

AeroMarine Research
TBDP Performance Boat Report

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>>>>> Tunnel Boat Performance News >>>>>>>>>>>>>>>>> (now over 6600 members!)

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1) THE F1 YEAR: 2005 - A Memorable Cappellini Comeback!

LAUSANNE, Switzerland - 6th of January, 2006 - Historians, when looking back on the 2005 U.I.M. F1 World Championship season, will see a year that started in tragedy as a tsunami ripped through Southeast Asia canceling the seasons first two races, and a remarkable comeback of a 9-time World Champion in the desert lands of the United Arab Emirates in December.

The season, courtesy of Mother Nature was going to be a sprint race, with every event meaning more than in past season's because of the shortened six race schedule. One driver in particular was under extreme pressure, but handled it with all the markings of a multi-time World Champion. Guido Cappellini of Como, Italy was back with his major sponsor Tamoil for another season. This time however with his signing for 2005 he promised to return to the top of the points table after falling to 4th in the 2004. Very simply put, Guido knew, lose the title and lose your sponsor. Cappellini would not fail in re-establishing himself as the world's number one driver in 2005. He won the title!

See "2005 year in Review" FULL story at: <http://www.flboat.com/index.shtml>
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2) FEATURE ARTICLE - "Surface Finish for Speed"

Here is a question that is typical of one that I get frequently, about sanding or waxing hull bottoms for improved speed and performance.

Question: "If the pad or performance hull is waxed or polished, will there be an improvement in top speed? I've heard that there is a special wax that produces less friction - is this true?" (BB - Illinois, USA)

Answer: The results of waxing the bottoms of performance hulls do not usually improve speed or performance. Also, the results of "Go-Fast" applications seem to be somewhat inconsistent. Many of these do nothing more than remove the wax from surface (getting the wax off is good).



If it's top speed you're looking for, polishing or waxing the surfaces can make it slightly worse. The "slick" surface will maintain a "laminar" water flow for a little longer on the lifting surface, which generates slightly more drag than a separated, turbulent flow. This is the "stickiness" that can be experienced when running on very smooth water or with "polished" or waxed running surfaces of your boat bottoms.

Best results seem to be achieved by wet-sanding with fine emery cloth. This will take out all the scratches, but won't create the "stickyness" or "sheen" that causes the additional drag.

By far, however, the most efficient (least drag) lift for a planing performance boat is the achievement of a smooth (no bumps), flat (no curves) surface. So cleaning up or "blueprinting" your hull bottom can result in significant performance improvements.

Some experimenters have suggested that even "golf-ball dimpling" of planing surfaces is advantageous. I do not subscribe to this approach either. The 'golf-ball' dimpling is not effective at our speeds at all. Most important factor (by a long shot) is the 'flatness' of the surface. ABSOLUTELY, 100% DEAD FLAT is what is fastest. Once you have this, sanding the planing surface with a 600 grit sand can slightly improve the laminar flow boundary layer, particularly at the leading edge. (This will be better than mirror or waxed finish). But 'flatness' will still be most important!

The whole issue of laminar flow is a very difficult one on powerboats. In displacement hulls, the surfaces exposed to drag are very predictable - the leading edge (most important part for drag generation) is well defined. In a powerboat, as speed changes, so does the 'wetted' surface area, and so does the location of the 'leading edge'. Since the configuration and surface condition of the leading edge is the most important, it's tough on a powerboat, since the leading edge is a 'moving target'.

So even though you can improve the drag at the leading edge of your planing surface by 'slightly roughening', it only helps at that one location - and you don't know where this leading edge location will be at any given speed. That is why the benefit is quite limited.

That brings another point...the trailing edge condition (of your planing surface - ie: sponson or pad) is also very key to induced drag. Should make as clean and sharp at trailing edge as possible.

