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**DISCLAIMER & INVITATION**

IHS chooses articles and photos for potential interest to IHS members, but does not endorse products or necessarily agree with the authors’ opinions or claims.

However, a part of our goal in promoting hydrofoils is to provide

media coverage to our members. Therefore, each member is encouraged to submit to IHS any articles, photos, videos, etc that tell his story. Wherever appropriate, we will include this material in our Newsletter, website, etc.

**PRESIDENT'S REPORT**

Membership expansion continues to be an important focus for IHS. For those of you in the communities of sailing, boarding, human powered, or whatever hydrofoils; do your friends a favor and send their email addresses to [IHSPresident2016@gmail.com](mailto:IHSPresident2016@gmail.com). They will receive our semiannual Newsletter and be welcomed to contribute news and articles to both the Newsletter and the website -- <https://foils.org/>. All addresses are known to only a few IHS officers, and never shared.

The newsletter continues to evolve. When first established, 49 years ago in London, the publication was on paper and distributed throughout the world by “Snail Mail”. This was labor intensive and expensive. With the development of the internet, the option to receive an email copy was encouraged. Today distribution is entirely by email, but the method was flawed. Our Gmail account was used to send about 500 NLs per day for 5 days. Because of the mass mail method, “spam” and “junk mail” filters were triggered by many of our members’ servers.

This issue will be the first to use Mail Chimp to improve our

distribution. Permit me to prop my club against the cave wall and explain the way I think it works. When hundreds of emails arrive suddenly from one sender, Internet Service Providers suspect “spam” and block the material. Effective mailing services “Throttle” the emailing. For example, they may send out one email per minute over an 8½ hour period each day for 5 days. That’s 2,500 emails individually sent that do not trigger the filters. Welcome to the 21st century, International Hydrofoil Society.

The Mandles Prize for Hydrofoil Excellence continues to reward our best young minds who produce valuable academic papers. Details will be found farther along in this Newsletter. But the time has come to expand our list of academic institutions that are active in hydrofoil research and teaching. Please send any potential institution’s name and all relevant individuals email addresses to [IHSPresident2016@gmail.com](mailto:IHSPresident2016@gmail.com)

Ray Vellinga



## DUES ARE HISTORY

As a key part of the present administration, annual dues have been eliminated. The new program is to rely on our Sustaining Members and donations from any member that volunteers to make a tax-deductible contribution. Advertising in the Newsletter, Web Page, and Facebook will be made available for nominal contributions. Please inquire with Ray Vellinga to place an advertisement.

## FROM THE ARCHIVE: Grounding of the USS Pegasus and USS Tucumcari.

*By Martin Mandles, John Sams,  
Ray Vellinga*

*Facts Extracted from  
Washington Post Article  
Written by: Art Harris ([link](#))  
December 24, 1979.*

At 9:30 am, August 20th 1979 at the mouth of the York River, the USS Pegasus ran aground. Visibility was two miles in haze, with light, variable winds. No nearby traffic was reported.

Pegasus was 239 tons with a 21-man crew was steaming towards the Yorktown Naval weapons station to pick up ammunition for a Fleet exercise.

Interviews with the crew say that the Commanding Officer, 38-year-old Lt Cmdr Charles

Penque was much respected by the crew and all were disappointed when he was temporarily relieved of his command, issued a punitive letter of reprimand and issued an adverse Fitness report. Thereby this Naval Academy graduate’s 16-year outstanding Navy career was also run aground.

Penque faced his boss, rear Admiral R.L. Walters, the group Commander of Navy's Norfolk-based Atlantic Feet Fleet. Used was a proceeding called Article 15 hearing. it's a form of non-judicial punishment that a commanding officer can choose to apply to a subordinate. Following the hearing, the question still flying around is how could such a sophisticated ship run aground in a well-used navigable harbor?

In the Post article it was questioned if the investigating officers may have have “failed to understand the aerodynamics of the Pegasus”? In hindsight we ask, “were they blown off course”, thereby involving aerodynamics? Or was there something special about the principles of hydro dynamics, such as, things don’t fly well through



Photos of the grounded Tucumcari. No known photos of the grounded Pegasus remain

sand and rock? The first idea seems improbable and the later obvious. IHS experts say, "When the draft exceeds depth, the vessel goes aground, regardless of which way the wind blows."

