

# ***LOFT LINES***

A NEWSLETTER FROM HAARSTICK SAILMAKERS

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## **CELEBRATING 35 YEARS THIS MONTH**

March 9, 2005

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### **In this issue:**

-Steve Haarstick is back on his Star in Miami- Good Luck Steve

- 35 years- Steve rehashes his past for all to enjoy

- Playing the Shifts-Part II – Volvo Ocean Race Weather Research - by Ken Davies

- FREE Seminars coming up at Haarstick Sailmakers

    Downwind Racing-this Saturday, 11am , 1461 Hudson Ave.

- New Sails for this season – Don't wait too long

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**Sailing in Miami**

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This Friday ( 3/4/2005 ) I'm off to Miami for the last time this winter to sail my Star in the Bacardi Cup. This is the usually the largest Star fleet of any regatta in North America , and I'm really looking forward to sailing. One problem awaits me. I got a pretty severe sprain in my left knee, probably from the second January regatta. My "primary-care" physician told me to just take some pain killer and ice it to reduce the swelling. As the pain became pretty severe early this week, I called my son, Chris, as he had experience with knee injuries from all the "chop blocks" he received as defensive linemen playing college football. He told me to get a brace on the knee, as the damage could become permanent. That's exactly what the Orthopedic Doctor said when I finally got an appointment. I had a pretty severe ACL sprain, and I'm now fitted with a brace. The Orthopedic Doctor confirmed exactly what Chris told me! This was the third time I've had to insist on treatment after being put off by my Preferred Care Doctor. If anyone has a Doctor they like, please let me know, I'm ready for a change. Hopefully, the knee will be better by the first race this Sunday, but I'm sailing even if Todd has to lower me into the boat with the hoist

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## **MARCH 1, 2005 WAS THE 35<sup>TH</sup> ANNIVERSARY OF HAARSTICK SAILMAKERS!!**

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Ten years ago, I wrote about how lucky I felt to have spent my entire working life at a job that I truly enjoyed, and "fed the fire" within me. Ten years later, as Haarstick Sailmakers reaches another milestone, our 35<sup>th</sup> year in business, I still feel the same way. This time, instead of simply repeating how lucky I am, I would like to exercise the tradition of "advancing years" to recall memories of the antics and events of my youth, which might provide some explanation on my becoming a sailmaker. I hope you will enjoy these memories (they are all true):

Ever since I can remember, I loved to build things. Starting with model airplanes, when I was seven or eight, I would spend hours building the balsa wood gliders of that era, and attempt to fly them. They would invariably crash, usually on the first flight, bringing a torrent of screaming and tears as they shattered into bits and pieces. Graduating to powered flights, things only got worse, as the motor would either not start, or almost take my finger off, and, still, they crashed, only faster, and more spectacularly.

When I was 11, I graduated to building coasters using soapbox derby wheels I found near my home in Ithan , Pa , a small town outside of Philadelphia . While extremely crude at first, with only a rope bridle to steer, and no brakes, my coaster slowly evolved into a two seater with a steering wheel, brakes (sort of), and a rumble seat in the back for my Collie dog, "Laddy". We would coast down the hills, push it up the next hill, and keep going, sometimes for miles in the surrounding countryside. One day as we were sliding down a gentle slope, building speed (these ball bearing wheels had almost no friction) and came around the corner, there was a Police car sitting at the side of the road. Just so he wouldn't pull out in front of us, I squeezed the "Ugga" horn, and whizzed past his window, as he looked down at us in disbelief. A second later, his siren was on, and he was in hot pursuit. He finally stopped us at the bottom of the hill, and got out of his car to have a look at what was obviously an underage driver of a motor vehicle. But with no engine to be found, only two kids and a drooling dog in the back of this vehicle, he told us to get the coaster off the road, as we were endangering ourselves. "We are, really?" Thinking of the consequences of being arrested, we promised to never run the coaster on the streets again! "Yes sir, we'll push it all the way home"

We moved from Ithan to Penn Valley , when I was 12, and it was time to motorize the coaster. I rigged up a lawn mower engine, and experimented with various drive trains until I got a compromise between raw speed, and some minor hill climbing, but mostly, geared for speed. Again, we cruised the open roads in the neighborhood, avoiding the patrol cars, and the big dogs, now that the car made so much noise, would chase after us- at eye level.

