I take this opportunity to wish all stakeholders a highly successful IREE 2017.

Organised since 1990 IREE is Asia’s Mega Rail Transportation Event, and the current edition attracts participation from 20 countries (Austria, Belarus, Belgium, China, Czech Republic, Finland, France, Germany, Italy, India, Japan, Korea, Netherlands, Poland, Russia, Spain, Switzerland, Ukraine, United Kingdom, USA).

I am particularly happy to welcome Japan, after its successful participation at IREE 2015 and InnoRail India 2016, as “Partner Country” for the second time, with the largest ever showcase of modern rail transportation products and technologies, including high speed rail, in an exclusive Japan Pavilion.

IREE 2017 is also hosting an International Rail Conference concurrently with the exhibition. The conference will be addressed by eminent subject experts from India and overseas.

UMTE 2017 – Urban Mass Transit Expo – a focused exhibition and conference on Metro + Light Rail will also be held alongside.

I wish CII and all the participants of IREE 2017 a great success in their endeavours.

Chandrajit Banerjee
Director General, CII

Indian Railways sector is undergoing transformation and several initiatives have been undertaken to increase capacity and improve infrastructure. With heightened investments in rail projects and mega projects like dedicated freight corridors and the High Speed Rail (HSR) link, the Indian Rail transportation sector offers tremendous opportunities for global business community.

The 12th edition of the IREE, organized in association with the Ministry of Railways, Government of India this year is the largest Rail Transportation Exhibition and Conference in Asia, and the second largest rail transportation show in the world, covering an area of around 25,000 square meters.

IREE 2017 will showcase the latest products and technologies from across the globe along with concurrent seminars and panel sessions on future developments, providing a unique opportunity for stakeholders to explore business opportunities and partnerships in this sector.

I would like to extend a warm welcome to all the exhibitors and participants to IREE 2017.

Shobana Kamineni
President, CII

I am pleased to note that the Confederation of Indian Industry (CII) in association with the Ministry of Railways, Government of India, is organising the International Rail Conference (IRC) 2017 on 11th October, 2017, coinciding with 12th edition of International Railway Equipment Exhibition (IREE 2017) being held from 11-13 October 2017 at Pragati Maidan, New Delhi.

In IREE 2017, Indian Railways will be showcasing its future plans for expansion and modernization by adopting latest technologies. The IR Pavilion will have theme based stands for areas like Coach & Interiors, Locomotives, Electrical, etc. It will also have active participation of Indian Rail Museum to showcase the history of Indian Railways in service of the people of India.

The exhibition will provide a great platform for companies, domestic and international, to display their latest technologies and products, to help to meet the current and future requirements of Indian Railways.

I wish CII and all the participants of IREE 2017 a great success in their endeavours.

Piyush Goyal
Minister of Railways and Coal, Govt. of India
During Prime Minister Abe’s visit to Ahmedabad, the historic first step of the Mumbai-Ahmedabad High-Speed Rail (MAHSR) project was inaugurated at Sabarmati, Gujarat on 14th September in the presence of Prime Minister Modi, Railway Minister Goyal and other important dignitaries.

The MAHSR project is a symbol of the solid and stable strategic global partnership between Japan and India. I expect that this High-Speed Rail project will become a catalyst for further innovation not only in the Indian Railways, but also in the Indian society and economy.

The Japanese “Shinkansen” system has maintained a zero-casualty record since its inauguration in 1964. I believe that the introduction of Shinkansen technology in India through transfer of technology and “Make in India” initiatives will certainly lead to noticeable improvement in the safety standards and up-gradation of the service level in the conventional railway network in India.

In addition, the MAHSR will create a new industrial cluster in India, expanding employment opportunities for the newly-skilled Indian workforce with knowledge of state-of-the-art technology of High Speed Railways.

Especially, in the field of rail safety in India, the Government of Japan is working closely with the Ministry of Railways to find out possible measures to improve safety and service level in the conventional network in India.

Finally, I would like to reiterate that the Japan-India relationship represents a mark of certainty in the age of uncertainty. I believe that this relationship will be further enhanced through the cooperation on the MAHSR project and the conventional rail network in India.

