Tunnel Boat Performance News #183 - Jan 15, 2017

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This month...

Torrente Wins F1H2O Sharja, but Chiappe Wins UIM Championship

SHARJAH, (UAE): Shaun Torrente did everything he possibly could in his bid to win the world title with a superb victory in the UIM F1H2O Grand Prix of Sharjah, but it was the man who followed him across the finishing line, Philippe Chiappe, who is the 2016 UIM F1H2O World Champion, with third place going to Finland's Sami Selio.

The result gives Victory Team their first Grand Prix win in only their second season in the championship, with Torrente clinching a much-deserved runners-up slot in the driver's championship and Victory taking third place behind CTIC F1 Shenzhen China and Mad-Croc Baba Racing in the teams championship.

Chiappe made a blistering start to jump pole-sitter Jonas Andersson, with Torrente matching the move and pressing the race leader as the two title rivals then edged away from the chasing pack of Jonas Andersson, Erik Stark, Bartek Marszalek and Alex Carella. ...

On lap 14 of 45 the yellow flag was raised when Chiappe's teammate Xiong Ziwei barrel-rolled out of the race. The boats were held for five laps and then released with Torrente making an immediate move to pass Chiappe, and then proceeded to disappear off into the distance knowing that nothing less than a win would give him any hope of the title, should Chiappe breakdown.

Sami Selio joined the chase and passed Carella on lap 20, the Italian taking back the place a lap later, then on lap 23 Stark faltered and lost ground, slipping to fifth, with Carella now leading the chase to try to overhaul Chiappe and Andersson, with Selio pressing frantically and trying everything to pass Carella. Carella and Selio were pushing hard and both made the move on Andersson on lap 28 and closed in on the champion-elect.

Out front Torrente continued to stretch his lead, going on to take the chequered and his maiden win for Victory Team by 25.77 seconds. Despite the intense pressure Chiappe delivered a true champions' drive and held his nerve and held off the challenge of the duo behind him to take his sixth podium of the year and become only the third driver in the 33-year history of the sport to win a hat-trick of world titles.

Carella looked set for third place when on lap 42 he suddenly pulled to the inside of the circuit and retired to compound a frustrating afternoon for Team Abu Dhabi, teammates Thani Al Qamzi going out on lap 31 and F1H2O debutant Rashed Al Qamzi on lap 11.

Selio was the beneficiary, taking his fourth podium of the year and sealing third spot in the world driver's championship, with Andersson heroically bringing the boat he spectacularly crashed out of qualifying in in fourth ahead of Stark.

One of the drives of the day belonged to Australian newcomer Grant Trask, who from P12 off the pontoon at the start fought his way through a world class field of driver's to take a brilliant sixth and claim five world championship points in just his second Grand Prix.

Filip Roms ended his year in the points in seventh ahead Duarte Benavente, one of only two drivers to have scored points in all races this year, with Marit Stromoy fighting her way back from P16 to take ninth a head of Nadir bin Hendi.

For three-time UIM F1H2O World Champion Philippe Chiappe today's result rounds out a simply outstanding year which has seen him take wins in Dubai and Portugal and podiums in back-to-back races in China and today in Sharjah to claim the world title, the BRM Pole Position Championship, the Fast Lap Trophy and steer CTIC F1 Shenzhen China to the Teams Championship.

Read more at F1H2O.com
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World's First Permanent Multi-Purpose Powerboat Racing Facility

The city of Springfield, OH and Clark County Fairgrounds have announced an exciting project with the development of the world's first permanent multi-use powerboat racing facility that could draw large crowds.

Development is centered around a 115-acre lake located next to the Clark County Fairgrounds that started life as a small gravel pit owned and operated by a local gravel company. The lake was first used by former World Championship F1 Boat Race team owner, Bill Chatfield, as a test facility.

