

Case Study 101: **Fast Interceptor Craft (FIC)**

SPECIFICATIONS

Waterjets:	DJ170HP (Twin)
Engines:	MTU 12V 183 TE93 846kW @ 2400 rpm
Gearboxes:	ZF BW190
Vessel:	17.7m L.O.A 14.2m L.W.L 19.6 tonne
Performance:	46 knots



High performance FIC for Royal Malaysian Navy

DOEN DJ170HP waterjets drive this high-speed aluminium 17.7m FIC monohull designed by Australian Naval Architect Greg Cox and built to DNV Class in Malaysia. This vessel is the start of a new FIC class and its design is in response to a growing requirement for fast response inshore patrol boats. Launched in 2001 this vessel has demonstrated excellent reliability and has proven to be an extremely cost effective, high-speed craft, providing sustained performance over its many years of use.

The DJ170HP is a 17" (432mm) single stage compact high performance waterjet that uses Doen's latest impeller technology to delivers mixed flow type, high speed performance, within an axial build. This approach combines the key benefits of excellent high-speed efficiency with superior cavitation margins and efficiency at lower speeds and cruise conditions. This waterjet model incorporates many features innovative features that enhance its application into high-speed craft eg. lightweight fabricated intake tunnel, providing scope for design customization and efficiency optimisation.

Steering is by conventional helm using a power assisted hydraulic steering system. Inboard cylinders are mechanically connected to the waterjets inboard steering tiller. This provides the vessel with exceptional and easy control at all speeds, especially for pursuit and high-speed maneuvers. A simple mechanical tie bar is used to connect the waterjets providing synchronized steering at all times.

The DJ170HP waterjets were fitted with Doen's ECS electronic control system. This fully electronic control provides single lever function, which combines control of the engine throttle and waterjet reverse bucket into one simple and reliable system. The reverse function provides full follow up control of the reverse bucket by way of the jet mounted hydraulic system incorporating a proportional solenoid valve. Control of the marine transmission is by way of separate, simple to use, touch pad.