

## India's Indigenous 120 kN Engine Poised to Power Future Naval and Air Force Fighters



India's ambitious drive for self-reliance in defense technology is set to receive a significant boost as the proposed 120 kilonewton (kN) class jet engine, under joint development for the Advanced Medium Combat Aircraft (AMCA) Mk2, is now strategically aligned to power the Indian Navy's Twin-Engine Deck-Based Fighter (TEDBF) jet. This alignment promises a robust indigenous power option for India's next-generation fighter fleet, reducing reliance on foreign suppliers for critical propulsion systems.

The 120 kN engine, a collaborative effort between France's Safran and India's Gas Turbine Research Establishment (GTRE), is designed to be a high-thrust solution for the Advanced Medium Combat Aircraft (AMCA) Mk2, India's stealthy fifth-generation fighter program. While initially focused on the AMCA, recent timeline revisions for the TEDBF program, pushing its operational debut to around 2038, coincide with the expected production readiness of this powerful indigenous engine. This unforeseen synchronization offers a unique opportunity to standardize propulsion across key future air and naval platforms.

The TEDBF, being developed by the Aeronautical Development Agency (ADA), is intended to replace the Indian Navy's aging fleet of MiG-29K carrier-borne fighters. As a twin-engine platform, the TEDBF requires substantial thrust for short takeoff and arrested recovery (STOBAR) operations from India's aircraft carriers, such as the INS Vikramaditya and INS Vikrant. With a projected maximum takeoff weight of approximately 26 tons, the aircraft will necessitate a combined thrust of 220-240 kN, making two 120 kN engines an ideal fit.

This strategic pivot underscores India's commitment to "Atmanirbhar Bharat" (Self-Reliant India) in defense manufacturing. The co-development of this high-thrust engine under a Government-to-Government (G2G) framework is a significant step towards achieving indigenous capability in advanced aero-engine technology. It will feature critical advancements such as Full Authority Digital Engine Control (FADEC), an improved power-to-weight ratio, and the potential for supercruise capability, enabling sustained supersonic flight without the use of afterburners.

"The synergy between the AMCA Mk2 and TEDBF engine requirements represents a significant stride towards greater strategic autonomy for India's air and naval forces," stated a defense official. This common engine platform not only streamlines development and maintenance but also safeguards against geopolitical pressures associated with foreign engine procurement.

As development progresses, the successful realization of the 120 kN engine will be a critical milestone, positioning India among a select few nations capable of producing advanced jet engines for its frontline combat aircraft. This indigenous power option is poised to redefine India's aerospace landscape, ensuring robust and reliable propulsion for its future air and naval fighter ambitions.