

The Hindu Important News Articles & Editorial For UPSC CSE

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Justice Ujjal Bhuyan, in granting bail to Arvind Kejriwal, upheld the right of an accused to remain silent during interrogation, criticising the practice of unnecessary arrests and emphasising that investigative power should not override individual constitutional rights.

Analysis of the news:

- ➔ Justice Ujjal Bhuyan, in his opinion allowing bail to Delhi Chief Minister Arvind Kejriwal, affirmed the right of an accused to remain silent during interrogation.
- ➔ He stated that an investigating agency cannot presume guilt or draw adverse inferences from an accused's silence.
- ➔ Invoking Article 20(3) of the Constitution, Justice Bhuyan emphasised that protection against self-incrimination applies during both trial and pre-trial stages.
- ➔ He criticised the practice of arresting first and questioning later, stressing that power to arrest does not always equate to necessity.
- ➔ Justice Bhuyan questioned the timing of Kejriwal's arrest 22 months after the FIR, advocating a balance between individual rights and investigative powers.

Accused has right to be silent during interrogation: judge

Krishnadas Rajagopal
NEW DELHI

Supreme Court judge Justice Ujjal Bhuyan in his separate opinion allowing bail to Delhi Chief Minister Arvind Kejriwal on Friday, upheld the right of an accused to remain silent during interrogation.

Justice Bhuyan, who was part of the two-judge Bench headed by Justice Surya Kant, observed that an investigating agency cannot presume guilt or make an adverse inference against an accused who chose to remain mum.

"An accused has the right to remain silent; he cannot be compelled to make inculpatory statements against himself. No adverse inference can be drawn from the silence of the accused," Justice Bhuyan stressed.

Justice Bhuyan invoked Article 20(3) of the Constitution, which mandated that an accused person must not be compelled to be a witness against himself. The judge observed that the protection against self-incrimination was not restricted to testimonies in court but also during the pre-trial stage, including at the time of interrogation by the police or a law enforcement agency.

Justice Bhuyan distinguished between an investigating agency's power to arrest with the need to arrest, saying deprivation of the personal liberty of an individual by throwing him into jail "scars forever".

"Power to arrest is one thing but the need to arrest is altogether a different



Justice Ujjal Bhuyan

thing," Justice Bhuyan referred to judicial precedents of the top court championing liberty in his separate opinion on Friday.

He deprecated the attitude "to arrest first and then proceed with the rest".

Just because an investigating agency had the power to arrest, it does not necessarily mean that it must arrest a person, Justice Bhuyan observed, questioning the timing and necessity of the CBI's arrest of Delhi Chief Minister Arvind Kejriwal in the excise policy case 22 months after registering the FIR in August 2022.

"No arrest can be made just because it is lawful for police officers to do so. The existence of the power of arrest is one thing but justification for the exercise of it is quite another," Justice Bhuyan underscored.

Probe agencies should draw a just balance between a citizen's right under Articles 19 (freedom of speech) and 21 (right to life and due procedure of law) of the Constitution and the expansive power of the police to investigate.

Page 04 : Prelims Fact

Trinamool Congress MP Mahua Moitra filed a complaint with the Lokpal against SEBI Chairperson Madhabi Puri Buch, alleging "quid pro quo" ties with the Adani Group, following Hindenburg Research's accusations of SEBI's inaction due to potential conflicts of interest.

Structure of Lokpal

- ➔ **Composition:** Lokpal consists of one Chairperson and up to eight members.
- ➔ **Chairperson:** Must be a former Chief Justice of India, a former Supreme Court Judge, or an eminent person with 25 years of expertise in anti-corruption, public administration, finance, law, or management.
- ➔ **Members:** Half of the members are judicial, and at least 50% must be from SC/ST/OBC/Minorities/Women.
- ➔ **Judicial Members:** Must be former Supreme Court Judges or former Chief Justices of High Courts.
- ➔ **Non-Judicial Members:** Must have 25 years of expertise in anti-corruption, finance, law, or public administration.
- ➔ **Term:** 5 years or until the age of 70.
- ➔ **Selection:** Appointed by the President based on the recommendation of a Selection Committee comprising the Prime Minister, Lok Sabha Speaker, Leader of Opposition, Chief Justice of India, and an eminent jurist.

