

## Delayed Track Renewal and Outdated Signalling Systems



Source: [http://www.frontline.in/multimedia/dynamic/03201/FL13TRAIN1\\_1\\_3201173g.jpg](http://www.frontline.in/multimedia/dynamic/03201/FL13TRAIN1_1_3201173g.jpg)

## In This Issue

### *COVER STORY:*

- Delayed Track Renewal and Outdated Signalling Systems

### *HEADLINE OF THE WEEK:*

- Eminent citizens write to the Committee of Experts on data protection framework

### *SECTION 1: GOVERNANCE AND DEVELOPMENT*

- **Security:** NTPC accident points to a wider need to document and reduce workplace mishap
- **Health:** 51% of Indian women aged 15-49 are anaemic, most in world: study
- **Technology:** Aadhar to aid rail staff attendance
- **Law and Justice:** Centre plans to set up more commercial courts; Construction workers welfare cess being 'frittered and defalcated' says Supreme Court

### *SECTION 2: SOCIETY*

- **Gender:** India falling 21 ranks on Global Gender Gap index: who will bachao the beti?

### *SECTION 3: INDIA AND THE WORLD*

- **India in the world:** India-Ukraine panel falls through

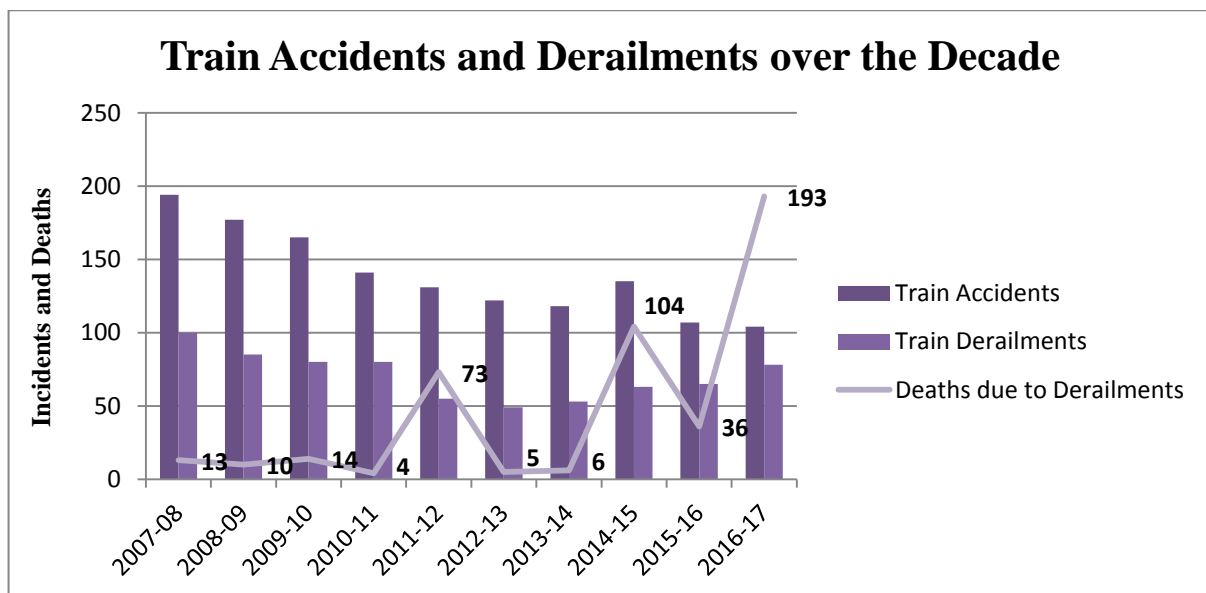
## Lead Essay

### Delayed Track Renewal and Outdated Signalling Systems

#### Introduction

Almost two months after the Prime Minister inaugurated the Ahmedabad-Mumbai bullet train project, which will cost the government Rs. 1,10,000 crore,<sup>i</sup> a response to an RTI query revealed that over 40 per cent of seats on the Mumbai-Ahmedabad route in the last three months have been going vacant. The response by the chief commercial manager of Western Railways further noted that between July 1 and September 30 in 2017, of the 7,35,630 seats in the 32 mail/express trains serving this sector, only 4,41,795 seats were booked during that period generating a revenue of Rs. 30,16,24,623 against the total estimated expected income of Rs. 44,29,08,220.<sup>ii</sup>

