Group of Experts on Improving Safety at Level Crossings
3rd Session, 23–24 Oct’2014, UNECE, Genève

Best Practices to Improve Level Crossing Safety
Submitted by: Finland & India

Kirsi Pajunen, Finnish Transport Safety Agency, Finland
Alok Kumar, Director(Safety) Ministry of Railway, India
Issues Typical to India for Implementation of Level Crossing Safety Programs/Measures

- **Huge Number of Level Crossings**: Total: 30348, Manned-18785, Unmanned-11563. Due to this any measure like Pre-warning Device or other will incur huge cost and long time due to vastness (about 64600 route KM).

- **Distribution of Population**: 69% are in rural area and due to this there are several associated problems like theft of devices or tampering with.

- **Associated Problems**: National Average Rate of Literacy is 74% and so any structured education program cannot cover the entire population (Kerala- above 93%, Bihar –below 65%).

- **Several Languages**: There are about 23 Official languages and the number of regional languages spoken all across India is above 100. So one common program can't be implemented.
Indian Railway Network (As on 1st April 2014)

- No. of Railway System: 17 Zonal Rly
- Staff directly Employed: 1.3 Million
- Route Kilometer: 65,436 KM
- Block Station: 7172 Nos
- Passenger Carried/Day: 23 Million
- Freight Carried/Year: 1008 Million Ton
Number of Level Crossings on IR
(Manned & Unmanned : As on 1st Apr’2014)

*Total Number of Level Crossings including Manned & Unmanned are 30348 Nos.*
Scenario of Level Crossings on IR

- Currently Indian Railway has 65436 route Kilometres and carries about 23 million passengers per day. Through painstaking effort the index of accident per “Million Train Kilometre” has been brought down from 0.44 in 2003 to 0.11 in 2012-13.

- Indian Railway Network has 30,348 Level Crossings (as on 01.04.2014) out of which, 18,785 (62%) are Manned and balance 11,563 (38%) are unmanned.

- These Level Crossings contribute 43%(50 out of 117) of all Consequential Train Accidents and 67% Fatalities (101 out of 149) over Indian Railways.
Accidents due to Level Crossing on IR

Accidents due to Unmanned LC - 40%

Accidents due to Manned LC - 4%

Accidents due to other than LC - 56%
Scenario of Level Crossings on IR

- The onus for safe movement over unmanned level crossing lies with the road users (Section 131 of “Motor Vehicle Act” and Section 161 of “Indian Railway Act”) as per existing Law in India.

- From analysis it has emerged that manning of Unmanned Level Crossing is not an ideal solution. Indian Railways envisages to eliminate all unmanned level crossing within a time frame of next five to seven years as an interim measure.

- To further enhance safety it has been decided to replace all Level Crossings by Grade Separators (Road Over Bridge/Road Under Bridge) gradually over a period of time.
Up gradation of Level Crossing

Crossing of Road & Rail Traffic

- Grade Separated Crossing
  - Road Over Bridge
  - Road Under Bridge
- Level Crossing
  - Unmanned Level Crossing
  - Manned Level Crossing

TVU: Train Vehicle Unit (TVU) product of average number of Road Vehicle and Trains passing a crossing in 24 hours.
ELIMINATION

- **VISION 2020**: Elimination of all unmanned level crossing within a time frame of five years.

- **Method of Elimination of Unmanned Level Crossing**
  - Road Over Bridges: high TVU LC (>0.1 Million)
  - Road Under Bridges At Bank
  - Merger/Diversion To Adjacent LC
  - Closure Of Low TVU LC
  - Manning Of Unmanned LC

- **Bottleneck**
  - ROB: Land Acquisition, Encroachment removal
  - RUB: Technical Feasibility
  - Closure: Permission from Government, Public Outrage
  - Manning: Manpower Requirement

