

## Defence, Science & Technology Current Affairs

- Tech Mahindra** announced its biggest defence order worth over Rs 300 crore with the **Indian Navy**.  
**Note:** As part of the '**Armed Forces Secure Access Card**' (AFSAC) Project, Tech Mahindra will implement RFID (Radio Frequency Identification) based Access Control System across all naval bases and ships. The new **AFSAC Card** will replace the **existing paper-based Identity Card** for all Navy personnel including dependents and ex-servicemen. Using the CMMI (Capability Maturity Model Integration) level 5 processes, Tech Mahindra will develop a secure application to manage the access control devices, network devices and the AFSAC Card through a data centre.
- Vice Admiral Karambir Singh (Commander-in-Chief of the Eastern Naval Command) has taken over as the **24<sup>th</sup> Navy Chief**.  
**Note:** Navy Chief Admiral Sunil Lanba has retired on completion of his tenure. During his tenure as the Chief of Naval Staff, Admiral Lanba set the tone for several transitions in operational, training and organizational philosophy of the Indian Navy.
- Kolkata-based defence shipyard signed an Rs. 6,311-crore contract with the Defence Ministry to build eight anti-submarine warfare shallow watercraft for the Indian Navy – **Garden Reach Shipbuilders & Engineers**.  
**Note:** The first vessel will be delivered within 42 months from the contract (by October 2022). The ASWSWCs are equipped with sophisticated sonar, with an algorithm that differentiates the signals reflected off the enemy submarine from those bouncing off the sea bed. These vessels will also have the ability to sprint fast for short bursts **order to maintain contact with a submarine**. After that, GRSE must deliver two more ASWSWCs annually, completing delivery by April 2026.
- According to the latest report from the **Stockholm International Peace Research Institute (SIPRI)**, India was the world's fourth biggest military spender in the year 2018,  
**Note:** The global military spending is 2.1% of the world GDP. India accounts for 3.7% of the global defence spending. Stockholm International Peace Research Institute (SIPRI) is an international institute based in Sweden, dedicated to research into conflict, armaments, arms control and disarmament.
- Indian Navy's fourth stealth Scorpene **class Submarine Vela** of Project 75 has been launched in **Mumbai, Maharashtra**.  
**Note:** The submarines are being built at **Mazagon Dock Limited**, with the main collaborator being M/s Naval group, France. The submarine has been named 'Vela' after an earlier submarine, which was the lead submarine, of the erstwhile Vela class, the second batch of the Foxtrot class submarines acquired from erstwhile USSR. INS Vela was first commissioned on 31<sup>st</sup> August 1973 in the Indian Naval service and continued to serve for 37 years.
- Rajput class destroyer** was decommissioned at a solemn grand ceremony at Naval Dockyard at Visakhapatnam – **INS Ranjit**.  
**Note:** The Decommissioning Ceremony was graced by 16 officers and 10 sailors from the commissioning crew and 23 erstwhile Commanding Officers. The ship commissioned on 15 September 1983 by Captain Vishnu Bhagwat in erstwhile USSR has rendered yeoman service to the nation for 36 years.
- Defence Research and Development Organisation (DRDO)** has conducted a successful flight test of ABHYAS – High-speed Expendable Aerial Target (HEAT) from Interim Test Range in Odisha.



**Note:** The flight test was tracked by various RADARS and Electro Optic Systems and proved its performance in a fully autonomous waypoint navigation mode. The configuration of ABHYAS is designed on an in-line small gas turbine engine and uses indigenously developed MEMS-based navigation system for its navigation and guidance. The performance of the system was as per simulations carried out and demonstrated the capability of ABHYAS to meet the mission requirement for a cost-effective High-speed Expendable Aerial Target.

6. The Indian Navy's first full-fledged **Services Selection Board (SSB)** has been inaugurated by Navy Chief Admiral Sunil Lanba at **Diamond Harbour near Kolkata**.

**Note:** The SSB (Kolkata) spread over 27 acres located on the banks of Hooghly that was previously occupied by a Naval Coastal Battery. The SSB (Kolkata) has the capacity to screen 5,000 officer-candidates annually. This is the fifth SSB of the Indian Navy and will cater for a selection of both permanent and short service commission (SSC) officers. The other boards are located at Bhopal, Bengaluru, Visakhapatnam and Coimbatore.

7. The **military drill** was conducted to showcase **joint operations** capability of the armed forces – **Exercise Bull strike**.

**Note:** During the exercise, the army personnel got the chance to display their prowess by undertaking company level airborne operation at Teressa island, Andaman Nicobar. 170 troops from three services carried out para drop operations in a Combat Free Fall and Static Line mode.

8. The **Union government** has planned to introduce **artificial intelligence** system in the **MCA 21 portal**.

**Note:**

- MCA 21 is the electronic backbone for the dissemination of information to all stakeholders, including the regulator, corporates and investors. All filings under the company's law are submitted to the ministry through this portal.
- MCA 21 allows electronic filings of various documents under the Companies Act, 2013 and has fully automated all processes related to enforcement and compliance monitoring under the Act.

9. The Navies of India and Singapore are participating in the **annual maritime bilateral exercise** in the South China Sea – **'SIMBEX-19'**

**Note:**

- Naval ships INS Kolkata and INS Shakti taking part in the bilateral naval exercise, along with long-range maritime patrol aircraft Poseidon-8I.
- The Singapore side is being represented by RSN ships Steadfast and Valiant, maritime patrol aircraft Fokker-50 and F-16 fighter aircraft.

10. **Indian** Indian Space Research Organisation (ISRO) has successfully launched its earth observation satellite RISAT-2B from Satish Dhawan Space Centre **Sriharikota**.

