Today's Prelims Topics

Dharti Aba Janjatiya Gram Utkarsh Abhiyaan (DAJGUA)

Context

Centre has sanctioned over **300 FRA cells in 18 States/UTs under the DAJGUA scheme** to fast-track and support the implementation of the Forest Rights Act (2006).

About Dharti Aaba Janjatiya Gram Utkarsh Abhiyan (DAJGUA)

- It is a **massive government campaign** launched in India to **improve the quality of life in tribal villages**.
- **Launched in:** October 2024
- **Aim:**
    - Identify and fill gaps in development in tribal-majority villages
    - Bring basic services like electricity, clean water, healthcare, roads, and education
    - Ensure last-mile delivery of government welfare schemes to every tribal household
- **Approach:**
    - Implements **25 interventions** through **17 line ministries** of the Government of India
    - Focuses on **convergence, outreach, and saturation** of welfare schemes

Forest Rights Act (FRA), 2006

- **Official Name:** The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006
- **Purpose**: To recognize and secure the rights of Scheduled Tribes (STs) and Other Traditional Forest Dwellers (OTFDs) over forest lands and resources.
- **Objectives:**
    - **Recognition of Historical Rights** over forest land and resources.
    - **Protection of Livelihoods** for forest-dependent communities.
    - **Empowerment of Communities** through legal ownership and management rights.
- **Types of Rights Recognized**
    - **Individual Rights:** Ownership and access to forest land for **cultivation and habitation** (up to 4 hectares per family).
    - **Community Rights:**
        - Use of **Minor Forest Produce** (e.g., bamboo, honey, lac).
        - **Grazing rights** and access to **water bodies**.
        - Rights to **conserve and manage** forest areas collectively.

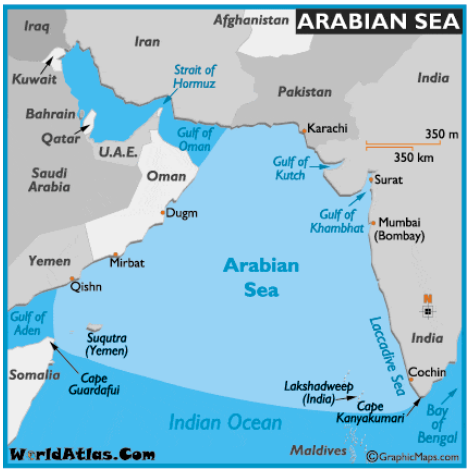
Source: TheHindu

Passage Exercise (PASSEX), 2025

Context

Passage Exercise (PASSEX) was conducted in the North Arabian Sea.

Passage Exercise (PASSEX): India–UK Naval Drills



- Conducted jointly by the **Indian Navy** and the **Royal Navy of the United Kingdom**.
- Featured Indian assets like **INS Tabar** (stealth frigate), a **submarine**, and **P-8I** long-range maritime patrol aircraft.
- Held in the **North Arabian Sea**, a key maritime trade and energy route.
- Reflected **India-UK commitment** to **maritime stability**, **freedom of navigation**, and **Indo-Pacific security**.

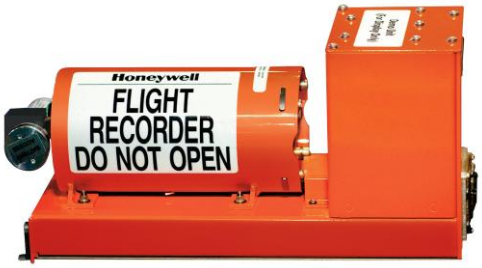
Source: TheHindu

Black Box in Aircraft

Context

The **black box of the crashed Air India flight AI171** was recovered from the roof of a hostel in Ahmedabad.

About Black Box



- A **black box** is a compact device that records critical flight data and cockpit audio during an aircraft's journey.
- Despite the name, it is usually **bright orange or yellow** to ensure easy visibility after a crash.
- It was **invented by Australian scientist David Warren** to help investigate the causes of airplane crashes.
- Commercial aircraft are generally required to have **two types of black boxes**:
    - **Cockpit Voice Recorder (CVR)** – captures cockpit conversations, radio communications, and ambient sounds.
    - **Flight Data Recorder (FDR)** – logs over **80 parameters** like altitude, airspeed, direction, engine status, and autopilot activity.
- These recorders are housed in **impact-resistant, fireproof, and waterproof** containers made of **titanium or steel**, with insulation to survive extreme conditions.
- Black boxes are usually placed near the **tail section** of the aircraft, where the chances of survival during a crash are highest.

