



Eastern Shipbuilding Selects MAN 28/33D STC Engines for US Coast Guard Offshore Patrol Cutter (OPC) Programme

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Sequential turbocharging continues to win favour in demanding marine applications

The US Coast Guard (USCG) will have MAN's 28/33D STC engines installed as the main propulsion for its new Offshore Patrol Cutter (OPC) programme. The programme is the replacement platform for the 13 'Famous' class and 14 'Reliance' class cutter vessels, making the order the largest vessel procurement order in the Coast Guard's history.

Lex Nijsen – Head of Four-Stroke Marine – MAN Diesel & Turbo, said: "We are very pleased to have won this major order within such a key, domestic market. It's a breakthrough for us as this is the first time that the USCG has ordered MAN 28/33D STC engines. Indeed, the engine's sequential turbocharging (STC) concept continues to make inroads into the Navy and Governmental segments where its inherent power characteristics offer a manoeuvrability that matches such demanding applications well. This success was achieved in great part through close cooperation with our longstanding partner and licensee, Fairbanks Morse Engine (FME)."

Each of the new 360-foot (110-m) cutters will be powered by two (2) MAN 16V28/33D STC engines, developing 7,280 kW each @ 1,000 rpm. FME will produce and test the engines at its Beloit, Wisconsin plant, while Eastern Shipbuilding Group Inc., based in Panama City, Florida, will design and construct the OPC ships. Initially, the USCG has ordered nine (9) ships with plans to ultimately produce 25. Delivery of the first ship of the class to the USCG is scheduled for 2021.

The 28/33D STC Engine

The MAN 28/33D STC engine offers compact power that sets itself apart with a high power-to-weight ratio. All engines are fully compliant with current environmental standards, producing NO_x emissions that fulfil IMO Tier II (+ Tier III with Selective Catalytic Reduction) and EPA Tier 2 regulations. Maintenance costs and servicing downtime are kept low thanks to high engine availability.

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STC concept

The sequential turbocharging (STC) concept operates with twin, high-efficiency MAN TCA33 axial turbochargers – specially developed for the MAN 28/33D STC engine – with the option to switch the second turbocharger off at low engine loads. Using the very simple STC system allows the engine to be operated at its optimum operating point over the whole applicable load range.

High efficiency at full and part loads results in a substantial air surplus, thorough combustion without residues, and low thermal stress of combustion-chamber components. STC also delivers decreased smoke emissions, low vibration and reduced part-load fuel consumption.

The overall result when using an STC system is an extended operating envelope at low engine speeds, which gives a power reserve for ship acceleration, ship turning, sprints or towing.

FME

Fairbanks Morse Engine has been a long-time partner and licensee for MAN Diesel & Turbo engines since 1968 and manufactures medium-speed MAN engines for US government projects.

Fairbanks Morse delivers application-specific, fuel-flexible power systems that deliver optimal performance in mission-critical applications. These applications include power generation – base load and standby power plants, and emergency back-up power for nuclear plants, and ship propulsion and shipboard power for the United States Navy, Military Sealift Command (MSC), Coast Guard and commercial vessels. Fairbanks Morse reliable engine-drive solutions can also be found in a wide range of municipal, institutional and industrial applications.

FME is a company of EnPro Industries, Inc., a leader in sealing products, metal polymer and filament wound bearings, components and service for reciprocating compressors, diesel and dual-fuel engines, and other engineered products for use in critical applications by industries worldwide.

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The MAN V28/33D STC engine, here pictured in its 20-cylinder configuration



Graphical rendering of the USCG's Offshore Patrol Cutter (courtesy Eastern Shipbuilding Group, Inc.)

About MAN Diesel & Turbo

MAN Diesel & Turbo SE, based in Augsburg, Germany, is the world's leading provider of large-bore diesel and gas engines and turbomachinery. The company employs around 15,000 staff at more than 100 international sites, primarily in Germany, Denmark, France, Switzerland, the Czech Republic, India and China. The company's product portfolio includes two-stroke and four-stroke engines for marine and stationary applications, turbochargers and propellers as well as gas and steam turbines, compressors and chemical reactors. The range of services and supplies is rounded off by complete solutions like ship propulsion systems, engine-based power plants and turbomachinery trains for the oil & gas as well as the process industries. Customers receive worldwide after-sales services marketed under the MAN PrimeServ brand.

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