The RTI response not only puts a serious question mark on the viability of the bullet train project; it also draws attention to the more serious and neglected areas of the Indian Railways that need immediate attention. The last few months have been marked by a spate of train accidents across the country, highlighting the alarming safety standards in the Railways. In the last 3 years, i.e. 2014-15, 2015-16 and 2016-17, there were 206 consequential train derailments in which 333 persons lost their lives.<sup>iii</sup> Between 1st January and 30th June, 2017, there were a total of 29 train accidents in which 57 people were killed and 58 were injured.<sup>iv</sup> According to *IndiaSpend*, data collated from two answers in the Rajya Sabha (March 31, 2017 and August 11, 2017) shows that at 193 deaths, the death toll from train derailments in 2016-17 is the highest it has been in a decade.<sup>v</sup> The data is given as follows:



Graph 1

Source: <http://www.indiaspend.com/special-reports/in-2016-17-indias-derailment-death-toll-highest-in-a-decade-12940>

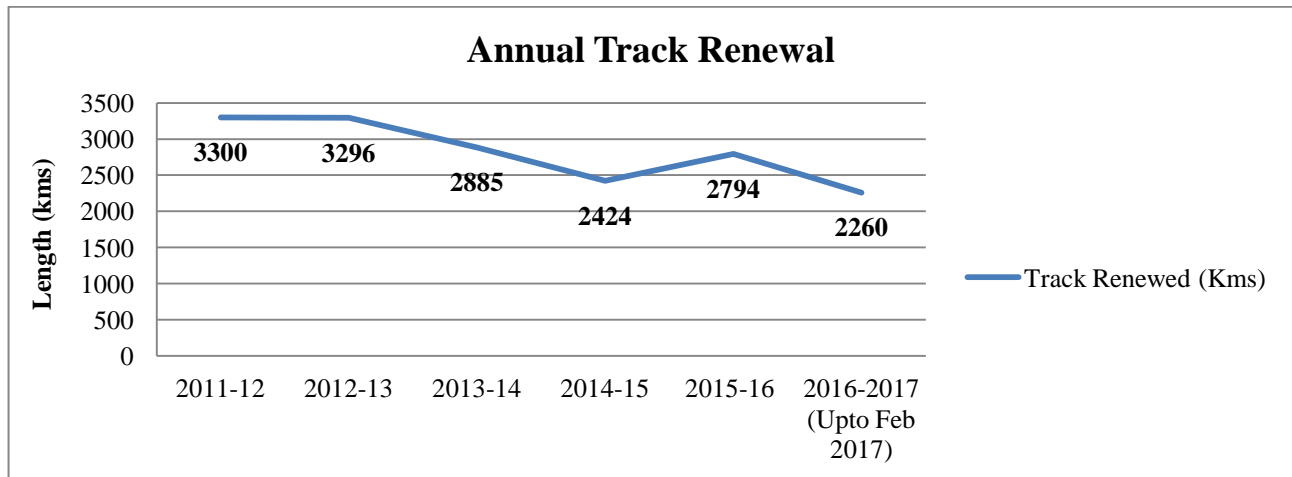
The data is clear. Over the past decade, derailments in particular have caused the highest number of train fatalities. But more than being an issue in itself, derailments are symptoms of other much larger issues. These include, mainly, delayed track renewals and outdated signalling systems.