A possible answer is suggested by a later experience of the Tucumcari reported herein by crew member Lt John Sams. Simply put it's very difficult to avoid unseen shallows when flying low at 50 mph while maneuvering (especially in relatively narrow channels).

Unquestioned is the Damage Done. The 132 ft Pegasus required \$200,000 worth of repairs. Of course, each of you readers who owns a \$65,000,000 yacht recognizes that \$200,000 of repairs is normal maintenance. So, what's the big deal?

We Navy guys know. Traditionally the officer-in-charge is responsible for every door ding and key scratch done by friend or Foe. So, one week after the non-injury accident, Skipper Penque was relieved of command.

Not everyone agrees with Penque's discipline. The Post quotes an anonymous officer, "When you have a unique craft, the Navy ought to be very careful at making snap judgments based on conventional means of navigation, especially when the craft is operated in the tidewater area with low marshes that make for bad radar horizons and have the possibility of shifting sand bars."

The Pegasus has a draft of only nine feet when hull borne. but much more when the foils are extended below flying speed. On this morning,

Pegasus was flying at 40 knots with the hull free of the water and drawing only five to eight feet. As she advances into the harbor the order was given to cease flying. As the hull settled to the surface, her draft increased to 23 feet. She went aground in two to eight feet of water just south of buoy 21 East of the York River.

According to the Post when the captain gave the order to quit flying there was a depth indication of 32 ft. It could be assumed that the bottom death came up quickly following the order to cease flying.

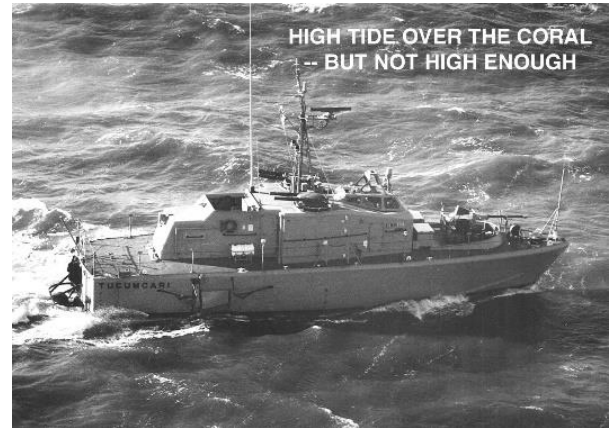
Experts testified that the mouth of the York is plagued with shifting bottoms, and the navigational aids are not always accurate.

Penque was the third officer to command the Pegasus, and this was his first week of command. Man, life is not fair....

This unfortunate incident was reminiscent of the Norfolk-based hydrofoil Tucumcari which was previously grounded in the Caribbean while under the command of Lt Edward Bond. The foils were virtually destroyed and the Tucumcari was scrapped.

Here is its story as told by crew member Lt. John Sams, Edenton, NC who was aboard during the incident.

My memory of long-ago events is dim, but certain things about running aground at 50 knots remain vivid. That night after 24:00 I was



asleep in forward berthing so I was not a witness to navigation preceding the grounding, but I do remember that the radar was operating without gyro input so any turn resulted in a rotating blob of landmass until the vessel steadied up for a while. I also remember the Board of Inquiry faulted us for not taking fixes every 3 minutes (lol).

The reef on which we ran aground was marked by a single "X" on the chart, and as I recall it was in red ink, which pretty much disappeared under red night lighting.

It was my impression that Tucumcari was not that badly damaged upon impact but the effort to drag her off the coral reef did not go smoothly and probably resulted in most of the damage to the after struts.

*From another unidentified news source:*

Sad, but true... On November, 16th, 1972 while participating in simulated combat operations too close to the Caballo Blanco Coral Reef near the Vieques Island, Puerto Rico, (seven miles east of Puerco Rico) Tucumcari ran hard aground on the reef slowing from 40 knots to a dead stop in less than the length of her 72 ft hull!

The bow hydrofoil was forced up and into the hull while the port and starboard rear hydrofoils were broken off their struts. Eight of the 13 crew members were injured -- two of whom were evacuated by helicopter to a nearby medical facility. They soon recovered. But in attempting to remove Tucumcari from the coral reef using tugboats, slings, flotation devices, a heavy-lift helicopter and even some explosives she was damaged beyond repair and shipped home to USNAB Little Creek, VA -- never to fly again.