27 October 2014

Safety Directorate, Ministry Of Railways, Government Of India
Indian Railway launches regional and nation wide safety campaigns to improve awareness of road users time to time through distribution of Hand Bills, Sticking of Posters, sending SMS, delivering Safety messages at public events, in public places, shops, cinemas, advertisement on media like newspaper, Radio, Street Shows, Morning Walks, Cultural Programs etc. Apart from this the lessons on level crossing safety has been included in school syllabus and safety park has been established.
Publication of LC Safety Leaflets

SOUTH EASTERN RAILWAY
Rail Safety is no accident

SAFETY RULES FOR MANNED & UNMANNED RAILWAY CROSSINGS

UNMANNED
Remember, all vehicles are under statutory obligation to follow the rules under Section 131 of Motor Vehicles Act, 1988 and Section 161 of the Indian Railways Act, 1989 regarding negligently crossing unmanned level crossings. Violation shall be punishable with imprisonment, which may extend to 1 year.

MANNED
Violation of rules regarding opening/breaking of gates in case of manned level crossings, is a punishable offence under Section 160 of the Indian Railways Act, 1989, which prescribes imprisonment for a term extending to 3 to 5 years.
मानवप्रिय रेलवे क्रासिंग पर सुरक्षा के लिए

क्रासिंग से पहले वाहन रोक दें
दोनों तरफ देखें गाड़ी तो नहीं आ रही
गाड़ी की आवाज ध्यान से सुनें

आती हुई ट्रेन के जाने के बाद ही रेल लाइन पार करें।
सावधान!

• अनाधिकृत रूप से
• खड़ी हुयी ट्रेन के नीचे से
• डिब्बों के बीच की जगह से
• रेलवे लाइन पार न करें।

फ्लेटफॉर्म बदलने के लिये
• पैदल ऊपरगामी पुल या
• भूमिगत पार पथ का प्रयोग करें।
Education at Mass Gathering - Kumbh Mela
Pavilion of North Central Railway
Kumbh Mela: Millions Attend
છોટન્યાન્યાલ લેવલ કોર્સિંગ અધેરણે કે ની ઉજવણી માટે ફિલ્મ શો અને પુકકડ નાટક યોજયા

બોડરા તા. ૧૧

ભારતીય રાષ્ટ્રીય દ્રાક્ષક હોના છે જેથી છોટન્યાલ લેવલ કોર્સિંગ અધેરણે ઉજવણી શો અને પુકકડ નાટક યોજયા.

બોડરા રેલબે દ્રાક્ષકના આવાલા ૧૯૨૪ હ્રસ્ત પછી ૧૯૨૬ રેલબે કાટક કાટકમાં વિનાશ થયું છે. છે લોકો સાત્જીવી દ્રાક્ષક હોય છે જેથી કાટકમાં રેલ કાટક પર ક્રમવાળીઓની નિમિશ્રી ક્રમે જાઓ રાસ દીખાવ્યો નથી. શું તેમ કાટકમાં વિનાશ થયું કરી કાટક પર અસામાન્ય સલચમ કે પાંચી કાટક પાણી તપાસ રેલ બાઇક સૂરત કરતા ખાલીઓ શું અને ખાલીઓ શું આવી વત્તો હતો.
Engineering Technology is made use of to develop various safety systems on level crossings, like double lifting barrier, electrified boom, LED Signals etc. Cable Stayed Road Over Bridges are being provided at major busy railway yards. R&D is being promoted in collaboration with academic institutions and business houses.
INNOVATIVE POSTERS AT LC – Deep Impact as Reported in Forbes Magazine, India

Enforcement is ensured through consistent monitoring/implementation of legislation provided in law (Motor Vehicle Act/Indian Railway Act) related to use of level crossing. Crossing of tracks at unauthorised locations is made a punishable offence. Safety Checks are conducted with association Traffic Police(RTO), Railway Police(GRP & RPF), NGOs and penalty is imposed on defaulters.
UMLC Night closing baricading arrangement
Across the Road at LC.No:82A between KKLR-PLVA in SSE/P.Way/KKLR Section.
Alok Kumar,
Director(Safety),
Safety Directorate, Ministry of Railways, Government of India, New Delhi

Email: alokirse@hotmail.com
Mobile: +91-9910487540
Thanks!