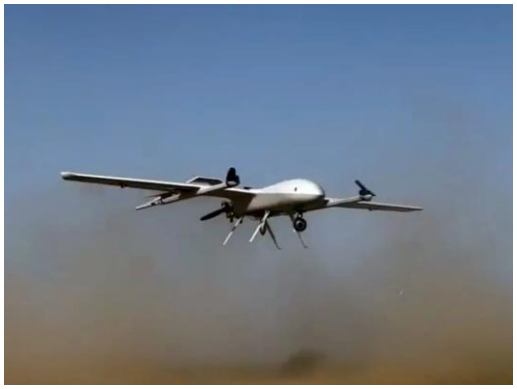
Source: TheHindu

Rudrastra

Context

Successful Trial of the Hybrid **Unmanned Aerial Vehicle (UAV) Rudrastra Conducted at Pokhran, Rajasthan.**

About Rudrastra



- It is a **Hybrid Vertical Take-Off and Landing (VTOL) Unmanned Aerial Vehicle (UAV)** – can take off and land vertically, does not need runways.
- **Developed by:** Solar Defence and Aerospace Limited (SDAL).

> An **UAV** is an unmanned aircraft that can be remotely operated or fly autonomously without a human pilot.

- **Features:**
  - **Weaponry:** Equipped with **precision-guided anti-personnel warheads** capable of **mid-altitude release**.
  - **Surveillance:** Capable of relaying **live video feed** and returning to the launch point autonomously.

Source: EconomicTimes

Detailed Summary

Aviation Sector Concerns

Context

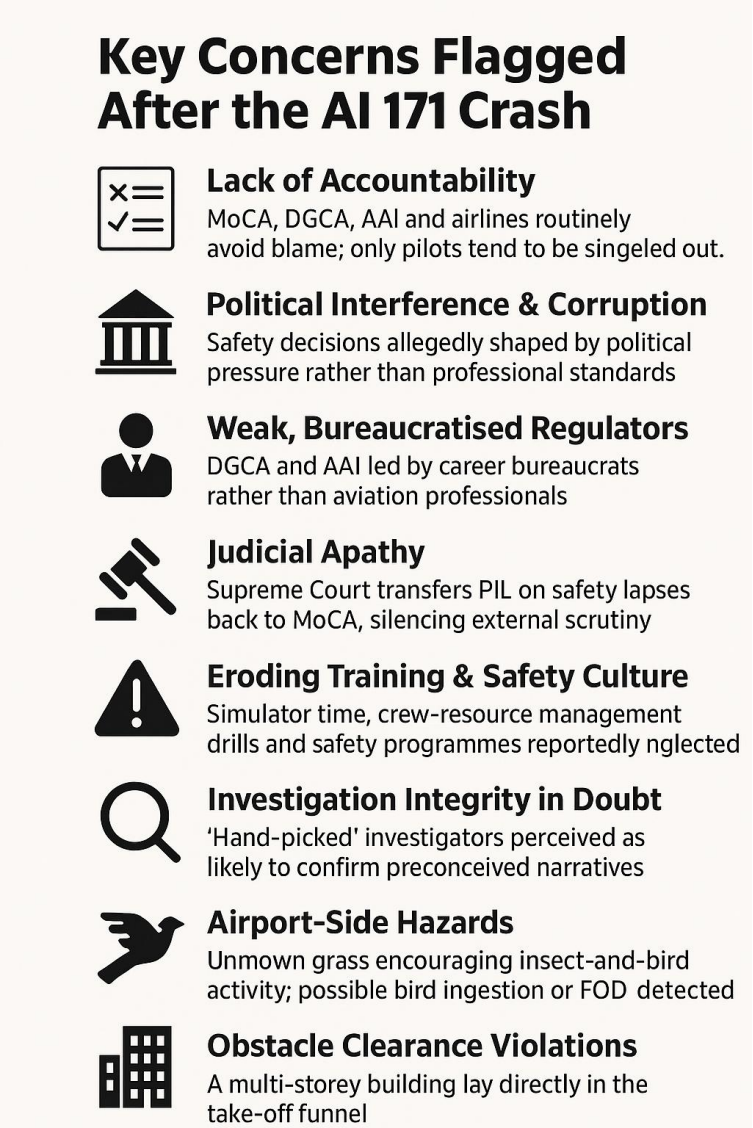
The recent **Air India Dreamliner crash (AI171)** in Ahmedabad, Gujarat has intensified scrutiny on the preparedness of the Aviation sector.

