

# Daily Defence Current Affairs

## 17 June 2025

### India Has Entered Into A New Quantum Era Of Secure Communication

- India has entered into a new quantum era by successfully demonstrating an experimental advancement through DRDO-Industry-Academia Centre of Excellence (DIA-CoE), IIT Delhi.
- The free-space quantum secure communication using quantum entanglement over a distance of more than one km was achieved via a free-space optical link established on the IIT Delhi campus.
- This cutting-edge experiment marks the nation's entry into a new era of quantum technology with applications in cyber security, defence, and strategic communication.
- The demonstration involved the establishment of a free-space optical communication link spanning more than 1 km on the IIT Delhi campus.
- The experiment achieved a secure key rate of nearly 240 bits per second with a quantum bit error rate (QBER) of **less than 7%**, showcasing the feasibility of secure quantum communication without physical optical fibers.
- The experiment was led by **Prof. Bhaskar Kanseri's research group**, in the presence of distinguished dignitaries from DRDO and IIT Delhi.
- **Why Quantum Entanglement Matters**
  - Quantum entanglement-based **Quantum Key Distribution (QKD)** offers a significant advantage over traditional methods of secure communication. Unlike the prepare-and-measure approach, entanglement-assisted QKD provides inherent protection even if devices are imperfect or compromised.
  - Any unauthorized attempt to intercept or measure the entangled photons disturbs their quantum state, alerting users of a potential breach. This makes the encryption fundamentally unbreakable.

- **Strategic Implications for India**
- This technology holds the potential to revolutionize secure communications across critical sectors such as:
  - **Defence and Military**
  - **Financial institutions**
  - **Telecommunications**
  - **Government communications**
- **Past Successes**
- In 2022, **India's first intercity quantum communication link** between **Vindhyachal and Prayagraj** was demonstrated using commercial underground fiber.



## **Fifth FPV 'Achal' built by GSL Launched for ICG**

- 'Achal', the fifth Fast Patrol Vessel (FPV) in a series of eight being constructed by Goa Shipyard Ltd for the ICG was ceremoniously launched on June 16, 2025, in Goa by Smt.
- Designed and constructed under stringent dual-class certification from the American Bureau of Shipping and Indian Register of Shipping, the FPV features over 60% indigenous content
- The vessel measures 52 meters in length and 8 meters in breadth, with a displacement of 320 tons. Powered by a CPP-based propulsion system, the vessel can reach a top speed of 27 knots.

- With its primary roles of **protection, monitoring, control, and surveillance**, 'Achal' is equipped to safeguard offshore assets and island territories.
- Built at a total cost of **Rs 473 crore**, the project has also provided a significant boost to local industry by generating substantial employment and supporting MSMEs engaged in production activities at various factories and within GSL.



## Defence Cyber Agency Begins Exercise

- 'Cyber Suraksha', a comprehensive Cyber Security Exercise organised by Defence Cyber Agency under the aegis of Headquarters Integrated Defence Staff, commenced on June 16, 2025.
- This multi-phased exercise, which concludes on June 27, 2025, is a proactive step towards bolstering cyber resilience at national level, and encompasses the conduct of targeted training sessions, evaluation and an engaging capsule for leadership.
- The exercise is designed to simulate real-world cyber threats, reinforce secure practices, and test the analytical and defensive cyber skills of participants in a high-paced, gamified environment.



## China Has World's Fastest Growing Nuclear Arsenal: SIPRI

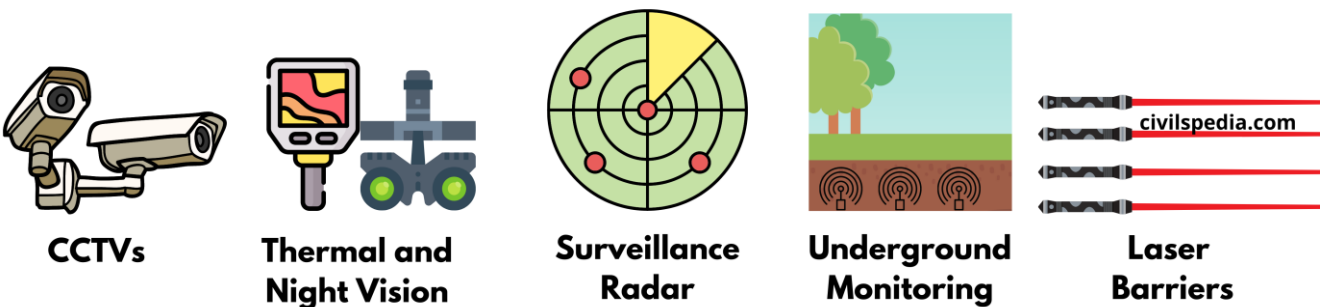
- China has the world's fastest growing nuclear arsenal and has been adding 100 new warheads every year while India has also slightly expanded its arsenal and continues to develop new delivery systems, a report by the **Stockholm International Peace Research Institute** says.
- The findings suggest that arsenals of nine nuclear-armed states are expanding at a time of geopolitical uncertainty and the global inventory stands at 12,241 warheads, with the US and Russia accounting for nearly 90% of these.
- As per the SIPRI yearbook 2025, **India has 180 nuclear stored warheads** as of January 2025, while **Pakistan has an estimated 170**. **China has 600** nuclear warheads as of January 2025, of which 24 are deployed warheads or those placed on missiles or located on bases with operational forces.
- The report said that India is believed to have once again slightly expanded its nuclear arsenal in 2024 and continued to develop new types of nuclear delivery systems.
- It said India's new 'canisterised' missiles, which can be transported with mated warheads, may be capable of carrying nuclear warheads during peacetime, and possibly even multiple warheads on each missile, once they become operational.



