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DIAMOND TRIANGLE OF BUDDHIST SITES IN ODISHA

Context

- UNESCO has reportedly included three Buddhist heritage sites from Odisha- Ratnagiri, Udayagiri and Lalitgiri, in India's tentative list for potential recognition as UNESCO World Heritage Sites.

About

- **The tentative list identifies sites** that are of outstanding universal value, either culturally or naturally, and suitable for potential inscription in the World Heritage List

- These sites, collectively known as the **'Diamond Triangle'**, are believed to reflect the spread and evolution of all three major schools of Buddhism: **Hinayana, Mahayana and Vajrayana.**

Buddhist Site of Lalitagiri, Cuttack

- **Location:** It is located on **Nandapahad hillock** in the Assia hill range, within the Birupa river valley.

  - It shows uninterrupted cultural continuity from the **2nd–3rd century BCE to the 13th century CE.**

- **Archaeological Findings:** Discovery of an inscribed terracotta sealing reading **"Sri Chandraditya Vihara Samagra Arya Bhikshu Sanghasa"** (9th–10th century CE).

  - A massive stupa of **Theravada phase** containing relic caskets of **khondalite stone, with inner steatite, silver, and gold caskets.**

  - Images from Mahayana and Vajrayana pantheon such as **Vajrapani, Manjusri, Tara, Jambhala, Hariti, and Aparajita.**

Buddhist Site of Udayagiri, Jajpur

- **Location:** It is situated in the Assia hill range on the right bank of the Birupa River.

  - It is also known as **"Sunrise Hill"** due to its east-facing crescent-shaped hill.

- **Architectural Importance:** Discovery of a massive Chaityagriha showing architectural evolution from circular to apsidal to rectangular.

  - Sculptures of **Avalokiteswara (colossal), Tara, Manjusri, Bhrikuti, Hariti, Chunda, Maitreya, Vairochana, Vasudhara**, and others.

  - Inscriptions with **Buddhist Dharanis on terracotta plaques** and stone tablets.

Buddhist Site of Ratnagiri, Jajpur

- **Location:** It is located in the Assia hill range on the left bank of the **Kelua River**, a distributary of the Brahmani.

  - It is also Known as the **"Hill of Jewels".**

- **Patronage:** It received major patronage from the **Bhaumakara dynasty (8th–10th century CE).**

- **Copperplate inscription** records residence of Queen Karpurashri, indicating female patronage.

Source: UNESCO

INDIA-SAUDI ARABIA: DEEPENING STRATEGIC PARTNERSHIP IN SECURITY

Context

- The 3rd India–Saudi Arabia Security Working Group meeting was held in Riyadh, Saudi Arabia.

Key Highlights of the India–Saudi Security Dialogue

- **Focus Areas:**

  - Counter-terrorism cooperation, including emerging threats.

  - Countering extremism and radicalisation.

  - Combating terror financing.

  - Preventing misuse of technology for terrorist purposes.

  - Addressing the nexus between **transnational organised crime and terrorism.**

- **Institutional Framework:** The dialogue operates under the **India–Saudi Arabia Strategic Partnership Council (SPC)**, providing continuity and predictability to cooperation.

India Saudi Arabia Relations

- **Political Relations:** The two countries established diplomatic relations in **1947.**

  - The royal visit of 2006 resulted in the signing of the **Delhi Declaration,** which was followed in 2010 by the **Riyadh Declaration** that elevated bilateral ties to a strategic partnership.

  - **The Strategic Partnership Council (SPC) Agreement** was signed during the **2019** visit of the Indian PM to Riyadh, which established a high-level council to steer the Indo-Saudi relationship.

- **Economic Relations:** India is Saudi Arabia's second-largest trade partner; Saudi Arabia is India's fourth-largest trade partner.

  - The bilateral trade between the partners stood at **$43.3 billion in 2023-24**. Saudi's direct investments in India amounted to **$3.15 billion** (as of March 2022).