#### Track Renewal

Amongst a number of challenges that mar the safety standards of the Railways, delayed track renewals is one of the most pressing issues today. The Report of Task Force on Safety (dated January 2017) ascribes train derailments to “rail fractures” and “weld failures”. In this direction, the report highlights the urgent need to address the “backlog in rail/track renewals and the technology of rail welding.”<sup>vi</sup>

## Lead Essay

According to the Railway Minister's White Paper of February 2015, out of the total track length of 114,907 kms, 4500 kms should be renewed annually.<sup>vii</sup> However, the annual length of tracks renewed has been declining for the past three years as compared to the earlier periods. The data in the graph given below indicates the declining trend of track renewal:

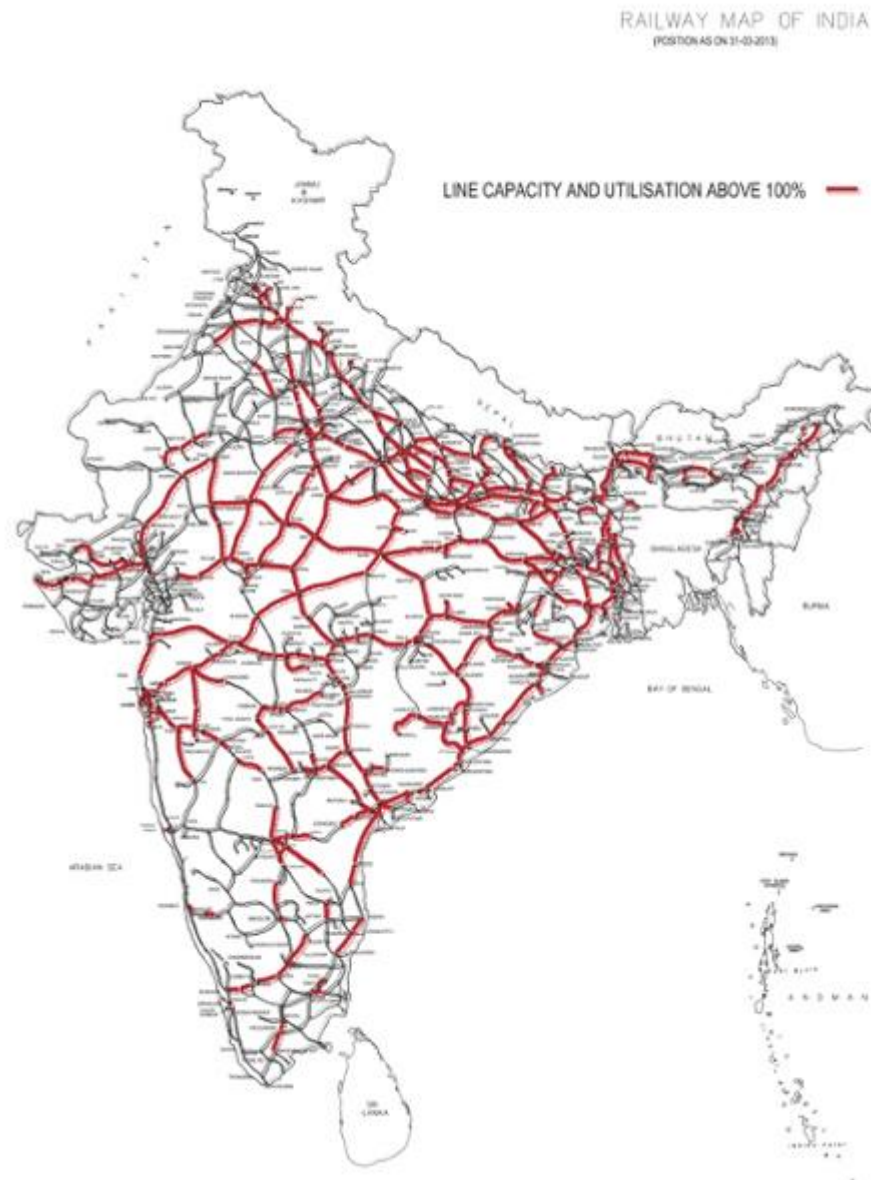


Graph 2

Source: 'Derailments as a cause of train accidents and casualties'  
Unstarred Question no. 3473, Rajya Sabha, answered on 31<sup>st</sup> March, 2017.<sup>viii</sup>

