

Case Study 142: Landing Craft

SPECIFICATIONS

Waterjets:	DJ110Z x2
Engines:	John Deere 6068SFM M4
Gearboxes:	ZF 280-1 (1.00:1.0)
Vessel:	11.0m L.O.A 9.0m L.W.L 6.9t (light) - 10.6t (laden)
Performance:	31 Knots (loaded, no cargo)



Frontier Resources Landing Craft

Frontier Resources is focused on exploring for and developing mineral deposits in the highly mineralised Pacific 'Rim of Fire' in Papua New Guinea. Commissioned by the company, this landing craft was designed by an Australian naval architect and built in Malaysia, and has been deployed to support their logistics requirement in their eight mining sites that are scattered across the shorelines of PNG.

Utilising waterjets in landing craft applications has a lot of merits; enabling the vessel to operate under a wide range of load conditions and provides maximum maneuverability in very shallow waters. Furthermore, waterjets are certainly the best solution for the 'beaching' maneuver that is key to functionality of any landing craft. Having a lifting effect at the transom in reverse mode, waterjets also make de-beaching easier.

Power is provided by twin John Deere marine diesel 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 in the fully laden low speeds.

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 inboard cylinder, which is mechanically connected to the waterjets inboard steering tiller. This provides the vessel with exceptional easy control at both 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 Jogstick Reverse System (JRS); an electro hydraulic control system that provides non-follow up jog lever control of the waterjets reverse buckets. An analogue indicator is used to show the reverse bucket position. This robust, simple and cost effective system remains very popular with operators like this in very remote locations and heavy-duty applications.