- **Energy Cooperation:** Saudi Arabia was India's **third largest** crude and petroleum products source for **FY23.**

- India imported **39.5 million metric tonnes (MMT)** of crude from the country in FY23, amounting to **16.7%** of India's total crude imports.
- India's LPG imports from Saudi Arabia stood at **7.85 MMT,** and **11.2%** of its total petroleum product imports, in FY 23.
- **Defence Cooperation:** Saudi Arabia signed a **$250 mn** contract for ammunition from Munitions India Limited, a Defence Public Sector Undertaking.
  - Saudi Arabia has procured the **155mm Advanced Towed Artillery Gun System (ATAGS)** from Bharat Forge.
  - **Joint exercises:**
    - **Sada Tanseeq:** The inaugural Army exercise held in Rajasthan in January 2024.
    - **Tarang Shakti:** Saudi Arabia participated as an observer in India's largest air exercise.
    - **Al Mohed Al Hindi:** Bilateral naval exercise initiated in 2022.
- **Indian diaspora:** As of 2025, there were **2.7 million** Indians in Saudi Arabia. This is the second largest number of foreign workers in the country, after Bangladesh.

Way Ahead

- **Balanced Regional Engagement:** Sustain India's strategic autonomy by engaging Saudi Arabia alongside other Gulf partners, contributing to regional stability without entanglement in regional rivalries.
- **Legal and Judicial Cooperation:** Improve mechanisms for extradition, mutual legal assistance, and information sharing to counter terrorism financing and organised crime networks.
- **Strengthen the Security Working Group** under the Strategic Partnership Council to address emerging threats such as cyber-terrorism, lone-wolf attacks, and technology-enabled radicalisation.

Source: TH

GAPS IN CIVIL AVIATION SAFETY FRAMEWORK: PARLIAMENTARY PANEL REPORT

Context

- A **Parliamentary Standing Committee** had flagged serious weaknesses in **India's civil aviation safety ecosystem,** months before the **recent plane crash in Baramati in Maharashtra** causing the death of Deputy Chief Minister.

About India's Civil Aviation Safety Framework

- It is a **multi-layered regulatory and oversight system** led by the **Ministry of Civil Aviation (MoCA)** and implemented through **specialized statutory bodies** such as the **Directorate General of Civil Aviation (DGCA)**, **Aircraft Accident Investigation Bureau (AAIB)**, and **Bureau of Civil Aviation Security (BCAS)**.

Legal & Regulatory Foundation	
Instrument	**Purpose**
Aircraft Act, 1934	Primary aviation law
Aircraft Rules, 1937	Operational & licensing framework
Civil Aviation Requirements (CARs)	Detailed safety regulations
ICAO Annexes	International Compliance

- The framework aligns closely with **ICAO Standards and Recommended Practices (SARPs)** and focuses on **preventive safety, regulatory compliance, accident investigation, and continuous safety improvement** through the **State Safety Programme (SSP).**

Parliamentary Standing Committee Overview

- The Standing Committee on Transport, Tourism and Culture presented its report on **'Overall Review of Safety in the Civil Aviation Sector'** in **August, 2025**, assessing **systemic safety challenges** and **proposing reforms** across regulation, operations, and infrastructure. These include:
- **Air Traffic Management Challenges:** A shortage of **Air Traffic Controllers (ATCOs)** has increased workloads and fatigue-related risks.
  - Training capacity has not kept pace with demand.
  - The Committee recommended **fatigue risk management systems**, **staffing audits**, and **expanded training capacity**.
- **Regulatory Autonomy and Capacity of DGCA:** The Committee highlighted severe staffing shortages in the DGCA, with nearly **50% vacancies** and limited recruitment autonomy.
  - It recommended granting **statutory and administrative autonomy**, creating **specialised recruitment mechanisms**, and offering **competitive compensation** to attract skilled professionals.