## Border Management Agency

- The Union home ministry is examining a proposal to set up a Border Management Agency (BMA) similar to what was started by South Africa in 2023 in the form of a separate border management agency.
- The proposal was first mooted by BJP Rajya Sabha MP from Maharashtra, Ajeet Madhavrao Gopchade, in a letter to PM Narendra Modi in April after the Pahalgam attack.
- Gopchade said, "There is a detailed explanation for this proposal in a five-page note. Since the paramilitary is under the home ministry, they have replied with a letter confirming the same."
- In a letter dated June 4, 2025, MoS (home) Nityanand Rai noted that the home ministry has received the proposal, and it is being examined.
- MP highlighted the "absence of unified command and tech-driven surveillance in the border areas". While quoting South Africa's 2023 legislation, it stated the need for "an integrated border law enforcement within the border law enforcement area, and cooperation and coordination of border management matters in general".
- Border management is a security function that aims to secure our frontiers and safeguard our nation from the risks involved in the movement of goods and people from India to other countries and vice versa.
- The principle of **"One Border, One Border Guarding Force"** is followed by the Government of India to secure the border.
- The Bangladesh and Pakistan border is looked after by **Border Security Force (BSF)**

- The China border is looked after by **Indo-Tibetan Border Police (ITBP)**
- The Nepal and Bhutan border is looked after by **Sashastra Seema Bal (SSB)**
- The Myanmar border is looked after by **Assam Rifles (AR)**.
- The **Line of Control (LoC)** on the Indo-Pakistan border and the **Line of Actual Control (LAC)** on the Indo-China border are protected by the Indian Army.
- Security of the coastal borders lies with the Indian Navy and Indian Coast Guard, with the State (Marine) Police acting as the second line of defense



## REVIEW QUESTIONS

1. As per the SIPRI Yearbook 2025, how many nuclear warheads does India possess as of January 2025?

- A. 150
- B. 170
- C. 180
- D. 200

**ANSWER: C**

2. What significant quantum communication breakthrough was achieved at IIT Delhi?

- A. Launch of India's first quantum satellite
- B. Free-space quantum secure communication over 1 km
- C. Intercontinental quantum messaging system
- D. Development of a quantum supercomputer

**ANSWER: B**

3. Which Indian city pair was connected through India's first intercity quantum communication link in 2022?

- A. Delhi – Mumbai



- B. Vindhyachal – Prayagraj
- C. Bangalore – Hyderabad
- D. Lucknow – Kanpur

**ANSWER: B**

**4. What is the name of the fifth FPV constructed by Goa Shipyard Ltd for the ICG?**

- A. Arjun
- B. Veer
- C. Achal
- D. Trikand

**ANSWER: C**

**5. Who organized the Cyber Suraksha Cyber Security Exercise?**

- A. DRDO
- B. CERT-In
- C. Defence Cyber Agency
- D. National Informatics Centre

**ANSWER: C**

**6. Operational Range of Barak 8 Missile Is**

- A. 70Km
- B. 80Km
- C. 90Km
- D. 100Km

**ANSWER: A**

**7. Defence Services Staff College Is Located At**

- A. Wellington
- B. Chennai
- C. New Delhi
- D. None of the above

**ANSWER: A**

**8. Motto of DSSC Is**

- A. To War with Wisdom
- B. Valour and Courage
- C. Fight With Determination
- D. None of the above

**ANSWER: A**

**9. Commandant of Defence Services Staff College Is**

- A. Lt Gen Virendra Vats
- B. Lt Gen Vikram Singh
- C. Rear Admiral Anil Sen
- D. None

**ANSWER: A**

**10. Cabinet Committee on Security Is Headed By**

- A. PM
- B. NSA
- C. The President
- D. COAS Indian Army

**ANSWER: A**

**11. Air Marshal Rank of IAF Is Equivalent To Which Rank Of Indian Army?**

- A. Brigadier
- B. Lt. Gen
- C. Captain
- D. Major General

**ANSWER: B**

**12. How Many States In India Have A Coastline?**

- A. Seven
- B. Eight
- C. Nine
- D. Ten

**ANSWER: C**

**13. OPEC Hq Is In**

- A. Budapest, Hungary
- B. New York, USA
- C. Luanda, Angola
- D. Vienna, Austria

**ANSWER: D**

**14. AUKUS Stands For**



- A. Azerbaijan, the United Kingdom, & the United States
- B. Australia, the United Kingdom, & the United States
- C. Australia, the United Kingdom, & Uganda
- D. Argentina, the United Kingdom, & the United States

**ANSWER: B**

**15. RIYADH Is The Capital Of**

- A. SAUDI ARABIA
- B. SENEGAL
- C. SERBIA
- D. SEYCHELLES

**ANSWER: A**

**16. "2001 Space Odyssey" Book Is Written By**

- A. C. Clarke
- B. Abhijit Chavda
- C. Hew Strachan
- D. APJ Abdul Kalam

**ANSWER: A**

**17. Captain Rank of Indian Navy Equivalent to Which rank of IAF?**

- A. Flying Officer
- B. Flight Lieutenant
- C. Group Captain
- D. None

**ANSWER: C**

**18. Predator B (MQ-9 Reaper) Is A**

- A. Helicopter
- B. Machine Gun
- C. UAV
- D. Fighter Jet

**ANSWER: C**

**19. International Maritime Organisation (IMO) Hq Is At**

- A. London, United Kingdom
- B. Vienna, Austria
- C. Paris, France

D. Geneva, Switzerland

**ANSWER: A**

**20. "If you win, you need not have to explain...If you lose, you should not be there to explain!" Said By\_\_**

- A. Winston Churchill
- B. Adolf Hitler
- C. Subhas Chandra Bose
- D. Bhagat Singh

**ANSWER: A**