Despite this inglorious ending, Tucumcari had logged over 1,500 hours of flight during her brief, but exemplary service.

### *Commanding Officers of USS Tucumcari*

1. Lt Martinn Mandles USNR, March 1968
2. Lt Richard Stedd USN, May 1969
3. Lt Edward N. Bond USN, October 1971 -- CO during grounding)
4. Lt John Sams USN, December, 1972 -- CO during final days in shipyard prior to ship's retirement from service in 1973.

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## **BOEING "LITTLE SQUIRT" RC MODEL**

*Edited by Ray Vellinga*

*Starting in October 2018 the following email exchange occurred between IHS members of various backgrounds:*

**Yoichi Takahashi:** (*IHS member and creator of the Little Squirt model*) Hi! Ray san, Today I launched my new model of the Boeing Little Squirt. Notice that the propulsion output and power pump are adjustable. Also, the boat is carefully balanced. It is not yet foil borne, but I expect it to be soon. Please help with some details of Little Squirt.

I started making this radio-controlled model of Little Squirt Model several years ago. I have doubts about the Little Scout steering system. I cannot determine the mechanism from the many photographs you have provided. There are

no ladder plates (ladder foils?) on the rear or front struts. The water jet nozzle is fixed, and does not turn right or left. So how does the Little Squirt perform steering? Who can answer, you or someone else?

**Ray Vellinga:** So nice to hear from you after some time has passed. I am writing from Paris where Patricia and I are spending the month of May.

The boat you speak of was in at the Boeing airfield museum in Everett, Washington, USA where Harry Larsen (receiving a copy of this email) and I visited it about three years ago. We took photographs, as you know, but do you have them all? I have perhaps 50 and I will send them to you if you do not have each of them.

As I recall, and Harry can give you his impression, the three struts are fixed. Perhaps at the aft end of the aft strut is a movable appendage that would be called a rudder. This conforms to a typical airplane configuration with a vertical stabilizer and a rudder hinged to the trailing Edge.

You mention "ladder plates" are not on the front and rear struts. I think we're talking here about ladder foils, the variable surface area that controls flying height and pitch?

The height and pitch of this boat are controlled by the front foils that have changeable angles of attack. The angle of attack is controlled by a electronic height sensor at the bow that electronically adjusts the front foils or their flaps/ailerons through the action of a push rod that goes to solenoids located in the hull. This is speculation on my part and perhaps



*Original Boeing Prototype*



*Yoichi's Model*

Harry, who is a control expert, can elaborate.

Who else can describe this boat? About 2 years ago the boat was sent to the USS Aries Hydrofoil Museum in Gasconade County Missouri, USA. Here is the contact information:

Bob Meinhardt, and Eliot James, <https://www.ussaries.org/about.htm> they may be more able to answer to answer your questions.

**Elliot James:** Yoichi, perhaps you are asking about lateral control, as from a rudder. This is something we too are trying to figure out. There are no control surfaces for yaw on the foils. The jet output is as you mentioned, fixed and there is no rudder. There is a teleflex steering gear and a cable but it isn't connected to anything.

Other IHS members, Does anyone have any idea how yaw was handled on Little Squirt?

**Harry Larsen:** (*IHS creator of Talaria IV*) Little Squirt was designed to develop the Boeing hydrofoil automatic control system. A review of its design suggests that it had no other purpose.

The videos of it flying show it turning with a very large turn radius.



*Close-Up of Foils on Model*

In my examination of the boat I did not see any mechanism for turning other than that which would occur during a bank. (Nearly all control system issues can be addressed in a test vehicle that does not have a yaw mechanism.)

The current Sea Bubbles (proposed Paris Water Taxi) design is an example of a hydrofoil without a yaw mechanism. It does not turn sharply either.

**Elliot James:** I have included a couple pictures; the Little Squirt is in our warehouse but hasn't been unpacked so we haven't had a chance to go through her. I climbed around a bit and took some pictures.

Could there have been an outboard for hullborne steering?

The lines Yoichi mentioned are hydraulic lines, I see no evidence of any specific yaw control which backs up Harry's assessment, the ACS would have coordinated the turns.

