

## Indian Aerospace Soars with TEJAS MK-2: A Testament to Indigenous Technology



India's quest for self-reliance in defense technology is taking a significant step forward with the development of the TEJAS MK-2 fighter jet. Designed to be a multi-role, 4.5-generation combat aircraft, the TEJAS MK-2 is a collaborative effort between the Aeronautical Development Agency (ADA) and Hindustan Aeronautics Limited (HAL). This project, also known as the Medium Weight Fighter (MWF), aims to replace the Indian Air Force's (IAF) aging fleet of SEPECAT Jaguar, Mirage 2000, and MiG-29 fighters. A key highlight of this program is the substantial integration of six "Made in India" technologies, which not only enhance the aircraft's capabilities but also cement the nation's position as a player in advanced aerospace manufacturing.

The TEJAS MK-2 will feature the indigenously developed Uttam Active Electronically Scanned Array (AESA) radar, a sophisticated system designed by the Electronics and Radar Development Establishment (LRDE). This advanced radar provides multi-target tracking and electronic warfare integration, a critical component for modern air combat. Unlike its predecessor, the TEJAS MK-1A, which uses an Israeli-made radar, this homegrown system reduces dependence on foreign suppliers.

Beyond its radar, the aircraft will be equipped with a comprehensive indigenous Electronic Warfare (EW) suite from the Defence Avionics Research Establishment. This system enhances the fighter's survivability by providing radar warnings, threat jamming, and countermeasure deployment in hostile environments. The TEJAS MK-2 also incorporates an Indian-developed

digital quadruplex fly-by-wire flight control system, offering enhanced handling and stability during high-stress maneuvers while ensuring redundancy for safety.

The cockpit itself showcases Indian innovation with indigenous display systems from HAL and Bharat Electronics Limited (BEL). These wide-area multifunction displays create a modern "glass cockpit" interface, improving the pilot's situational awareness. Additionally, the TEJAS MK-2 is being configured to carry a full suite of indigenous armaments. This includes the Astra beyond-visual-range air-to-air missiles, Smart Anti-Airfield Weapons (SAAW), and various laser-guided bombs developed by the Defence Research and Development Organisation (DRDO), reducing reliance on imported munitions.

With an initial indigenous content of around 82%, expected to increase to over 90% after licensed engine production begins, the TEJAS MK-2 program is a cornerstone of India's long-term defense strategy. As the prototype is slated for rollout in 2025 and is projected to enter mass production by 2029, the aircraft represents a significant leap in India's technological and manufacturing capabilities. It signals a new era of self-reliance, not just for the IAF but for the entire domestic defense industrial base, with an eye on potential export markets for this capable and cost-effective fighter jet.