Current Growth Of Aviation Sector of India

- Domestic air travel is rebounding strongly with **6–10% annual growth**.
- India is now the **3rd-largest aviation market in the world**.
- **Delhi's Indira Gandhi International (IGI)** airport ranks among the **top 10 busiest airports worldwide** (around 79 million passengers) and 3rd busiest in Asia

What are the Different Concerns Associated with the Sector?

- **Aircraft Safety and Airworthiness:** Past issues with the Dreamliner include **battery fires**, **engine icing**, and **manufacturing quality lapses**.
    - Experts fear gaps in **aircraft maintenance**, **pre-flight checks**, and **crew training**.
- **Regulatory Oversight Gaps:** The **Directorate General of Civil Aviation (DGCA)** faces staff shortages, limiting its ability to perform thorough safety audits.
    - There are delays in responding to complaints, ramp inspections, and safety incident analysis.
    - India's aviation regulator is **overstretched** given the rapid fleet expansion.
- **Shortage of Skilled Manpower: Pilot shortage** is acute, especially for widebody aircraft.
    - **Training facilities and simulators** are insufficient to meet demand.
    - Skilled **aircraft maintenance engineers (AMEs)** and **air traffic controllers (ATCOs)** are also in short supply.
- **Airport Infrastructure Challenges: Congestion** at major airports like Delhi, Mumbai, and Bengaluru causes delays and potential safety risks.
    - **Tier-2 and Tier-3 airports** lack essential infrastructure like fire safety, navigation aids, and



bird hazard control.
    - **Airspace saturation** in busy corridors increases mid-air risk.
- **Supply Chain and Aircraft Availability:** Delays in aircraft and engine deliveries due to **global supply chain issues**.
    - **Spare parts shortages** increase aircraft-on-ground (AOG) time.
    - Airlines are forced to **cannibalize grounded jets** for parts.
- **Financial Fragility of Airlines:** Margins are thin due to **high fuel costs**, **leasing rates**, and **currency volatility**.
    - Many airlines are still recovering from **COVID-era debts**.
    - **High leasing costs** persist due to weak contract enforcement (Cape Town Convention not fully implemented).

Key Government Initiative

- **National Civil Aviation Policy (NCAP) – 2016 (MoCA):** Enhances domestic aviation growth by rationalizing MRO taxation, supporting international expansion, and creating a more investor-friendly aviation ecosystem.
- **NABH (NextGen Airports for Bharat) Nirman (MoCA):** Focuses on modernizing airport infrastructure and increasing capacity to accommodate the rising number of air passengers.
- **DigiYatra (MoCA):** Introduces biometric-based, paperless travel to streamline airport processes and improve the passenger experience.
- **GAGAN (GPS-Aided GEO Augmented Navigation) – ISRO + AAI:** Enhances flight navigation accuracy and efficiency, improving operational safety through satellite-based augmentation.
- **100% FDI in Aviation (DPIIT):** Permits full foreign ownership in greenfield airport projects and up to 49% in domestic airlines via the automatic approval route to attract global investment.
- **Krishi Udan Scheme (MoCA):** Supports air transportation of perishable agricultural products, aiming to boost farmers' income and reduce post-harvest losses.
- **Aircraft Leasing & Financing at GIFT City (IFSCA):** Establishes a domestic hub for aircraft leasing and financing to reduce reliance on foreign leasing companies.
- **Open Sky Policy (MoCA):** Liberalizes international airspace access, encouraging greater global connectivity and foreign airline participation.
- **Make in India – Aviation (DPIIT):** Encourages domestic manufacturing of aircraft parts, systems, and airport infrastructure to strengthen the aviation supply chain and reduce imports.
- **GST Introduced**: A uniform **5% Integrated Goods and Services Tax (IGST**) rate has been introduced for aircraft parts to promote India as a competitive global MRO hub.

