



## F/A 18 Super Hornet Fighter Jets

**For Prelims:** Aircraft Carrier, INS Vikrant, INS Vikramaditya, Significance of Aircraft Carriers, INS Vishal, F/A 18 Super Hornet Fighter Jets.

**For Mains:** Significance of Aircraft Carriers for Internal Security.

### Why in News?

Ahead of Commissioning India's **first Indigenous Aircraft Carrier (IAC) Vikrant**, the US aviation major Boeing has proposed Indian Navy to choose its **F/A 18 Super Hornet fighter jet**.

II

# LETHAL ADVANCED AFFORDABLE

F/A-18E/F BLOCK III SUPER HORNET



## KEY FEATURES



### MULTI-ROLE SUPERIORITY

Capable of tactical strike, aerial reconnaissance, air defense, and maritime roles



### CUTTING-EDGE TECHNOLOGIES

Enhanced computing and data link, advanced cockpit system, signature improvements



### LIFECYCLE AFFORDABILITY

Lowest cost per flight hour among all U.S. tactical fighter in production. High mission capability rates



### FUTURE READY

Unrivaled growth potential to complement future air wing capabilities

40 Year legacy of carrier-based operations

1.5M+ Flight hours since 2008

10k+ Hours airframe life

400+ Sales opportunities

700+ F/A-18s delivered



## ADVANTAGE INDIA

### ■ STATE-OF-THE-ART PRODUCTION FACILITY

World-class manufacturing ecosystem built on Boeing's broad presence in India

### ■ ADVANCED INDIGENOUS TECHNOLOGY

Scope for technology insertions, maximizing indigenous content

### ■ "BY INDIA - FOR INDIA" SUSTAINMENT

Lifecycle support in partnership with Indian partners and India's armed forces

## What are the Key Features of F/A 18 Super Hornet Fighter Jets?

- The F/A-18 Super Hornet Block III is the world's **most advanced, combat proven, multi-role frontline naval fighter** that offers unique and differentiated capabilities and full compatibility with Indian Navy carriers.
- It has been designed and built **for carrier operations**, and is fully compliant with **INS Vikramaditya and INS Vikrant** aircraft carrier.
- F/A-18 will be able to **operate on the deck**, in the hangar and on the lifts of the Indian Navy's aircraft carriers.
- It will help further the interface between manned and unmanned systems in a carrier environment.
- The Super Hornet's Precision Landing Mode software is **specially designed to reduce pilot workload while landing** on the Indian Navy's Vikramaditya carrier by maintaining the proper glide slope and proper approach speeds.
- It has fully redundant systems and is independent of the carrier's optical landing system.

- F/A-18 Super Hornet is in single-seater (E-Variant) and two-seater variant (F-Variant), and both variants are **carrier compatible** to perform the full range of combat missions and can fully operate from the carrier deck.
  - The two-seater is also a capable trainer aircraft - both ashore and carrier borne.

## What is IAC Vikrant?

- **About:**
  - Vikrant is the **largest warship to have ever been built in India**, and the first indigenously designed and built aircraft carrier for the Indian Navy.
  - It puts India in an **elite club of nations that have the capability to design and build** these giant, powerful warships.
  - It is designed by the Cochin Shipyard Ltd (CSL), a public sector shipyard under the Ministry of Ports, Shipping & Waterways.
  - The ship had **successfully completed its fourth and final phase of sea trials**.
- **Operation Capabilities:**
  - It has a maximum designed speed of 28 knots (about 52 km/h) with an endurance of 7500 NM.
  - The ship will be capable of operating 30 aircraft including [MiG-29K fighter jets](#), [Kamov-31 Air Early Warning Helicopters](#), [MH-60R Seahawk multi-role](#) helicopters, as well as the [Advanced Light Helicopters \(ALH\)](#), and the Light Combat Aircraft (LCA).
  - Using a novel aircraft-operation mode known as [Short Take Off But Arrested Recovery \(STOBAR\)](#), the **IAC is equipped with a ski-jump for launching aircraft**, and a set of three 'arrestor wires' for their recovery onboard.
- **Significance:**
  - It will enhance a **Navy's capability to travel far from its home shores** to carry out air domination operations.
  - It is considered to be a "blue water" navy — that is, a navy that has the capacity to project a nation's strength and power **across the high seas**.

## What is the Significance of Vikrant Building in India?

- Only five or six nations currently have the capability of manufacturing an aircraft carrier, and India has joined this prestigious club now.
  - Experts have said that India has demonstrated the capacity and self-reliance to build what is considered to be one of the most advanced and complex battleships in the world.
- India has had aircraft carriers earlier too — but **those were built either by the British or the Russians. The 'INS Vikramaditya'**, which was commissioned in 2013 and which is currently the Navy's only aircraft carrier, started out as the Soviet-Russian warship 'Admiral Gorshkov'.
- India's two earlier carriers, the 'INS Vikrant' and the 'INS Viraat', were originally the British-built 'HMS Hercules' and 'HMS Hermes'. These two warships were commissioned into the Navy in 1961 and 1987 respectively.

## Why will the new warship IAC-1 be named 'INS Vikrant'?

- The name 'INS Vikrant' **originally belonged to India's much-loved first aircraft carrier**, a source of immense national pride over several decades of service before it was decommissioned in 1997.
  - The original 'Vikrant', a Majestic-class 19,500-tonne warship, which was acquired from the UK in 1961, **played a stellar role in the 1971 War with Pakistan**.
- Last year, as the IAC-1 started her first sea trial, the **Navy hailed the "proud and historic day for India as the reincarnated 'Vikrant'"** sails for her maiden sea trials.

## What are the Future Plans for IACs?

- Since 2015, the Navy has been seeking approval to build a third aircraft carrier for the country, which, if approved, **will become India's second Indigenous Aircraft Carrier (IAC-2)**.
- This proposed carrier, to be named '**INS Vishal**', is intended to be a giant 65,000-tonne vessel,

much bigger than both IAC-1 and the 'INS Vikramaditya'.

## UPSC Civil Services Examination, Previous Year Question (PYQ)

### Prelims

**Q. Which one of the following is the best description of 'INS Astradharini', that was in the news recently? (2016)**

- (a) Amphibious warfare ship
- (b) Nuclear-powered submarine
- (c) Torpedo launch and recovery vessel
- (d) Nuclear-powered aircraft carrier

**Ans: (C)**

**Exp:**

- INS Astradharini is an indigenously built Torpedo Launch and Recovery Vessel. It was commissioned on 6th October 2015.
- The design of the Astradharini was a collaborative effort of Naval Science and Technological Laboratory (NSTL), Shoft Shipyard and IIT Kharagpur.
- It is an advanced replacement for Astravahini which was decommissioned on 17th July 2015.
- It has a unique design of a catamaran hull form that significantly reduces its power requirement and is built with indigenous steel.
- It can operate at high sea states and has a large deck area with Torpedo Launchers for deploying and recovering various kinds of Torpedos during the trials.
- The ship also has modern power generation and distribution, navigation and communication systems.
- 95% of the systems of the ship are of indigenous design, thus demonstrating the Navy's continued adherence to the 'Make in India' philosophy.
- INS Astradharini will be used to carry out the technical trials of underwater weapons and systems developed by NSTL, a naval systems laboratory of DRDO.
- **Therefore, option (c) is the correct answer.**

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### Mains

**Q. How is S-400 air defence system technically superior to any other system presently available in the world? (2021)**

**Source: HT**