

## Direct comparison of waterjets

Two recent refits of waterjets are unique in one respect that they allow a direct comparison between waterjet brands, while everything else remains unchanged. Waterjets from Marine Jet Power were recently used to solve some significant propulsion issues and in one case the exchange even helped a yard to achieve its project goals leading to the fact that the yard finally was able to deliver the ships to the owners.

In the first case, the operator of a 10-year-old vessel decided to change to MJP DRB jets due to significant service and corrosion issues on the existing waterjets. The vessels were originally equipped with axial flow jets. MJP DRB mixed flow jets with intakes completely made of GRP were installed in one of the existing hulls with the rest of the equipment, including the engine, remaining unchanged. The GRP gives a smooth and efficient intake shape and eliminates any corrosion issues. The MJP DRB waterjets are otherwise completely made of stainless steel and have thus unmatched strength, resulting in a full five-year warranty, which per se is unique in the marine market.

Sea trial following the refit showed stunning results: Ship speed increased from 38 to 43 knots only thanks to the change of waterjets. The vessel with its original water jets never achieved more than 38 knots – not even when the ship was new. The overall efficiency has increased from 57% to 67%. The difference in efficiency is incredible 18%, meaning that the vessel can obtain an 18% lower fuel consumption. The engines can operate at lower load, giving less wear and longer service life.

Since the operator is very satisfied with both installation and function of the control system, more vessels are now being rebuilt accordingly.

In the second case a yard was in big trouble. Three brand-new vessels could not be delivered due to lack of performance. After long, it was decided to shift out the existing mixed flow jets to MJP DRB mixed flow jets on one of the vessels. Again, it was the MJP DRB jet with GRP intakes that were installed. Interestingly enough, when comparing the two jet systems on paper, they both claimed to deliver the same thrust. In reality, however, the MJP jets consumed 8,5% less power at the same operating speed. Power consumption was measured under the supervision of DNV, guaranteeing the

accuracy of the measurements.

Furthermore, the noise level in the aft part of the passenger compartment was also measured. It turned out that the noise level was cut in half following the installation of the MJP DRB jets.

After the exchange of water jets, the yard could finally deliver the ships to the owner, who is now successfully operating the vessels.

MJP is said to have removed a big burden from the shipyard, while the operator is now counting on savings of approximately NOK 1.2 Mio per year when operating 3,500 hours annually.

Ivan Fossan\_Managing Director of Norled comments: “Norled is very satisfied that Oma Baatbygeri AS has been able to find the reason why our new vessels didn’t reach the agreed speed. Oma Baatbyggeri builds high-speed vessels with an important comfort-factor and thanks to the MJP waterjets we do not only reach our desired speed, but save a substantial amount of fuel oil at the same time.”.

In 2012 MJP Waterjets acquired Ultra Dynamics. The new group is named Marine Jet Power and has offices in Sweden, UK, US, Italy and Singapore as well as sales and service representatives in well over 30 countries. The company group product range comprises MJP CSU, DRB and Ultrajet series.