The White Paper notes that arrears of track renewal are accumulating which will result in disproportionately high maintenance effort, and also result in reduced reliability of assets. Most importantly, they put at risk the safety of the passengers. Writing for *IndiaSpend*, Charu Bhahri notes that three major train derailments from November 2016 to January 2017 occurred on over-utilised sections of the Railways. These derailments include the 19321 Indore-Patna Express derailment near Pukhrayan, 60 kms from Kanpur, in the Jhansi rail division, on November 20, 2016; the 12987 Sealdah-Ajmer Express derailment near Rura, 70 kms from Kanpur, on the Kanpur-Tundla rail stretch; and the 18448 Hirakhand (Jagdalpur-Bhubaneswar) Express derailment near Kureru in Andhra Pradesh. According to the following map, all these three stretches were used to run trains beyond their line capacity:

## Lead Essay



Source: <http://www.indiaspend.com/wp-content/uploads/map1.jpg>

The target track renewal for the year 2017-18 has been revised to 3,600 kms<sup>ix</sup>, which is still below the 4,500 km-recommended length.

### Signalling Systems

Similar to overused tracks, signalling gears in many stations have outlived their utility. Safe running of trains requires proper functioning of signal gear. The January 2017 Report of Task Force on Safety highlights that “safety of trains depends on the integrity of signalling systems.”<sup>x</sup> The report noted that “in spite of advancement of signalling systems in the world and even on IR [Indian Railways], there are nearly 370 stations having Lever-Frames and Semaphore Signals” – which require replacement with more advanced systems, such as the Multiple Aspect Colour Light Signalling (MACLS).



## Lead Essay

However, the report further notes that at the current levels of funds provisions and resources, liquidation of signal works will take 7-8 years, “leave aside investments in Advance Signaling Systems.” Additionally, expressing dismay over the rate of replacement of signalling gears – 100 stations against the needed rate of 200 per annum – the report gives the example of the catastrophe in Itarsi, which was caused by the delay in renewing the signalling equipment. Writing for *Frontline*, R. Elangovan notes that in the case of the Kalinga Utkal Express accident, the loco-pilot noticed a signal to proceed although the track ahead of the signal had been removed. There have been several instances when the “alright” signal suddenly flies back to “danger.”<sup>xi</sup> This hints at a direct link between obsolete signalling systems and train accidents. The Task Force report makes a note of this and produces a list of major yards due for replacement:

### LIST OF LEVERFRAMES/RRI (MEDIUM/LARGE YARDS) DUE FOR REPLACEMENT:

S No	Railway	Route	Station Name	MACLS/ Semaphore	Type
1	NR	D	Amritsar	MACLS	Lever Frame
2	NR	B	Ambala Cantt	MACLS	RRi
3	NR	A	Andal	MACLS	RRi
4	ER	D Spl	Amausi	MACLS	Lever Frame
5	NR	B	Balamau	MACLS	Lever Frame
6	NCR	D	Banda	Semaphore	Lever Frame
7	NR	E	Bathinda Cantt	MACLS	Lever Frame
8	CR	A	Bhusawal	MACLS	Lever Frame
9	WCR	A	Bina Cabins	MACLS	Lever Frame
10	SER	E	Bokaro Cabins	MACLS	Lever Frame
11	CR	C	Dadar	MACLS	RRi
12	NCR	A	Dadri	MACLS	PI
13	ECR	B	Danapur	MACLS	Lever Frame
14	NR	E	Dhuri	Semaphore	Lever Frame
15	ECR	E	Dugdha	Semaphore	Lever Frame
16	NR	D	Faizabad	Semaphore	Lever Frame
17	NR	A	Ghaziabad	MACLS	RRi
18	WR	D Spl	Hapa	Semaphore	Lever Frame
19	NCR	E	Harduaganj	MACLS	Lever Frame
20	CR	A	Igatpuri	MACLS	RRi
21	ER	B	Jamalpur	Semaphore	Lever Frame
22	NR	B	Jammu Tawi	MACLS	Lever Frame
23	NCR	A	Jhansi	MACLS	Lever Frame
24	SR	B	Jolarpettai Jn.	MACLS	RRi
25	NCR	A	Juhi *Cabins	MACLS	Lever Frame
26	CR	C	Kalyan	MACLS	RRi
27	CR	B	Karjat	MACLS	RRi
28	NER	E	Kashipur Jn.	Semaphore	Lever Frame
29	NR	B	Khanalampura	MACLS	Lever Frame
30	SER	A	Kharagpur	MACLS	RRi
31	ECR	B	Kiul	MACLS	Lever Frame
32	ECR	E	Krshnshila	Semaphore	Lever Frame
33	WCR	A	Kota	MACLS	End PI
34	ECR	E	Kusunda	MACLS	Lever Frame
35	NWR	E	Lalgah Jn	Semaphore	Lever Frame
36	CR	B	Lonavala	MACLS	PI
37	NR	D	Manak nagar	MACLS	Lever Frame

