The Mayflower Autonomous Ship (MAS) in sea trials earlier this year. Credit Tom Dickenson for ProMare / IBM

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Fischer Panda UK Powers Ground-Breaking Mayflower Ship for Unmanned Atlantic Crossing in June

Marine system supplier has installed and commissioned the hybrid-electric propulsion system and other equipment on the next generation autonomous research vessel

Fischer Panda UK's electric drive system and generators will power the world's first fully automated vessel, the Mayflower Autonomous Ship (MAS), when it sets sail on its historic maiden voyage across the Atlantic this June.

Propelling the 5-ton, 50ft trimaran during the 3,000 mile-crossing from Plymouth, England, to Plymouth, Massachusetts, the Fischer Panda UK equipment will play a key role in the success of the inspirational project to test and advance innovative AI and data-gathering technology which promises to transform ocean-related industries in the future.

The robot research vessel, developed by marine research organisation ProMare with IBM acting as lead technology and scientific partner for the project, was launched on 16th September last year and has undergone several months of sea trials.

With MAS now preparing to get underway in the coming days depending on the weather, Fischer Panda UK's motors, batteries, diesel generators, and associated power and control electronics are among an array of sophisticated equipment onboard. Designed to provide a safe, flexible and cost-effective way of gathering data about the ocean, the sleek vessel also features an AI Captain and is fitted with precision inertial navigation, Global Navigation Satellite System (GNSS) positioning, radar sensors, satellite communications, meteorologic instrumentation, cameras and radar to enable the quest for data and discovery on whale populations, sea levels, microplastics and other research topics.

Driven by the Fischer Panda hybrid-electric propulsion system which will be primarily charged by wind and solar energy, MAS is expected to make the crossing in approximately 20 days at speeds up to 10 knots – a huge leap from the original Mayflower's 60 days at 2.5 knots over 400 years ago. The fully-electric propulsion system will give unlimited range in equatorial sunshine and breeze – although Fischer Panda diesel generators will offer backup should conditions be less ideal.

MAS is a collaborative initiative led by ProMare, a non-profit charity established to promote marine research and exploration throughout the world. The vessel is designed by Whiskerstay and MSubs, both companies with extensive experience developing manned and unmanned marine vehicles, while the Universities of Plymouth and Birmingham are also involved, respectively working on some of the research pods and virtual/augmented reality systems.

Brett Phaneuf, ProMare co-founder, said: "We wanted to buy an end-to-end hybrid drive that was fully integrated and tested by the manufacturer and we

knew would work. We've used Fischer Panda in the past for our military work and found them to be very reliable."

The equipment installed and commissioned by Fischer Panda UK's engineering team comprises:

- Two 48V DC generators – a 22kW Fischer Panda AGT 22000 and a 4kW Fischer Panda AGT 4000. Both generators are in 'PVM' format, with a dry exhaust. This removes the need for a raw water intake, a potential source of leakage or corrosion.
- Two 48V Fischer Panda 20kW 600rpm Easybox shaft motors.
- A Mastervolt Mass Combi 48/3500-50 Inverter and Charger, supported by a battery management system for control and monitoring.
- A 38.4kWh battery bank consisting of eight of the new Mastervolt MLi Ultra 5500 Lithium Ion batteries, providing 800Ah at 48V.

Barry Fower, Managing Director at Fischer Panda UK, said: "This project will have huge implications for the maritime industry and we will be watching the Atlantic crossing avidly along with the rest of the world. We are seeing unmanned vessels play an increasing role in many different sectors, with interest in our systems for these applications continuing to grow. We are proud to see the reliable Fischer Panda equipment onboard Mayflower, alongside some of the most innovative systems and advanced AI technology."

With no human captain or onboard crew, MAS has been designed as a platform which is suitable for many years into the future for deepening understanding of critical issues such as climate change, ocean plastic pollution and marine mammal conservation. In parallel, the development of marine autonomous systems promises to transform the shipping, oil & gas, telecommunications, security & defence, fishing & aquaculture industries.

The MAS project can be followed on Mas400.com, a live mission portal that enables the world to receive updates on its voyages.

For more information about Fischer Panda UK's range of products, visit www.fischerpanda.co.uk.

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About Fischer Panda UK

Fischer Panda UK Ltd offers full-system design capability, servicing and aftercare as a leading distributor of diesel generators and a major supplier of the latest technology in air-conditioning systems, hybrid electric propulsion systems, integrated mobile power solutions and water makers for a variety of commercial and leisure vessels.

Renowned worldwide as innovative, reliable and extremely quiet, the extensive Fischer Panda range of compact diesel generators includes its next generation highly efficient and powerful variable speed iSeries-Generators. Fischer Panda generators from the Panda 4000s Neo up to the next generation iSeries Panda 45i genset have passed type approval by members of the IACS (International Association of Classification Societies) board.

Other world-class products from Fischer Panda UK include desalination systems from Sea Recovery, HRO, and Village Marine, with models suitable for day-boats to warships and offshore platforms, plus air-conditioning systems from leading marine HVAC supplier Dometic, CZone digital switching and Mastervolt power solutions.

Fischer Panda UK is ISO UKAS 9000/1 accredited and operates from a purpose built 9,000 sq. ft facility in Verwood, Dorset. Its experienced engineers, sales and operational staff work with OEMs to develop integrated systems for custom vessels and offer specialist technical support and on-going aftercare to its customers.

Also active in the military and automotive sectors, the company works with UK MOD and other armies around the world providing solutions for specialist vehicle and land-based applications. Two thirds of Formula 1 mobile truck units install Fischer Panda generators, as do the BBC, Sky and many other mobile broadcasting vehicles.

Operating since 1977, Fischer Panda GmbH is headquartered in Paderborn, Germany. The Fischer Panda team covers more than 500 technicians and partners in over 90 countries worldwide.