Jurisdiction and Powers

- ➔ **Jurisdiction:** Includes the Prime Minister (with some exceptions), Ministers, MPs, and Group A, B, C, and D officers.
- ➔ **Powers:** Can superintend the CBI, confiscate assets in corruption cases, and suspend or transfer public servants.
- ➔ **Inquiry Wing:** Functions with civil court powers, preventing record destruction during investigations.

INBRIEF



Mahua Moitra files complaint with Lokpal against SEBI chief

Trinamool Congress MP Mahua Moitra on Friday lodged a complaint with the Lokpal against SEBI chairperson Madhabi Puri Buch alleging "quid pro quo" arrangements which potentially threaten national interests". "My LokPal complaint against Ms. Puri-Buch been filed electronically & in physical form. LokPal must within 30 days refer it to CBI/ED for a preliminary investigation and then a full FIR enquiry," she posted on X. The U.S. short-seller Hindenburg Research in August said SEBI's unwillingness to act against the Adani Group may be because Ms. Buch had stakes in offshore funds linked to the conglomerate. PTI

Railway Board Chairman Satish Kumar highlighted urgent manpower shortages in Indian Railways due to rapid infrastructure growth, increased assets, and safety concerns.

- He emphasised the need for additional staff to ensure safe operations and maintain expanding railway assets effectively.

Railway Board Chairman flags shortage of manpower

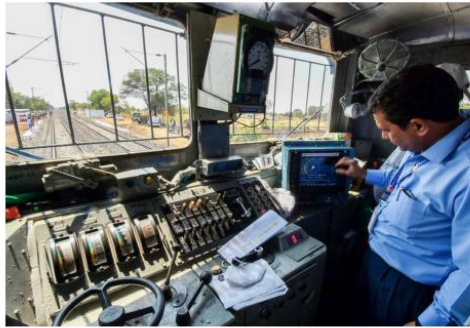
In a letter to the Finance Ministry, Satish Kumar highlights increase in new lines and trains, and emphasises need for creation of new posts; he says more staff needed for safe operation of trains

S. Vijay Kumar
CHENNAI

Days after taking charge as the Chairman and Chief Executive Officer of the Railway Board, Satish Kumar has raised concerns about the critical issue of manpower shortages in the Indian Railways and sought additional staff “urgently” to ensure the safe operation of trains.

In a letter to the Finance Ministry, Mr. Kumar highlighted the exponential growth in railway infrastructure, particularly the increase in new lines and trains, and emphasised the need for the creation of new posts. “For effective monitoring and execution of various projects, maintenance of new assets, and the smooth and safe operation of trains, there is an urgent requirement for additional manpower in Indian Railways,” he stated.

Mr. Kumar’s concerns are set against the backdrop of a series of major accidents resulting in multiple fatalities across the railway network over the past two years. Filling the large number of vacancies across various depart-



Stitch in time: Mr. Kumar’s concerns are set against the backdrop of a series of major accidents over the past two years. NAGARA GOPAL

ments, especially in safety-related roles, has been a long-standing demand of trade unions.

Increase in capex

He pointed out that creating new posts required approval from the Department of Expenditure, and noted the significant increase in capital expenditure by the Railways – from ₹1.48 lakh crore in 2019-20 to ₹2.62 lakh crore in 2023-24. This increased spending had led to a substantial rise in assets, necessitating adequate manpower for reliable, and safe train operations.

To meet the ambitious targets set for 2030, more

trains would have to be operated, which required increased manpower for both train operations and infrastructure maintenance. The creation and expansion of new assets and lines in the Railways also necessitated adherence to all safety parameters for clearance by the Commissioner of Railway Safety.

Given that compliance with safety norms was paramount in train operations, outsourcing critical activities like maintenance of tracks, bridges, locomotives, coaches, wagons, and signalling equipment was not feasible. Therefore,

Mr. Kumar stressed the

need for the Ministry of Railways to be granted authority to create non-gazetted posts in essential safety categories.

Underlining the urgent need for more manpower, Mr. Kumar noted that the number of locomotives increased from 11,739 in March 2019 to 15,564 in March 2024, which was a 59.86% increase. This growth was accompanied by a rise in the number of loco sheds, workshops, and running rooms (rest houses for train crews). Additional manpower was required to operate these locomotives for both passenger and freight trains and to maintain the associated assets.