Source: <http://irtsa.net/pdfdocs/Report-of-Safety-Task-Force-on-Safety.pdf.pdf>

## Lead Essay

### Way Forward

With mounting backlogs from the previous years, tracks and signalling systems are clearly in a state of utter despair, both requiring immediate renewal and modernisation respectively. Given the status-quo, the much-hailed bullet-train project seems nothing but a misplaced priority, with the RTI response only further hinting at the project's hollowness.

The government, in the 2017 budget, had announced the Rs. 1 lakh crore Rashtriya Rail Sanraksha Kosh meant for passenger safety.<sup>xiii</sup> Additionally, according to *Livemint*, the Railways has recently floated a global tender for procuring 700,000 metric tonnes of rails for track renewal.<sup>xiii</sup> It would be helpful for the government to complement these plans with the recommendations of the Task Force for Safety report. These include, inter alia, the following:

#### Prevention of Derailments

- Backlog of rail renewals, deep screening, de-stressing, renewals of Crossings, welds, glued joints etc. must be taken up on topmost priority overcoming all constraints of budget.
- Replacement of Defective (D-Marked and others) rails should be the top most priority for IR and should rank higher than new lines, doubling, gauge conversion etc.
- Mission Zero-Missing-Track-Fittings must be pursued in right earnest and fulfilled.
- All future procurement of rails for all new line, doubling, gauge conversion and programmed rail renewal should be 20-rail panels using 65m or 130m rail, flash butt welded at rail manufacturers' factory.
- Rails should be galvanised or painted with anti-corrosion paint at the manufacturers' factory before despatch.
- In-situ Rail Stress Measurement Devices to be acquired for checking stress in LWRs and taking preventive action before rail fracture or rail buckling happens. A limited number, one for each Zonal Railway to be acquired in next two years and then for each Division over next five years.
- Need for special wagons for such transportation of long rails and long panels must be ascertained in next three months and wagons acquired within next one year.
- Lubrication of gauge face should be done frequently and without fail on curves, points and crossings, locations having exercise lateral wear, work-sites and on bad formations to prevent climbing of wheel.

#### Signalling Systems

- All Lever- Frames and Semaphore Signalling should be replaced in next three years.
- All Relay Rooms of interlocked stations having more than 100 routes should be Air-conditioned, Dust-proofed and fitted with Fire Detection and Dowsing System.
- A study should be conducted to evaluate threats of sabotage, terrorist attacks etc. to them and to provide necessary protection. This should be done within next six months in consultation with the RPF to define the security protocol for implementation.
- Raise standard of interlocking to provide isolation for safe operation and to improve speeds.
- All starters at stations should be made free starters so that the need for physically ensuring correct setting of points protected by the signal is not required during failures like block failures. If due to the complexity of the signalling system, a free starter is not possible, a calling-on signal should be provided below the starter so that correct setting and locking of points can be ensured with the clearing of the calling-on signal.

