

October 11, 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.

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

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.

The screenshot displays the HydroComp NavCad software interface. The main window is titled "HydroComp NavCad - [OSV63m.hncd]". The interface is divided into several panels:

- Left Panel:** Contains configuration options for "VESSEL DRAG", "VISCOSUS", "CATAMARAN", and "ADDED DRAG".
- Center Panel:** Contains project information (Project ID: Sample tutorial, Description: 63 m Offshore Su...), a "SUMMARY" section (Scope: ITTC-78 (CT), Configuration: Monohull, etc.), "WATER PROPERTIES" (Water type: Salt, Density: 1026.00 kg/m3, etc.), "DESIGN SPEED" (Design speed: 13.00 kt), and "SPEEDS" (Speed [01] to [07]).
- Right Panel:** A graph showing "ROTOTAL [kN]" on the y-axis (0 to 250) versus "SPEED [kt]" on the x-axis (0.0 to 14.0). The graph shows a curve that increases exponentially with speed.
- Bottom Panel:** A table titled "Resistance" with columns for "SPEED COEFS", "ITTC-78 COEFS", and "RESISTANCE AND EFFECTIVE POWER".

SPEED COEFS			ITTC-78 COEFS							RESISTANCE AND EFFECTIVE POWER					
SPEED [kt]	FN	FV	RN	CF	[CV/CF]	CR	dCF	CA	CT	RBARE [kN]	RAPP [kN]	RWIND [kN]	RSEAS [kN]	RCHAN [kN]	R
13.00	0.279	0.595	3.30e8	0.001765	1.222	0.003857	0.000000	0.000658	0.006671	152.18	7.17	1.69	0.03	0.00	0.0

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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