The roll control flaps look to be split, at least they are modular. There are two control rods going down each front strut, one large and one small, could one of the control rods be for splitting the trailing edges increasing drag on one side? Or would one have been for positional feedback?

**Harry Larsen:** Little Squirt had two outboards, Evinrude?? V4s, probably 50 HP each, for hull-borne operation. The cable in the second picture looks like the steering for cable for the outboards.

I can't recall, is it possible that the foils had both incidence and flap



*Model on Stand*

control? For a test vehicle, positional feedback seems most likely.

**Yoichi Takahashi:** Hi! Elliot san. Thank you for taking pictures in your dark warehouse to help answer my question.

It is clear that there was no ladder attached to the back. Next, although there was at onetime an external outboard motor for steering at low speed and hull-borne, it is not observable in the photos and videos of the foil-borne test. Furthermore, they do not seem to have been pulled up inside the hull.

**Harry Larsen:** Of course, all of the other Boeing hydrofoils had turn-able bow struts, but they were intended for use as ships. Little Squirt was intended as a test platform for the development of Boeing's hydrofoil control system, not as a functional boat. A rudder or turn-able strut is not necessary for that development. If more yaw was needed, given the configuration of the boat, turn-able bow struts would have been mechanically the easiest. As I mentioned earlier, Seabubbles also has fixed struts and no rudder. They apparently feel that it has adequate turning capability.

**Ray Vellinga:** Harry first observed that the design of little squirt did not

include any way to induce yaw, and I am impressed with this clever perception. But I asked myself why Boeing with all their talented engineers, money, and resources would not attempt to master such a fundamental aspect of control as is yaw. Then it came to me that little squid was designed by aeronautical engineers, not designed by naval architects. Boat designers typically use rudders (at the stern) to turn boats, and that also induces a roll to result in a balanced turn.

Little Squirt was designed by aeronautical engineers. Airplanes do not turn by using rudders. The rudders in an aircraft are used to counter adverse yaw that occurs when the ailerons are deflected to induce roll. When the aircraft rolls, the lift vector is inclined and that powers the turn. Pilots are trained, as I was in Naval Aviation, to kick in a little rudder to balance the turn and eliminate skid. (The rudder also serves to counteract propeller-induced roll & yaw in high powered propeller aircraft. Right rudder is applied as power is increased).

Another detail is boats have their rudder on the bottom of the hull and aircraft have theirs above the hull. This affects the direction of roll when rudder is applied. You cannot make a balanced turn in an aircraft by using rudder alone.

So, it's reasonable to assume the aeronautical engineers designed little squirt to turn based on inclination of the lift vectors that occurs when roll is induced. Like an airplane yaw (rudder) would not be used to induce a turn.

Also, the large radius turns are typical of Boeing passenger aircraft.

Of course, Boeing is also capable of creating 1st class tight-turning aircraft, like the F15E Strike Eagle (which came after Little Squirt).

Video with actual flight shown toward the end: Watch [HERE](#).

Videos of Yoichi's other hydrofoil models: Watch [HERE](#)

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## MANDLES PRIZE FOR HYDROFOIL EXCELLENCE

*Mark Bebar*

Once again, we thank Martinn and Connie Mandles, for sponsoring the Mandles Prize for Hydrofoil Excellence competition. The competition, is now in its 6th year. includes up to \$4,500 annually in IHS hydrofoil achievement prizes for students, with a \$2,500 First Prize and up to two \$1,000 Honorable Mention awards.

In order to open the competition to a wider spectrum of qualified entries, submissions based on work completed since 2014 will be eligible for the IHS Mandles Prize for Hydrofoil Excellence. Significant contest dates are as follows:

Competition Application Form: due not later than May 1, 2019

Entry (student report submission): due not later than June 28, 2019

Awards announced: on or before August 30, 2019

Awards presented: on or before September 27, 2019

This is an outstanding opportunity for the next generation of hydrofoil developers to be acknowledged for their efforts to advance the state of the art in hydrofoil and hydrofoil-assisted craft engineering, design and construction. Background on the Mandles Prize and Rules for the competition can be downloaded from the IHS website ([www.foils.org](http://www.foils.org))

Based on the 2018 entries and award winners, we anticipate a very exciting competition and look forward to receiving many high-quality entries. Questions on the Mandles Prize can be emailed to:

Mark Bebar at:  
[mark.bebbar@caci.com](mailto:mark.bebbar@caci.com) and/or  
Ray Vellinga at:  
[IHSpresident2016@gmail.com](mailto:IHSpresident2016@gmail.com)

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## EXTRA-JOINT DINNER MEETING

*SNAME SD-5 Panel &  
International Hydrofoil Society +  
SNAME Chesapeake Section &  
ASNE Flagship Section*

Thursday, 24 January 2019  
The Portofino Restaurant  
526 23rd St. S., Arlington, VA

5:30 to 6:30 Cash Bar  
6:30 to 7:30 Dinner  
7:30 to 8:30 Program

Unmanned Maritime Systems for the Future Force Howard A. Berkof  
Deputy Program Manager, PMS 406



## SAILOR'S PAGE

### Blue Arrow Radical Martin Grimm

I was just surfing the net for hydrofoil photos and came across an unusual view of a nice-looking hydrofoil sail craft (not the artist's conception shown here). It had in its caption: "...Blue Arrow 'Radical', The Innovative Hydrofoil Glider of Peter de Savary "

It wouldn't be surprising to see images like this one now, but that was 'way back' in 1988/89. Had any of you heard of it before? I sure hadn't. It has the "T" foil configuration we could expect from a Sam Bradfield design.

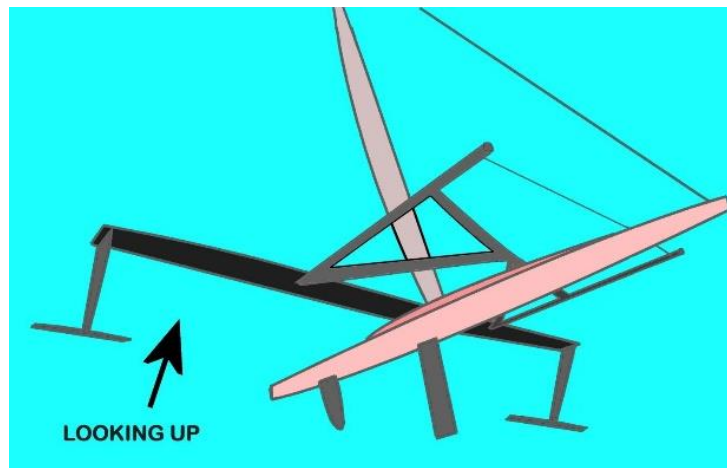
In response, here are some facts uncovered from the New York Times and conversations with Doug Lord who was a friend and student of Sam Bradfield prior to Dr. Sam's passing.

We were surprised to find that Doug designed and built a scale model of a 19.5 ft foiling trimaran using the Fire Arrow foil system. That led to the reprinting of Doug's website. See the following article in this Newsletter—"Flying Trimaran, WOLF".

[Here is what we found about Fire Arrow](#) by Ray Vellinga:

Fire Arrow was designed prior to the start of the September 7, 1988 America's Cup Race in an effort to compete with Dennis Connor's catamaran and Michael Fay's sloop.

Peter de Savary is a British businessman. His innovation is a 65-foot sloop-rigged sailboat with trimaran hulls. It is distinctive with its "bird like" appearance. De Savary intended to compete, but he met with bad luck when a New York Court ruled there will be no British involvement. Not to be discouraged, the tycoon, who heads the British Blue Arrow Yachting Syndicate, went ahead and had the boat flown to San Diego for an uninvited appearance.



Apparently, they were willing to go through the expense and effort of flying 5,487 miles to San Diego to prepare for a future America's Cup. Or was it for Old Town Carnitas?

Practice makes perfect, say the fifty Sailors who feel compelled to get to know the area and find out how the wind and current flows.

Perhaps just to see if it could be done, the Innovative Englishmen flew the hulls and foils to So Cal aboard a jumbo jet. This seemingly impossible feat was accomplished by spending beaucoup bucks and taking advantage of the unusual design. The hull is only 2 ½ feet wide, and the entire vessel weighs only 5,000 pounds. That is roughly 10% of what a similar length mono-

hull weighs. That helps to explain why New Zealand packed their 133-foot-long mono-hull aboard a cargo ship for a much slower crossing.

When assembled, the narrow hull supports an 80-foot crossbeam with small winglet hulls and inverted "T" shaped hydrofoils port and starboard.