- **Modernisation of ATC Systems:** Existing air traffic control automation systems suffer from performance degradation and lack advanced features like **conflict detection** and **predictive analytics**.
    - The Committee urged **timely modernisation** with integration of **Artificial Intelligence**.
- **Strengthening Safety Surveillance and Enforcement:** Weak follow-through has led to unresolved concerns, including aircraft fitness while DGCA detects safety issues.
    - The Committee recommended **time-bound closure mechanisms** and **stronger enforcement**, including **financial penalties** for non-compliance.
- **Safety in Helicopter Operations:** Helicopter accidents exposed regulatory gaps, especially in **state-managed high-risk operations** and lack of **terrain-specific pilot training**.
    - The Committee proposed **uniform national frameworks** and **mandatory terrain-specific training and certification**.
- **Addressing Recurring Operational Risks:** Incidents such as **runway incursions** in 2024 exceeded safety targets. Persistent issues despite reviews indicate failure in systemic fixes.
    - The Committee recommended **mandatory root cause analyses** and **targeted remedial programmes**.
- **Error Reporting and Whistleblower Protection:** Heavy penalties on individual ATCOs discourage voluntary error reporting.
    - The Committee advised **reviewing penal provisions** and establishing **clear whistleblower protection frameworks** to promote a safety culture.
- **Developing Domestic MRO Capabilities:** Around **85% of MRO work** is outsourced abroad, causing foreign exchange outflow and strategic dependence. Despite tax reductions, domestic MRO struggles to compete.
    - The Committee called for a **comprehensive policy review** and further **tax and incentive rationalisation**.
- **Aligning Airport Development with Fleet Expansion:** Aircraft induction is outpacing airport infrastructure, causing capacity constraints at major hubs.
    - The Committee recommended a **National Capacity Alignment Plan** and continued **investment in pilot training and certification** to meet future demand.

Learning from International Models

- The **European Union Aviation Safety Agency (EASA)** and **US FAA** have already **embedded**

real-time crew monitoring and **fatigue management systems** into their safety protocols.
- EASA mandates a **Resource Assurance Certificate** before approving airline expansions, a practice **India could replicate.**
- Similarly, the **Civil Aviation Authority of Singapore (CAAS) of Singapore** uses **predictive oversight models** that combine machine learning with safety audits to flag anomalies early.

Directorate General of Civil Aviation (DGCA)

- It is **India's apex regulatory body for civil aviation**, operating under the **Ministry of Civil Aviation.**
- It was **created in 1927** and became **a statutory body in 2020** after amendments to the **Aircraft Act.**
- **Organizational Structure:**
    - **Headquarters:** Located in New Delhi.
    - **Regional Offices:** Spread across major cities to manage local aviation oversight.

Key Functions of the DGCA

- **Safety Oversight:** DGCA is primarily responsible for enforcing civil air regulations, airworthiness standards, and air safety norms across all Indian civil aviation operations.
- **Licensing and Certification:** Issues licenses to pilots, aircraft maintenance engineers, and air traffic controllers.
    - Certifies aircraft and aviation training organizations.
- **Regulation of Air Transport Services:** Oversees scheduled and non-scheduled air transport services to, from, and within India.
- **Accident Investigation:** Coordinates and monitors investigations into aviation accidents and incidents.
- **International Coordination:** Represents India in the **International Civil Aviation Organization (ICAO)** and ensures compliance with global aviation standards.

Recent Developments

- **eGCA Platform:** A digital initiative to streamline licensing, approvals, and regulatory processes for stakeholders.
    - **eGCA 2.0,** a digital transformation initiative to enhance transparency and reduce paperwork.

- **Drone Regulations:** DGCA oversees the registration and regulation of Unmanned Aircraft Systems (UAS) in India.
- **Flight Duty Time Limitations (FDTL):** Recently updated norms to address pilot fatigue and improve safety, which played a role in the recent IndiGo operational crisis.

Source: IE

INTELLECTUAL PROPERTY AND SPACE ACTIVITIES

In News

- Human space activity highlights a clash between territorial patent law and multinational, collaborative innovation beyond any nation's sovereignty.