I hope and wish that the railway industries of various countries can cultivate further cooperation and business ties among each other, with candid exchange of ideas in “the 12th IREE 2017.”
10:00 Hours INAUGURAL SESSION

C P Sharma, Chairman, CII Rail Transportation and Equipment Division and Managing Director, Daulat Ram Engineering Pvt Ltd. Tilak Raj Seth, Past Chairman, CII Rail Transportation and Equipment Division and Executive Vice President, Siemens Ltd. Ravindra Gupta, Member Rolling Stock, Railway Board. H.E. Milan Hovorka, Ambassador of the Czech Republic. Manoj Sinha, Hon’ble Minister of State for Railways, Anand Chidambaram, Vice Chairman, CII Rail Transportation and Equipment Division and Managing Director, EMD Locomotive Technologies Pvt Ltd

11:15 Hours TRACK, WHEEL AND BEARING CONDITION MONITORING

Steve Turley, Managing Director, Perpetuum - SecureRail India Pvt Ltd, UK. Dominique Malenfant, Chief Technology Officer (CTO), GE Transportation, US. Ghanshyam Singh, Member Tractiion, Railway Board. Ravi Ravitharan, Director, Institute of Railway Technology, Monash University, Australia. Filip Rosengren, Head Railways, SKF, Sweden. Thomas Dorneich, Manager, Siemens Mobility Services, Germany. Beatrice Lippus, Managing Director, Cyient GmbH & Head of Global Sales & Business Development, Transportation BU, Cyient, Germany.

BREAK

14:15 Hours VISION, PLANS AND INITIATIVES.

Akhil Agrawal, DG Signalling and Telecom, Railway Board. Harj Dhaliwal, Managing Director, Middle East & India Field Operations, Hyperloop One. Yoshihiro Kumamoto, Senior Executive Officer, Deputy Director General of International Affairs Headquarters, Indian High Speed Rail Division, East Japan Railway Company. Shiv Charan Gupta, Head-Technical, L&T Railway SBG. Takema Sakamoto, Chief Representative, JICA India. Sushant Kumar Mishra, Principal Executive Director (Infra.), Railway Board.

16:00 Hours VALEDICTORY SESSION

C P Sharma, Chairman, CII Rail Transportation and Equipment Division, Managing Director, Daulat Ram Engineering. Rajeev Jyoti, Chairman, CII Task Force on Railways and Chief Executive – Railway Strategic Business Group, L&T Limited. Past President, CII RTED. Ravindra Gupta, Member Rolling Stock, Railway Board. Ashwani Lohani, Chairman, Railway Board. H.E. Hiroshi Narahira, Deputy Minister of Land, Infrastructure, Transport and Tourism (MLIT). H.E. Kenji Hiramatou, Ambassador, Embassy of Japan. Piyush Goyal, Hon’ble Minister of Railways. Anand Chidambaram, Vice Chairman, CII Rail Transportation and Equipment Division and Managing Director, EMD Locomotive Technologies Pvt Ltd

Programme subject to change. Check at Conference venue.

Exhibitors from 20 countries

INTERNATIONAL EXHIBITION AND CONFERENCE ON RAILWAYS

GETTING GLOBAL
Train sets from ICF

The team at the Integral Coach Factory (ICF), Chennai hopes to transform the way we look at Indian trains in the next few years. ICF has embarked on an ambitious plan for complete makeover of passenger trains that ply on Indian Railways.

Come June 2018, ICF is set to roll out the first medium high speed (160 km/h) passenger train set, designated as Train 18. This train will not need any locomotives as the traction power is provided distributed over the train below the board while it will have plush but ergonomically-designed interiors for comfort of passengers on-board. It will also have passenger-friendly features like live information systems on LCD screens, free Wi-Fi and modern pantries. Equipped with technologically current propulsion systems and bogies, it will set a first in safety, energy-efficiency and quick-turn-round at terminals.

While the Train 18 is an indigenous Make in India effort, ICF also plans to introduce state of the art train sets in collaboration with a European major, designated as the Train 20 project. Bids have been called for 14 Aluminium-bodied trains matching with any in the developed world. By the time the project would be completed these trains would be manufactured in ICF itself... 5 Mani, General Manager, ICF

Welcome to Brand Railways

Dr. Sujatha Narayan has taken over as Managing Director, Faiveley Transport Rail Technologies in India in August 2017. She has a distinguished career spanning 20 year, having worked recently at 3M India, heading the R&D for the healthcare business and the new product development function.

Dr. Narayan, a PhD in Polymer Science & Engineering from Georgia Institute of Technology, graduated from IIT-Delhi.