Regarding passenger amenities, the number of escalators rose from 656 in March 2019 to 1,436 in March 2024, and the number of lifts increased by 196%. Electrification was completed over 63,456 km of route, compared to 35,488 km previously. On the revenue front, the Railways recorded a 40% increase in passenger earnings and a 31.4% increase in freight loading between 2019-20 and 2023-24, the Chairman said.

Key Information about the Railway Board

- The Railway Board is the apex body of the Indian Railways, responsible for its overall management and functioning.
- The Chairman and CEO oversee policy formulation, infrastructure development, safety, and operations.
- The Board reports to the Ministry of Railways and coordinates with other ministries for finance and infrastructure matters.

- ▶ Indian Railways has seen significant capital expenditure, from ₹1.48 lakh crore in 2019-20 to ₹2.62 lakh crore in 2023-24.
- ▶ It manages the maintenance of infrastructure, including electrified routes (63,456 km by 2024), escalators, lifts, locomotives, and loco sheds, with substantial revenue increases in passenger earnings and freight loading.

Concerns Raised by Chairman Satish Kumar

- ▶ **Manpower Shortages:** Urgent requirement for additional staff due to the exponential growth in railway infrastructure, new lines, and assets.
- ▶ **Safety Issues:** Recent major accidents highlight the need for more personnel in safety-related roles to ensure safe train operations.
- ▶ **Increased Assets:** The number of locomotives grew by 59.86% between 2019 and 2024, necessitating additional manpower for operation and maintenance.
- ▶ **Non-feasibility of Outsourcing:** Outsourcing critical activities like track, bridge, and locomotive maintenance is not viable due to safety compliance issues.
- ▶ **Capex Increase:** Capital expenditure growth has led to more assets, requiring more staff for infrastructure maintenance and train operations.
- ▶ **Safety Clearance:** More manpower is needed to comply with safety norms for clearance by the Commissioner of Railway Safety.

UPSC Mains PYQ : 2014

The setting up of a Rail Tariff Authority to regulate fares will subject the cash strapped Indian Railways to demand subsidy for obligation to operate non-profitable routes and services. Taking into account the experience in the power sector, discuss if the proposed reform is expected to benefit the consumers, the Indian Railways or the private container operators.

India's submissions at the WTO aim to curb harmful subsidies promoting unsustainable industrial fishing while protecting small-scale fishers.

- ➔ Supported by many developing countries, the proposal seeks to balance sustainability goals with fair treatment for developing nations' fishing sectors.

India's Stance on Fisheries Subsidies at WTO

- ➔ India demands stricter disciplines on subsidies that fuel unsustainable deep-sea industrial fishing, mainly by large fleets.
- ➔ India emphasises not burdening small-scale fishers, particularly in developing countries, as they seek to expand fishing capacities sustainably.
- ➔ The country seeks a fair agreement that supports sustainability goals without penalising developing nations disproportionately.
- ➔ India's submissions focus on addressing loopholes in the WTO draft that may allow large-scale industrial fishing operations to evade accountability.

Support and Impact

- ➔ **Support from Developing Countries & LDCs:**
 - Backed by many developing nations and Least Developed Countries (LDCs) concerned with protecting small-scale fishers.
 - Gambia's fishing community supports India's call to address loopholes affecting sustainable practices in poorer countries.
- ➔ **Impact:**
 - Expected to check harmful subsidies that fuel overfishing and depletion of global marine resources.

India's stance on WTO fish talks gets support from many developing nations

Amiti Sen
GENEVA

India's submissions at the WTO demanding disciplines on fisheries subsidies should effectively check large-scale industrial fishing fleets involved in deep-sea fishing while not inhibiting small players looking to expand fishing capabilities received support from many developing countries and LDCs, a Geneva-based trade official has said.

"Efforts are on at the WTO to conclude the second part of the fisheries subsidies agreement, that deals with disciplining subsidies contributing to over capacity and over fishing, by the end of the year. India's submissions, made in response to the fisheries committee chair's draft proposal, has been supported by many developing and least developed countries," the official said.

On Friday, Chair of fisheries negotiations Ambassador Einar Gunnarsson of Iceland, in a note, asked all member-countries to maintain considerable momentum to engage with each other and senior leaders in capitals to find the political will necessary to conclude the negotiations by the year-end.