Innovation in Space

- Human space habitation is becoming a practical reality, relying on continuous, collaborative technological innovation for survival, but this raises unresolved questions about who owns inventions created in space beyond national sovereignty.

Territorial Foundations of Patent Law

- Patent law is territorially based and Patent systems grant exclusive rights within national jurisdictions.
- Infringement is assessed by locating where acts like making or using an invention occur.
- This works on Earth because innovation happens within clearly defined territorial boundaries.

Applicability in space

- Outer space disrupts territorial logic and International space law prohibits national sovereignty over celestial bodies.
- However, states retain jurisdiction over space objects they register.
- Under Article VIII of the Outer Space Treaty, legal jurisdiction follows registration, not physical location.

Present status

- An invention made aboard a registered space object is treated as occurring within the registering state.
  - This approach extends domestic patent law into space by legal fiction.
  - It has become the default method for governing IP in space.
- The International Space Station (ISS) assigns jurisdiction module by module based on contributing states.

- Each module is treated as national territory for IP purposes.
- Lunar and Martian bases will likely lack clearly defined national zones, with multinational teams jointly improving shared systems, making jurisdiction over innovation uncertain.

> **Do you know?**
> - **Article I of the Outer Space Treaty** frames outer space as a domain to be explored and used for the benefit of all humankind.
> - **Article II reinforces** this vision by prohibiting any form of national appropriation of celestial bodies, including the moon.
> - **Article VIII of the Outer Space Treaty and the Registration Convention** together stipulate that legal jurisdiction attaches to the state of registry of a space object, not to the physical location where activities occur.
> - **Article 5 of the Paris Convention for the Protection of Industrial Property** is concerned with the doctrine of temporary presence.
>   - It limits patent enforcement in the public interest to ensure patented articles in transit are not treated as infringing. On the earth, this provision preserves freedom of transport across borders.

Challenges and Issues

- Space innovation is highly collaborative and multinational, yet patent jurisdiction is determined by registration rather than actual contributions, creating a disconnect between innovation practice and patent law.
- The Outer Space Treaty ensures space benefits all humanity and forbids national claims, but patents, while not territorial, can grant exclusive control over essential technologies, potentially restricting access and functioning as de facto exclusion in permanently inhabited space.
- **Patent enforcement in space is fragmented and unclear,** potentially restricting access to essential technologies and creating legal uncertainty, as doctrines like temporary presence may not apply.
- **Registration-based jurisdiction encourages strategic exploitation**, similar to maritime "flags of convenience," risking weakened patent protection.
- Globally, few states shape the system, coordination mechanisms exist but **lack legal authority,** and proposals for specialized space IP frameworks are emerging, leaving most

countries as rule-takers in a governance system mismatched with collaborative, shared space environments.

Suggestions and Way Forward

- Patent law, built on territorial boundaries, struggles to govern innovation in outer space where collaboration, shared infrastructure, and non-appropriation principles dominate.

- Therefore, a specialised international IP framework may be needed to prevent exclusion and ensure equitable access to survival technologies in space.

Source :TH

SOLID WASTE MANAGEMENT (SWM) RULES 2026

In News

- India has notified the Solid Waste Management (SWM) Rules, 2026, replacing the 2016 version to embed circular economy principles and producer responsibility, effective April 1, 2026.

About

- The rules embed circular economy and Extended Producer Responsibility (EPR) to prioritize waste reduction, reuse, recycling, and recovery over disposal.

- They target urban India's waste crisis (over 62 million tonnes annually, with bulk generators contributing ~30%), mandating systemic shifts via technology and accountability.

Key Provisions of SWM Rules, 2026

- **Four-stream Segregation of Solid Waste at Source:** Mandatory segregation into wet waste, dry waste, sanitary waste and special-care waste to improve recycling, safety and resource recovery.

- **Clear Definition of Bulk Waste Generators (BWGs):** BWGs identified based on built-up area (≥20,000 sq m), water consumption (≥40,000 litres/day) or waste generation (≥100 kg/day).

