HydroComp, Inc.

October 23, 2024

HydroComp NavCad® 2024 What's New

New features for improved Vessel-Propulsor-Drive system simulation

Development in 2024 for HydroComp NavCad offers new technical features and workflow improvements.

Release Build 2024.2

Miscellaneous

- Added "km/h" speed unit.
- Improved propeller sizing solution when no Drive data is present.
- Additional cavitation metrics to scripting output. [Premium Edition]

Display of Propulsor Thrust and Lift (for Improved CFD)

While shaft line thrust force is common in planing hull predictions (i.e., the "general case" Savitsky model), NavCad also includes the effect of a propulsor's lift force in the sum of forces and moments solution. However, propulsor lift force is characteristically omitted from CFD planing hull resistance prediction, and shaft line thrust can be missing from simple planing hull CFD predictions. NavCad now displays the propulsor lift (LPROP) and shaft line thrust (TPROP) forces in the resistance results, which can be used as applied body forces to improve the fidelity of CFD planing hull resistance predictions.

OTHER				
LIFT [lbf]	CGRISE [ft]	LPROP [lbf]	TPROP [lbf]	RBARE/W
16924	0.31	197	968	0.04999
16678	0.30	308	1514	0.07681
16414	0.38	425	2094	0.10395
16151	0.53	543	2679	0.13023
15877	0.68	672	3310	0.15766
15558	0.80	825	4061	0.18951

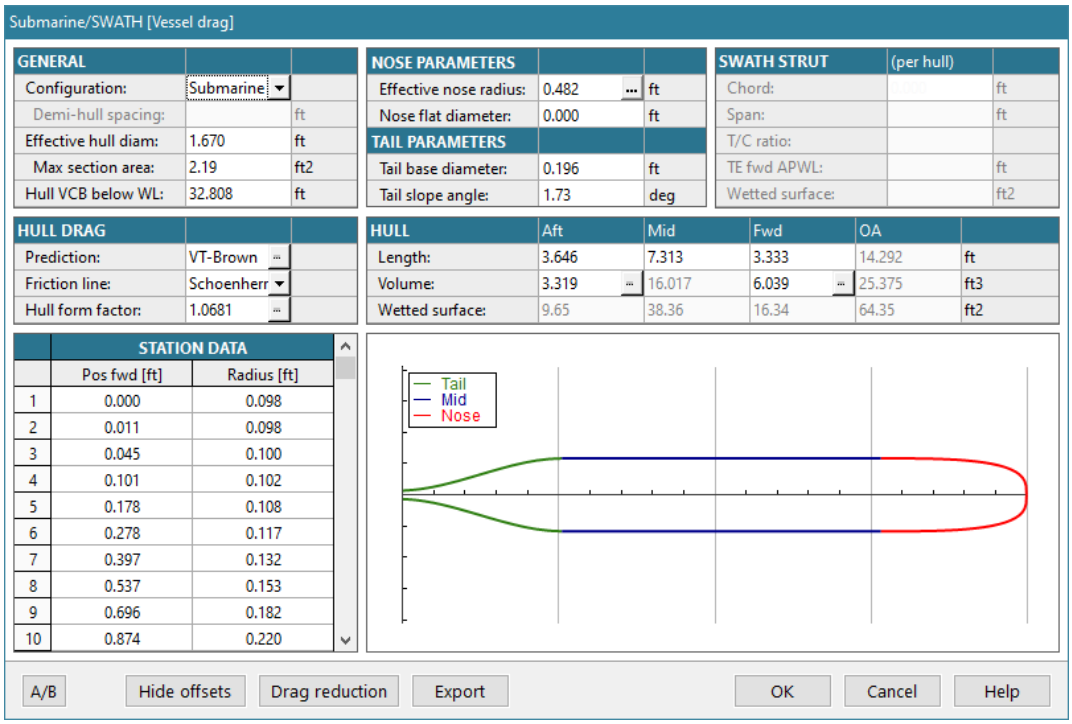
New *Seakeeping Index* Quick-calc report

To improve a designer's sense of their vessel's seakeeping characteristics, NavCad provides basic estimations of seakeeping "quality" through the calculation of a *Seakeeping Index*. Four different ship type methods are presented, all of which are based on the Bales approach. The indices provide a quick, non-dimensional assessment of a ship's seakeeping qualities.