We spent the summers at a small island off the end of Long Island , called Shelter Island . Having so much fun with the coaster left behind in Penn Valley , I built an eight-foot hydroplane the summer I was 13. To power it, I took the 15 HP outboard off my brother's Lyman (without asking, as he would have said no), and took my new boat for a spin. Unfortunately, my "modifications" to the plans caused the bow to ride about 2 inches off the water, as I discovered the first time out, when I gave it full throttle. The boat became a submarine with the first wave encounter.

Later that summer, water skiing was just becoming popular, and my brother Tony and I decided it was time to give it a try. Obviously, the best way to start was on the beach, standing on the skis, and have the boat tow you into the water. Made sense, why get wet? Gunning the rebuilt 15 HP engine on the Lyman with a slack line would also be necessary to give the boat a chance to get up to speed. It's a good thing the power to weight ratio was much different for me then than now, as beyond the sand burns from head to toe, I would probably have had my arms pulled out of their sockets, if I tried that stunt today.

The next bright idea was to sit on the edge of the dock, and have the boat pull us off. Again, why get wet? After my Mom took me to the Doctor to get the splinters pulled out of my butt (there was no way I was going to let her do it), we decided that starting while in the water was the best method. This finally worked, without injury. Later that summer, I decided that starting on two skis and dropping one was for sissies, and I tried to start up on a single ski. But the rebuilt 15 HP motor that I submerged earlier that summer couldn't pull me out of the water. The remedy was building a large sized single ski: bending the tip up by cutting it on top every  $\frac{1}{4}$ " and fiber glassing it together. That worked great for the rest of the summer, until it broke just as I was going to win the bet with my brother that I could ski around Shelter Island, a distance of about 40 miles. About 1 mile from the dock, the front half of the ski broke off, and I face planted in a school of jellyfish. My brother was very pleased to win his \$10, not to mention pulling me aboard covered with stinging slime.

The following summer, my Mom dragged me down to the Shelter Island Yacht Club and enrolled me in their sailing class. I was adamant that I didn't want to learn to sail with a bunch of yacht club kids, I wanted to water ski. I had sailed with my brother on his Lightning, and hated it, as we always lost. The only fun I had was to drop the spinnaker over the bow and keel haul it at the leeward marks. But, when I realized that there were girls in the class, things were looking up! I was paired up with another kid, named Eric on a Wood pussy (yes, that really is the class name of the boat), the club's training boats. These boats were cat rigged, similar to a Beatle Cat, but with a Marconi rig. They were extremely heavy boats, virtually impossible to capsize, with a huge cockpit. Perfect size for verbal disagreements on the race course to turn into wrestling matches. I don't think Eric and I ever made it past the first mark of the course before the arguments and wrestling for the helm began. We became the best of friends that summer!

That summer also began our annual summer two week racing/cruising voyage on a Block Island 40 owned by Joe Purtell. His son Mike and I also became friends during sailing class, and I was invited to join him, his Dad, and eight other 13 and 14 year old kids. These cruises were the best! How Mr. Purtell, or "Pa Joe", as we called him only among ourselves, could race this boat with the eight of us, loud, screaming kids, and no other adult on board remains a mystery to me. He had nerves of steel! He never raised his voice, and always called us "men". No disaster could faze him, and there were many in the course of each summer's voyage. The one that really sticks in my mind occurred off Pt. Judith, in Long Island sound, when we sprung a plank while sailing over to Block Island and almost sunk the boat. It's amazing how fast eight panic driven kids can set up a bucket brigade. We barely made it to Block Island Harbor, and ten minutes after we had tied up to the town dock, the keel was resting on the bottom with three feet of water in the bilge.

