

Use of Main Drive Waterjets as Azimuth Thrusters

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Abstract

Achieving reliable, high performance and cost effective maneuvering control is a difficult issue facing designers of vessels that must operate in both high-speed transit and dynamically positioned modes. On crew boats that service offshore platforms, the main drive propulsion system is also called upon to act as a set of thrusters for station keeping under manual and automatic control.

Traditionally, vessels with multiple propellers and rudders, together with one or more bow thrusters have achieved good efficiency during transit combined with acceptable maneuvering performance. More recently, waterjets have offered a viable alternative for this role, and these are seeing increased use in crew boat designs because of a number of inherent advantages.

With superior power absorption under bollard pull conditions and rapid thrust vectoring through high speed reverse and steering actuation, waterjets are ideal for station keeping on relatively lightweight and quick responding vessels. When in transit, the ability of waterjets to absorb full engine power irrespective of the state of vessel loading, means that significantly higher speeds can be achieved when running light.

Hamilton Jet has pioneered the use of main drive waterjets that can also emulate azimuth thrusters for dynamic positioning (DP), and these have been highly successful in a number of vessels operating in the Gulf of Mexico.

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