DJ110 Waterjet

Performance Reliability Simplicity

Case Study 146: Pilot Boat

SPECIFICATIONS

Waterjet:	**DJ110 x2**
Engine:	**FPT N67 x2** **420hp x 3000rpm**
Gearbox:	**ZF220 (1.128:1)**
Vessel:	**14.95m L.O.A** **12.59 L.W.L** **12t**
Performance:	**32 knots**

BATUMI 1, Alloy Pilot Boat

Working closely with our regional and local partners, SEA-TEK AS. (Norway) and ENKA (Turkey), Doen Waterjets proudly supplied the waterjet propulsion system for BATUMI1. This is the first unit of L153 Pilot Boat Series designed & built by Loyd Shipyard in Turkey, and delivered to 'Black Sea Pilot Service' in Georgia. The vessel was very well received throughout its acceptance trials, meeting all requirements and exceeding the contract speed of 30 knots.

As a fast pilot boat operating in 25+ Knot speed regime, waterjets were a natural choice for driving this vessel, offering better efficiency and fuel economy compared to propellers. Other factors for consideration were superior maneuverability, controls, safety and maintenance.

Power is provided by twin FTP engines, which are coupled to the DOEN DJ110Z waterjets through ZF marine transmissions. The DOEN 11-inch (280mm) diameter high volume axial flow impellers provide excellent overall and high speed efficiency at reduced fuel consumption whilst delivering exceptional cavitation margin at low speed in the fully laden condition.

The Doen balanced steering nozzle gives fast, precise response with minimal input force. This is simply controlled using a conventional manual hydraulic steering system, with an inboard cylinder, which is mechanically connected to the waterjets inboard steering tiller.This provides the vessel with exceptional ease of control at all speeds, and especially when maneuvering alongside a moving ship for pilot transfer both at high and low speeds. A simple mechanical tie bar is used to connect the waterjets providing synchronized steering at all times.

The DJ110 waterjets are fitted with DOEN's Rotary Servo Control (RSC), which is a proportional hydraulic control system providing simple and exact follow up control of the waterjet reverse bucket, by conventional lever using push-pull cable. This vessel system has fully integrated hydraulics using a jet-driven hydraulic pump, oil cooler, jet mounted control valve and reverse cylinder.

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