



DRDO & Research & Development:

Indian Defence Manufacturing & Modernization

Indigenous Gatling Gun Development: The Armament Research and Development Establishment (ARDE) has confirmed plans to develop indigenous Gatling gun systems for the Indian Army and Air Force. These multi-barrel, high-rate-of-fire weapons are intended for use as a hard-kill Close-In Weapon System (CIWS) to counter aerial threats like drones, cruise missiles, and low-flying aircraft. This aligns with the "Atmanirbhar Bharat" (self-reliant India) initiative.

"Mission Sudarshan Chakra": In his Independence Day address, the Prime Minister announced "Mission Sudarshan Chakra," an ambitious project to develop a fully indigenous, layered air defense system similar to Israel's Iron Dome. The mission aims to protect vital military and civilian installations and is part of a larger push to reduce dependence on foreign technology.

Record Defence Production: India's defense manufacturing sector achieved a record production value of ₹1,50,590 crore in FY 2024-25, marking an 18% increase over the previous year. This milestone underscores the success of the government's focus on domestic procurement.

Strategic Acquisitions and Inductions

Naval Developments:

The Indian Navy is set to commission two frontline stealth frigates, INS Udaygiri and INS Himgiri, on August 26, 2025. These are the second and first ships of the Project 17A class, respectively. Their simultaneous commissioning from two different shipyards (MDL and GRSE) highlights India's accelerating naval modernization and shipbuilding capacity.

The Navy is also actively pursuing the development of an electromagnetic railgun (EMRG) for its future warships, a cutting-edge system to enhance long-range and cost-effective naval power.

Air Force Procurements:

The Indian Air Force (IAF) is preparing to fast-track the procurement of 114 Multi-Role Fighter Aircraft (MRFA), a program valued at over \$20 billion, to address its depleting squadron strength.

The IAF is also considering the acquisition of the Russian-made R-37 Vypel air-to-air missile, which has a range of up to 200 km, to boost its long-range air combat capability.

S-400 System: A veteran operator of the Indian Air Force's S-400 Triumf Air Defence System, Sargent Bhale Singh (Retd), was recognized for his role in Operation Sindoor, where the system reportedly engaged a high-value aircraft 300 km inside Pakistani airspace. This event highlights the strategic capability of the S-400 system.





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MCQS

1. What is the primary purpose of the indigenous Gatling gun systems being developed by ARDE?

- A. To be used as a primary weapon on tanks.
- B. To serve as a hard-kill Close-In Weapon System (CIWS) against aerial threats.
- C. To replace the standard issue rifles for infantry.
- D. To be mounted on fighter jets for air-to-air combat.

Answer: B.

The article states that the weapons "are intended for use as a hard-kill Close-In Weapon System (CIWS) to counter aerial threats like drones, cruise missiles, and low-flying aircraft."

2. What is "Mission Sudarshan Chakra" aimed at developing?

- A. A new type of stealth submarine.
- B. A fully indigenous, layered air defense system.
- C. A high-altitude surveillance drone.
- D. A next-generation fighter jet.

Answer: B.

The text describes "Mission Sudarshan Chakra" as a project "to develop a fully indigenous, layered air defense system similar to Israel's Iron Dome."

3. What milestone did India's defense manufacturing sector achieve in FY 2024-25?

- A. It became the world's largest exporter of defense equipment.
- B. It signed a major deal to produce foreign fighter jets.
- C. It achieved a record production value of ₹1,50,590 crore.
- D. It privatized all government-owned defense factories.





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Answer: C.

The article mentions that the sector "achieved a record production value of ₹1,50,590 crore in FY 2024-25."

4. What is significant about the upcoming commissioning of INS Udaygiri and INS Himgiri?

- A. They are the first ships of their class.
- B. They are being simultaneously commissioned from two different shipyards.
- C. They are India's first nuclear-powered frigates.
- D. They will be the new flagship vessels of the Indian Navy.

Answer: B.

The text highlights their "simultaneous commissioning from two different shipyards (MDL and GRSE)," which shows an acceleration of India's shipbuilding capacity.

5. Why is the Indian Air Force (IAF) preparing to fast-track the procurement of 114 Multi-Role Fighter Aircraft (MRFA)?

- A. To replace its aging transport fleet.
- B. To address its depleting squadron strength.
- C. To gain an advantage in ground-based combat.
- D. To support humanitarian relief missions.

Answer: B.

The article states the procurement is "to address its depleting squadron strength."

6. What was a notable reported strategic use of the S-400 Triumf system mentioned in the text?

- A. It shot down a satellite in low-earth orbit.
- B. It engaged a high-value aircraft deep inside Pakistani airspace.
- C. It provided air defense for a major civilian airport.
- D. It was used in a multinational military exercise.

Answer: B.

The text reports that the S-400 system "reportedly engaged a high-value aircraft 300 km inside Pakistani airspace" during Operation Sindoor.

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