

AeroMarine Research

TBPNews - Performance Report

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 TBPNews #147- Jan 31 2012  
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>>>> Tunnel Boat Performance News >>>>>> (over 5000 members!)
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Check out [review of Jimboat's 13th Ed. "Secrets of Tunnel Boat Design" book in the last HotBoat magazine printed!](#)

1) Carella's 2011 World Title Turns a New Page in F1 H2O Series



ABU DHABI - Italian Alex Carella of the Qatar Team used both his driving skills and youthful exuberance to overtake his wily veteran teammate Jay Price of the USA with a victory in Abu Dhabi in December to win the 2011 UIM F1 H2O World Championship for power boating for the first time in only his second season in the series.

The young 26 year-old racer from Piacenza, Italy while trailing his teammate for most of the season, ran a smart and steady campaign, winning twice from pole position in both Kazan at the Grand Prix of Russia and along the corniche in Abu

Dhabi.

Carella virtually locked his title away, when on the first lap of the final Grand Prix in Sharjah, he was able to out duel his teammate into second place. The two of them went into the left hand corner with Price making a desperate move that didn't work taking both drivers out of the race and handing Alex the title even before both DAC boats stopped barrel rolling in turn three.

Alex finished the season with 84 points on the strength of two wins, two second places and a pair of fifth's and only failing to finish crashing out with his teammate at the final event. The final standings differential Jay had with Alex and how he lost on the title, was his disqualification at the Grand Prix of China in Liuzhou. On the very last lap, Jay misjudged the right hand buoy with three corners to go and lost out on a third place finish giving him no points and opening the door for his teammate Alex to have a chance to chase him down for the title. Alex did just that in Abu Dhabi out qualifying him and winning. Jay was third that day and finished second in the championship for the second straight year with 79 points.

Team Sweden started the 2011 season in Doha with a solid line-up of Swedish driver Jonas Andersson and USA rookie Shaun Torrente hoping to make a statement before seasons end. The two-time North American champ Torrente, captured a fine fourth place just ahead of his veteran teammate in Qatar. The Miami driver missed China, only to rejoin the series with the Qatar Team in December. Shipping his own GRAN PRIX short boat from California to the series, Shaun's bad luck continued, crashing out on the opening lap in Abu Dhabi. The 33 year-old finished the season strongly in Sharjah taking a fine fifth place. His performance earned him Rookie-of-the-Year honors in the process capturing 10th in the championship with 16 points.

In total, 2011 saw 24 drivers from 13 different countries travel throughout Europe, Asia and the Middle East on their 10 month journey for a World Title. In the end, a young, new generation Italian in only 15 starts joined the elite list of person's who can be called World Champion. Alex Carella give the Qatar Team their second title in four years and moves them in a tie with Team Abu Dhabi and the Mad Croc Teams for most drivers titles of current F1 organizations.

See the [Final 2011 Driver Standings](#)

Is 2012 going to be the year that Team's Abu Dhabi or Mad Croc shoot for revenge? Or will the Qatar Team make it a rare back to back success for one Alex Carella? Time is short, there is only 10 weeks before the start of the new campaign on the ninth and tenth of March at the Grand Prix of Qatar in Doha.

Stay tuned, new drivers to new teams and new boats. It's already shaping up to something special for 2012!

Check out more at: f1h2o.com

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2) Family of powerboat racer to file wrongful death lawsuit



NAPLES, Fla - The family of a speedboat racer killed during a race in Key West plans to formally file a wrongful death suit. Joey Gratton, died in November. His family says it's not the crash that killed him, but the response by rescue teams.

The family is not fighting this out in criminal court, but civil court but they say, it's not the money they are after, but change in the sport of boat racing. Joey Gratton lived for off shore racing. He and friend Stephen Page won eight national championships and three world championships over the course of their racing careers. On Nov. 11, 2011, their boat suddenly flipped over during a race in Key

West.

