

Twin Engine Deck Based Fighter (TEDBF)

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About Twin Engine Deck Based Fighter (TEDBF)

- It is a canard delta-wing, twin-engine, carrier-based, multirole combat aircraft currently under development for the Indian Navy.
- The TEDBF is being indigenously designed and developed by the Aeronautical Development Agency (ADA) and will be manufactured by Hindustan Aeronautics Limited (HAL).
- It is intended for carrier-based operations and is expected to replace the ageing MiG-29K fighters on the INS Vikramaditya and the upcoming INS Vikrant aircraft carriers.
- Key Features:
 - The TEDBF's twin engines will enable shorter take-offs from the Indian Navy's Short Take-Off Barrier Arrested Recovery (STOBAR) aircraft carriers.
 - It will have a maximum take-off weight of between 24 and 26 tons.
 - The TEDBF fighters will be able to reach Mach 1.6 speeds.
 - Designed specifically for carrier-based operations, the TEDBF will feature foldable wings for more compact storage, enhancing the flexibility of carrier operations.
 - It will be equipped with various homegrown Indian weapon systems and avionics.

- It is intended to perform various missions, including air supremacy, air interdiction, anti-access/area denial (A2/AD), anti-ship warfare (ASW), and electronic warfare (EW) missions.

What is a canard on an airplane?

- A canard is a fuselage-mounted, horizontal surface that is located forward of the main wing to provide longitudinal stability and control.
- Depending upon the installation, it may be a fixed, moveable, or variable geometry surface and may or may not incorporate control surfaces.

What is a Delta Wing?

- A delta wing is a type of wing design characterized by a triangular or delta-shaped planform.
 - In this design, the wing has a straight leading edge and a swept-back trailing edge, forming a shape reminiscent of the Greek letter “delta” (Δ).
 - Advantages:
 - The delta wing offers advantages in structural integrity and both high-speed and low-speed flight.
 - Because of the wing’s large surface area compared to its span, it can be built stronger and stiffer and also has a greater internal volume for fuel storage.
 - Delta wing aircraft do not require a horizontal tail.
 - Disadvantage: Higher viscous drag due to the large wing area.
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Q1) What is Hindustan Aeronautics Limited (HAL)?

Hindustan Aeronautics Ltd (HAL) is an aerospace and defense company, owned by the government of India. The company develops, designs, manufactures, and supplies aircraft, helicopters, avionics, and communications equipment for military and civil markets.

Source: [Indian Navy’s indigenous TEDBF program progresses, prototype expected in 4-5 Years](#)

Source: <https://vajiramandravi.com/current-affairs/tedbf/>

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