

Case Study 216: **22.5m Fast Patrol Boat**

SPECIFICATIONS

Waterjet:	DJ220
Engine:	MTU 16 V 2000 M90 1800 hp @ 2300 rpm
Gearbox:	ZF BW 255 1.511:1
Vessel:	22.5m L.O.A 18.4m W.L.L 52 tonne (full load)
Performance:	42 knots (half load)



Royal Malaysian Police – 22m High Speed Patrol Boat

Designed and supplied by renowned builder Strategic Marine, these 22.0m vessels are used for extended coastal patrols of a week to ten days, with a crew of nine. Powered by twin V16 MTU marine diesels of 1800hp coupled to the **DOEN DJ220** waterjets, the vessel is capable of sprint speeds in excess of 42knots (half load) and up to 38knots at full load. Fifteen of these vessels are now in service.

The project called for only stainless steel waterjets and the **DJ220** waterjets are subsequently specified with all stainless steel pump assemblies. Fitted with 22" (560mm) 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. Doen's pre-fabricated aluminium intake design made it possible to customise the inlet ducting and shaft line so as to facilitate waterjet installation into the unusual hull form without any compromise to the vessels' or waterjets performance. The waterjets and control system supplied to **DNV +1A1 HSLC R3**.

The fully integrated hydraulic system operates the waterjet reverse and steering functions. Twin PTO driven hydraulic pumps supply the tank mounted control valve bank with all reverse and steering cylinders and hydraulic lines completely mounted inboard.

The vessel is fitted with Doen's **ECS-200** Control System. Configured for twin engine - twin station; this electronic control system provides primary control of engine throttle and gear command with the waterjet steering and reverse functions. Twin levers providing combined bucket and throttle control with steering by conventional helm wheel. Additionally the system provides the operator with all necessary monitoring, alarm and back-up control functions.