



## OVER 38 YEARS OF INNOVATION

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Since the Summer of 1964, **STEVE HAARSTICK** has been an innovator in sailmaking, from Hard Sails, to Hard-McPherson, to the start of **HAARSTICK SAILMAKERS** in 1970, **STEVE** has pioneered some of the greatest contributions to the science/art of sailmaking.

1. 1st Radial Head Spinnaker : Developed at Hard Sails, 1964.
2. [Cloth Testing Program](#) : Developed at Hard Sails, Fall 1964.
3. Cloth Test Data correlated with measured sail distortion: Summer 1965.
4. Extensive Wind Tunnel Testing : **Master's Thesis**, 1968 - "*Study of Vertical Camber Distribution's Effect on Induced Drag.*"
5. **Developed Computerized Sail Design Program** that incorporated results of Master's Thesis, 1968.
6. Published article in **SAIL MAGAZINE** on "*Benefits of Increasing Cloth's Threadline Strength at the Expense of Bias Strength*" : 1972 - Widely Disputed at the Time of Issue.
7. **Introduced World's 1st Computer Driven Sail Cutting Machine** : March 1974. Patented process of machine cutting as it applies to mass production of LASER Sails (**ALL LASER SAILS WORLDWIDE WERE CUT ON OUR MACHINE FROM 1974-1983**).
8. **World's 1st Computer Cut Custom Offshore Triradial Spinnakers** delivered to Customers : Spring 1975.
9. **World's 1st Vertically Cut Racing Genoa** : 1978 1/2 Ton Championships. This "Quilt-Cut" genoa completely revolutionized the industry as it paved the way for today's vertically cut Triradial Sails.
10. **1st Vertically Cut Kevlar/Dacron Mainsail** used by *Daedalus* to Win BLOCK ISLAND RACE WEEK, 1981.
11. Developed early "Insertion" Style Kevlar Laminates with Dimension Polyant Sailcloth : 1982.
12. Triradial Upwind Sails Introduced in 1982.
13. Introduced "**QUILT-CUT**" Rocked Horizontals to our Triradial Spinnakers: Summer 1983.

14. Developed Custom CAD System : Spring 1985.
15. Introduced "Fully Faired" Triradial Mainsails, Genoas, and Spinnakers: Spring 1987.
16. **1st FULL BATTENED PHRF Mains** : Fall 1990.
17. Introduced Extended Battens in #3 Jibs : Spring 1991.
18. Began using Dimension Polyant's [ULTRA-BOND System](#) for Bonding Triradial Panels : 1996. Result - Sails are Smoother, Stronger, and Lighter.
19. Constructed Triradial Sails from DP's PBO Laminates for Eight Meter World Cup : Sodus Bay YC, 1996.
20. PBO Zylon Magna Shield "Flypaper" UV Film PBO Laminates used in PHRF & Class Sails : 1999.
21. AIRX Nylon Spinnaker Cloth used in PHRF & Class Sails : 1999.
22. Magna Shield "Flypaper" UV Film Kevlar Laminates used in PHRF & Class Sails : 2000.
23. *Haarstick* [Carbon Fiber Sailcloth Research](#) Published in **September 2001** Issue of **Sailing World Magazine** in Peter D'Anjou's Article, "*Are You Ready For Carbon Fiber Sails?*".
24. [Carbon Fiber](#) used in sails for PHRF and Grand Prix Racing : 2001.
25. UV Retardant "Smoke" Kevlar film laminates in PHRF & GP Racing Sails: 2002.