International Hydrofoil Society Correspondence Archives...

Hydrofoil Sailboards, Windsurfers, Surfboards

Descriptions, Advice, Sources of Information, and Requests For Help

Go to Posted Messages Bulletin Board (BBS)

See also: The Miller Hydrofoil and **<new!>** Rich Miller's 28-page Illustrated Technical Paper on his Hydrofoil Sailboard **<new!>**

(Last Update 8 Jun 03)

Correspondence

Hydrofoil Surfboard Source

[27 Apr 02] Please forward all inquiries for hydrofoil surfing to www.hydrofoilsurfing.com -- Daniel Elias (xmandan@extractorsled.com)

Hydrofoil Windsurfer "Parabolic Design"

[16 Dec 01] I am designing a hydrofoil windsurfer. Your site has been most informative and inspirational. I've been in contact with Rich Miller and Gerard Delerm, two of your foiling windsurfing enthusiasts. They've been excellent sources of info. My project is finally moving forward. I've been trying to design a prototype of a "parabolic wing hydrofoil". I saw one once in an Industrial Design Magazine six years ago, I liked the idea but have been unsuccessful in locating the necessary technical information to actually create one from scratch. As you'll see, "Parabolic Hydrofoil" does not a good key-word search make. By Parabolic, I mean as if we took a straight wing form, held it at both ends and bent or bowed it downward into the water. I may be calling the curved wing by the wrong name etc. If you know what I mean and have any leads please contact me. -- Eric Dixon, Designer/Builder/Inventor (wetpaintinc@earthlink.net)

Responses...

[16 Dec 01] At one time about 25 years ago, I sat through a presentation by a fellow in Seattle who built a tow model of a four-legged hydrofoil using parabolic disks as foils. Since he towed the model with his pleasure craft, I cannot attest to his success since almost anything that is towed can create enough lift to skim on top of the water. I don't have any more details or who may be of help in tracing down this individual. -- Sumiyasu Arima (arimas1@juno.com)

[16 Dec 01] I am not familiar with the term parabolic when applied to a hydrofoil. From your description as to what you mean by "parabloc", it looks like "negative" dihedral. Or am I misinterpreting your statement? I wouldn't advise using negative dihedral. Although it was used on the tips of the aft foil of PHM (but the center section, which was much larger, had positive dihedral). If anything, you want positive dihedral as a stabilizing effect. Not many airplanes flying around with negative dihedral. Note that there is a hydrofoil document by Gibbs and Cox (although very old) on the AMV CD ROM that has a discussion of effects of dihedral and will tell what you want to know. -- John Meyer (president@foils.org)

[16 Dec 01] My only comment is that the reason PHM had negative dihedral (anhedral?) on the outboard sections of the aft foil is that the ship had a very high turning rate (degrees/second) when foilborne at design speed and, as a result, in fully coordinated turns, the roll angle of the ship was very large (on the order of 20 degrees as I recall. The negative dihedral was needed to keep the outboard tips of the foil submerged in turns. It also contributed to increased roll control authority at oblique headings in waves. Bill O'Neill could expound on this further, I'm sure. If Eric isn't looking for such high performance, then positive dihedral is the way to go. -- Bebar Mark R NSSC (bebar@foils.org)

[16 Dec 01] I'm not certain that we're discussing the same concept. If you could go to the Hydrofoil Society's web site and look in the photo gallery under "what's next?", find Luigi Colani's site. There is a concept model from 1973. It looks like a fish with a push prop. and it has an "external observation/control cabin. This model has two foils each with curving profiles. Another image from the photo gallery shows the ship "Katran-1" from the Volga shipyard, this working vessel has curved foils as well. This is the concept I wish to employ. Where do I find technical info on these types of foils? -- Eric Dixon, Designer/Builder/Inventor (wetpaintinc@earthlink.net)

[16 Dec 01] I checked the material you referred to, so now I understand the foil configuration you have been talking about. Such a foil has been referred to as a "Hoop Foil" and was first used by Prof. Oscar Tietjens in 1931. I described this briefly in a draft of a book (Ships That Fly) I put together some years ago. I am attaching the brief discussion here as an Adobe Acrobat file. As to analysis of such a foil, my guess is that you could approximate it as a V-foil with an appropriate dihedral angle and end plates, and go from there. Tom Speer may have looked at this, so I am cc'ing him on this in case he can help. -- John Meyer (president@foils.org)

[16 Dec 01] I've not looked at hoop foils. I agree that they would be somewhat similar to V-foils. My guess is the flatter center section would have less wetted area than the V-foil but possibly more induced drag due to its closer proximity to the surface. Perhaps this is what he had in mind: http://www.geocities.com/aerohydro/Seafliertext.htm -- Tom Speer, F-24 Ama Deus, website: www.tspeer.com; email: (me@tspeer.com)

[3 Feb 02] I partly fabricated such parabolic / hoop foils for my own windsurfer once but never finished that project, and earlier last year my windsurfer broke in half so now there is even less reason to finish those hoop foils off. I may reply at some time with more details and photos of my attempt. -- Martin Grimm (seaflite@alphalink.com.au)

Surfboard Hydrofoils

[29 Sep 01] Hello, can you please assist me with information about Laird Hamilton and hydrofoils on surfboards? -- Graham East (soupbonesurfer@xtra.co.nz)

Response...