Key loopholes

India's submissions on the WTO draft text on fisheries subsidies point to significant loopholes that may perpetuate unsustainable fishing operations, particularly by large-scale industrial fishing nations.

"It is essential to carefully review these aspects of



Net big fish: Small-scale fishers are calling for more effective measures to curb industrial-fishing subsidies. THE HINDU

the current draft text to ensure it effectively aligns with sustainability goals of the OCOF pillar without unfairly burdening developing countries," it said.

Reflecting India's worries, Alieu Sowe, Coordinator, Gambia Fisher Folks Association, said small-scale fishers from around the world had expressed significant concerns about the current WTO proposed text on fisheries subsidies.

Speaking at the ongoing WTO Public Forum in Geneva on the issue of meeting sustainability development goals in fisheries negotiations, Mr. Sowe said the proposed text did not effectively discipline the large-scale, industrial fishing operations that are primarily responsible for overfishing and depletion of marine resources. Instead, it imposed stringent conditions on small-scale fishers, particularly in developing countries.

Sustainability-exemption clause was also seen as problematic as it allowed advanced fishing countries with better monitoring and notification capabilities to avoid commitments to cut harmful subsidies.

"This discriminates

against poorer countries that lack such capacities, even if they fish sustainably," Mr. Sowe said.

The proposed special and differential treatment provisions for small-scale fishers are considered inadequate. The exemptions are based on non-industrial characteristics, which do not address the core issue of industrial fishing.

"Overall, small-scale fishers are calling for more effective measures to curb industrial fishing subsidies and better support for sustainable small-scale fishing practices," he said.

An estimated 37.7% of global fish stocks are overfished compared with 10% in 1974. There is a total government funding of \$35 billion for fishing, of which an estimated \$22 billion increases the capacity to fish unsustainably, per figures shared by the WTO.

While China, the EU, the U.S., South Korea and Japan are among the top subsidisers, India's subsidies are relatively small estimated by the government at less than \$15 per fisher family annually.

(The Hindu Businessline writer is in Geneva at the invitation of the WTO)

Daily News Analysis

- Could ensure better protection for small-scale fishers in developing countries, promoting sustainable fishing practices.
- Calls for more robust commitments from top subsidisers like China, the EU, the U.S., Japan, and South Korea.



Term In news : *Onitis bordati*

Recently, researchers have identified a previously unknown dung beetle species, *Onitis bordati*, in the Nongkhylllem Wildlife Sanctuary in Meghalaya.



About *Onitis bordati*:

- ▶ It is a dung beetle species belonging to the genus *Onitis*.
- ▶ **Appearance:** Males of most species have distinctive forelegs that are long, slender and curved, often with teeth or spines.
- ▶ The species belonging to the genus *Onitis* are tunnellers. Males of most species have distinctive forelegs that are long, slender and curved, often with teeth or spines.
- ▶ Dung beetle species were previously only found in Vietnam and Thailand.
- ▶ **Ecological Significance:** They are known for their ecological functions, such as seed dispersal, nutrient cycling, and pest control, and plant growth.
- ▶ **Threats:** Habitat destruction and climate change pose significant threats.

Key Facts about Nongkhylllem Wildlife Sanctuary

- ▶ **Location:** The Sanctuary falls in the Eastern Himalayan Global bio-diversity hot spot and located in the state of Meghalaya.

Daily News Analysis

- The area consists of undulating plains to low hills, which are part of the Archaean Meghalaya Plateau.
- The area has become broken and rugged, especially towards the west and north, because of continuous erosion by the rivers Umtrew, Umran, Umling, Umtasor and other smaller streams.
- The Umtrew is the main river of the area and the rest named above are its tributaries. The Umtrew also marks the western boundary of the Reserve Forest and the Sanctuary.
- Fauna: It is home to the Clouded Leopard, Elephants and Himalayan Black Bear.
- Flora: Shorea robusta, Tectona grandis, Terminalia myriocarpa, Gmelina arborea etc.