- **Extended Bulk Waste Generator Responsibility (EBWGR):** BWGs made accountable for segregation, processing and safe disposal of the solid waste generated by them.

- **Centralised Online Portal for Solid Waste Management:** Digital platform to track waste generation, collection, transportation, processing and disposal in real time.

- **Promotion and Mandatory Use of Refuse Derived Fuel (RDF):** Industries such as cement plants and waste-to-energy units mandated to use RDF produced from high-calorific municipal waste.

- **Restrictions on Landfilling:** Landfills permitted only for non-recyclable, non-energy-recoverable waste and inert materials to minimise dumping.

- **Solid Waste Management in Hilly Areas and Islands:** Local bodies empowered to levy user fees on tourists and regulate tourist inflow based on waste management capacity.

- **Environmental Compensation for Non-compliance:** Provision for imposing environmental compensation based on the Polluter Pays Principle to ensure accountability.

Source: TH

═══ NEWS IN SHORT ═══

LALA LAJPAT RAI

In News

- The Prime Minister paid tributes to Punjab Kesari Lala Lajpat Rai on his birth anniversary.

About Lajpat Rai

- He was a lawyer, journalist, and freedom fighter.

- He was born on 28 January, 1865 in a Punjabi Hindu family in Dhudike.

- In 1886, Lala Lajpat Rai moved to Hisar, practiced law, co-founded the Hisar Bar Council, and established the district branches of the Indian National Congress and Arya Samaj.

- He also contributed to newspapers like The Tribune and helped Mahatma Hansraj found the Dayananda Anglo-Vedic School in Lahore.

- In 1914, he left law to fully dedicate himself to India's freedom struggle.

- He was elected President of the Indian National Congress in the Calcutta Special Session of 1920.

- In 1921, he founded **Servants of the People Society,** a non-profit welfare organization.

- He also founded the Punjab National Bank and the Lakshmi Insurance Company

Literary works

- He was a prolific writer and authored several works like – "Unhappy India", "Young India: An Interpretation", "History of Arya Samaj", "England's Debt to India" and a series of popular biographies on Mazzini, Garibaldi and Swami Dayanand.

Philosophy

- He was of the view that Hindu society needed to fight its own battle with caste system, position of women and untouchability.
- He believed that everyone should be allowed to read and learn from the Vedas irrespective of one's caste or gender.

Death

- On 30 October 1928, Lala Lajpat Rai led a non-violent protest in Lahore against the Simon Commission.
- He was brutally beaten by police superintendent James A. Scott and later succumbed to his injuries on 17 November 1928.

Legacy

- He led protests against injustices like the Jallianwala Bagh massacre, and championed unity within Hindu society while advocating social reforms.
- He offered everything he had to liberate India from the chains of slavery.
- His life of sacrifice will continue to remain a source of inspiration for every generation of the country

Source :PIB

TULU LANGUAGE

Context

- The Karnataka government has expressed support for declaring **Tulu as the State's second additional official language.**
    - Currently, Kannada is Karnataka's sole official language, while English is used as an additional official language.

About Tulu

- With a recorded history of over **3,000 years**, Tulu is predominantly spoken in the coastal districts of Udupi and Dakshina Kannada in Karnataka.
- It has its **own script** and is one of only five literary **Dravidian languages**, the other four being Telugu, Tamil, Kannada, and Malayalam.
- The language is gaining global recognition, with **academic research in Germany and France**, and inclusion in **Google Translate**.

Do you know?

- In 2023, the Karnataka government constituted a committee headed by **educationist Mohan Alva**, which recommended declaring Tulu as the State's **second official language** under **Article 345 of the Constitution**.

Source: TH

BULLEH SHAH

In News

- Recently, the shrine of 17th-century Punjabi Sufi poet Bulleh Shah in Mussoorie was vandalised.

Bulleh Shah

- He was born Abdullah Shah in 1680 in Kasur (present-day Pakistan).
- He hailed from a Syed family and was educated in Persian, Arabic, and the Quran.
- He was a disciple of Shah Inayat Qadri.