City officials conducted a feasibility test with F1 Powerboat Racing drivers, Tim Seebold, Chris Fairchild and Mark Proffitt, using a four-pin course, video shown above. The drivers came away from the test praising the lake's potential, leading to a grand from the Springfield Foundation to start the multi-phase operation. .....
"I've raced on a variety of locations from a mall retention pond to Three Rivers in Pittsburgh, this is the best and only permanent gated facility I know of for our style of boats," said Fairchild. "This could become a great destination for all boat racers"

The first of multiple phases of the operation includes preparation for event parking and camping along with the construction of a scoring tower and grandstands. The lake's natural shape will also lend well to the building of the staging area and pits, with space that has already handled tractor trailer rigs.

The facility will be able to host a variety of powerboat events including a variety of courses for F1 Powerboats, drag racing, and possibly grands prix. The powerboat racing community

is already abuzz with the potential for large-scale events at the Ohio lake.

“Our goal is to build a state of the art permanent multi use powerboat racing facility, a one of a kind destination for the boat racing community to call home” said Dean Blair, Clark County Fair Executive Director.

With the facilities of the fairgrounds already able to draw in large crowds, large expectations are being shared by many involved.

“We’re in process of designing and building the first phase along with development of the first major event. I could see this as the Indy 500 of Powerboat racing”, stated Dana Potts of B2B Motorsports, the promoting agency associated with the project.

See more at: Slipstreamnetwork.com

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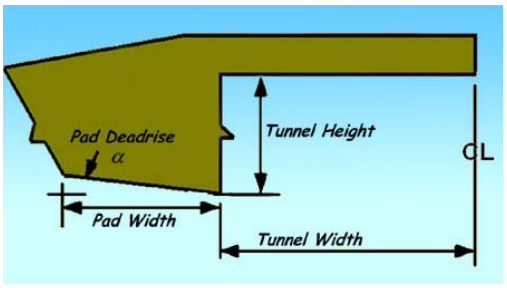
'What a Difference an Inch Makes'

'Tunnel height and how it works to our performance advantage'

by Jim Russell



There are dozens of design and setup factors that impact performance of tunnel boats or ModVP hulls, and most of them also influence each other. This makes prediction of performance a tricky business. The good news is that most of these factors are controllable (by design/setup). We rely on computers, and our "Tunnel Boat/Vee Boat Design" software to do the work for us...but understanding the factors is the key!

One factor is Tunnel Height - this is the height of the tunnel at the aft-most location, measured from tunnel roof to the aft sponson bottoms (running pads). The “tunnel” exists in a tunnel hull, catamaran design, ModVP designs, even unlimited hydroplane boats.

The tunnel roof (lower surface) and deck (upper surface) are really surfaces that form a “wing”. In applications like tunnel boats, this wing operates in what is called "close proximity ground-effect". This “wing” can generate a huge portion of the total Lift that the hull requires to perform....

Research has shown that this aerofoil is influenced by it's proximity to the water surface. A lesser tunnel height will increase Lift/Drag ratio of the tunnel hull "wing", improving its lift characteristics. Regrettably, it also brings the tunnel roof closer to the water surface, risking increased wetted surface if water conditions (waves) cause "splashing" to the tunnel roof and sides. The design of this feature is, as most are, a compromise of performance factors.

Two kinds of Lift: Lift is generated in two ways. Planing sponson bottoms create 'hydrodynamic' (water) Lift. Aerodynamic lift is generated by relative air flow over the “wing” formed by the tunnel and deck surfaces. The relative significance of these forces changes as the speed increases

At lower velocities, aerodynamic lift may account for less than 5% of total lift, sponsons supporting nearly all the boat's weight. At higher speeds aero-lift can account for over 80% of total lift. For every pound of aero-lift we can achieve, the required sponson (hydrodynamic) lift (and drag) is reduced accordingly, giving dramatic improvements in the hull’s performance. A pound of hydrodynamic Lift can be the cause of many times more associated Drag than a corresponding pound of aero Lift might cause, because of the difference in the properties of water versus air.

An Example: A 24ft offshore catamaran with 2X250hp outboards may achieve top speed of

105 mph in 26 seconds with a tunnel height (HC) of 16 inches. Changing HC to 12 inches will generate more (approx. +15%) aerodynamic Lift and top speed of 107+ mph in 22 seconds.