Hall 07

Elastic Solutions for track superstructure and rolling stock

The Austrian Getzner Werkstoffe is displaying their innovative products like Mass-Spring Systems, Sleever Pads (USP), Under Ballast Mats (UBM) and Floating Floors for rolling stock. “We will have a special focus on these products”, briefs Sanjay Risbood, CEO, Getzner India. ‘Mass-Spring Systems provide particularly effective protection against vibrations and structure borne noise for people living next to railway lines. Our solutions are used wherever protection against disruptive vibrations is the priority’. elastic bearings from Getzner have so far been installed in over forty cities, on high-speed lines and on various standard gauge lines worldwide. In India, these are already adopted for Delhi, Bangalore, Mumbai, Kochi and Lucknow Metros. Since 2014, Hitachi has been equipping all trains for the British InterCity Express Program with Getzner’s elastic bearings for floating floors.

USPs, used for vibration mitigation, ballast protection and improve overall track quality can be installed both in high-speed railway lines and in heavy haul lines, as well as in existing mainline tracks during new construction and during repairs and retrofiting. Getzner UBMs are also an effective solution for vibration mitigation, ballast protection and adjustment of track stiffness at the bridge/tunnel approaches.

Getzner elastic solutions from have also been used in the 57km Gotthard Base Tunnel in Switzerland -- the longest railway tunnel in the world. Getzner has supplied approximately 400,000 elastic pads for mono block sleeper boots, 30,000 USPs and 5,000 m2 UBM for this project.

Hall 12A

The little things that count big

‘Lock bolts are now standard fitment on IR wagons, and use of steel rivets is now restricted to few locations only. These are proven fasteners, easy and fast to install, that stay tight through the service life. Plus, these do not require high skills and staff can be trained in use very quickly. Lock bolting delivers high, consistent tight joints with a clamping force 20% higher than a conventional 8.8 grade hex bolt nut, creating a high strength friction grip joint’.

Pankaj International is of the first certified manufacturers in India, (range 5/16” to 1-3/8”). In addition, Pankaj is IR approved for a variety of fasteners, including for 132 different designs by DUN, Varacasa. Pankaj product range includes products according to various Indian and International standards like ISO, DIN, ASTM, BS, ANSI, BIS etc. and any special items to customer design...Madhur Gupta, CEO

Hall 12A

Plasser India

We will be highlighting three of our anchimens in IREE 2017 : SVM 1000 (New Track Laying Machine), 09-3X Dynamic Tamping Express and RM 900 Advanced Ballast Cleaning Machine.

Established in 1965, Plasser India manufactures up - to-date, sophisticated & high-performance machines for track maintenance. Following the principles of its parent company Plasser & Theurer, Austria, Plasser India strictly adheres to a dynamic quality policy to deliver efficient and cost-effective machines. The machines for IR are tailor-made designs with special emphasis on the appropriate technology for local conditions.

Production in India ensures a high indigenous content, using many Indian suppliers and wholeheartedly supporting the “Make in India” drive of Honorable Prime Minister. Machines and components are not only manufactured for IR, these have also been exported & supplied to private railway contractors in India as well.

Mission “Innovations for You”

Plasser India offers a complete range of machines for track laying and maintenance. SVM 1000, a fully automated sleeper laying machine for laying new tracks around the world, has been one recent introduction to Indian market. The machine model is operating successfully on 4 continents as it delivers high accuracy combined with high output & facilitates cost efficient track laying.

Plasser India is looking to offer its dual purpose, tamping and track stabilization machines model 09-3X Dynamic Tamping express, one of its most advanced machines. With peak outputs of up to 2200 m/h, the 09-3X continuous action three-sleeper machine achieves high performance and excellent quality of work with dynamic track stabilisation as integrated ideal complement. In conjunction with tamping, stabilisation raises the track resistance to lateral displacement and enables maximum line speed immediately after completion of work. The combination of these two processes reduces track occupation time and increase safety during operation.

We are also looking to offer advanced ballast screening solutions based on the RM 900 series, a concept in a class of their own. Conveying the ballast material and enabling an exact cut of the formation, the powerful excavating chain is the heart of the machines. The double screening unit cleans the excavated material and separates valuable ballast from unusable spoil and the integrated Stabiliser homogenises the ballast installed...

Siegfried Fink, Managing Director, Plasser India.