Teaching and Philosophy

- He rebelled against caste, orthodox religion, and patriarchy, promoting universal love, tolerance, and spiritual equality through his Punjabi kafis.
- He drew inspiration from Sufism, Nath yogis, and the Bhakti movement, embracing Vedantic Monism and seeing divinity in all human and religious opposites.

Legacy

- He was laid to rest outside Kasur, and today his tomb attracts devotees worldwide.
- His kafis continue to inspire artists and films, while awards in his name honor literary contributions.
- Despite fame and vandalism, Bulleh Shah's focus remained on love, compassion, and humanity.

Source :IE

JOINT SITTING OF BOTH HOUSES OF PARLIAMENT

Context

- A protest by the Opposition during the President's Address to a joint sitting of Parliament on the first day of the Budget Session triggered sharp political exchanges.

Constitutional Position of the President's Address

- **Article 87** of the Constitution mandates the President to **address both Houses** of Parliament assembled together:
    - **At the commencement** of the first session after a general election.
    - **At the first session** of each year.
- The Address outlines the **policy priorities of the elected government,** approved by the Union Cabinet.
- It is a **constitutional and ceremonial exercise,** reflecting collective executive responsibility rather than the personal views of the President.

Joint Sitting of Two Houses

- **Article 108** of the Indian Constitution provides a constitutional mechanism for resolving legislative deadlocks between the Lok Sabha and the Rajya Sabha regarding ordinary bills.

- **A deadlock is deemed to have taken place** under any one of the following three situations after a bill has been passed by one House and transmitted to the other House:

  - if the **bill is rejected by the other House;**

  - if the **Houses have finally disagreed** as to the amendments to be made in the bill; or

  - if **more than six months have elapsed** from the date of the receipt of the bill by the other House without the bill being passed by it.

- **The president can summon** both the Houses to meet in a joint sitting for the purpose of deliberating and voting on the bill.

  - Voting is by simple majority of members present and voting.

- The joint sitting is presided over by the **Speaker of the Lok Sabha**, or in her absence, the **Deputy Speaker,** and then **the Deputy Chairman of the Rajya Sabha.**

Historical Instances of Joint Sitting

- Dowry Prohibition Bill, 1961.

- Banking Service Commission (Repeal) Bill, 1978.

- Prevention of Terrorism Bill, 2002 (POTA).

Source: TH

ENFORCEMENT DIRECTORATE (ED)

Context

- The Supreme Court agreed to examine whether the Enforcement Directorate (ED) is entitled to invoke the writ jurisdiction of constitutional courts to seek relief.

Directorate of Enforcement (ED)

- **Origin:** It was established in **1956** with the formation of an **'Enforcement Unit'** under the aegis of the **Department of Economic Affairs** and handles Exchange Control Laws violations under **Foreign Exchange Regulation Act, 1947 (FERA 1947).**

  - It was renamed as the **Enforcement Directorate in 1957,** with administrative control later shifting to the **Department of Revenue.**

- It is a **multi-disciplinary organization** mandated with **investigation of the offence of money laundering and violations of foreign exchange laws.**

- **The statutory functions of the Directorate** include enforcement of following Acts:

  - **The Prevention of Money Laundering Act, 2002 (PMLA):** It is a criminal law enacted to prevent money, ED has been given the responsibility to enforce the provisions of the PMLA.

  - **The Foreign Exchange Management Act, 1999 (FEMA):** It is a **civil law** enacted to consolidate and amend the laws relating to facilitate **external trade and payments.**

  - **The Fugitive Economic Offenders Act, 2018 (FEOA):** This law was enacted to **deter economic offenders from evading the process of Indian law** by remaining outside the jurisdiction of Indian courts.

What are the Writs?