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3) FREE!ship surface modeling program

FREE!ship is a surface modeling program for designing ships yachts and boats. Subdivision surfaces are used rather than NURBS to give the designer the freedom to design ANY desired hullshape. Unfold surfaces, panel based hydrostatics, various exp formats

get yours FREE at: http://www.aeromarineresearch.com/free_downloads.html

***** TBPNews *****

4) Powerboat Racing on TV

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



Author Jim Russell (Jimboat) is the powerboat design technical consultant on a new National Geographic special for "Thrill Zone" series...It is scheduled to re-air on National Geographic on Sunday, February 5, 2006, at 10P "Professional powerboat racing is one of the most death-defying sports in the world. Competing at speeds that often reach 200 mph, their boats are marvels of engineering but even the most technologically advanced can crash. From Formula One Racers to Offshore Powerboats to Unlimited Hydroplanes, Extreme Powerboats takes viewers up close with the world's fastest boats, the sport's best drivers, and the most advanced technologies".

Also airs: Sunday, March 5, 6:00P - details at:
<http://channel.nationalgeographic.com/channel/ET/daily/20060205.html>)

Watch for other show dates on the AeroMarine Research website!
http://www.aeromarineresearch.com/NatGeo_thrill-zone.html
***** TBPNews *****

5) OMC Racing V-6 Returns to Competition

The OMC V-6 racing engine will return to competition in 2006. Kingfisher Inc. of Seattle, Wash., has acquired rights to the 3.0-liter, electronically-fuel-injected engine that was developed jointly by OMC and Cees Vander Velden in 1998/1999 and raced on the UIM Formula 1 circuit for three years. Development of the engine ended with the bankruptcy of Outboard Marine Corporation in 2000.

Kingfisher has apparently recruited a team of experienced racing engineers and technicians to assist in preparing the OMC engine for competition, with the ultimate intention to eventually sell complete race engines, gear cases and center sections. They would like to build an engine that can compete on the U.S. Champ Boat Series and the international Formula One tours.

For more information contact: Greg Jacobsen, President - Kingfisher Inc.
[Phone: 206-650-9627]
***** TBPNews *****

6) Mercury Marine's new Enertia propeller produced from X7 alloy

Formal Mercury Announcement [Originally reported in TBPNews #89 - October 28, 2005]

Belgium - Mercury Marine has developed a new proprietary alloy, X7, which is claimed to be a major technological breakthrough in that it is 30 per cent stronger and four times more durable than conventional stainless steel. A new line of propellers called Enertia will be produced from X7.

The first of the Enertia range, available in Europe by mid-2006, will be for use on Mercury and Mariner Verado, OptiMax and their other outboards rated at 135HP and higher. The strength of X7 is enabling Mercury to design its Enertia propellers with a more aggressive blade geometry, such as thinner blades, greater rake angles and sharper leading edges, which, in turn, enhances boat performance without the need for extra horsepower.
***** TBPNews *****

7) Jimboat writes NEW Feature article in F&PB magazine

Jimboat writes Feature article in Family & Performance Boating magazine. 'The Bottom Line' - "Why does a Pad make a vee Hull faster?" is the FEATURE in the F&PB September 2005 issue.



Get your copy of the full article at:

<http://www.aeromarineresearch.com/adverts/Vee%20Pad%20Design.html>

and Recently published...

Jimboat writes Feature articles in HOTBOAT & F&PB magazine

"10 Smokin' Speed Secrets Revealed..." - Jimboat has new article in February 2005 HOT BOAT magazine. "If you don't want to make expensive modifications to your hull or engine setup, then here are some tips for getting the most performance from your current setup. By Jim Russell, author of "Secrets of Tunnel Boat Design" [editor-HB]

Check it out at: http://www.aeromarineresearch.com/adverts/HB_Feb2005.html

"Winterizing your Performance Outboard" - Jimboat has new article in Jan2005 issue of Family & Performance Boating. Check it out at:

http://www.aeromarineresearch.com/adverts/F&PB_Jan05.html

"What a Drag" - Trim Angle & Engine Height Can Reduce Drag and Increase Speed", by Jim Russell, author of "Secrets of Tunnel Boat Design book [editor-HB]. See September 2004 issue of HOT BOAT Magazine. Or get your own copy of the feature article at:

http://www.aeromarineresearch.com/adverts/HotBoat_Sept2004.html

"10 Safety Tips" - The author of "Secrets of Tunnel Boat Design" offers ten safety ideas for high performance go-fast boats [editor-HB]. See August 2004 issue of HOT BOAT Magazine. Or get your own copy of the feature article at:

http://www.aeromarineresearch.com/adverts/HotBoat_August2004.html

***** TBPNews *****

See you next time!

/Jimboat



