ROAD SAFETY, ORG. CULTURE & SUSTAINABILITY

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Road safety is a crucial indicator of societal progress

" I hate over-simplification – Pilot Error.

It voids other factors that influence the pilot's (driver's) faulty performance and ignores the role of system in keeping human error from resulting in catastrophe".

Robert L. Sumwalt
Chairman - National Transport System Board

AGENDA

- Road Safety – Challenges & Concerns
- Safety Culture & Road Safety
- Sustainable Approach in Safety
- Initiatives taken by Nayara Energy
- Way Forward

Every Year on World's Road

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1.25 Million People are killed

50 Million People are injured

25% of global crashes are work related

50% - if commuting is included

36% of occupational deaths worldwide due to road crashes

Global Status Report on Road Safety 2015 – WHO 2015

Road Safety : Indian Context

- Road accidents - a serious public health problem.
- Problem much more serious in India : over 5 lakh road accidents in 2015.
- Ensuring road safety, priority area for GOI.
- India a signatory to Brasilia Declaration :
  - ✓ Committed to reduce the number of road accidents and fatalities by 50 per cent by 2020.
- Ministry of Road Transport & Highways (MoRTH) nodal agency for road safety.

Road safety designated a public health issue by both the United Nations and the World Health Organization

Source: NSC, Regulatory Bodies

Road Safety : Indian Context

- Increased motorization/urbanization/migration India faces severe road congestion in most areas.
- CAGR of vehicles over 10%; growth in road network only 4% causing congestion – impacting road safety.
- Road safety holistic issue – involving roads, motor vehicles, people & **in Organisational context leadership.**
- Needs coordination between different stakeholders.
- In a federal set up much depends on efforts of States to mobilise data on road accidents.

Road Safety : Indian Context

- 2015 data reveals 54% of road accident deaths in age group 15-34.
- Deaths & injuries place heavy burden on economy; household incomes.
- Strain the health, insurance and legal systems.
- **Large number of persons lose jobs after road accident injuries.**
- Families driven deeper into poverty by loss of the bread earner or by expenses on prolonged treatment of injuries.
- Estimated socio-economic costs of road accidents was 3 per cent of GDP - (as per UNESCAP report).

Road Safety : Indian Context

During 2015 :

- Total road accidents – 5,01,423
- Road accident deaths - 1,46,133
- Person injured in road accidents – 5,00,279

In Every Hour 57 Road Accidents take place & 17 Persons killed.

- 28.4 per cent, 24.0 per cent and 47.6 per cent of road accidents on National Highways, State Highways and Other Roads respectively.
- 54.1% of road accident victims are in the age group of 15 to 35 years.
- Share of road accidents accounted by two wheelers (28.8 per cent) and Cars, Jeeps & Taxis (23.6 per cent), trucks, tempos and tractors (19.7%), buses (8.3%) and auto rickshaws (6.1%).
- **However, the maximum number of fatalities was caused by Trucks and Tractors (25.6%).**

Road Safety : Indian Context

Most vulnerable road users killed on road accidents:

- Two Wheelers (31.5%), Pedestrians (9.5%) and Bicycles (2.1%)
- Drivers fault, accounted for 77.1 per cent of total road accidents.
- Within category of driver's fault, over speeding accounts for a high share (62.2%) of road accidents – **only driver responsible??**
- 35 per cent road accident deaths on National Highways.
- The severity of accidents, which refers to the number of persons killed per 100 accidents rose from 20.4 in 2006 to an all-time high of 26.3 in 2015.