The next summer, at 15, my Mom still had to drive me to sailing class. This was definitely not cool! Although I had no license to drive a car, a motor scooter was a different matter, at least in my mind. So I built one with a wood frame, a tricycle front end, and another lawn mower engine. With a top speed of about 15 mph, and a drive chain that constantly fell off the rear wheel sprocket, it was not dependable transportation, but it was definitely better than having your Mom drive you. I spent the summer driving and fixing that scooter, and avoiding Pete Hannabery the Shelter Island sheriff. At the end of the summer, he finally caught me on the road, instead off on the side of the road fixing that damn chain drive, and, instead of “putting the cuffs on me”, insisted that I give him a ride on the back.

When I turned 16, Mike and I decided to start a “handy man” summer business. We actually got hired on several jobs, probably the \$ 1.25 hourly rate. Our first job was to recaulk a large number of small windows on an outside porch, and replace the tile in the downstairs bathroom. (I can't image how any adult would hire us for these jobs) Having no idea how to remove old caulking, we cracked about 90% of the glass panes. Not a good start, but this was only the beginning. As I was trying to get the old tile out from under the sink by hitting it on the edge with a hammer, the sink twisted off the wall, breaking the cold water pipe. Immediately, water poured out, spraying everywhere. As we ran around the basement looking for the water shut off valve, the water was flowing out of the bathroom into the rest of the house. I remembered there was a hose in the garage that I could shove over the broken pipe and divert the water into the bathtub. Racing to the garage, I grabbed the hose and ran back towards the house. However, the hose was tangled around the table, and it, together with the open paint cans, went crashing to the floor of the garage! When we finally found the water valve about an hour later, the entire first floor of the house was flooded, carpets floating, water pouring out the front door, and the garage floor covered with paint. We mopped up the house, hung up the carpets to dry, and spread the paint around the garage floor, hoping it would look like we planned to paint it. When it was all over, I actually asked the homeowner if we could get a reference for our next job!

Later that summer, for reasons never revealed, “Pa Joe” decided that we had become “responsible men” at 16, and, he would allow us to take the Block Island 40 out for a sail by OURSELVES. What a mistake! Somehow in the middle of Gardiner' Bay, we sailed straight into a very large bell buoy at 6 knots. Hit it RIGHT on the nose, bounced back, and dragged it all the way down the side of the boat! Could it have been the distraction of the girls on board that day? I know that I wasn't paying any attention to where we were going, but then I wasn't steering, Mike was. The thought of facing Pa Joe with a big dent in the bow and red drag marks down the side was just too grim. We could fix this! We just had to sail over to my house where I had all the necessary tools. Getting into Cockles Harbor is really tricky, even with a motorboat, much trying it for the first time in a boat with a seven foot draft. True to form for this day, we ran hard aground, on an outgoing tide. All attempts to back off with the engine going full bore failed. In fact, we sucked so much sand into the water intake that the engine fried. Now we were really in trouble! It took over seven hours for the tide to come back up, and allow us to sail off. By now, it was dark, and, with no motor, we still had 12 miles of sailing in a dying breeze to get back to

Dearing Harbor . By the time we sailed into the harbor at 2:00 AM , the Coast Guard was on full alert, with their search lights panning the harbor. Seeing the crowd of angry parents lining the shore, especially the parents of the young ladies on board, thoughts of jumping overboard with the anchor entered my mind. Beyond the “your grounded” punishments, we all contributed to the cost of the repairs, from our summer wages, but that was still the last time “Pa Joe” ever let us “men” take the boat out again.

Later that summer, having served our “grounding”, we decided to motor out in the Lyman to the “ruins”, a small island just north of Gardiner’s Island . The Air Force was rumored to use this island for bombing practice, and we obviously had to check this out. Of course, we didn’t tell anyone where we were going, because you’re not allowed to set foot on either Gardiner’s Island or the “ruins”. We found that the bombing rumors were true, as there were shell and bomb casings everywhere. Picking up only the best of the examples, we loaded the Lyman, and headed home. As we approached the dock at dusk, my brother came stomping down the door screaming that we had been reported missing to the Coast Guard, again! We were so excited with our trophies that we forgot the time. Later that night, about 3:00 AM , there was a loud knocking on the front door, waking my Mom, who was told by the Riverhead BOMB SQUAD in full field gear, that they were here to collect any and all the LIVE bombs that we had taken from the “ruins”. I didn’t know they were live. Someone must have been showing off their trophies to a parent.