Days after the accident, Joey's best friend and co-pilot told WINK News he was struggling to comprehend what went wrong. Gratton's family says the crash didn't kill him. Instead, they say, he drowned because emergency crews with Super Boat International Productions, Inc. or SBI, were negligent and didn't respond in time. The Gratton's attorney Michael Allweiss says, "Joey suffered no fatal or life threatening injuries in the accident and according to Steve Page, who was in the boat with him, Joey was alive and fighting for his life trying to get out of his restraints for several minutes."

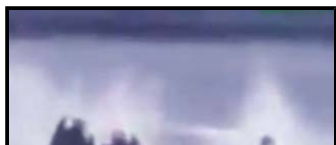
The Gratton's have been part of the off shore racing community for years. For them, this lawsuit is to ensure others in the sport of speed racing can continue to do so safely. Allweiss says, "there is no ill will. The point of this is to try to affect change. It's to ensure no event is ever conducted again that is as remotely dangerous as this particular event." Allweiss tells WINK News, autopsy results are still not back yet, but the medical examiners office says Gratton's official cause of death was drowning.

The family has started a foundation in Joey's name to help less fortunate children through sports and education. If you'd like to know more or make a donation click here.

Check out more + video at winknews.com

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3) Great Powerboat Videos



Check out these great videos....

.....Elvis was a [boat racer!](#)

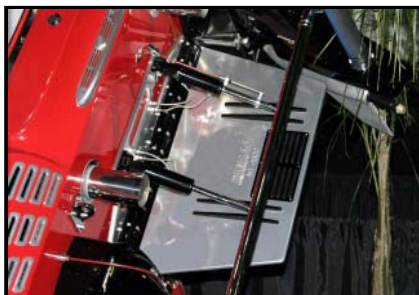
.....Stock 25hp tunnel boat racing in Australia - [race view video](#) - [driver view video](#)

.....How propellers are made [video](#)

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4) FEATURE: "Tunnel Tabs"

Here is a question that comes up every year from readers..."What is the theory and benefit of a "Tunnel-Tab" on catamarans and how they can be utilized?"



Tunnel tabs evolved from adjustable trim tabs that were mounted at the rear of running surfaces. With trim tabs or rocker plates, as the plate is lowered, the changing effects adds "hook" or "rocker" to the running surface and this changes the attitude (lowers or raises the bow) of the boat. For example, adding "hook" to the running surface can allow the angle of the outdrive to stay more neutral – which can be more efficient for the propulsion system. These must be used with caution, however, since they can generate dramatic changes to angle of attack that can quickly affect the handling of your boat.

More Lift & Modified CofG - The tunnel tab or "tunnel flap" or "flex tab" has been used as a similar application by mounting to a catamaran in the tunnel. It is intended to affect the Lift and attitude (angle of attack) of the hull. Additional Lift is generated and a change to the center of gravity (CofG) is resulting. These two outcomes can often change the behaviour of the hull at specific velocities and during acceleration. If, for example a porpoising nature is problematic as the boat accelerates through the "hump zone" velocity range, the addition of tunnel tabs can sometimes introduce a sufficient change to the dynamic CofG so to dampen the porpoising.

Often modified trim tabs or "K-Planes" (by Kiekhaefer Marine) are used to "fine-tune" aerodynamic flow. With traditional tabs, the more the tabs are lowered, the greater amount of drag. By directing the airflow, the attitude corrections can be made with less drag impact.

The aerodynamic affect is one of changing the "camber" of the aerofoil (tunnel/deck surfaces). While it is clearly a better design solution to build the hull with appropriate "camber" in the aerofoil initially, the addition of a "tunnel tab" will: a) increase Lift by increasing aerofoil surface area; and b) increase "camber" of aerofoil which increases Lift (and drag). Positioning the tunnel tab "down" (increasing camber), the dynamic center of gravity (Dynamic CG) is also altered, which must be considered carefully when evaluating whether this design modification is best for your situation.

Fixed or Hydraulic? - The tunnel tab can be installed as either fixed or hydraulically adjustable. A fixed one can help eliminate porpoising at particular speeds, but hydraulically operated tabs are recommended so as to have adequate control of the tab during operation. Full tunnel width tabs are best installed, as these present fewer edges to "catch" or "trip" undesirable water flow. Installing a trim tab made for running surfaces into the tunnel of your catamaran isn't recommended, as it is unlikely to be the correct dimension for your tunnel width. You should really have it made just for your tunnel area in order for it to work properly.



