

AeroMarine Research

TBPNews - Performance Report

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**TBPNews #124 – December 1, 2008**  
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>>>> **Tunnel Boat Performance News** >>>>> (over 5000 members!)
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***** TBPNews *****

1) Live Webstream for UIM F1 World Championships



In a grand experiment that may become a common trend at every event, the U.I.M. F1 World Championship for power boating announces today that as of the final two events of the 2008 season, people from around the world will now have an opportunity to watch the December 5th and December 12th race events in Abu Dhabi and Sharjah "live" on the internet via the official website www.f1boat.com.

The whole process will be logistically coordinated with Philippe Stiernon of Belgium who is the official F1 Press Officer and head of Website productions of the series working together with the official television production company of SBP s.p.a. of Rome, Italy linking the two together bringing the live television broadcast on the website for

worldwide consumption. The broadcast will be available free of charge and for anyone who wants to watch, there is a form that must be filled out ahead of time that is currently available on the home page of the www.f1boat.com website in order to know the size of the portal to order.

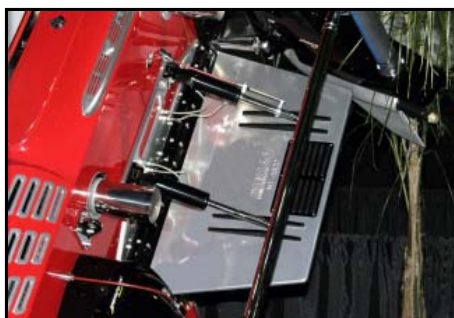
The scheduled race start for the 16th Grand Prix of Abu Dhabi on Friday, December 5th is 15:30 Local; 11:30 GMT and 05:30 EST in North America and 22:30 on the East Coast of Australia. People who are interested in watching the Grand Prix will be updated shortly on the exact time the uplink will begin.

You can fill out the reservation form at: f1boat.com

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2) Feature Article "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.

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

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3) Mercury Racing Product DVD Released



Highlighting the best in marine performance, Mercury unveils its new Product DVD! Produced by the award-winning motorsports television group Creative Television Communications, the all-new Mercury Racing Product DVD documents the most dynamic aspects of the Mercury Racing story and its current product offerings.

Follow the transformation of Mercury's once top-secret testing facility at Lake X to X-Site, a state-of-the-art research and development facility in Panama City, Florida. Take an in-depth look at Mercury Racing's new CNC propeller production process and an overview of their 5- and 6-blade CNC cleaver propeller offerings. Travel the Horsepower Highway, Mercury Racing's state-of-the-art engine manufacturing

process.

A close-up look at the evolution and development of Mercury Racing's EU662 SCi engine, conforming to the current requirements of the European Union's emissions directives. Racer and customer support has always been a top priority for Mercury Racing. Its "Factory Fresh" engine refresh program takes this support to the next level. A comprehensive look at the dynamics of Mercury Racing's new Verado 350 SCi high-performance outboard and its impact on the consumer outboard engine market. The complete breakdown of all Mercury Racing sterndrive and outboard engine models with complete specifications and applications.

Send an e-mail to mercury.racing@mercmarine.com for information on how you can obtain your copy of the complete Mercury Racing Product DVD.

For more visit mercuryracing.com or americanpowerboat.tv

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4) Spectacular flip not enough to stop champ and Evinrude E-Tec



Not even a spectacular head over tail crash could stop racing driver Greg Adams as he went on to win his division of the Australian F1 Superboat Series in Queensland.

Held at the Gold Coast Marine Stadium, Adams, who races in the Stock Mono class, was lucky to walk away unscathed after the flip, let alone place second for the round and retain his lead in the 2008 series point score. Powered by a stock Evinrude E-TEC 225HO, the Adams Sportsboat also avoided damage and was back again to race out the remaining heats.

Check out more at yachtandboat.com.au

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5) 2008 Zapcat Champions announced following appeal



The Zapcat National Championship finished with rounds 13 & 14 of the championship at Watergate Bay, Newquay (UK). It was an event full of mixed emotions for the Pegasus Vortex racing, with pilot Mick Pritchard breaking his back during the event, and replacement pilot Neil Fraser and co-pilot Baz Minns pulling it out of the bag to hold on to the 2008 championship title.