I think the love of building things, and the nature of the times back in the fifties, had a strong influence on me. It was not unusual for kids to spend their summer days completely on our own, even at 8 years old. We had rules, of course, but I can never remember the kind of 24 hour supervision that is the norm today. I would never have let Chris out of my sight outside when he was 8 years old, especially as we lived on the lake in Ithaca . But, at that age, I was usually out on the water in a boat with only my friends. Who would race a sailboat with only one adult, and a bunch of kids, today? Well, actually, I did when Chris was 12. We sailed “Minutehand” at Youngstown Levels, with three of his friends, and myself as the only adult.

I couldn’t see myself “sitting behind a desk with 1000 other engineers in the room, cranking their slide rulers”. This type of job seemed really unappealing to me. For some reason, perhaps just to prove how bad that could be, I took a summer job in Hartford after my senior year at Trinity College with a steam turbine plant. This job required a room full of budding engineers to endlessly calculate water rates. Why, I have no idea. This job was unbelievably BOORING!

The next summer, I begged Wally Ross, the president of Hard Sails, to hire me to do “whatever” for the summer. Working for Hard Sails was the best! I found the type of work that combined my engineering training with the “getting your hands dirty” work that I always loved. To design it, build it, and see the results of your work- sailmaking had it all!

For more articles on the early years of Haarstick Sailmakers please check out our prior Newsletters on our website:

[November 2003](#) : The story of our first computer cutting operation in Annapolis , MD in 1973.

[December 2003](#) : My introduction to sailmaking at Hard Sails in the summer of 1964.

[January 2004](#) : Building a cloth testing machine at Hard Sails, and my first venture into the design of very large mainsails.

[February 2004](#) : The story of my beginnings in the Star, and my love of this boat ever since.

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### **Playing the Shifts- A Course to Haarstick Sailmakers – by Ken Davies**

(if you missed Part I, or Ken’s Bio. [CLICK HERE](#) to go to last months “Loft Lines”)

### **Part II: Volvo Ocean Race Weather Research**

Anyone who has had the opportunity to race knows the repercussions of incorrectly picking a shift. The larger the stakes the harder it is to bite the bullet when wrong, and the stakes cannot get much bigger than in the Volvo Ocean Race. Syndicates devote significant time and money on weather prediction and modeling, the results which affect every aspect of the race, including sail design.

While you’re not going to find a Haarstick sail on the start line of the 2005 Volvo Ocean Race this November in Spain , the knowledge needed for such a campaign is not exclusive to the large, international, sailmakers. Needless to say Steve Haarstick has always been an innovator in the industry, but I am happy to now bring a modest amount

of VOR experience to Haarstick Sailmakers. Admittedly my familiarity derives purely from academic research optimizing routes for the race but any syndicate will concede this an integral part of a successful campaign.

The opportunity to research weather routing for the Volvo Ocean Race came when I returned from living in New Zealand and volunteering for the Louis Vuitton Cup. Wanting to prolong my inevitable entry into the workforce, I returned to school for a masters degree in engineering. Fortuitously my advisor was not only interested in sailing, but as a New Zealander had worked for Team New Zealand 's 2000 Defense conducting computer-based match race simulations. I proposed a research project working with Oracle BMW, but my advisor patriotically refused to help work against Team New Zealand . Instead together we developed the idea of applying engineering and statistical methods to the Volvo Ocean Race.

Compared to previous races, the upcoming 2005-2006 Volvo Ocean Race further restricts the availability of weather forecasts at sea. This restriction presents a potential for historical weather data to play an important role in course selection. Since many of the race legs are longer than three weeks, the power of extended forecasts is reduced and climatology, or long term weather averages, becomes significantly more important. It was this opportunity which I seized upon last year, and subsequently partnered with a syndicate to help develop a new method of weather routing.