Updated Submarine/SWATH tool

Several updates have been developed for the Submarine/SWATH tool, particularly for smaller UV designers. Resistance scaling for smaller vehicles has been improved and a new method (being identified as the "VT-Brown" method) added. Most visible is the new generation and representation of body offsets from entered parametric segment lengths

and volumes (CP). While predictions are based on the entered parametric data, the offsets provide a visualization to support data entry and can be exported for vehicle development. A parametric drag reduction utility can help identify the influence of key shape trends on the resistance of axisymmetric submersible vehicles.



Release Build 2024.1

Miscellaneous

- Added to SpeedPerformance scripting object. [Premium Edition]

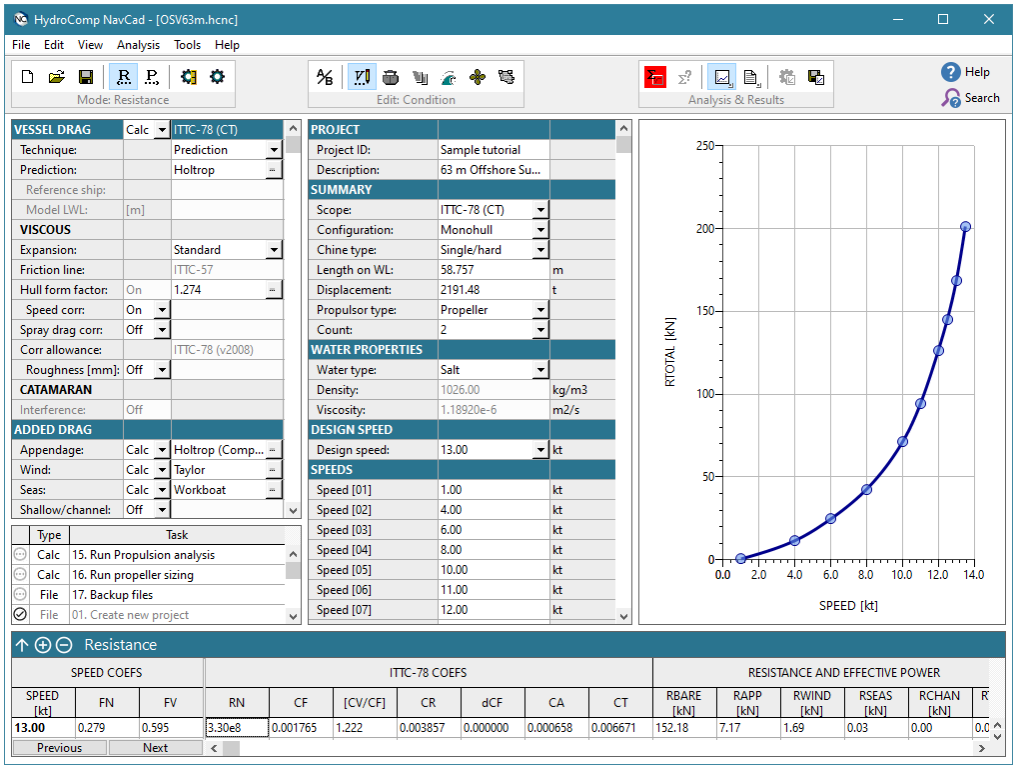
Release Build 2024.0

Miscellaneous

- New investigations allowed us to develop an updated prediction model for the partial load efficiency of PMAC (permanent magnet AC) motors.
- To support our continuing development of oblique flow corrected KTKQ prediction, a new scripting function is available (File.ExportFullKTKQ). [Premium Edition]

Interface Theme Update

Modifying the interface for one of our products is a careful balance between maintaining the efficiency of a known process and accommodating contemporary interface standards. Our priorities are to maintain the known workflow, but to also find aesthetic and process improvements that users expect with current versions of Windows. The interface updates for 2024 reflect the first step of a transition to a more contemporary look-and-feel while still being anchored to the process that users know. You can select this theme option by clicking **Tools | Options...** from the menu, then selecting **System** from the *Theme* dropdown list.



About HydroComp NavCad

For additional information, click to: www.hydrocompinc.com/solutions/navcad

About HydroComp

Since 1984, HydroComp has been a leader in providing hydrodynamic software and services for resistance and propulsion prediction, propeller sizing and design, and forensic performance analysis. Through its unique array of software packages and services, HydroComp now serves over 1200 naval architectural design firms, shipyards, yacht owners, ship operators, propeller designers, universities, and militaries around the globe.

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