



F/A 18 Super Hornet Fighter Jets

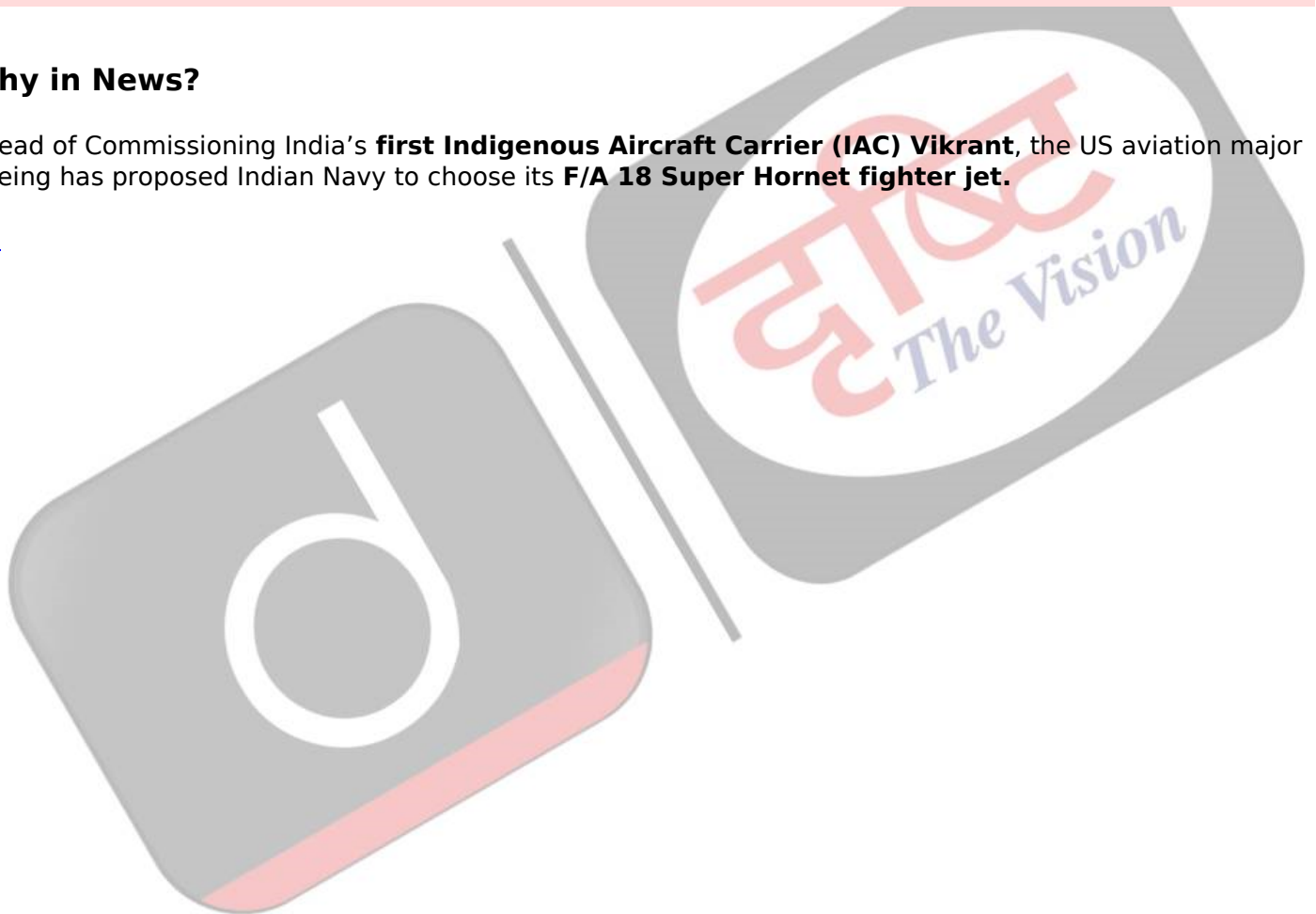
For Prelims: Aircraft Carrier, INS Vikrant, INS Vikramaditya, Significance of Aircraft Carriers, INS Vishal, F/A 18 Super Hornet Fighter Jets.

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**.

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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.**

Mains

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

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