

September 4, 2019

“Props” to HydroComp on its 35 Years of Service to the Marine Industry

New England Company is an Industry Leader in Global Hydrodynamics

(DURHAM, NH) HydroComp, Inc. is celebrating 35 years of serving the global marine community with technological innovations. HydroComp is best known for its contributions to naval architecture companies and organizations in more than 65 countries around the world, via its engineering design software including NavCad®, PropCad®, PropExpert® and PropElements®.

Managing Director Jill Aaron and Technical Director Donald MacPherson founded the New England-based company in 1984 to solve design and engineering challenges faced by individuals, businesses and government agencies working in the naval architecture and maritime propulsion industries.

A longtime and continued focus at HydroComp is improving maritime sustainability. The software has an impact on greenhouse gas (GHG) emissions from marine vehicles, as it makes them operate more efficiently by design. MacPherson and Aaron aim to take this further with a formal focus on sustainability metrics to shrink the carbon footprint of maritime vehicles on a global scale. They also understand that that altruism and a business model must operate hand in hand.

“We’re providing the means for companies to achieve their sustainability objectives in a way that also meets business planning and company mission objectives,” MacPherson said.

A History of Solving Hydrodynamic Challenges

HydroComp first developed software during the desktop computing infancy, becoming the go-to expert for those with hydrodynamic challenges. The company’s software offerings include:

- **NavCad:** HydroComp’s hydrodynamic and propulsion system simulation software is built on a physics-based performance equilibrium of the *Vessel-Propulsor-Drive* system model. NavCad is known for its reliable and confident prediction and analysis of vessel speed and power performance. It also provides designers with the necessary tools for the optimized selection of suitable propulsion system components.
- **PropCad:** HydroComp’s fast and powerful design software aids in the geometric modeling of marine propellers. It increases productivity for designers and manufacturers, producing better propeller designs in less time. PropCad’s interface provides full control over the blade parameters and hydrodynamic section shapes and automatically prepares 2D design drawings, 3D CAD models, construction data and offset reports, as well as Class society thickness calculations.
- **PropElements:** This program provides propeller “design for performance” capabilities to a variety of marine professionals so they can evaluate existing performance of a propeller in service or to design optimally performing propellers for a ship’s particular mission.

PropElements is not only for propeller specialists and manufacturers, but also of great use for naval architects and vehicle designers.

- PropExpert: HydroComp's software for the selection and analysis of propeller systems is most used for workboats and pleasure craft. It features current techniques presented in an easy-to-use and powerful package, and assists in elements of sizing commercial propellers, such as diameter, pitch, blade area, and reduction gear ratio. It is the international choice for the application sales staff of most major engine and propeller companies.



Don MacPherson and Nick Danese, Europort 1993

Throughout the substantial fluctuations in ship design evolutions, oil industry booms and crashes, and trend shifts, HydroComp has remained an industry leader in global hydrodynamics because of the company's commitment to its core mission: providing tools for naval architects, marine engineers and ship operators to be able to develop their vessels more efficiently and responsibly. "Every year we focus on what's important to the industry and pass it on to the community we serve," MacPherson said.

Aaron added that many relationships with HydroComp's customer base have developed from professional to personal over the years. "The best feedback we receive are emails from family-run business that say, 'You have made such a big contribution to our company and personally to our family.' That's why we do this."

Aaron oversees HydroComp's operations, sales & marketing and corporate customer communications. MacPherson is an internationally-recognized specialist in applied hydrodynamics with emphasis on the design of propulsors, and the numerical forecasting of vessel and propulsor performance.

Aaron and MacPherson also credit HydroComp's success to the outstanding team of staff members over the previous 35 years, including some 80 university interns that began their professional experience with HydroComp. Adam Kaplan is an 11-year team member rising from intern to HydroComp's Program Manager Propeller Tools with his strong mechanical engineering focus. As HydroComp's earliest full-time staff, Bill Cook's programming excellence helped shaped the development of the products, while for a large part of the '90s, Stephanie McArdle assisted the company's sales and marketing progression and AJ Lambert helped develop and evolve HydroComp's propulsion system modeling. Of particular note, Nick Danese, of NDAR in Antibes, France, was the initial sales provider in Europe and greatly expanded new territory. His input is still vital to HydroComp's accomplishments today.

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