\*\*\*\*

**Prepared by:**

Manas Raturi

## Lead Essay

### ENDNOTES

- <sup>i</sup> Venu, M.K. (15<sup>th</sup> September, 2017). The Mumbai-Ahmedabad Bullet Train Is Many Things, But It's Not Free. *The Wire*. Retrieved from <https://thewire.in/177815/mumbai-ahmedabad-bullet-train-many-things-not-free/> on 6<sup>th</sup> November, 2017.
- <sup>ii</sup> IANS. (2<sup>nd</sup> November, 2017). Bullet train route is loss-making: RTI. *The Hindu*. Retrieved from <http://www.thehindu.com/news/national/bullet-train-route-is-loss-making-rti/article19963892.ece> on 6<sup>th</sup> November, 2017.
- <sup>iii</sup> 'Death as a result of derailments'. Starred Question No. 216, Rajya Sabha, answered on 4th August, 2017. Retrieved from <http://164.100.158.235/question/annex/243/As216.docx> on 16th October, 2017.
- <sup>iv</sup> 'Train Accidents'. Unstarred Question No. 665, Lok Sabha, answered on 19th July, 2017. Retrieved from <http://164.100.47.190/loksabhaquestions/annex/12/AU665.pdf> on 16th October, 2017.
- <sup>v</sup> Mallapur, C. (22nd August, 2017). In 2016-17, India's Derailment Death Toll Highest in a Decade. *IndiaSpend*. Retrieved from <http://www.indiaspend.com/special-reports/in-2016-17-indias-derailment-death-toll-highest-in-a-decade-12940> on 16th October, 2017.
- <sup>vi</sup> <sup>vi</sup> GOI, Ministry of Railways (January 2017). Report of Task Force on Safety, p. 14. Retrieved from <http://irtsa.net/pdfdocs/Report-of-Safety-Task-Force-on-Safety.pdf> on 6<sup>th</sup> November, 2017.
- <sup>vii</sup> Indian Railways (Feb 2015), White Paper, p. 17. Retrieved from [http://www.indianrailways.gov.in/railwayboard/uploads/directorate/finance\\_budget/Budget\\_2015-16/White\\_Paper-English.pdf](http://www.indianrailways.gov.in/railwayboard/uploads/directorate/finance_budget/Budget_2015-16/White_Paper-English.pdf) on 16<sup>th</sup> October, 2017.
- <sup>viii</sup> Retrieved from <http://164.100.158.235/question/annex/242/Au3473.docx> on 16<sup>th</sup> October, 2017.
- <sup>ix</sup> Arora, R. (17<sup>th</sup> February, 2017). Railways' target: Laying 9.5 km of tracks every day. *The Economic Times*. Retrieved from <https://economictimes.indiatimes.com/industry/transportation/railways/railways-target-laying-9-5-km-of-tracks-every-day/articleshow/57195430.cms> on 6<sup>th</sup> November, 2017.
- <sup>x</sup> Report of Task Force on Safety, p. 20.
- <sup>xi</sup> <http://www.frontline.in/cover-story/chasing-a-chimera/article9873597.ece>
- <sup>xii</sup> PIB. (1<sup>st</sup> February, 2017). First combined Budget of Independent India, that includes Railways, presented. Retrieved from <http://pib.nic.in/newsite/PrintRelease.aspx?relid=157860> on 6<sup>th</sup> November, 2017.
- <sup>xiii</sup> Bhaskar, U. (26<sup>th</sup> October, 2017). Railways floats global tender for rails to improve track safety. *Livemint*. Retrieved from <http://www.livemint.com/Industry/joQBJ32FXenbxK1xNe7u7K/Railways-floats-global-tender-for-rails-to-improve-track-saf.html> on 6<sup>th</sup> November, 2017.



## Headlines

### **Eminent Citizens write to the Committee of Experts on Data Protection Framework**

(Seema Chishti, *The Indian Express*, November 6, 2017)

An important part of the government's arguments about Aadhar in the course of various hearings in the Supreme Court has been the Data Privacy Committee, set up in August under the Chairmanship of Justice (retd) BN Srikrishna (formerly on the Supreme Court) to work towards a law on data privacy. It was notified in July, during the course of the hearings on Privacy before the five-Judge Constitutional bench. The Committee set up under the auspices of the Ministry of Electronics and Information Technology (MeitY) to deliberate on a Data Protection Framework, has on board ten members, including the Chairman, UIDAI, other government officials and others with known and stated positions on the matter. Recently, 22 eminent citizens, including a former Chief Justice of a high court, a former CIC, senior advocates, and petitioners in the privacy matter have written to the committee, expressing their discomfiture at the composition of the committee. "Most members on the current committee have in the past voiced or echoed views that seem to support Aadhar, the brand created by the UIDAI. Some have even taken stands in the Supreme Court to challenge the fundamental right to privacy. A committee created to look at a fundamental issue which will impact this country needs to be balanced and cannot be biased towards one position, particularly when there might be conflicts of interest."