The shock of crumbling infrastructure and the solution

Reports on the collapse of a series of under-construction bridges in Bihar have highlighted the issues of quality control and project implementation in infrastructure in India. In some instances, these have been megaprojects. The number of such incidents where bridges have collapsed could be 10 or even more. The infrastructure sector has been one of the key drivers of the Indian economy. The government's aim of making India a developed nation by 2047 is linked to improvements in its infrastructure sector. Steps to advance India's infrastructure have taken shape in the form of the PM Gati Shakti National Master Plan (NMP), the National Logistics Policy and the Smart Cities Mission among others. Further, the government increased its capital expenditure allocation to ₹11.11 lakh crore (3.4% of GDP) in Budget 2024, indicating the government's commitment towards infrastructure development.

The challenges within

However, the sector still struggles with certain issues and challenges. One of the most common issues faced by most projects, particularly those that are government-sponsored, are time delays and cost overruns. A report by the Ministry of Statistics and Programme Implementation reveals that as many as 431 infrastructure development projects, each with investments of ₹150 crore or more, suffered a cost overrun of ₹4.82 lakh crore, as of December 2023. Moreover, the percentage of delayed projects hit a three-year low in March this year. Out of 779 projects delayed, 36% were running behind schedule for a period between 25 to 60 months, 26% for one to 12 months, 23% for 13 to 24 months, and 15% for over 60 months averaging a three-year delay.

Any industrial or commercial activity in India requires multiple clearances from the time of conception to the commissioning of the project. The implementation status of most of the projects points to gaps in project management practices, especially in urban infrastructure projects, including a lack of comprehensive planning and



Alkesh Kumar Sharma

a former Secretary, Government of India and was the CEO and MD of the Delhi Mumbai Industrial Development Corporation (DMICDC) Limited

As a key driver of the Indian economy, the infrastructure sector cannot be subject to failures; having a robust programme management system is important

management by urban local bodies, and a lack of capacity of local self government institutions. All this results in an additional expenditure burden on the government, crowds out funding for more deserving projects and increases procurement costs. It has also been observed that sufficient attention, time and expertise are not devoted during the project planning stage. Therefore, building our experience in project management is crucial for India to continue on its high-growth trajectory in years ahead. While organisations are realising the need for structured project management, many are looking at short-term programmes to enhance the skill sets of their existing project teams.

Traditional practices need an overhaul

Traditional project management practices require an overhaul to integrate modern tools and techniques that involve real-time data management and then crunching that data. An enabling policy framework should consider global best standards on project management and prescribe procedures/guidelines for effective project execution in public sector and public-private partnership projects.

Various countries have adopted multi-pronged approaches to address these issues. In the United Kingdom, the Infrastructure and Projects Authority has a special emphasis on the processes involved for project completion. China, Saudi Arabia and a few other countries have set up similar agencies for end-to-end project deliveries.

Under PM Gati Shakti, the National Master Plan has been launched to break the silos in which government ministries/departments work to bring all stakeholders to work on an integrated platform. This initiative has set benchmarks for all departments to achieve the proposed targets and deadlines. PM GatiShakti is being demonstrated through a GIS-based ERP portal wherein the objective is to monitor real-time progress. This will provide not only visual depiction of the National Master Plan but will also

integrate, through application programming interface, real-time progress of various departments. However, the quality of projects during implementation and the integrity of the team overseeing the projects will also be critical.

To address these challenges, a holistic "Program Management Approach" is needed. This approach was adopted in the industrial corridors development projects, beginning with the Shendra-Bidkin in Aurangabad, Maharashtra. This involved a disciplined and systematic coordination of human resources, time, money, and information to plan and deliver multiple projects in a unified manner. It is typically employed when the mission involves significant resource expenditure and requires the integration of diverse activities (as in Shendra-Bidkin, with over nine packages taken up simultaneously).

Set up an agency

Programme management relies on well-defined and proven business delivery processes and tools to achieve the overall mission objectives within specified time and budget constraints. This can only be achieved if we are able to develop an industry-ready workforce. Setting up an agency to conduct professional courses in project management along the lines of the The Institute of Chartered Accountants of India and chartered engineers in various other countries, will help in developing professional ethics and responsibilities in project execution, monitoring and oversight.

The government has allocated a substantial budget of taxpayers' money for infrastructure projects. As India moves ahead to become a global powerhouse, it is crucial to prevent time and cost overruns as well as the repeated failure of under-construction projects. Implementing a robust programme management system is essential to achieving this goal. Such a system will bring much-needed efficiency to create future-ready infrastructure, paving the way for an affluent and safe future for Indian citizens.