SUVs dominate the roads in the United States, India leads the world in the two-wheeler market

Road Safety : Indian Context

- 11.4 per cent of road accidents are reported as Hit and Run cases
- Traffic junctions generally accident prone – accounting for 49 per cent of total road accidents
- 13 States account for 87 per cent of total road accidents
- 13 States account for 83.6 per cent of road accident deaths

50 cities with million + population account for :

- ✓ 22.1 per cent of total road accidents ;
- ✓ 11.3 per cent of total persons killed;
- ✓ 16.4 per cent of persons injured in road accidents

Road Safety : Some indicators

- Driver error is most often the result of Distracted Driving.
- NSC study reveals 25% of all crashes are related to cell phone use – talking or texting – **who is responsible??**
- 52% of accidents occur within 8kms from a person's home; most collusions occur close to home.
- As per AAA, 31% of fatal truck accidents occur on weekend
- Highest number of truck drivers are on the road between midnight & 3 am.
- Fatal crashes are 4 times higher at night than during the day

Road Accidents : Common causes

Dangerous Actions of Passenger Vehicle Drivers:

Although it is rare, not all truck accidents are caused by the truck-driver's mistake. Some truck accidents occur due to unsafe driving practices by drivers of small passenger vehicles, such as:

- Entering traffic in the wrong manner, causing truck-drivers to brake or turn abruptly.
- **Driving in the 'no zone' areas of a truck can lead to serious truck accidents.** (The areas directly behind a truck, and the left and right rear quarters, are a truck's 'no zone', meaning areas where the truck-driver has very little, and often zero visibility.)

Road Accidents : Common causes

- Trying to get ahead of a truck and then not managing to accelerate quickly enough.
- Changing your traffic lane suddenly and coming in front of a speeding truck.
- Leaving a stalled vehicle in the middle of a traffic lane and not getting it properly onto the shoulder of the road.
- Driving between big commercial trucks without keeping sufficient distance from the back and front of the trucks.

Road Accidents : Common causes

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Unsafe Actions of Truck Drivers:

Despite training and standards, truck accidents are often the result of a poor decision by the truck driver. Some of these dangerous actions include:

- Driving under the influence of alcohol or drugs.
- Dangerous, reckless, and aggressive driving practices.
- **Insufficient training in truck driving and lack of defensive driving techniques.**
- **Speeding to meet unrealistic employee expectations or tight deadlines.**
- Not taking enough rest and **driving while fatigued.**

Road Accidents : Common causes

- Backing-up the truck without looking properly behind them.
- Loading the truck to more than its maximum capacity. This can put unnecessary strain on the truck tires and brakes, which can malfunction and cause truck accidents.
- Making sudden turns or turns at high speeds, which can cause the truck to flip over to any one side.
- Driving too close to the sidewalk or too close to ditches and potholes, without reducing the speed of the truck to compensate for poor driving conditions.
- Driving a truck that has mechanical faults and is in need of repairs.
- Not blocking the raised bed of a truck while working on it can cause trucking accidents.

Road Accidents : Common causes

Unavoidable and Unforeseen Circumstances:

- Sometimes a truck accident can occur due to circumstances that are beyond the control of the truck-driver, such as:
  - ✓ Oil spills during rain that makes the roads slippery and conditions very unsafe for truck driving.
  - ✓ Swerving or turning suddenly in order to avoid colliding with a broken down vehicle or another motorist or pedestrian.
  - ✓ Sudden mechanical or brake failure causing the driver to lose control of the truck resulting in a truck accident.

Road Accidents

What Injuries Could You Suffer in a Tanker-Truck Wreck?

Many of the injuries victims suffer in a tanker-truck wreck can be life-threatening. Some of the injuries people suffer include:

- Burns
- Scarring and disfigurement
- Traumatic brain injuries
- Spinal cord injuries—including paralysis
- Amputation
- Crushed, broken, or fractured bones
- Back and neck injuries
- Internal organ damage
- Death

These are all well known – no rocket science

But

Accidents continue to happen

And

People continue to suffer

WHY???

Over-simplification

Pointing fingers

Not learning

Culture

"Its easy to look at an individual's role in accident causation, but the role of the organization must not be overlooked".