Hall 11

Visit Indian Railways stalls in Hall 10

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Railway Minister Piyush Goyal calls for Speed, Safety & Innovation

In an impassioned and energetic address, Railway Minister Piyush Goyal laid out his plan for making Indian Railways “the best among the best” railway systems across the world. The Minister was forthright in assessing that IR could develop more stake-holder friendly policies and procedures that push to lower costs and faster compliance. IR Board has been instructed to work towards contract-easing process, clearing due payments within 30 days, bulking of works to ensure adequate contracts that permit opmal pricing and faster product development cycles. It is expected that all pending cases of product development pending in IR’s RDSO would be listed and acted upon quickly. As the Minister put it succinctly, “development activities have to be pushed in a mission mode”. IR is now working towards pushing coach production from existing around 4000 p.a. to near 7000 and this would require industry marching in step.

In a clear statement of faith in high speed rail, the Minister referred to nay-sayers who objected to the last experiment in IR high speed, the introduction of 130 kph Rajdhani trains way back in 1969. For the 1964 born minister, the coincidence that the Japanese Shinkansen also debuted the same year was highly symboic. The Minister’s thrust on change and emphasis on business friendly procedures was well received.

"With attention to Speed, Scale, and Safety, Indian Railways will be the best catalyst for growth of the new India. We are in a hurry to engage with technology, to engage with innovation and to engage with industry."

The Minister emphasized simplification of IR policy and governance for greater industry engagement through innovative financing models, guaranteed timely payment systems and clearance of pending decisions & faster through structured processes. He also urged industry to come up with new ideas, innovations and frameworks to make the Railways more efficient and safe. "There is no dearth of funds and we are ready to make investments", he added.
The CII Trade Fair Council is pleased to present the 12th Edition of The International Railway Equipment Exhibition (IREE) 2017.

Trade Fairs are an intrinsic activity of CII, aimed at promoting business connectivity and showcasing advanced products and services to stakeholders. We strongly believe that the trade exposition platform not only brings out the best of industry but also assists dialogue and debate on matters of mutual interest. Trade fairs help evolve solutions to challenges facing industry and act as a facilitator for economic growth.

I am confident that this edition of IREE, the largest ever in size, and participation from both global and domestic industry, would prove to be a valuable experience for all the stakeholders.

Let me extend my deep appreciation to the Indian Railways and all our supporters who have helped us to make the IREE Asia’s Mega Rail Transportation Event.

Vipin Sondhi
Chairman, CII Trade Fairs Council

CII, through its Rail Transportation & Equipment Division (RTED), has been working closely with IR on various initiatives by actively engaging the industry in IR’s continuous efforts of modernization and innovations. Towards this direction IREE and International Rail Conference (IRC) are some of the CII initiatives.

The IREE objective is to become the main platform and support system for IR in its modernization and expansion plans, and the main driver of bolstering competitiveness and enabling freight and passenger transportation system.

This event, with the largest gathering of representatives from global rail transportation industry, will act as a catalyst in realizing our ambitions of bringing together IR and its partners under a neutral platform to network and deliberate on possibilities.

Undoubtedly, railways today are the mainstay of Indian economy. The system has started turning the corner from being a conventional railway to high-speed (HSR) system. An indigenous supplier base should become one of the sinews of sustainable growth of the Indian railway story. The development and integration of this platform, and ensuring the availability of alternatives, as well as enhancing technology is inevitable should we wish to take the lead in international railway system.

I assert that all of us need to work together, clear-sightedly and with national consciousness to create a sustainable environment for HSR system growth, and put India in the lead, both economically and commercially.

C. P. Sharma
Chairman, CII Rail Transportation and Equipment Division
Managing Director, Daulat Ram Engineering

In his address to the IRC, Ravindra Gupta, Member, IR Board presented a snapshot of some of the development activities now on stream. IR will stop manufacture of the decades old ICF design coaches from April 2018 (except EMU and some special purpose stock); instead plans are now well progressed towards increasing production of much safer and comfortable LHB designs.

IR is also aggressively pushing the contracting and installation processes for condition based maintenance equipment, and that should address many of the current safety issues. Air conditioned EMU suburban train sets, with automatic doors, should also be in service in coming year.

IRIS quality norms

In a significant announcement, Gupta indicated that IR production units will be asked to shift to quality assurance schemes compliant with the European rail norm IRIS. The IR vendor base would also be mandated to certify compliance to the IRIS norm. This step will bring the Indian rail industry much closer to international standards, and also boost service reliability.

We are constantly working towards making IREE as the “INNOTRANS of the East” and the growing participation is a pointer. It is now clear that the Indian Industry is capable of handling broad range of products required for expansion project like HSR. A working group to identify global best practices for efficient procurement will help faster Make in India successes.