The crossbar moves 1 foot fore and aft to adjust for pitch while under Sail. Like the catamarans in the race, the Blue Arrow uses a trampoline to support the acrobatic crew as they scurry about.

While under sail, the strong wind forces on the windward side of the wing tend to capsize the narrow hull, and these forces are controlled by the hydrofoil under each winglet. Only the downwind foil is submerged and working. The upwind outboard hull and foil is raised by hydraulics. At these controls is Derek Clark, the chief designer. To counteract roll over when not moving, there are buoyant air bag at the extreme ends of the struts

Unfortunately, later reporting tells us that Blue Arrow did not make as great an impression as was hoped. The use of hydrofoils was ahead of its time. But by using hydrofoils for roll stability only, and not for lifting the hull free of the water's drag, the de Savary team underestimated the tremendous potential that hydrofoils were to have on the future revolutionary America's Cup races.

### Flying Trimaran, WOLF

*The following is a reprint of Doug Lord's website, published with permission.*



WOLF is a new type of small trimaran sailing foiler utilizing new technology never before used on this size boat. The technology is based on the Fire Arrow Foil System used successfully for the first time on a large Test Model on July 24th, 2014.

I've worked on this project since 2010 when I first conceived of the unique foil system. I was working for IMANNA Laboratory at the time at home because of some physical problems. In my spare time, I designed and built an exact scale



*The Test Model and fullsize WOLF design, build and development thread ([link](#))*

model of a 19.5' foiling trimaran using the Fire Arrow Foil System. It took four years to get the Test Model done and it was successfully tested in July 2014. See the (very long) thread detailing the project below. WOLF came about because I wanted to do a much smaller version of a foiling tri using the Foil System. It's all detailed in the thread.

I believe in the WOLF Project and have decided to use the gofundme funding to be able to hire a company like Falcon LLC to build the prototype with me doing the foils myself. This project has tremendous potential to change small boat sailing dramatically by providing an easy to sail, easy to fly, extremely comfortable small foiling trimaran like nothing else on the market under 20' . This project has the potential to help grow sailing and allow the average person to enjoy the thrill of hydrofoil sailing on an extremely comfortable, easy to sail and very stable platform.

Since 2014 several versions of the Fire Arrow Foil System have been used on very large trimarans.

#### Plan

This website will be part of a multistage plan starting with Stage One which will encompass the building of a fullsize prototype and the extensive testing and development of that prototype. The Plan will use a crowd funding platform to help provide the capital required to complete Stage One.

Go <https://sailwolffoiler.com/wolf/> to: and click on "HOME" above right for a complete resume for Doug Lord.



*"Wolfman" is a miniature mannequin whose height- at the same scale as the concept model- is 5 ft 4 in. The idea is to use him to give some idea of the size of the final boat.*

Mainfoil is designed to retract flush with bottom to facilitate beaching and trailering with no foil damage. Ama foils retract clear of beach when sitting level. Rudder foil retracts above the bottom of the boat for beaching and trailering:

#### WOLF specs :

LOA	14.8 ft
Max Beam	16 ft
CL to CL ama hull	14 ft
Target weight	175-190 lb
SA-(mast length 24 ft all carbon wing mast)	upwind: 167 ft <sup>2</sup> downwind: 267 ft <sup>2</sup>
max pressure before depowering/reefing:	1.79 lb/ft <sup>2</sup>
RM-max righting moment	4460 ft-lb

#### Advantages:

1-Singlehander- Excellent upwind and downwind performance with up to a 220lb crew.

2- Will foil in 5 knots of wind with up to a 220lb crew. Minimum crew weight 120lb.





3-Carbon rotating wing mast, carbon cross arms and carbon foils.

4-Retractable foils (from cockpit). Mainfoil retracts flush with bottom and tips are designed to not dig into sand. Rudder foil retracts above bottom. Ama foils retract above waterline when boat is level.

5-Extremely comfortable sliding seat on each side. Allows crew to move 1.75' outboard very quickly.