GS Paper 03 : Indian Economy – Infrastructure – Railways.

PYQ: (UPSC CSE (M) GS-3 2022): Why is Public Private Partnership (PPP) required in infrastructural projects? Examine the role of PPP model in the redevelopment of Railway Stations in India. (150 w /10 m)

UPSC Mains Practice Question What are the key challenges faced by India's infrastructure sector? How can a holistic Program Management Approach and professional training help address these issues? Illustrate your answer with examples of successful models and policy frameworks. (250 w /15 m)

Context :

- Recent reports on the collapse of several under-construction bridges in Bihar underscore significant quality control and project implementation issues within India's infrastructure sector.
- The government aims to transform India into a developed nation by 2047, emphasizing infrastructure improvements through initiatives such as the PM Gati Shakti National Master Plan and the Smart Cities Mission.
- Despite increasing capital expenditure to Rs 11.11 lakh crore in Budget 2024, the sector faces persistent challenges, including time delays and cost overruns.

Project Delays and Cost Overruns

- **Statistics on Cost Overruns:** As of December 2023, 431 infrastructure projects with investments of Rs 150 crore or more experienced cost overruns totaling Rs 4.82 lakh crore, highlighting severe financial inefficiencies.
- **Extent of Delays:** Out of 779 delayed projects, 36% were behind schedule by 25 to 60 months, with 23% delayed by 13 to 24 months and 15% by over 60 months, indicating a systemic issue in timely project completion.
- **Impact on Infrastructure Development:** These delays and cost overruns impose additional financial burdens on the government, diverting funds from other critical projects and inflating procurement costs, thereby hindering overall infrastructure growth.

Gaps in Project Management

- ➔ **Implementation Challenges:** The current project management practices reveal gaps in planning and execution, especially in urban infrastructure, where there is often insufficient capacity and oversight by local self-government institutions.
- ➔ **Need for Comprehensive Planning:** Inadequate planning during the project conception stage results in increased expenditures and inefficiencies. Effective project management and planning are essential for managing large-scale infrastructure projects.
- ➔ **Overhaul of Traditional Practices:** Modernizing project management practices with real-time data management and global best practices is crucial for improving the efficiency and effectiveness of infrastructure projects.

Program Management Approach(Way Forward)

- ➔ **Successful Models:** The Shendra-Bidkin industrial corridor in Maharashtra exemplifies the effective use of a Program Management Approach, coordinating multiple projects to optimize resource use and achieve unified objectives.
- ➔ **Proposed Agency for Professional Training:** Establishing an agency to conduct professional courses in project management, akin to the Institute of Chartered Accountants of India, will enhance project execution standards and develop a skilled workforce.
- ➔ **Government's Role and Funding:** With substantial taxpayer funding allocated for infrastructure, it is imperative to implement robust program management systems to prevent project failures and ensure efficient use of resources for future-ready infrastructure.

What is the Current Organizational Structure of Indian Railways?

- ➔ **About:** Indian Railways was established in 1853 and is one of the world's largest railway networks.
- ➔ The first railway on the Indian sub-continent ran over a stretch of 21 miles from Bombay to Thane.
- ➔ India is projected to account for 40% of the total global share of rail activity by 2050.
- ➔ Indian Railways crafted the National Rail Plan (NRP) for India - 2030 to develop a modern railway system.
- ➔ **Revenue:** In 2022-23, Railways Indian railways earned 69% of its internal revenue from freight and 24% from passenger traffic.
- ➔ The remaining 7% was earned from other miscellaneous sources such as parcel service, coaching receipts, and sale of platform tickets.

Structure:

- ➔ **Ministry of Railways:**
 - **Responsibilities:**
 - Formulates overall railway policy and sets strategic direction.
 - Oversees budgetary allocations for the Indian Railways.
 - Approves major railway projects and expansion plans.
 - Provides policy guidance to the Railway Board.

- In Budget 2024-25, capital outlay of Rs. 2.52 lakh crore (USD 30.3 billion) has been allocated to the Ministry of Railways to make advancements in railways.
- Government has allowed 100% FDI in the railway sector.

