

# Rolls-Royce pursues 'Atmanirbhar Bharat'

British firm looking to engage with India's military to explore engine design in air, sea and land

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As China's rising aggression in the Asia-Pacific drives strategic convergence between India, the US and the UK, British high-technology firm Rolls-Royce sees strategy, politics and technology coming together to create a compelling rationale for major investments in India.

Rolls-Royce executives at the DefExpo 22 defence exhibition point out that they are the only global original equipment manufacturer (OEM) looking to engage with India's military in the "highest-technology" realm of engine design in three dimensions — air, sea and land.

In the realm of aircraft carrier propulsion, Rolls-Royce is pitching its MT30 turbines, which provide all-electric drive to both the Royal Navy's Queen Elizabeth-class aircraft carriers.

With New Delhi ruling out nuclear propulsion for India's second indigenous aircraft carrier (IAC-2), which is still in the design phase, Rolls-Royce executives point out that the MT30 has already proven its capability in driving the 65,000-tonne HMS Queen Elizabeth. The IAC-2 is also being conceived as a 65,000-tonne carrier.

Rolls-Royce says the MT30 is "designed with approximately 50 per cent fewer parts than other aero-derived gas turbines in its class... and can be configured in either mechanical, electrical or hybrid drive configurations."

Rolls-Royce is also offering India the WR-21 turbine, which propels the Royal Navy's Type 45 Daring-class destroyers. However, the Indian Navy has so far built its destroyers and frigates with Russian and Ukrainian turbines, and with the General Electric (GE) LM2500 gas turbine.

The WR-21 is more than a match for the LM2500, say Rolls-Royce engineers. But the Type 45 destroyers also have a worrying record of breaking down mid-ocean, most



An exhibit of Su 30 MK-I fighter aircraft at the Bharat Dynamics Limited (BDL) pavillion during the 12th edition of DefExpo, in Gandhinagar on Tuesday

recently earlier this year when a destroyer that was accompanying HMS Queen Elizabeth as part of her battle group had to pull into port for repairs.

"We must be sure that India understands the uniqueness of these offerings, since they include not just a transfer of capability and manufacture but also of the know-how and know-why in the WR-21," says Alex Zino, who handles business development and future programmes for Rolls-Royce.

## Aero engines

Rolls-Royce has a long history of partnering India in manufacturing and operating aero engines. Currently, some 750 Rolls-Royce engines power aircraft in service with the IAF, the Indian Navy and Hindustan Aeronautics Limited (HAL).

These include: Adour engines, which power the Hawk advanced jet trainer and the Jaguar deep penetration strike aircraft; the Gnome engine that powers the navy's Sea King helicopters; the Dart, which powers the air force's HS 748 Avro aircraft; and the AE 2100 and AE 3007 engines that power the C-130J Super Hercules and the Embraer's ERJ145 airborne early warning (AEW) aircraft respectively.

Many of these aero engines were built under licence in HAL's engine division in Bengaluru. While Rolls-Royce's marine

engines are fewer in number, they are "aero-derivative" engines, which means they were originally aero engines that had been re-engineered into marine engines.

For Rolls-Royce, the big prize in India's aero engines field is the opportunity to design and develop a power pack for the Advanced Medium Combat Aircraft, which will form the backbone of the IAF's fifth-generation fighter fleet starting a decade from now. "This is about co-creating the intellectual property that goes into a brand-new fighter engine. From our perspective, this will be a greenfield design and will take a decade to create," said Zino.

## Light tank engine

The Defence Research and Development Organisation (DRDO) is designing and developing a new light tank to prevent any further instances of Indian troops being outgunned in places such as Eastern Ladakh, where the Indian Army found itself confronting Chinese armour.

While the Indian side did a creditable job in moving up its T-72 tanks to the Chushul area, that required long road moves that wore down Indian tanks as well as Indian roads. Army planners gave the go-ahead for the DRDO to develop a 35-40 tonne light tank, and the DRDO opted for a MTU MB 838 engine that generates 1,400 horsepower.

German engine-maker MTU has been acquired by Rolls-Royce Power Systems.