The aerodynamic principle is one of changing the lift characteristic of the lifting "wing" of the tunnel boat. Trimming the tab down will move the overall CG of the hull (usually aftward). Note that this action also increases the total Lift of the hull, and so the resulting impact on overall hull performance can be one of either bow-up (CG driven) or bow-down (Lift driven) attitude, depending on the operating situation of your hull. If the tab is being employed to address a "porpoising" problem, then often any change to the dynamic CofG can have a positive affect on performance.

More ISN'T Better - Total movement of the tab should be adjusted to be small –and while running the adjustment should be very small changes at a time. You should also consider the effect of the added weight of the tab and hydraulic controls. The introduction of a tunnel tab can effect dynamic stability directly and quickly, so there is a real need to be an experienced pilot (lot's of seat time in your boat) and to be very careful in using the tunnel tab.

Dynamic Stability Affected – Since the tunnel tab alters the aerodynamic balance of the hull significantly, dynamic stability of

the hull will be changed and can produce new handling issues. Potential handling problems can include tripping, and dramatic attitude changes – possibly progressing quickly to spectacular results such as “stuffing” due to the rapid CG relocation. Note that if the tab can contact the water at all there can be a more dramatic affect on hull stability, so it’s a good idea to NOT USE the tunnel tab in heavier waves. In all cases the tunnel tab should be used with extreme caution.

Some tunnel hull designers would consider the application to be somewhat of a “band aid”, correcting for a dynamically unstable design or improperly balanced boat! Nevertheless, if the application helps resolve the problem, the improvement can be beneficial.

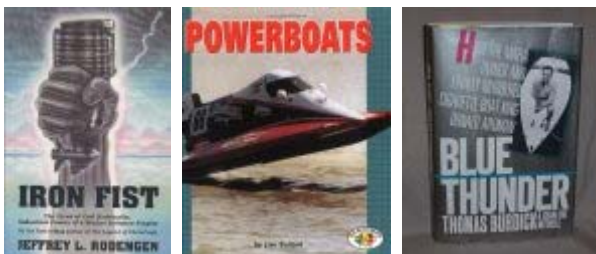
Read more about Tunnel Boat design and setup in the world acclaimed "[Secrets of Tunnel Boat Design](#)" book

See more Performance Articles at: <http://www.aeromarineresearch.com/articles.html>

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

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5) Discounts on Performance Powerboat Books and Magazines



Great deals on Performance Powerboat Books. Check out all of the books available on...powerboat history , boat building, powerboat racing, marine engineering, powerboat handling, powerboat design, outboard motors, aerodynamics for powerboats, hydrodynamics for powerboats, radio control boats, powerboat propellers & design, How-To for powerboating

See more at: powerboatbooks.com



Great deals on Performance Powerboat Magazines. We've got all of the mags that are on the market on....Performance Powerboats , boat buildings , bass boats , powerboat design, auto racing , RC/Model boating, Sport Fishing, RIB mags, Pontoon & Deck Boats. Also mags on Auto Racing, Hot Rod/Nascar, Watercraft/PWC, Waterskiing & Wakeboarding, Powerboating Industry, Yachting .

See more at: powerboatmags.com

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6) NEW RELEASE TBDP/VBDP SOFTWARE V7.14 software!



TBDP/VBDP© - BIG NEW FEATURES...YOU ASKED FOR IT...NOW TBDP© HAS IT!....

- *** NEW 2012 OEM Motor database, with over 1200+ OEM engine specs!
- *** Full Vee Hull and Vee-Pad hull performance analysis (included in one software package!)
- *** New aerodynamic algorithms.
- *** Porpoise Analysis - We have developed a new analysis tool! XPorpoise is an engineering tool developed by AR that predicts your hull's inherent susceptibility to porpoising...and shows how to fix it!
- *** User Picture import - right onto your TBDP© data input screen!
- *** Centerpod Wangle input - now you have the ability to represent a special trim angle of the hull CenterPod that is different than the angle of the Sponsons.