Another Example: A 10ft Sport racing tunnel hull with a 45hp outboard may achieve a top speed of 65mph with a tunnel height of 10 inches. Changing the height to 5 inches will generate more aerodynamic lift (225 pounds as compared to 110 pounds) and consequently may achieve a top speed of 70+ mph. And this design alternative also has the benefit of being able to operate at a reduced (trim) angle of attack (2.9 degrees instead of 2.2 degrees - 25% less), improving the dynamic balance of the hull and even a reduced tendency for porpoising at intermediate speeds.

There are always some trade-offs or performance compromises to think about when considering the design alternatives such as Tunnel Height in a performance hull. The benefit of making these assessments is that the design and performance decisions can be made on purpose - with an understanding of what we will get in the hull's real-life performance.

And there's dozens of OTHER design factors that can influence hull performance... but, more in later issues of TBPNews!

Read more at aeromarineresearch.com

[Note: Do you have any of your own questions on performance hull design? Send your question or story to mailto:jimboat@aeromarineresearch.com?subject=TBPNews]

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Video - F4 Tunnels, 2-boat blowover

[click for video]

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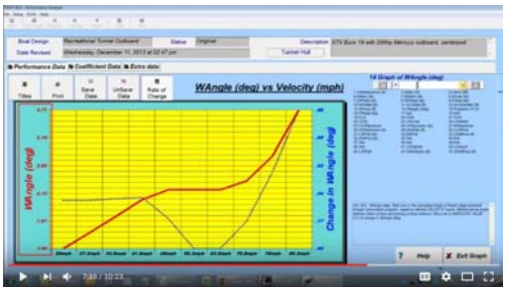
NEW TBDP/VBDP Ver 8.6 software release!

See the newest Version 8.6 "Tunnel Boat Design Program" and "Vee Boat Design Program" software.

"The best TBDP/VBDP release ever!" - Dozens of new features, enhanced results. Performance optimization, speed prediction, dynamic stability analysis, porpoising analysis, acceleration, elapsed time, and allot more!

"TBDP/VBDP software does not use 'factors' or 'estimates' - it analyzes each hull design & setup uniquely using first-principle algorithms build and tested ONLY for high-performance tunnel boats and vee hulls."

See your hull's performance results throughout the full operating velocity range. Easy Auto



1-2-3 Performance Wizard. *[see demonstration video here]*. Now Vee hull and Tunnel hull design in same software package.

Version 8.6 has NEW screen layouts, NEW input variables, more performance analysis, output data/graphics, more reporting. Also includes the NEW 2016 Motor Wizard update with over 2250 OEM outboard and inboard engine choices. NEW input variables and NEW 5-screen input format. Performance results with 500+ performance data points and 50+ trending graphs showing full velocity range. Animated 3D Chart display for all Lift/Drag component contributions through Velocity range. And lot's more!!

See ALL the TBDP/VBDP features, screen samples and 'how-it-works'!

See some of the new update features here, and all the high performance TBDP/VBDP features here.

See more at AeroMarine Research

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See 13th Edition "Secrets of Tunnel Boat Design" book (ISBN# 1-894933-30-3)

See 4th Edition "Secrets of Propeller Design" book (ISBN# ISBN# 0-9780586-0-7)

Review: TBDP V8 at Scream & Fly magazine. *["Tunnel Boat/Vee Boat Design Software is the very best and most comprehensive performance evaluation tool available. It has been evaluated by Scream And Fly, and has proven to be extremely accurate and easy to use. Version 8.4 is the most robust yet" - Scream and Fly mag, March 2015]*

Get the new TBDP/VBDP software! Buy Now

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Jimboat interviews F1H20 star Shaun Torrente
"How Trim Angle & engine height affect performance"
"Outboard Jack Plates'
'Is Bigger Always Better?'

...and check out lot's more of Jimboat's FREE articles here...

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See you next time!

/Jimboat