Robert L. Sumwalt, Chairman
National Transport System Board

Lessons to be learned

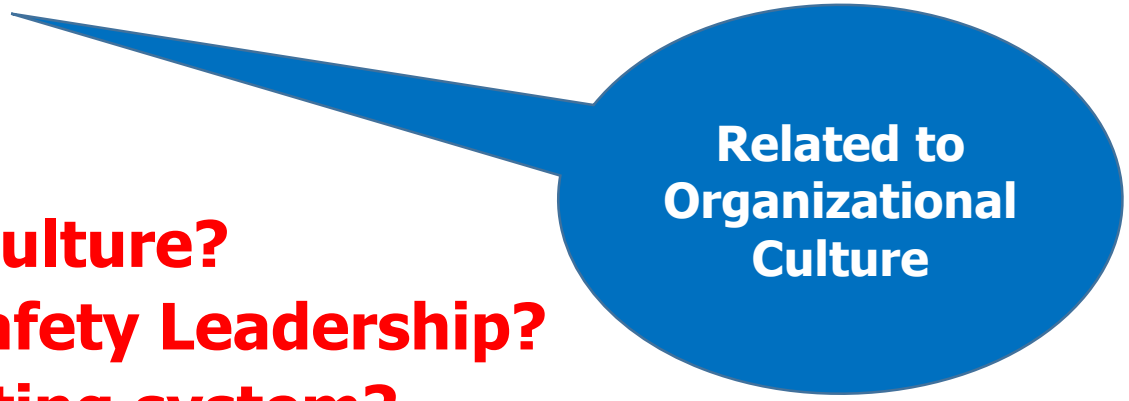
- Conceptual framework on accident analysis indicates that **80-85% failures are due to Leadership / Management failures** & only 10-15% are due to Human error,
- Accident prevention must **not** be treated as an expensive add-on facility but must be an integral part
- Hazard assessment must be carried out at project appraisal stage itself
- **Leadership commitment is pre-requisite to Safety**

Culture

Why Errors?

Is it due to:

- **Poor Safety Culture?**
- **Absence of Safety Leadership?**
- **Lack of reporting system?**
- **High stress?**
- **Lack of Motivation?**
- **Lack of Training & Education?**



Role of Leadership in delivering SHE performance

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- Role Model
- Walk the talk
- Provide Resources
- Safety Vision

- Building Trust
- Training
- Recognition
- Role Clarity

- Implement SMS
- Share Result
- Celebrate Success
- Measure Performance

- Develop SMS
- Measure SMS
- Align
- Accountability

Leadership

Traditional Leaders	Inspirational Leaders
Short term objectives	Long-term Mission, Vision, & Values
Individualistic approach	Institutional approach
Driven by necessity and crisis	Driven by innovation and continuous learning
Address Lagging indicators	Focus on Leading Indicators
Instruct people	• Listen to people • Spot the warning signals of complacency creeping in • Willing to sit with peers, subordinates and understand the process safety issues
Works within set established goals and organizational boundaries	Challenges the status quo and is more future-oriented