[11 Nov 01] A little late but the following url www.tim-mckenna.com/ has a photo of Laird Hamilton on a hydrofoil surfboard. That sums up my knowledge -- Bill White (linksout@foils.org)

[27 Apr 02] See this website: www.hydrofoilsurfing.com -- Barney C. Black (Please reply via the BBS)

Planing Sailboard

[10 Aug 01] I am from the University of Natal and need assistance on the theory of planing. I am doing a dissertation on the hydrodynamics of planing sailboards. If you have any information on this it would be greatly appreciated. Would a copy of the 1994 Shanghai Conference proceedings be of any use? -- Gordon Cook (981189683@stu.und.ac.za)

Responses...

[10 Aug 01] Try the following two websites:

- http://naca.larc.nasa.gov/reports/1958/naca-report-1355/
- http://personal.inet.fi/private/muu/plancat.htm

Tom Speer (tspeer@tspeer.com) website: www.tspeer.com

[13 Aug 01] Planing theory has been covered in depth by many papers authored by Dan Savitsky at Stevens Institute. "High Speed Small Craft" by Peter Du Cane (Temple Press, London - 1964) is a good reference. The Heller-Jasper paper on this subject is a classic (SNAME, late 50s I believe). Joe Koelbel has also published some good basic small planing craft design guidance - in papers and magazine articles. -- Ken Spaulding (secretary@foils.org)

Speed Record

[4 Jan 01] According to the 2000 Guinness Book of World Records, prior to the Yellow Pages *ENDEAVOUR* gaining the sailing speed record, it was held by a windsurfer. Thierry Bielak of France rode his windsurfer to a speed of 45.34 knots (84.02 km/h or 51.21 mph) at Camargue, France. -- Martin Grimm (seaflite@alphalink.com.au)

Response...

[3 Feb 01] A few years ago I saw a photo in a windsurfing shop purporting to show the setting of a windsurfing record of 54+ mph. I can't recall where the shop was. There is a sailor named Mike Delahanty who runs Gorge Sails (in Washington state, near Hood River) who was the speed champion about that time. Perhaps he could tell you the current situation. -- Rich Miller (rich@mail.ski.org)

Sailboard Success in France

[3 Oct 00] I am French, and I built a homemade sailboard with hydrofoils. I named it "Le Foilboard." To show my work I made a little home page about it. There is a French version and an English one. -- Gérard Delerm (gerard.delerm@free.fr) website: http://gerard.delerm.free.fr

Hydrofoil Surfboards

[17 Aug 99] Do you know if anyone has worked on hydrofoil surfboards? For waves? I'm looking for info, as I surf, and spend way too much time on crazy ideas, so I don't want to duplicate someone else's work. -- Doug (directaudio@surfside.net)

Response...

[17 Jan 99] Go to the IHS Links page and look for links to the Miller Hydrofoil Windsurfer and the Air Chair hydrofoil water ski. Those two examples are the closest to what you are talking about.

Small Foil Design Info Wanted

[24 Jul 99] Has anyone that you know of designed or produced a hydrofoil windsurfer? I had the idea to design one, but need to know more about the characteristics of foils, i.e. how much surface area required for x amount of weight and speed over the foil, etc. Any help you could give would be appreciated. -- Dr. David Miller (Dboncraka@aol.com)

Hydrofoil Sailboard Design Problem

[14 May 99] I'm a student in my first year in the Ecole Nationale Supérieure des Mines de Paris, And I'm just beginning to work on a project : I'd like to try to make a windsurf board with hydrofoils. I know this is not very original, and I have seen the links to " Miller hydrofoil," but I don't know how to contact him. Moreover, I don't know which solution I am going to chose (number and type of foils). I'd like to have some advice on this issue. I already have some contact with Hugues de Turckeim, a French shaper who is working on the *TECHNIQUES AVANCÉES*, the catamaran of Ensta, also a French engineering school. -- Yannig-François le Roux (98leroux@paris.ensmp.fr); PARIS

Another Hydrofoil Sailboard Design Problem

[17 May 99] I'm working in the design of a windsurf board with the hydrofoil concept. Do you have some information regarding this idea? -- Juan Carlos Santilli. (jcsantilli@email.msn.com)

Response...

[19 May 99] There is magazine article that describes the Miller hydrofoil wind surfer in detail... this description will give you plenty of ideas for your project. Please note that Miller's design is patented and may not be copied for profit! -- Barney C. Black (Please reply via the BBS)

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