Mick was released from hospital on his road to recovery but faced with the news that their championship title was under appeal. Commando Predator had questioned the eligibility of Neil Fraser replacing Mick Pritchard after his accident left him incapable of continuing to race.

Appeal documents were submitted to the RYA and a panel of experienced Senior RYA officials was formed to hear the case.

Unfortunately due to uncontrollable circumstances the panel were delayed in meeting to hear the appeal until the 19th November. So after two months of apprehensive waiting the result has been announced. The RYA Appeal panel decided there was no rule broken in Neil Fraser replacing Mick at the event and the appeal was rejected. Three titles in the Zapcat National Championship were in question under the appeal, the National Title, the Zapcat Team Championship and the King of Surf championship. With the appeal rejected the champions are announced as the following;

2008 Zapcat National Championship

1st place - Zapcat 01, Pegasus Vortex Racing, pilot Mick Pritchard and co-pilot Baz Minns.

2nd place - Zapcat 03, Commando Predator, pilot Bligh Julius and co-pilot Simon Butters

3rd place – Zapcat 02, Vortex Racing, pilot Craig Davis and co-pilot Rob Martin.

2008 Zapcat Team Championship

Winners - Team Vortex – Mick Pritchard, Baz Minns, Craig Davis, Rob Martin, Dan Smith and Nathan Parker.

Zapcat 2008 King of Surf

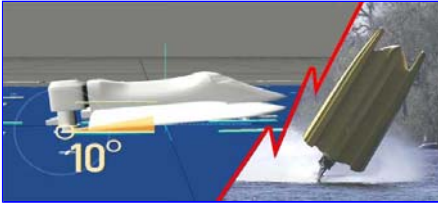
Winners- Zapcat 01, Pegasus Vortex Racing pilot Michael Pritchard and co-pilot Baz Minns.

check out more at: zapcat-racing.com

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6) 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 next show date at AR's website! aeromarineresearch.com/NatGeo_thrill-zone.html

*** **"Streaming Motorsports"** on Speedbox.tv - Parker ENZED Jetsprinting Championship - - Check at: speedbox.tv

*** **"Champ Boat Grand Prix Series"** - on SPEED Channel - Check next show at: www.champboat.com or at: www.speedtv.com

*** **"F1 World Championship TV Show"** on The Water Channel - See: www.waterchannel.com; [see web site for other show times]

*** **"War On Water" TV Show** on The Water Channel - Check it out at: www.waterchannel.com; [see web site for other show times]

*** **"Powerboat Showcase"** on The Water Channel - Check it out at: www.waterchannel.com; [see web site for other show times]

*** **"Offshore Classics"** on The Water Channel - Check it out at: www.waterchannel.com; [see web site for other show times]

*** **"American Powerboat Television"** on The Water Channel - See: www.waterchannel.com or americanpowerboat.tv

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

[Ed. Note: The Water Channel is available on [The Dish Network](#)]

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7) Jimboat's Feature Articles

Watch for upcoming articles by Jimboat in *"Performance Boats"* magazine and *"HotBoat"* magazine!



NEW Jimboat Article Announcement! - Author Jim Russell explains '[Why Boats Create Rooster Tails](#)'

Check out full article at: aeromarineresearch.com

Jimboat writes Feature articles in HotBoat, Family&Performance Boating, Performance Powerboat, World of Powerboats, Extreme Boats magazines.

- '[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

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Let us know ideas you have, requests for articles, questions or comments on TBPNews. Send comments to TBPNews@aeromarineresearch.com

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Get your full, illustrated, *13th edition* copy of the world acclaimed "[Secrets of Tunnel Boat Design](#)" book; "[History of Tunnel Boat Design](#)" book, "[Secrets of Propeller Design](#)" book, the "[Tunnel Boat Design](#)" [software](#) for tunnel and high-performance vee-hull design, and "[PropWorks2](#)" [software](#) for speed prediction and propeller selection at the AeroMarine Research web site:
<http://www.aeromarineresearch.com>