HydroComp, Inc.

FOR IMMEDIATE RELEASE
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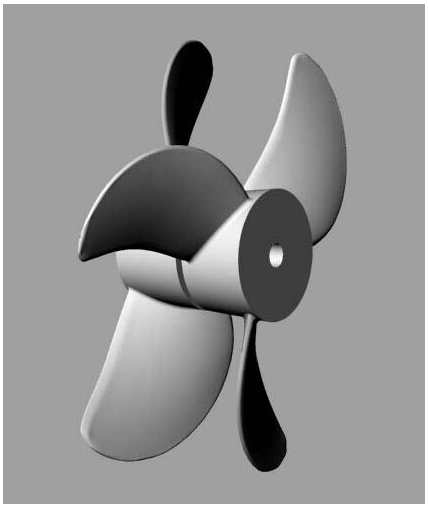
New system prediction of Contra-Rotating Propellers with HydroComp NavCad®

New features for the industry-standard resistance and propulsion software



Many contemporary marine vehicles are being outfitted with contra-rotating propellers (CRP), and naval architects need the ability to model the performance of CRP systems – a capability that has been lacking until now. As part of its ongoing internal R&D program, HydroComp, Inc. has just deployed a new CRP system analysis module into *HydroComp NavCad®*, the industry-standard software for the prediction and analysis of vessel speed and power performance.

Published comparisons of the efficiency between standard fixed-pitch propellers (FPP) and CRP propellers typically indicate that CRPs are between 3% and 10% more efficient. It is often presumed that the efficiency gains of a CRP are due solely to recovery of energy lost in the rotational flow of a single propeller. While recovery of rotational energy is partly responsible for the efficiency gains with a CRP, much of the gain actually occurs due to improved inflow and the reduction in propeller blade loading (with its corresponding change in RPM and blade area ratio).

HydroComp evaluated an extensive catalog of published studies that made direct comparison between FPP and CRP propellers. From the results of this evaluation, a new CRP performance prediction method was developed around a "system-level" model using only the representative definition of one propeller in the set to determine the overall system performance. The intent of the new CRP method is to reasonably predict the overall performance of a CRP "system", and is not intended to provide a means to design or size the specific details of the blade sets.

HydroComp's new ***CRP (Simple)*** model includes proper consideration of:

- Thrust and torque division for proper individual blade loading.
- Reduction in loading due accelerated induced velocities.
- Increased efficiency due to improved inflow and recovery of rotational losses (see Figure 1).
- Reduced hull efficiency due to rudder interaction.

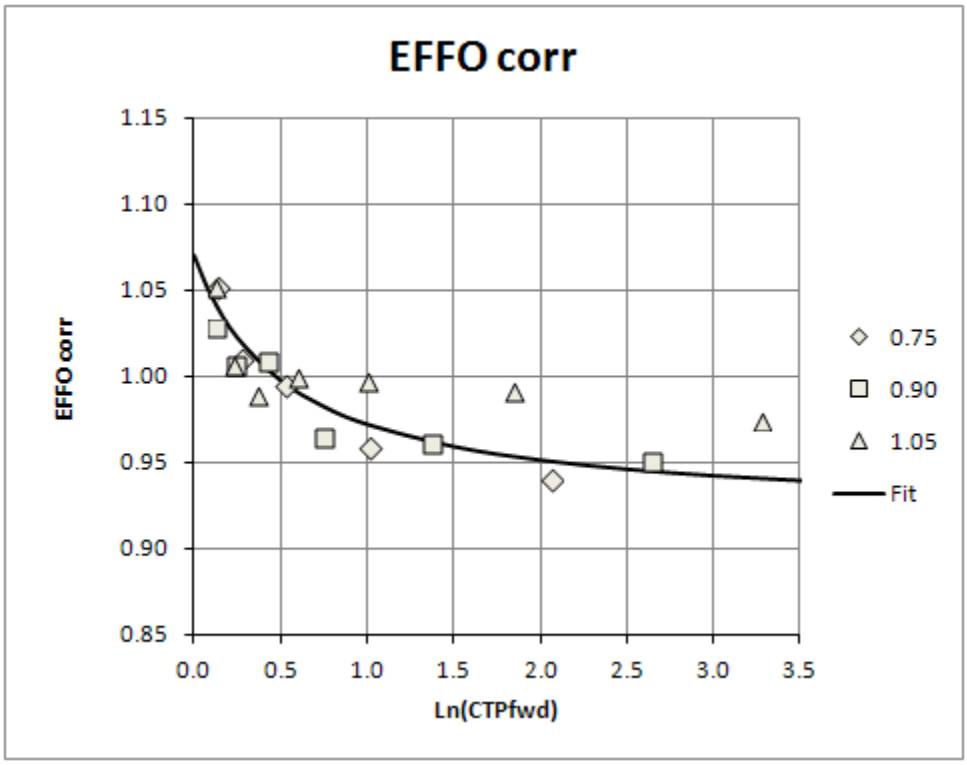


Figure 1 – Overall propeller efficiency correction

About HydroComp

Celebrating its 29th year of operation in 2013, HydroComp provides software and services for the performance analysis and design of marine vehicles to industry, research, academic, and government clients. The company is proud to have served over 700 customers from more than 60 countries.

Forecasting Hydrodynamic Performance from Design to Manufacture since 1984.

Download at: www.hydrocompinc.com/company/news.htm

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