➔ **Railway Board:**

○ **Responsibilities:**

- Implements policies set by the Ministry of Railways.
- Oversees day-to-day operations of the Indian Railways.
- Formulates long-term plans for network development, modernization, and safety improvement.
- Issues directives and guidelines to zonal railways.

➔ **Zonal Railways:**

- **Number:** 17 (as of June 2024) with a proposed 18th zone (South Coast Railway)

○ **Structure:**

- Zonal Railways further divided into divisions managed by Divisional Railway Managers (DRMs).
- Each division further subdivided into smaller units for specific functions (e.g., workshops, traffic management).

➔ **Responsibilities:**

- Each zone is responsible for the efficient and safe operation of its geographical territory.
- Oversees maintenance of tracks, rolling stock, and railway infrastructure within the zone.
- Implements safety regulations and procedures.
- Generates revenue through ticket sales and freight charges.

What Recommendations have various Committees made to Enhance Railway Safety?

➔ **Kakodkar Committee (2012):**

- Establishing a statutory Railway Safety Authority.
- Forming a non-lapsable Rashtriya Rail Sanraksha Kosh (RRSK) of Rs. 1 lakh crores over 5 years for safety projects.
- Adopting advanced technologies for track maintenance and inspection.
- Enhancing human resource development and management.
- Ensuring independent accident investigations.

➔ **Bibek Debroy Committee (2014):**

- Separating the railway budget from the general budget.
- Outsourcing non-core activities.
- Establishing a Railway Infrastructure Authority of India.

➔ **Vinod Rai Committee (2015):**

- Setting up an independent Railway Safety Authority with statutory powers.
- Forming a Railway Accident Investigation Board for impartial inquiries.

- Establishing a separate Railway Infrastructure Company for owning and maintaining railway assets.
- Implementing a performance-linked incentive scheme for railway employees.
- ➔ **Rakesh Mohan Committee (2010)**
 - Revamp the accounting system to align with Indian GAAP (Generally Accepted Accounting Principles).
 - Expand railway presence in FMCG, Consumer Durables, IT, containerized cargo, and automobile segments.
 - Focus on long-distance and inter-city transport, speed upgrades, and High-Speed Rail corridors for passenger services.
 - Improve connectivity to industry clusters and major ports.
 - Develop logistics parks at key network hubs.

What Measures Can Be Taken to Improve the Railway Sector in India?

- ➔ **Integrated Multimodal Logistics Solutions:** Developing integrated logistics solutions that seamlessly combine rail, road, and air transportation modes for efficient door-to-door movement of goods and passengers.
 - Establishing logistics parks and multimodal hubs near major industrial clusters and urban centers to facilitate intermodal connectivity and reduce last-mile inefficiencies.
- ➔ **Renewable Energy Integration:** Developing a comprehensive renewable energy strategy to transition the Indian Railways towards clean energy sources, such as solar, wind, and biomass.
 - Undertaking large-scale installation of solar panels on station rooftops, vacant land parcels, and along railway tracks to generate renewable energy for traction and non-traction purposes.
 - Exploring the deployment of battery-electric and hydrogen fuel cell technologies for rolling stock and auxiliary power units, reducing the Railways' carbon footprint and environmental impact.
- ➔ **Intelligent Transportation Systems (ITS):** Implementing advanced ITS solutions, such as real-time traffic management systems, automated train control systems, and intelligent signaling systems through Kavach, to optimize network capacity and improve safety.
 - India can also learn from Germany's Deutsche Bahn renowned for its punctuality and operational efficiency.
- ➔ **Value Capture from Land Development:** Leveraging land assets near railway stations for commercial development projects like malls or office spaces, generating revenue streams beyond ticketing.
- ➔ **Leverage Digital Twins and Predictive Analytics:** Developing digital twins of the entire railway network, including infrastructure, rolling stock, and operational systems, to create virtual replicas for simulation, testing, and optimization.

Daily News Analysis

- Implementing predictive analytics and machine learning algorithms to analyze real-time data from sensors, cameras, and other sources to enable proactive maintenance, optimize asset utilization, and enhance safety.
 - India can learn from the Netherlands Nederlandse Spoorwegen in this regard.
 - Integrate digital twins and predictive analytics with decision support systems to enable data-driven decision-making and proactive risk management.
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