- *** NEW USER picture import feature.
- *** New CG import feature.
- *** Dozens of NEW features - including VEE HULL DESIGN software INCLUDED.
- *** NEW - Now can select Inside Spray Rails or Outer Spray Rails or BOTH. NOW input measured Static CG of boat hull if desired (otherwise TBDP© will calculate for you).

*** NEW - 'Rate-of-Change' performance analysis!

*** Free Expert Analysis Reports (4) included shows how you can apply expertise to your design/setup.

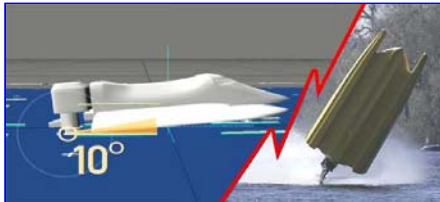
...AND Lots more new great Features in V7.14 TBDP© software!

...check out the new TBDP© software V7.14 at: aeromarineresearch.com

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7) Powerboat Racing on TV

*** **"Thrill Zone: Extreme Powerboats"** - National Geographic powerboat show.



Author **Jim Russell** (Jimboat) is powerboat design technical consultant on a new National Geographic special for "Thrill Zone" series...

Details at: (channel.nationalgeographic.com)

check out more at AR's website! aeromarineresearch.com/NatGeo_thrill-zone.html

*** **"Powerboat SuperLeague"** Series - Check out show schedule at AmericaOne.com

*** **"IHBA Lucas Oil Drag Boat Racing"** Series on SPEED TV - Check next show at speedtv.com

*** **"War On Water" TV Show** on The Water Channel - Check it out at: www.waterchannel.com;

*** **"Boats on TV"** - See at: www.boatson.tv

*** **"American Powerboat Television"** on The Water Channel - See: americanpowerboat.tv

*** **"Honda Formula 4-Stroke Powerboat Series"** - Check it out at: www.f4sa.co.uk

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8) Jimboat's Feature Articles



NEW Jimboat Article Announcement! - Author Jim Russell writes in RIB magazine!

Jimboat interviews the newest up-and-coming star of 2011 F1 H2O World Championship circuit, Shaun Torrente together with his Crew Chief Ted Gryguc.

Jimboat details the speed secrets of 'Vee pad design', vee hull design and performance powerboat design

Jimboat explains 'Gearcase & Propeller BlowOut' (RIB magazine April 2011 issue)

Jimboat explains 'How Trim Angle and engine height affects performance' (RIB magazine Jan 2011 issue)

Jimboat explains 'Chine Walking' (RIB magazine Dec 2010 issue)

[Jimboat writes Feature articles in HotBoat, Family&Performance Boating, Performance Powerboat, RIB magazine, World of Powerboats, RaceBoat International, SEA Yachting, Extreme Boats magazines].

- [Tunnel Vision - 'How Do Tunnel Boats Fly?' - HB Nov/Dec 2008](#)
- ['Why Do Boats Create Rooster Tails?' - HB-August 2008](#)
- ['What a Blow Out!' - "Gearcase & Propeller Blowout- Why it Happens & How to Fix it" - HB-June 2008](#)
- ['Walk on the Wild Side' - "Chine Walk - Why it happens & How to Fix it" - HB-Jan 2008](#)
- ['Hump Zone' - "Why does your Boat Porpoise?" - HB-April 2007](#)
- ['The Bottom Line'-"Why does a Pad make a Vee Hull faster?" - F&PB-Sept 2005](#)
- ["10 Smokin' Speed Secrets Revealed..." - HB-Feb2005](#)
- ["Winterizing your Performance Outboard" - F&PB-Jan2005](#)
- ["What a Drag" - 'Trim Angle & Engine Height Can Reduce Drag and Increase Speed' - HB-Sept2004](#)
- ["10 Safety Tips" - 'Ten Safety Ideas for High Performance Go-Fast Boats' - HB-Aug2004](#)
- ["Flight Path" - 'Where does Lift Come From?' - HB-April2004](#)
- ["Rocket Science" - 'How To Increase Your Hull's Design Speed With Aerodynamics' - World of Powerboats-Winter2004](#)