Gupta also pointed out that IRIS quality norms are being implemented across the entire rail network. IR now has 198 quality units and 129 IRIS units.

The successes by construction companies in handling larger project sizes is a good omen for the enhanced investments in rail network. This is borne out by the near Rs. 3,500 crore sized projects executed on the dedicated freight corridors...

Rajiv Jyoti, past President, RTED.

‘The unmatched Japanese Shinkansen safety record was enhanced when none of the 29 high speed trains on run were impacted even during a disastrous 9.1 Richter earthquake. Japan is now actively associated with India in various Railway segments, like dedicated mainline freight corridor, metros and now HSR systems. An expert level railway delegation has also reported on safety improvement initiatives.'
Japan Railway Seminar
Quality Railways of Japan and its Contribution to India

Hosted by:

Thursday, 12th October, 2017
11:00 – 16:00

INTERNATIONAL EXHIBITION AND CONFERENCE ON RAILWAYS
First time exhibitors do us proud.

IREE India continues to grow, with a greater range of exhibitors, products and services. We believe that is crucial for growth of rail services and the industry supporting it. Here we present brief profiles of typical exhibitors.

On display: Han® HP Direct, Han® 22 HPR Slim Modular Industry Computing Architecture (MICA), RFID, Ethernet Switches and Han® 34 HPR EasyCon, a new solution for increased environmental demands in the high-current range, has a high-power density, making it particularly suitable for use in rail vehicles.

HARTING has been a regular exhibitor in IREEs.

Hall 12A.31

Jainex Group offers specialized grades in cold rolled, hardened & tempered steel and stainless steel & galvanized wires. Setting facilities in Mumbai & Chennai form a key resource.

The Railway Engineering Division commenced conversion of mild steel air-brake pipes for the Mumbai Suburban EMUs to seamless stainless-steel piping with double ferrule fittings. Now hundreds of locomotives have been converted to stainless steel piping, partially or completely. Jainex has been undertaking works involving provision of crew friendly locomotives and many other maintenance tasks, chiefly involving fabrication.

Hall 7C11

Delta showcases its Energy Efficient Smart Solutions

Delta is displaying its diversified portfolio of smart power solutions based on cutting edge power conversion technology capable of delivering industry-leading energy efficiency.

Power quality is a big issue for railway traction sub-stations as per the power quality and energy guidelines. Here is where Delta's Smart Power Solutions comes in with its power conditioning and complete propulsion equipment appropriate for the IGBT traction system of electric powered locomotives. The improved power quality, energy management and harmonic balance will help the railway save energy, increase efficiency and passenger load without increasing capex.

Dalip Sharma, MD: “We at Delta, the leading company in power and thermal management solutions, are offering Delta's Railway Power solutions that are based on cutting edge power conversion technology. It is fully geared to partner in IR growth by providing Power Quality Compensating and Traction Propulsion equipment. These products are developed at our state of the art R&D lab in Bengaluru.”

Delta’s Power Solution offerings:

- Power Quality Compensating Equipment
- Power Supplies for Signalling, Telecommunication and Train Control systems
- Display & Monitoring Solutions
- UPS & Datacentre Infrastructure Solutions
- Renewable Energy Solutions
- EV Charging Solutions

Hall 9.2

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We will not be happy in just adding one coach or upgrading one station. We want both horizontal and vertical development of the railways. It can become the engine of Indian economy.

Shri Narendra Modi, Honorable Prime Minister of India
13 October, 2017

A pleasant day that saw continuing visitor interest and active participation in a few specially organised events. Visitors showed keen interest in various technical developments exhibited.

The Japan Railway Seminar saw 29 presentations by participating companies, with each pinpointing potential contribution to Indian network investments, particularly the forthcoming High-Speed Link. Companies are already factoring in their plans for a Make in India shift.

Initial HSR train sets are likely from Kawasaki, who have laid out a four-phase plan for progressive migration for increasing ex-India value addition. The HSR coach uses a double skin shell built up from heavy extruded Aluminum sections, permitting light weight and adequate strength.

An MoU has also been signed with the Indian major PSU BHEL for progressive value addition. BHEL has good footprints in power generation and supply, traction systems for rail and electronics. For the Mumbai Ahmedabad link, about 240 coaches will be needed and bulk of these will be sourced from the parent plant in Japan.

Kawasaki has so far supplied above 4000 HSR coaches, including the 7000 T series (based on Shinkansen E7 series) for Taiwan and the CRH 2 (based on E2-1000 series) for China. Overall the company has so far produced above 90,000 coaches since its inception in early last century.

