. Often overlooked in AC design teams is the effort required to produce a set of drawings to build the boats. Most teams are well equipped with computer experts but ultimately the theory needs to get distilled down to a practical sailing yacht design, and then communicated to the builders through a set of drawings. FYD prides itself in producing a thorough and complete drawing package. Patrick worked closely with the Oracle sailing team to refine the yacht deck layout and interior requirements, and then managed the extensive drawing production effort and weight calculations.

USA-76 proved to be one of the quickest and most versatile platforms of the 2003 Louis Vuitton Cup, a true testament to the quality and dedication of the entire OBR team. Our eventual elimination at the hands of the ultimate America's Cup winners Alinghi was hard fought and showed both of the finalist yachts to be very similar in performance. Each America's Cup event is a wonderful learning experience and we have spent the recent months reviewing our experience and feel confident that we have learned a number of lessons that can be applied to produce an even faster design for the 2007 America's Cup series. We are anxiously looking forward to having another crack at the Auld Mug.



OBR'S US 76 Photo Courtesy Max Ranchi

WELCOME NEW FYD TEAM MEMBERS!

In September 2002 **David Millett** joined our team in a newly formed position of Design Sales and Marketing Manager.

A native of California, David has been an avid sailor most of his life, participating in various inshore and offshore regattas. For several years he had a very successful MORC campaign and was also a US Sailing Judge and Umpire. He has also been the Chairman, Chief Judge and PRO of numerous high profile regattas in the US. David also worked as a rigger for a yacht company in California for several years assembling racing, cruising and power yachts as well as hardware sales.

In 1982, David graduated from Long Beach State with a BS in Marketing. He has over 20 years experience in sales and marketing. Prior to joining our team, he was a regional sales manager for a corporation specializing in the sales of large custom manufacturing equipment.

David's primary responsibilities will include sales of custom designs produced by our office, promotion and marketing of the company, as well as press liaison.

Formerly employed with the research and design team of Oracle BMW Racing, the 2003 Challenger for the America's Cup, **Alon Finkelstein** joined our team as a Design Engineer in January 2003.

Born in South Africa, Alon began sailing at a very young age. Combining his aptitude for math and science with



a love of sailing, he decided to pursue a career in yacht design. Alon graduated with honors in 1998 from the University of the Witwatersrand (Wits) in Johannesburg, South Africa with an undergraduate degree in Aeronautical Engineering. To realize his dream, Alon came to the US and earned his Master's degree in Naval Architecture and Marine Engineering from the University of Michigan in 2000.

Alon's primary responsibilities are appendage design and research, geometry modeling utilizing Pro/Engineer and producing detailed design drawings.

A former Optimist European Champion and voted Wits University Sportsman of the Year for sailing achievements in 1998, Alon is an active participant in the Annapolis Vanguard 15 fleet and enjoys racing various small keelboats and dinghies.

Jean-Marc LeRoy joined our team in January 2003 as a Designer to assist in detailing of design drawings, producing renderings and geometry modeling.

A native of Washington and of French descent, Jean-Marc spent some of his early years living in France and is bi-lingual with dual citizenship. In 1995 he received a BA in Architecture from the University of Washington and began a career in architecture designing residential and commercial properties.

Desiring to make a career change to yacht design, he entered the Yacht Design Program offered by the Westlawn Institute of Marine Technology and earned his certificate in November 2000.

Jean-Marc has spent most of his life racing small keelboats and cruising on the waters of the Pacific Northwest. Since arriving in Annapolis, he is now active in the local racing scene.



UPDATE ON THE NEW FARR 36 ONE DESIGN

The design brief from Carroll Marine, Ltd and Farr International, Inc called for a strict one-design class yacht combining high quality construction and superb performance. Added requirements are offshore capability and transportability, all at a reasonable cost and disregarding the influence of handicap rule constraints.

With this brief in hand, the designers at Farr Yacht Design created possibly the fastest keel sailboat less than 40 feet designed to date.

A totally new and modern concept, the Farr 36 One Design is built in carbon and SAN foam and displaces just 3,059 kgs (6744 lbs). The design features 89 sq m of sail area upwind and 220 sq m downwind on a retractable bowsprit with 7/8 fractional carbon rig, swept back spreaders and no runners. With a draft of 2.60 m (8.50 ft) and 10 m (32.80 ft) on the waterline, this boat is fast and stable upwind and a pure rocket downwind. It is also the first boat in its class to meet the new ORC/EEC mandatory liferaft storage rules for offshore racing.

One of the most interesting features of the boat is its

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and much more.
www.farrdesign.com

transportability. The keel hydraulically retracts to a draft of 2.0m (6 ft) to meet a generally accepted 13.5' trailer height in most areas. Remove the rudder and the height will be reduced further. The keel-retracting feature was designed for transport and shallow water mooring only, therefore while sailing the keel is lowered and locked in place.

The design is currently under production at DK Composites in Malaysia, whose first hull debuted at Key West Race Week 2003. A second set of tooling allowed production to begin at Carroll Marine and a new production location will be announced soon. For more information, please contact Farr International at info@farr-int.com.



The Farr 36 One Design TAZO at Key West Race Week 2003.

FARR®

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