Union Budget 2025–26: Key Initiatives to Strengthen India's Aviation Sector

- **Revamped UDAN Scheme**: The government has announced a modified UDAN initiative aimed at strengthening regional air connectivity.
    - The updated scheme will add 120 new destinations and is expected to serve an additional 4 crore passengers over the next 10 years.
- **Infrastructure Development**: Major plans include the expansion of Patna Airport and the development of a brownfield airport at Bihta in Bihar to enhance aviation infrastructure.
- **Focus on Remote Areas**: The UDAN scheme will also support the establishment of helipads and small airports in hilly regions, aspirational districts, and the Northeastern states, promoting access in underserved areas.
- **Budget Allocations**: The Ministry of Civil Aviation has been allotted ₹2,400.31 crore, a decrease from ₹2,658.68 crore in the previous year.
    - Funding for the **UDAN scheme** has been **reduced to ₹540 crore from ₹800 crore**.

About Regional Connectivity Scheme- Ude Desh ka Aam Naagrik (RCS-UDAN)

- **Launched:** 2016
- **Ministry:** Ministry of Civil Aviation
- **Objective**: To connect small and medium cities with big cities through air service.
- **Funding**: **Jointly funded** by the central government and state governments.
- **Features**: Linking **small and medium towns** to **major cities** through air connectivity.
    - Ensuring air travel is **affordable, economically sustainable, and commercially viable**.
    - Offering **financial incentives** to select airlines to promote services from **unserved and underserved airports**.

Two components of UDAN:

- **Airports:**The first component is to develop new airports and enhance the existing regional airports to increase the number of operational airports for scheduled civilian flights.
- **Flight routes:** The second component is to add several hundreds of new financially-viable, capped-airfare, new regional flight routes to connect more than 100 under-served and unserved airports in smaller towns by using "Viability Gap Funding" (VGF) where needed.

Significance of UDAN Scheme

- **Enhanced Regional Connectivity**: The scheme promotes **balanced regional development** by connecting smaller cities and remote areas with major urban hubs through air routes.
    - It boosts **intra-state and inter-state connectivity**, particularly in the North-Eastern states, hill states, and islands.
- **Affordable Air Travel**: UDAN caps airfare at **₹2,500 for a one-hour flight**, making flying more accessible to the common man.
    - This democratizes air travel, encouraging **middle-class and lower-middle-class** participation.
- **Infrastructure Development**: Development of **airports in tier-2 and tier-3 cities** fosters local infrastructure growth.
    - Reviving unused or underused airstrips helps in **optimizing national assets**.
- **Economic and Tourism Boost**: Enhanced connectivity promotes **tourism**, trade, and **employment generation**.
    - It leads to the **development of regional economies** and supports the **Make in India** and **Startup India** missions.
- **Environmental and Social Benefits**:
    - Better air connectivity reduces **road traffic congestion** and can **lower fuel usage** for long journeys.
    - Improves **medical evacuation** and emergency services access in remote areas.

Way Forward

- **Infrastructure Modernization & Expansion:** Accelerate the 200-airport target by 2025 and 4,000-aircraft fleet plan through $11 billion in infrastructure investments.
    - **Prioritize greenfield airports in underserved regions** and **upgrade existing hubs** (e.g., Delhi, Mumbai) to handle rising traffic, which is projected to double by 2029.
- **Legislative & Policy Reform**s: Implement the Protection of Interest in Aircraft Objects Bill, 2025 to align leasing laws with global standards.
- **MRO Ecosystem Development:** Establish MRO clusters near major airports and streamline customs for faster spare-part clearances.
- **Workforce & Safety Enhancements:** Address 12–15% crew shortages through accelerated training programs and partnerships with global institutes.

    - Mandate AI-driven safety protocols and fatigue management systems to reduce incidents like unstable approaches and runway overruns.
- **Technological Integration & Global Collaboration:** Adopt AI/ML for predictive maintenance and digital twin systems to optimize operations.
    - Partner with firms like Airbus for "Make in India" aviation manufacturing, starting with the TATA-Airbus C-295 facility in Vadodara.
    - Expand UDAN 5.0 to enhance last-mile connectivity through electric/hybrid aircraft pilots.

Source: [The Hindu: The rot starts at the top of the aviation ladder]