- In India, the Supreme Court is vested with the power to issue prerogative writs under **Article 32** of the Constitution, while High Courts exercise a similar jurisdiction under **Article 226.**

- The Constitution recognises **five such writs:**

  - **Habeas corpus** (to secure the release of a person from unlawful detention),

  - **Mandamus** (to compel a public authority to perform a statutory or public duty),

  - **Prohibition** (to restrain a lower court or tribunal from acting beyond its authority),

  - **Certiorari** (to quash an order of a lower court or tribunal for lack of jurisdiction or illegality), and

  - **Quo warranto** (to question the legality of a person's claim to a public office).

- While Article 32 enables the Supreme Court to issue writs **primarily for the enforcement of fundamental rights**, Article 226 vests High Courts with **broader authority**, including the enforcement of **legal rights** and the **review of administrative action.**

Source: TH

GITA MITTAL COMMITTEE

In News

- The Supreme Court extended the tenure of the Justice Gita Mittal Committee by six months till July 31, 2026, to continue overseeing humanitarian relief for Manipur violence victims.

About the Committee

- This all-women panel, formed in August 2023 under Articles 32 and 142, comprises former judges Justice Gita Mittal (Chairperson, ex-CJ J&K HC)

- It probes violence against women, ensures medical/psychological aid, compensation, rehabilitation, legal support, and property restitution amid Meitei-Kuki clashes since May 2023.

- The panel has submitted 42 reports directly to SC, covering victim aid, skill development, and housing, despite no formal extension since July 2025.

Source: TH

BLUE CATEGORY OF INDUSTRIES

In News

- The Central Pollution Control Board (CPCB) has classified **Common Effluent Treatment Plants (CETPs)** under the **new Blue Category as Essential Environmental Services (ESS)**, incentivizing pollution control infrastructure.

    - CETPs are centralised facilities designed to treat industrial effluents from a cluster of industries.

About Blue Category of Industries

- Blue Category includes essential environmental services (ESS). These are facilities necessary to control, abate, and mitigate pollution arising from domestic activities & industrial activities.

    - ESS are facilities that directly contribute to pollution control and environmental management. For example: Sewage Treatment Plants (STPs), Common Effluent Treatment Plants (CETPs), Waste-to-Energy Plants etc.

Know About Pollution Index (PI) Framework

- **CPCB's PI methodology** assigns equal weight to air emissions, water effluents, and hazardous waste generation, guided by the Precautionary Principle.

- **Categories:** Red (PI ≥ 80, highly polluting), Orange (55–79), Green (25–54), White (PI < 25, minimal impact), and Blue (ESS override).

Source: AIR

DISCOMBOBULATOR

In News

- Recently, US President Donald Trump claimed that American forces used a secret weapon called the **"discombobulator"** during a military operation in Venezuela which resulted in the capture of President Nicolás Maduro and his wife.

Discombobulator

- It may not be a single weapon but a combination of multiple systems.

- It could involve high-pitched sounds and blinding effects to temporarily deafen, blind, or confuse.

- It may be deployed individually or in combination for maximum effect.

Systems that Disorient People

- **Active Denial System (ADS):** Directed energy "heat ray" causing intense burning sensation on skin, forcing people to disperse without lethal injury.

- **Vortex Ring Generator:** Uses high-pressure air pulses to strike targets or deliver irritants, causing nausea and confusion.

- **Acoustic Hailing Devices (LRAD / Sonic Cannons):** Emit high-intensity directional sound waves leading to vertigo, nausea, confusion and temporary incapacitation.

- **Visual Dazzlers:** High-intensity laser systems producing temporary blindness and battlefield disorientation.

Systems that Disable Equipment

- **Electronic Warfare (EW) Systems**: Jam or manipulate enemy radars, sensors and communication networks, degrading air defence capability.

- **High Power Microwave (HPM) Weapons:** Microwave pulses used to burn out or disable electronic circuits without physical destruction.

- **Cyber Weapons:** Similar to past tools like Stuxnet, used to sabotage critical systems digitally as part of SEAD (Suppression of Enemy Air Defences).

- **Graphite Munitions:** Non-lethal weapons dispersing carbon filaments to short-circuit power grids and disrupt electricity supply.

Source: IE

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