Press Release
MAN Diesel

MAN Diesel Moves Into Specialist Fishing Segment

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MAN Diesel entered a new industry segment this October with the launching of the tuna-freezing purse seiner "Playa de Azkorri" in Spain's Basque Country. The vessel, considered by experts as one of a kind, features an MAN 8L32/44CR medium-speed main engine.

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The shipyard: Astilleros de Murueta, S.A.
The vessel was ordered by one of the companies of the PEVASA GROUP, headed by Pesquería Vasco Montañesa, S.A., one of the top tuna-fishing companies in Spain. Construction took place at the Astilleros de Murueta shipyard in Murueta, Spain, close to Bermeo, the birthplace of the world tuna industry. Since the construction of the first tuna ship, more than 200 such vessels have left the Murueta yard with the result that it is known worldwide as a specialist builder of tuna fishing-freezer vessels. A well-known example of this being the 100-metre tuna vessel "Txori-Argi", launched in 2003, and now the construction of the state-of-the-art "Playa de Azkorri" vessel.

The owner: Pesquería Vasco Montañesa, S.A. (PEVASA)
PEVASA was established in 1961. Its corporate headquarters lie in Bermeo from which it currently operates five modern, tuna fishing-freezer vessels from 75 to 85 metres in length and with capacities ranging from 1,200 to 1,400 tonnes. The vessels fish the Atlantic and Indian Oceans, fishing tuna using the purse-seine method and freezing it by means of immersion in brine (seawater with added salt) cooled to -18 degrees Celsius.

The Playa de Azkorri
"The Playa de Azkorri is the best tuna vessel in the world!", said Mr. Borja Soroa, managing director of PEVASA, during launching.

The birth of this project dates back to 2005 when the technical department of PEVASA had to face the twin challenges of 1) optimising fishing while simultaneously reducing operation and maintenance costs; and 2) reducing the vessel's environmental impact by reducing atmospheric emissions.

The PEVASA inspectors, Aguirre and Okamika, addressed this by analysing the company's own fleet and thoroughly reviewing existing, state-of-the-art solutions. At this stage, MAN Diesel emerged as the obvious candidate with its common-rail (CR) injection technology that permits independent and separate control of injection pressure and timing. Fuel is fed into the rail (pressure accumulator) by an

electronically controlled high-pressure pump and stored there for each injection. The result is highly effective combustion (particularly in the low-load range), and resultant, significantly lower NOx and CO_2 emissions.

The Playa de Azkorri is powered by one MAN eight-cylinder type 8L32/44CR main engine, rated 4,480 kW at 750 rpm. This drives a controllable-pitch propeller via single input and output shaft-reduction gear, as well as, one 2,500 kW shaft generator located in the power-take-off on the reduction gear. This shaft generator was installed to reduce consumption, emissions and maintenance for the generator units. The shaft generator also helps to cover electrical power during fishing manoeuvres as well as freezing.

Preliminary project stages devoted significant time to the study, analysis and optimisation of the ship's hydrodynamics. Basic and classification design has been carried out by the recognized and experienced Spanish ship designers Cintranaval-Defcar, S.L.. As such, the Playa de Azkorri displays certain, distinctive characteristics, including:

- Hull-form optimisation: hull lines were designed for optimal hydrodynamic efficiency. To that end, successive potential-flow calculations using the non-linear CFD code RAPID were carried out by MARIN (Maritime Research Institute). A model test program (testing resistance, propulsion with stock propellers and cavitation) was then developed by CEHIPAR (Canal de Ensayos Hidrodinámicos de El Pardo). The resulting characteristics include a lower block coefficient with reduced fuel consumption, a special counter design and bulb aft to ease entrance flow to the propeller, and a "goose neck" bulb forward.
- Seakeeping has also been improved by means of a passive stabiliser tank.

The combination of hydrodynamically optimised shapes and the 8L32/44CR engine has led to reductions in both fuel consumption and emissions. At the same time, the ability for high-speed navigation was maintained as this parameter is of paramount importance during the operation of such fishing vessels.

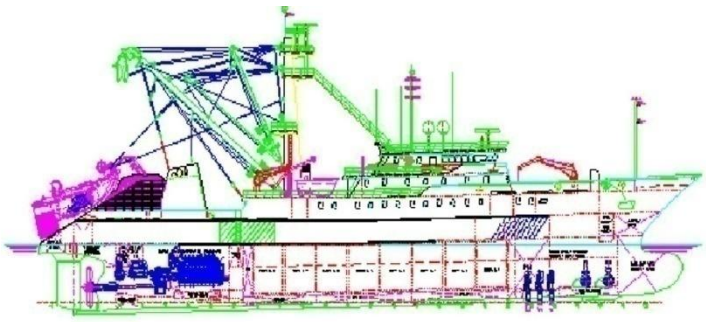
The Playa de Azkorri also features other, innovative technical improvements.

- Ship stability has been improved for all fishing conditions by making the vessel less top-heavy. This was achieved through using aluminium to build

the superstructure while the booms and mast are made of high-resistance, AH40 steel.

- As a significant amount of energy is utilised aboard this type of ship when freezing the fish, refrigerator performance was improved by means of frequency controllers using high-performance evaporators and a new coil system in tubs called “impressed circuits”. This equipment reduces fuel-oil consumption and speeds up the freezing process, which also results in a better quality fish product.
- Special “self-supporting” tanks, fixed with a resin grout and without hull contact, were designed to reduce cool leakage in the storage tanks.
- Improved fishing activities that enable the crew to make faster and safer manoeuvres.

The Playa de Azkorri has an overall length of 87 metres, a beam of 14.2 metres, and a design draught of 6.3 metres with a top speed of 18 knots. The vessel can accommodate 30 crew members.



An illustration of the general layout aboard the Playa de Azkorri

The Playa de Azkorri pictured in Bilbao, the Basque Country, a few days before travelling to the Canary Islands for sea-trials

The common-rail 8L32/44CR engine aboard the Playa de Azkorri

Hydraulic crane aboard the Playa de Azkorri

About MAN Diesel

MAN Diesel is the world's leading provider of large bore diesel engines for marine and power plant applications. The company designs two-stroke and four-stroke engines, generating sets, turbochargers, CP propellers and complete propulsion packages that are manufactured both by MAN Diesel and its licensees. The engines have power outputs ranging from 450 to 97,300 kW. MAN Diesel employs approx. 8,000 staff, primarily in Germany, Denmark, France, the Czech Republic, India and China. The global after-sales organisation, MAN Diesel PrimeServ, comprises a network of the company's own service centres, supported by authorised partners. MAN Diesel is a company of MAN SE, which is listed on the DAX share index of the 30 leading companies in Germany.

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