

## Rail Safety

### Why in news?

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- 39 people have lost their lives after the Hirakhand Express derailed in Vizianagaram on Saturday evening.

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- This is the **third such horrific incident in the past three months**. In November - 146 people died when 14 coaches of the Indore-Patna Express derailed. In December - 15 coaches of the Sealdah-Ajmer Express went off the rails.

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### Apathetic Attitude:

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- Every incident has led to loud cries from experts and the public, asking the government to address safety concerns.

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- But on every occasion, a routine inquiry is ordered and the inquiry commission gives its report after months. By then, the public would have forgotten about this accident till another such unfortunate accident takes place, then yet another inquiry commission will be ordered.

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- And so, **the cycle of accidents and routine inquiry commissions will go on** — but who will never forget such horrible yet avoidable accidents?

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- An accident report is of use if its recommendation is followed in letter and spirit. But nothing much happens with these recommendations.

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- Otherwise, why would reports prepared by experts in consultation with the railways gather dust? The Kakodkar and Sam Pitroda committee reports are just two, in recent times.

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- Also after every such accidents, the government has chosen to believe that

the incident is likely to have been **the result of sabotage**. This is the view of the Indian Railways spokesperson in the latest case as well.

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- However, given the spate of accidents, the government and the Indian Railways would be well advised to introspect and prioritise safety.

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## **What is the core reason for the mishaps?**

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- Indian railways is being **systematically damaged by successive governments because of the lack of understanding of this organisation's potential**.

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- Indian railways needs to be benchmarked to the Japanese railway system, Shinkansen, which, since 1964, has been carrying millions of passengers with zero fatality.

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- The present problem of the railways is that the organisation is **on the verge of bankruptcy**. Biggest worry is safety as the Depreciation Reserve Fund (DRF) and Development Fund (DF) are getting depleted, since the railways are cash-starved.

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- The railways are not generating enough operating cash surplus to even meet daily operating expenses. To replace an old asset (tracks, rolling stock or signalling systems), you need to put money in the DRF.

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- On an average, the system requires Rs 20,000-25,000 crore year after year to replace old assets. Instead of that, a provision had been made for a mere Rs 3,200 crore for the DRF in the 2016 budget. Therefore, the much required replacement of old assets is postponed — knowingly compromising safety.

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- The railways have **lost their focus from operation with safety**, to peripheral activities like catering, Wifi, bullet trains, etc. The railway organisation is totally demoralised as uncertainty looms large in terms of major changes at the top level.

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- The quality of maintenance isn't being monitored. Further, continuous track circuiting (CTC) is needed on all tracks to detect rail fractures. With CTC, the derailment of the Indore-Patna Express would not have occurred.

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## **Technological measures to improve safety:**

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  - Advanced Signalling System.
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  - Technological aids of Automatic Train Protection System to Loco pilots: In order to avoid collisions due to Signal Passing at Danger or over speeding.
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  - Train Protection and Warning System: Prevents train accidents caused by human error.
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  - Train Collision Avoidance System: Has dual capability of preventing train accidents caused due to Signal Passing at Danger or non observance of speed restrictions by train drivers as well as preventing train collisions.
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  - Complete Track Circuiting.
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  - Automatic Block Signalling: For augmenting Line Capacity and to reduce headway on existing High Density Routes on Indian Railways.
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  - Block Proving Axle Counter: To enhance safety, automatic verification of complete arrival of train.
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  - Train Management System: Helps in real-time monitoring of trains in the control room.

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## **Recent Standing Committee Report:**

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The Standing Committee on Railways headed by **Sudip Bandopadhyay** submitted its report on **Safety and Security in Railways** on December 14, 2016. Key observations and recommendations of the Committee include:

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  - 1. Institutional framework:\n
    - a. For Indian Railways to ensure safety in the backdrop of inter department differences is difficult. The Committee recommended that a

**separate department solely entrusted with providing safety and security.**

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- b. The Ministry of Railways should appoint a Member (Safety) to provide dedicated focus to the railway safety operations.

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## 2. Under-investment in Railways:\n

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- a. The Committee observed that **slow expansion of rail network has put undue burden** on the existing infrastructure leading to severe congestion and safety compromises.

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- b. Further, under-investment in Railways has resulted in congested routes, inability to add new trains, reduction of train speeds, and more rail accidents.

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## 3. Accidents at unmanned level crossings (UMLCs):\n

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- a. In 2014-15, about 40% of the accidents occurred at UMLCs, and in 2015-16, about 28%. The Committee recommended that certain measures such as Approaching Train Warning Systems, Train Actuated Warning Systems for giving **audio-visual warning to road users about an approaching train** should be implemented.

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- b. Further, additional road speed breakers should be constructed before the level crossing gates to reduce the speed of approaching traffic. Such measures should be provided at all manned and unmanned crossings.

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## 4. Accidents due to derailments:\n

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- a. Between 2003-04 and 2015-16, derailments were the second highest reason for casualties. In 2015-16, around 84% accidents occurred due to derailments.

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- b. **One of the reasons for derailment is defect in the track or rolling stock.** Of the total track length of 1,14,907 km in the country, 4,500 km should be renewed annually. However, of the 5,000 km of track length

due for renewal currently, only 2,700 km of track length was targeted to be renewed.

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- c. The Committee also noted that the **Linke Hoffman Busch (LHB) coaches** do not witness higher casualties in case of derailments as the coaches do not pile upon each other. It recommended that Indian Railways should switch completely to LHB coaches.

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#### 5. Accidents due to failure of railway staff:\n\n

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- a. The Committee noted that more than half of the accidents are due to lapses on the part of railway staff. Such lapses include carelessness in working, poor maintenance work, adoption of short-cuts, non-observance of laid down safety rules and procedures.

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- b. The Committee recommended that a **regular refresher course for each category of railway staff** should be conducted.

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- c. The course can cover case studies of accidents due to common errors, pattern of working, modernisation and technology upgradation.

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#### 6. Accidents due to loco-pilots:\n

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- a. With rail traffic increasing, loco-pilots encounter a signal at every kilometre and **have to constantly be on high alert.**

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- b. Further, currently no technological support is available to the loco-pilots and they have to keep a vigilant watch on the signal and control the train accordingly. Loco-pilots are also **over-worked** as they have to work beyond their stipulated hours of duty.

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- c. The Committee recommended that loco-pilots be provided with sound working conditions, better medical facilities and other amenities to improve their performance.

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- d. The location of signals can be uniformly displayed and be linked with visibility, braking distance, and speed.

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### **Conclusion:**

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- We need to go for a generational change in our railway system and completely modernise it with latest technology. For this, **the government needs a massive investment programme without relying on revenue from the railway's internal generation.**

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- Indian Railways has been taking a hit on its revenues on the one hand and on the other it has been losing out to both air travel and road transport. If lax safety standards are not addressed urgently, the Indian Railways will acquire an unsafe tag soon.

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**Category: Mains | GS - III | Infrastructure**

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