6-Uses the Fire Arrow Foil System (like Fire Arrow, Gitana 17\*, Banque Pop\*, Macif\* and Maserati\*)– the same as the original system first used on the Test Model- except the larger boats use two rudder t-foils on each tack. WOLF has two UptiP ama foils-one used at a time-and one wand controlled mainfoil for very early takeoff and capable of substantial downforce- all working with a single rudder T-foil. The wand controlled mainfoil can automatically increase righting moment with lighter crew by developing downforce. Downforce can be virtually instantaneous

adding RM in response to gusts. \*similar to the basic Fire Arrow Foil System

7-Foiling throughout the wind range -including very light air-the essence of 3D SAILING!

8- Assy Spin/Screecher retracted under the front deck.

9- Boat folds from max beam to trailerable width in about 4 minutes. No waterstays.

10-Mid (wish)boom mainsheet so sheet is always in forward hand and extension tiller always in aft hand.

11-Quickly self-draining cockpit-large scuppers with backflow flap.

12- Planing ama hulls designed for incidental contact with water at speed and for inadvertent contact at slow speed. Adjustable angle of incidence of planing surface of each ama simultaneously. Angle of incidence of ama foil has to be changed when this is done. Planing surface starts at +4 degrees.

Uses Two-Stage Amas-see pictures below. They consist of a planing ama hull (Stage One) coupled to a “curved piece” (Stage Two) that provides extra buoyancy in the event of a knockdown. Curved piece facilitates high dihedral crossarms which keep the crossarms clear of the water.

13-Planing main hull.

14- Aerodynamic surfaces added to forward and aft crossarms. Adjustable flaps added on rear cross each side. Jib foot and forward part of main foot to be sealed to deck.

—Memorable quote from JG Baker, Designer and Builder of the Monitor foiler in the 1950’s:

*“ The main need is to lower the wind velocities required for flying in order to increase the opportunities for high speed travel”*

**Fire Arrow Foil System**-first of its kind on any trimaran. Elements developed first by Fire Arrow include:

- 1) the first trimaran in history to use uptip ama foils,
- 2) the first trimaran in history to use a single wand controlled main foil capable of downforce,
- 3) the first trimaran in history to use Two Stage Amas.(see to left for Two-Stage Ama pictures, [Link](#))



## Norwegian Fully Submerged Hydrofoil Ferry in Development

*Ray Vellinga*



This artist's representation, based on the promoter's published photo, is of a Norwegian Fully Submerged Hydrofoil Ferry. It was recently announced that five Norwegian companies are combining to develop a ZeFF -- Zero Emissions Fast Ferry. It will have fully submerged hydrofoils, a light weight composite hull and be powered by either batteries or hydrogen fuel cells. This will result in zero or very low emissions.

## Brief History of Thames River Hydrofoil Service and Request for More.

*Michael Olivier*

*IHS member Michael Olivier is a writer and editor at [LondonReconnections.com](http://LondonReconnections.com). He recently made this request:*

I have searched through the IHS CD-ROM archives and produced a few tidbits, but there are still some gaps in the story about the Thames River hydrofoil service. To complete my research, I need more. (these academic papers are also available on our website: <https://foils.org>).

I'm looking for information, background and passenger observations on hydrofoils used for commuter and tourist operations on the Thames in London in the 1970s:

Other members may be interested in reading what I have so far:

The Thames Arrow Express established a commuter ferry service in 1973, between Tower Pier and Greenwich using two Italian hydrofoils, the Freccia di Reggio and Freccia del Vesuvio. The service was not commercially successful however and was shut down after less than six months.

In February 1974 Airavia received the three Raketas it ordered from the Soviet Union, the Raketa Greenwich, Raketa Westminster and Raketa Thames, to carry passengers between Westminster - Greenwich - Gravesend. These craft operated at 30-minute frequencies at rush hour, with lesser service during the day according to tourist demand.

Airavia also imported a larger Soviet Kometa hydrofoil for charters. The Kometa World Trader could carry 116 passengers in three areas, two on the main deck and one on the bridge deck. Three air stabilizers ensured a comfortable

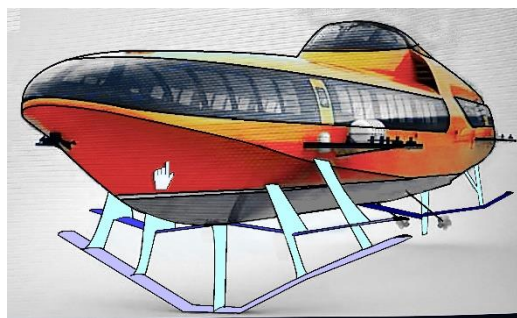
ride, but the class was not rated for passenger service on the open seas.