**Note:**

- It will replace the RISAT-2, which was launched in 2009. The 615 kg satellite was released into the orbit 15 minutes after the lift-off.
- RISAT-2B meant for application in fields such as surveillance, agriculture, forestry and disaster management support. RISAT-2B expanded Synthetic Aperture Radar (SAR) making it an advanced earth observation satellite, operating in spotlight mode, mode and mosaic mode.

11. The 8th edition of the **Indo-Myanmar Coordinated Patrol (IMCOR)** is being held in **Andaman & Nicobar Command**.

**Note:**

- Under the program, **Myanmar ships UMS King TabinShweHtee (773)** and **UMS Inlay (OPV-54)** are participating in the coordinated patrol (CORPAT) along with Indian Naval Ship Saryu.
- The ships will patrol along the **International Maritime Boundary Line (IMBL)** between the two countries covering distance of roughly 725 kilometres in four days, augmented by patrol aircraft from both navies.



12. **Indian Navy** has achieved a significant milestone in enhancing its Anti-Air Warfare Capability with the maiden cooperative engagement firing of the Medium Range Surface to Air Missile (MRSAM).

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- The Indian Navy achieved a significant milestone in enhancing its Anti-Air Warfare Capability with the maiden cooperative engagement firing of the Medium Range Surface to Air Missile (MRSAM).
- The firing was undertaken on the Western Seaboard by Indian Naval Ships Kochi and Chennai.
- In test, the missiles of both ships were controlled by one ship to intercept different aerial targets at extended ranges.

13. **Defence Research and Development Organisation (DRDO)** has successfully test-fired an indigenously developed 500 kg class guided bomb from a Sukhoi combat jet at Pokhran in Rajasthan.

**Note:**

- The test firing of the guided bomb came two days after the Indian Air Force successfully test fired the aerial version of the supersonic BrahMos cruise missile from a Sukhoi jet at the Andaman and Nicobar Islands.

14. Indian **Air Force officer** has become the **first day-time** Indian woman fighter pilot -- **Flight Lieutenant Bhawana Kanth**.

**Note:**

- Flight Lieutenant **Bhawana Kanth** adds another feather to her cap by completing day operational syllabus on MiG-21 Bison aircraft.
- She is the first women fighter pilot to qualify to undertake missions by day on a fighter aircraft. Bhawana joined the fighter squadron in 2017 and flew the first solo on MiG-21 Bison in 2018.

15. Air Chief Marshal **BS Dhanoa** led a four aircraft, MiG-21 'Missing Man' formation flypast at Air Force Station Bhisiana in **Bhatinda, Punjab**.

**Note:**

- The 'Missing Man' formation is an aerial salute accorded to honour the fallen comrades-in-arms. This is an Arrow Formation, with a gap between two aircraft in the formation depicting the Missing Man.
- Later, the Air Chief Marshal laid a wreath at the War Memorial in Bhatinda to honour the Air Force men who made the supreme sacrifice in the line of duty.

16. **Pakistan successfully** test-fired surface-to-surface medium-range guided ballistic missile -- **Shaheen-II**.

**Note:** Shaheen-II is a two-stage rocket with a diameter of 1.4 m, length of 17.5 m, the weight of 25 tons and a range of 1500-2000 km. Shaheen-II is a highly capable missile that fully meets Pakistan's strategic needs towards the maintenance of desired deterrence stability in the region. The Shaheen-II is designed and developed by the NESCOM and the National Defence Complex (NDC) of Pakistan.

17. The first Apache Helicopter AH-64E (I) formally handed over to Indian Air Force (IAF) at Boeing production facility in -- **Mesa, Arizona (USA)**.

**Note:** The first batch of the helicopters is scheduled to be shipped to India by July this year. The helicopter has been customized to suit IAF's future requirements and would have significant capability in mountainous terrain. It has the capability to carry out precision attacks at standoff ranges and operate in hostile Airspace with threats from the ground.

18. The first part of the Indo-French joint naval exercise has begun at Goa coast -- **Varuna 19.1**.

**Note:** The exercise is being conducted in two phases. The harbour phase at Goa would include cross-visits, professional interactions and discussions and sports events. Varuna 19.2 (the second part of the exercise) is scheduled to be held in May end in Djibouti.

19. A **Japanese aerospace startup** funded by a former internet maverick successfully launched a small unmanned rocket into space -- '**MOMO-3**'.

**Note:**



- According to Japanese aerospace startup Interstellar Technology, its 10-meter (32-foot) craft reached an altitude of about 100 kilometres (60 miles) before splashing down into the Pacific Ocean.
  - The successful flight lasted about 10 minutes and came after two failed launches by the same company in 2017 and 2018. It is the first commercially developed Japanese rocket to reach orbit.
20. According to ISRO (Indian Space Research Organization), India's second lunar mission Chandrayaan-2 will be launched on between **9 and 16 July 2019**.
- Note:**
- Chandrayaan-2's lander will touch down near the Moon's south pole on 6th September.
  - The National space agency said Chandrayaan-2 will have three modules in it, an orbiter, a lander named Vikram and a rover known as Pragyan. Chandrayaan-2 will be launched using India's most powerful rocket GSLV-Mark-3.
21. NASA' revealed its plan to hit a small moonlet target in a double asteroid system with a spacecraft in **2022**.
- Note:**
- It is its first mission to demonstrate a planetary defence technique.
  - The Double Asteroid Redirection Test (DART) will get one chance to hit its target.
- The asteroid, called Didymoon or Didymos B, is a moon asteroid around 150 meters tall orbiting a larger body Didymos A

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