Read More: <http://indianexpress.com/article/india/citizens-group-questions-data-privacy-panel-composition-aadhaar-4924220/>

Date Accessed: 06.11.2017

## Governance and Development

### SECURITY

#### **NTPC accident points to a wider need to document and reduce workplace mishaps**

(Bharat Dogra, *The Wire*, November 5, 2017)

The horrific accident at the National Thermal Power Corporation (NHPC) Plant in Oonchahar (Rae Bareli district of Uttar Pradesh) on November 1 has already claimed 29 lives, with over 100 scalded and injured workers and other persons being treated in hospitals. On November 4, quoting unidentified senior government officials, *Asia Times* reported that “negligence and the violation of established safety procedures” were likely the key causes behind the blast. However, beyond purely technical explanations, we need to look at factors relating to negligence – a demand voiced both by workers and the NHRC. Boiler mishaps are one of the most common industrial accidents. Industrial labour expert Reinald Skiba has written in a paper titled ‘Theoretical Principles of Job Safety’ that “causes of an accident involving a burst boiler may include one or a combination of the following reasons: faulty materials in the boiler wall, inadequate training to ensure safe operations, failure of a pressure relief device, or violations of an operating procedure such as overheating. Without one or more of the deficiencies the accident may not have happened”. Beyond the NTPC accident, there is also a need to bring down workplace or occupational accidents in India.

Read More: <https://thewire.in/194379/ntpc-accident-points-wider-need-document-reduce-workplace-mishaps/>

Date accessed: 06.11.2017

### HEALTH

#### **51% of Indian women aged 15-49 anaemic, most in world: Study**

(Sushmi Dey, *The Times of India*, November 7, 2017)

Women's health in India is facing a serious nutritional challenge, with the country on the one hand grappling with the largest number of anaemic women in the world and on the other having to deal with diseases linked to obesity which is rapidly increasing among the fairer sex. Findings of the new Global Nutrition Report 2017 place India at the bottom of the table with maximum number of women impacted with anaemia in the world after analyzing the situation in 140 countries against targets set in May last year at the World Health Assembly (WHA) held in Geneva. The report highlights that the country presents worse outcomes in the percentage of reproductive-age women with anaemia, and is off course in terms of reaching targets for reducing adult obesity and diabetes.

Read More: <https://timesofindia.indiatimes.com/india/51-of-indian-women-aged-15-49-anaemic-most-in-world-study/articleshow/61538152.cms>

Date Accessed: 07.11.2017

### TECHNOLOGY

#### **Aadhar to aid rail staff attendance**

(PTI, *The Hindu*, November 5, 2017)

The railway ministry will be introducing a system of Aadhar based biometric attendance system to monitor the regularity of its staff across zones and divisions. The system will be introduced with effect from 31st January 2018. The Railway Board has clarified that this will be a phase wise implementation and it will be implemented in the offices of all divisions, zones, Metro Rail Kolkata, railways workshop, factories and production units in the first phase by 30 November. In the second phase, it will be implemented in all offices of Railways, including public undertakings, attached and subordinate offices by January 31, 2018.