Speed Hydrofoils (no longer Airavia, but appears to be a related company) operated Kometa World Trader for private charters and for trips to Southend pier for a short period. She was intended to be a demonstrator for longer distance services that would take better advantage of the hydrofoils' high speed.

However, the summer tourist season was not enough to support the service year-round, as tourist numbers dropped off dramatically in autumn and winter with the cold, wet Thames becoming a deterrent to sightseers. The Russian hydrofoils operated until 10th September 1976, then were sold back to Eastern Europe in 1977.

Airavia Ltd was liquidated that December. Umo Leasing was apparently involved as well, but I can find no information on its role or operations.

Catamaran Cruises Limited started operating a Thames taxi service from West India Dock pier in Spring 1978 using two imported Russian Volga 275 hydrofoils, which carried five passengers and the pilot at up to 30 knots.



Artist's Conception of a Contemporary Russian Kometa Hydrofoil

Any reader able to contribute to Michael's material, please contact him at:

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## FLYING ON WATER

### A Celebration of innovation, Imagination & Persistence

*“One of the most interesting of the strange things that have come from Dr. Graham Bell’s laboratories is a weird looking glider that recently has been tearing up the peaceful Bras d’Or Lakes at the rate of 70 miles per hour.”* (Annual Report of the Board of Regents of The Smithsonian Institution, 1919)



September 9 to 11 2019. Cape Breton. Nova Scotia. Canada

On September 9 1919, Alexander Graham Bell and Casey Baldwin broke the world speed records on water – the HD-4 travelled 70.86 (113 km) per hour skimming across the Bras d’Or Lake – and Nova Scotia became the site of some of the most advanced technological testing and experimentation with hydrofoils in the world.

Join Alexander Graham Bell National Historic Site/Parks Canada, the Alexander Graham Bell Foundation, Alexander Graham Bell Museum Association, Theatre Baddeck, Penguin Random House, the International Hydrofoil Society and other partners and funders as we celebrate the 100th anniversary of the HD-4 speed records achieved in Cape Breton and the recreational and commercial development and use of hydrofoils over the last 100 years.

From September 9 to 11 2019 there will be community celebrations for

all ages at the National Historic Site in Baddeck that will include the launch of a new book about Casey Baldwin, staged readings of Eric Walter’s *The Hydrofoil Mystery* by Theatre Baddeck along with presentations by the author, interactive exhibits and lectures, and a virtual reality experience of the HD4. And throughout the celebration new and unique products celebrating hydrofoils, invention and innovation will be available at the Museum Store – onsite and online.

Stay tuned for more details to follow in the coming months.



Parks Canada    Parcs Canada

**HYDROFOIL -- The Amazing Boats of Kotaro Horiuchi.** Watch video [HERE](#) posted by Ray Vellinga

**MANTA5** Human Powered hydrofoil with an electric assist. Watch [HERE](#).

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## VOLUNTEER NEEDED

IHS has a huge inventory of photographs that need to be posted on our web site. Please volunteer for all or a portion of the task; on the job training, of course. Contact: [IHSpresident2016@gmail.com](mailto:IHSpresident2016@gmail.com)

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## IHS WEB CONTENT

Check it out (click on link):

<http://foils.org/>

[Facebook Page](#)

[YouTube Channel](#)

*Our Associate, The Foiling Week:*

<http://www.foilingweek.com/>

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## THE NEXT ISSUE

Remember, if you enjoyed reading articles in this issue of the Newsletter, they were provided with thanks to fellow IHS members. If you are able to share news, photos, and/or videos on new projects or research work and, better still, prepare an article for the Newsletter, please email: [IHSpresident2016@gmail.com](mailto:IHSpresident2016@gmail.com)




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## YOUTUBE TRENDING VIDEOS

**The America's Cup AC75** boat concept revealed [HERE](#)

How will the new AC75 will fly? Watch [HERE](#).

**Superfoiler** - Sydney Saturday Race 1. Watch [HERE](#).

**High Speed Hydrofoil Racing:** Red Bull Foiling Generation World Finals. Watch [HERE](#).

**Laird Hamilton, Foil Boarding in Kauai.** Watch [HERE](#)