

Case Study 298: **23m Immediate Support Vessel**

SPECIFICATIONS

Waterjet:	DJ200-IWJ x2
Engine:	CAT C32 ACERT 1600hp @ 2300 rpm
Gearbox:	WVS430/1 1.485:1
Vessel:	22.70m L.O.A 18.00m W.L.L 38t (light) - 45t (laden)
Performance:	40 knots (light)



Indian Navy – 23m Immediate Support Vessel,

SHM Shipcare of Mumbai, India has built fourteen of these 23m Immediate Support Vessels (ISV) for operation by the Indian Navy undertaking asset patrol and surveillance operations for the Indian Oil and Natural Gas Corporation. Constructed in fiberglass and powered by twin CAT C32 ACERT marine diesels coupled to **DOEN DJ200-IWJ** waterjets these vessels have a maximum speed of 40knots and are designed to cruise at around 30knots.

The Doen Integrated Water Jet (IWJ) installation method provides a simple and extremely cost effective method for waterjet installation in fiberglass vessels as it allows the waterjet intake ducting to be laminated with the vessel hull form itself. To simplify the mechanical complexity and to further reduce the installed cost, the waterjet shaft is arranged to thrust directly to the gearbox as per conventional propeller arrangement. Fitted with 520mm single stage high performance axial flow impellers; these waterjets deliver excellent high-speed efficiency with superior cavitation margins and efficiency at lower speeds and cruise conditions.

The waterjets have their own fully integrated hydraulic system providing steering and reverse control. All of the hydraulic equipment including steering and reverse cylinders and associated hose connections are inboard mounted. The hydraulic pumps are directly driven from the gearbox PTO's.

Vessel propulsion control is managed using Doen's own **ECS200 – Electronic Control** system. Configured for twin engine - single station; the system simply combines primary control of engine throttle and gear command with the waterjet steering and reverse functions. Additionally this system provides the operator with indication, monitoring and alarm information using a full color LCD screen with soft buttons. Back-up steering and reverse control functions are provided at both the main control station, and locally at the waterjets.