Hitachi supplies HSR train sets in the E2, E5, E6 and E7 Shinkansen series.

Rail R&D from Japan

The impressive rail developments in Japan have depended in large part to the tests and research carried out in the Railway Technical Research Institute RTRI. This unit is now in the process of a global outreach to ‘increase the degree of recognition’ and has participated in INNORAIL 2017 also. Its impressive portfolio includes about 525 persons, with 193 Ph Ds and research areas that cover Maglev systems (at Yamanashi and Miyazaki) also. The large-scale test facilities that could be of interest to IR include a Wind Tunnel for 400 km/h wind velocity, rolling stock test plant, large scale shaking table, current collection test facility, ride control simulator and a real scale vibration tester that permits a 5mx 7m shake table.

Research funding

Of interest is that 0.35 % of the annual transport revenue of the 6 passenger railway companies and .035 % of that of the freight rail company are contributed to RTRI.

Clearly, research and product development do not happen but are accused.
SPECIAL EVENT
RDSO outreach to industry

CII and RDSO cooperated in a panel discussion session on improving interfaces for product development by RDSO and industry. Such events are expected to remove the many seeming roadblocks in faster product development for IR applications. AK Goel, IR’s Director General Stores and M Hussain, Director general RDSO shared the current development in Ir for improving the development and purchase processes. IR has pushed the digitization of the purchase and related processes successfully.

Industry perceptions were echoed by CP Sharma, with TR Seth (Siemens India) moderating the discussions.
SEE THE LATEST INNOVATIONS, PROTOTYPES & DESIGNS IN RAILWAYS

innoRail 2018
Innovation | Design | Prototype

22–24 NOVEMBER 2018: RDSO, LUCKNOW, INDIA

BLOCK YOUR DATES

INTERNATIONAL EXHIBITION AND CONFERENCE ON RAILWAYS
TOWARDS A GREEN ECO-SYSTEM

IR has made commendable progress in equipping coaches with bio-toilets that use DRDO developed technology for biodigesting toilet material. The unique technology leaves no residues and no need for any waste matter evacuation at train terminals or maintenance points. IR plans to equip all coaches with such digesters by Oct 2019. New production is fully equipped with such toilets.

On display in the Indian Railway Stalls, Hall 10

A parallel effort is the development of Vacuum toilets that may even sit on top of a bio-digester and thus provide the best in class design. These designs are being developed for specific rail applications. One developer is reported to have received an initial contract for 140 numbers of a prototype developed by Semvac, Sweden. Fitment could start next year.

On display by Daulat Ram Engineering in Stall 10.2 and by Wabtec in Stall C6

Solar panels on coaches

Also on display: a conceptual model of a flat solar panel fitted coach, that can feed the coach power needs from a solar panel. IR is already working a train set with such equipment. Successful trials will be extended for broader application.

Oil-free compressor for locomotive application.

ELGi has been a long time IR vendor for various types of compressors and other equipment. Oil-free compressors reduce maintenance load and come with high reliability. IR has already tried out designs and ELGi plans to have their version on trial in coming months. Such designs should replace the traditional oil reservoir compressors that also carry an environment penalty.

Stall 9.3

Patil Rail Infrastructure, the largest Indian manufacturer of concrete sleepers, displaying a wide variety of developmental products, including a wider base sleeper that could become standard fitment on IR in coming years. On display at Stall 8.1

Modern coaches employ friction brakes on an axle mounted discs, with a brake application unit mounted as an integrated unit. Faiveley has now developed a proto-version of a design that can provide adequate braking for the proposed 160 kph train sets. The design uses a cast steel brake disc (instead of the earlier grey cast iron disc) and sintered brake pads (that replace organic compositions).

On display in Stall C6

All about heritage

Patil Rail Infrastructure, the largest Indian manufacturer of concrete sleepers, displaying a wide variety of developmental products, including a wider base sleeper that could become standard fitment on IR in coming years. On display at Stall 8.1

Visit nostalgia and espy a multitude of heritage photos at the well-stocked National Rail Museum gallery (part of IR stalls). The display is divided into two ‘walls’: of rail heritage and the growth of the National Rail Museum since its inception in 1977. The IR heritage effort is now supplemented by many regional museums, and each one has a set of unmatched and well-preserved pieces, ranging for a bunch of steam locos, to turn table for the steam horses, to steam driven ploughs and road rollers.

Leave some memories. And carry some with you, including souvenirs from the Museum Shoppe.

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