The goal of the research was to use past weather patterns to assist with onboard navigation. To accomplish this, we developed a model incorporating NASA satellite wind, NOAA ocean current, and Farr Yacht Design VPP data to simulate the optimal paths. The method broke down historical wind vector fields into tens of thousands of nodes and subsequently found the time from each node to sixty-four neighbors. A shortest path algorithm then found the minimum time to finish from any point on the race course. Then using hundreds of days of data, and thousands of computer hours, we were able to develop an average time to finish from any location.

It would be illogical to depend solely on these results for navigation, because present conditions are always a better indicator than historical averages. That being said, in the VOR even the best predictions do not span the duration of the longer legs. This leaves the navigators guessing where to position the boat to maximize the probability of favorable conditions weeks in advance. These long term weather averages illustrate what parts of the oceans have been historically fastest, often confirming the navigator's own personal intuition. Hence in conjunction with up-to-date weather forecasts, these charts provide a unique predictive model to aid in the navigation of the yacht throughout the race.

Below is a link to an example of a map produced by the algorithm. It is an illustration of the North Atlantic and horn of Africa where the axes represent degrees of longitude and latitude. In the upper right is western coast of Spain and Portugal . The colors illustrate the time of a Farr designed VO 70 to reach Fernando de Noronha . The darkest blue indicates mere hours and the darkest red indicates approximately fourteen days, which is commensurate with the actual time taken in the previous Volvo Ocean Race.

[CLICK HERE](#) for illustration example

I wish I could claim hands-on experience with VOR yachts, my knowledge to date remains wholly academic. Nevertheless these award-winning results illustrate an innovative approach to the problem of weather routing. While the applications of the VOR may have limited scope, it demonstrates the innovative spirit which has driven the pursuit of excellence at Haarstick for thirty-five years. We are committed to being to your local, personalized, loft, but pride ourselves on unparalleled expertise – in all aspects of sailing.

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## **Free Winter Seminars Coming up**

Open discussion. Starts, tactics, upwind, downwind, rules, driving, crewing, sail trim...

Seminars are right here in the Loft at: 1461 Hudson, Rochester NY, Just North of RT 104

Jon Faudree of Haarstick Sailmakers is the presenter.

The last few have been a great success. 60+ showing up to hear Jon speak. We hope to see you this weekend.

For a Picture of the 2<sup>nd</sup> Seminar in progress: [CLICK HERE](#)

### **3<sup>rd</sup> Racing Seminar/Discussion- Setting the Chute and Downwind Tactics and Strategy**

Saturday March 12<sup>th</sup>, 11:00am-1pm.

### **4<sup>th</sup> Racing Seminar/Discussion- New Rules Update and Discussion**

Saturday March 26<sup>th</sup> 11:00am-1pm

Refreshments provided

\*\*\*Please let us know if you plan to attend the next Seminar so we can make sure we can accommodate all interested. Just reply to this e-mail. (Subject: "Seminars" is fine) Thanks.\*\*\*

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## Need Sails for 2005

If you are thinking of a new sail for the upcoming season, let me know and I'll get you a quote. Production slots are filling up and we would not want you to be disappointed with a later delivery date. So if you are thinking about a new sail for 2005 give us a call and we'll show you what has kept Haarstick in the business for 35 years. Fast, durable and constructed with only the best sailcloth right here in this building. I look forward to hearing from you.

Doug Burtner

Sales/Service

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## LOCAL UPSTATE NEWSLETTERS

If you are not already receiving their e-mail newsletters, we recommend that you sign up for these two upstate NY newsletters:

For the **RCR** Newsletters: <http://www.rcryachts.com/newsform.htm>

For the **Navy Point** Newsletter: <http://www.navypointmarine.com/subscribe.html>

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Please let us know if you are changing your contact info. We will update our database.

If you stop receiving our newsletters, check you spam filters, we may be getting blocked. –  
Thanks.

\*\*That's all for this issue. If you no longer wish to receive our Newsletters please reply with  
"Remove" in the Subject box\*\*

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