Read more: <http://www.thehindu.com/news/national/aadhaar-to-aid-rail-staff-attendance/article19988083.ece>

Date accessed: 07.11.2017

## Governance and Development

### LAW AND JUSTICE

#### **Construction workers welfare cess being ‘frittered and defalcated’ says Supreme Court**

(The Wire Staff, *The Wire*, November 2, 2017)

An affidavit filed before the Supreme Court regarding the utilisation of the cess collected under the Construction Workers Welfare Act has revealed there has been gross misuse of the fund. CAG reports have highlighted usage of the funds for purchasing washing machines, laptops as well as for payment of value added tax. The Supreme Court while taking strict view of the situation, noted that more than Rs 29000 crores have been collected but hardly 10% has been utilised for the welfare of the workers. The petition noted that implementation loopholes exist and have been manipulated because there is no mechanism to identify the beneficiaries and for extending the benefits to them. The petition has also prayed that the rules and regulations relating to the health, safety and welfare of the workers should be framed and safety equipments including safety harness and safety nets should be provided to them at the place of work.

Read more: <https://thewire.in/193835/cess-collected-construction-worker-welfare-not-spent-properly-reveals-cag-affidavit/>

Date accessed: 07.11.2017

#### **Centre plans to set up more commercial courts**

(Special Correspondent, *The Hindu*, November 5, 2017)

The Union government has proposed the setting up of new commercial courts in districts in an effort to further improve India’s rank as per World Bank’s Ease of Doing Business Report. Although the country fared well on the ‘court system and proceedings’ parameter, it scored poorly in terms of management of cases, indicating a severe backlog in the judiciary. The government plans to amend the jurisdictions to facilitate the establishment of commercial courts, at the district level, in places where the High Courts have ordinary original civil jurisdiction. The scope and jurisdiction of commercial arbitration would also be expanded by bringing down the specified value of commercial disputes.

Read more: <http://www.thehindu.com/news/national/centre-plans-to-set-up-more-commercial-courts/article19988214.ece>

Date accessed: 07.11.2017

## Society

### *GENDER*

#### **India falling 21 ranks on Global Gender Gap Index: Who will bachao the beti?**

**(Dailybite, Daily-O, November 2, 2017)**

One of Prime Minister Narendra Modi's flagship campaigns - Beti Bachao, Beti Padhao - has been all about the PM's sensitivity towards gender justice and making India great again for its daughters. Despite the hype and focus on PM Modi's pet scheme, here comes a sobering jolt: the country fell 21 places on the World Economic Forum's (WEF) Global Gender Gap index in a year. Even as the government was celebrating India's improved performance in the ease of doing business rankings, and while we were previously warned about India falling sharply in the Global Hunger Index, what's alarming is the drastic fall in the gender gap rankings inspite of PM Modi himself being a brand ambassador of pro-woman policies. The rankings are calculated on the basis of four parameters: health and survival, access to education, economic participation and political representation. While India's performance has never been heartening, a fall of 21 places is dismally sharp.

Read More: <https://www.dailyo.in/variety/world-economic-forum-rankings-global-gender-gap-index-indias-poor-performance/story/1/20375.html>

Date Accessed: 06.11.2017

## India and the World

### *INDIA IN THE WORLD*

#### **India-Ukraine panel falls through**

(Kallol Bhattacharjee, *The Hindu*, November 6, 2017)

The India-Ukraine Inter-Governmental Commission meeting scheduled for November 1st has been cancelled and rescheduled for February while government officials claim that there has been no external pressure from Russia or any other country to cancel the meet. India has cooperated and collaborated with Ukraine on commercial and cultural ties though the most important issue remain Ukraine's ongoing warfare with Russia which India tries to help contain in exchange for Russia's intervention in Pakistan by holding military exchanges with anti terror units. The two countries have also discussed the possibility of deployment of peace keeping forces in Ukraine as per the UN security council resolution.

Read more: <http://www.thehindu.com/news/national/india-ukraine-panel-meeting-falls-through/article19988743.ece>

Date accessed: 07.11.2017

Issue Coordinator: Mr. Manas Raturi

Connect with RGICS at: [info@rgics.org](mailto:info@rgics.org); [www.rgics.org](http://www.rgics.org)



**Disclaimer:** This document has been prepared by the RGICS staff and has not been seen by the Trustees of the Rajiv Gandhi Foundation (RGF). Further, the views presented in this document in no way reflect the views of the RGF Trustees.

To unsubscribe, please write to us at [info@rgics.org](mailto:info@rgics.org)