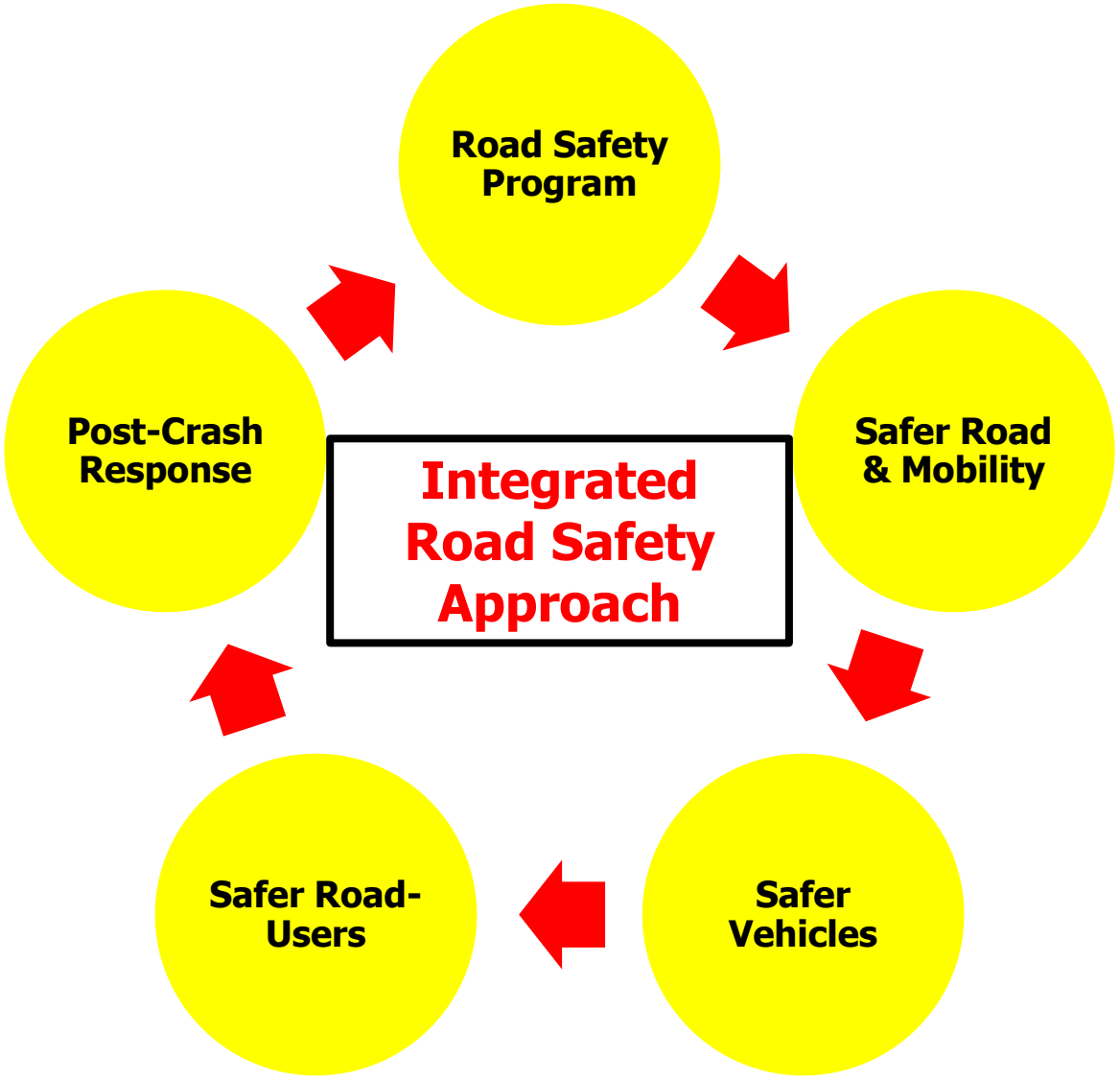
Leadership

Traditional Leaders	Inspirational Leaders
Works within set established goals and organizational boundaries	Challenges the status quo and is more future-oriented
'Judicial' approach of Incident reporting	• Promote reporting of incidents/ near-miss – opportunities for improvement • Actively work to remove barriers to the reporting of '*Bad News* ' & promote an open culture for communication.
Safety is a cost Safety is a Priority	• Safety is an investment • Prioritize long term process safety assurance over & above short term budget restrictions and profitability • Safety is core value

Inspirational Leadership

Sustainable Approach in Road Safety

The Approach



Road Safety Program

Road Safety Policy / Program must encompass:

- Responsibilities of drivers, supervisors, HODs & other concerned
- Driving guidelines & Driver Reinforcement
- Training for drivers, supervisors
- Process for reporting malfunctions and collisions
- Disclosure of monitoring systems (e.g. GPS tracking)
- Use of personal vehicles for company business

SAFER ROADS AND MOBILITY

Managing the transportation Journey

- Transportation journeys must be carefully planned and analysed to manage the risk associated with driving.
- Consideration for drivers' schedules, distance covered possible hold-ups, and potential road hazards should form part of the transportation planning process.
- The best way to reduce road risk is to limit the amount of time spent on the roads.
- Identifying and managing the potential hazard associated with each journey.
- Determine if any areas of the transportation route are hazardous
- Check & suggest alternate routes – if the route found hazardous.

SAFER VEHICLES

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Selection of Vehicles with safety features

- Collison mitigation system like ABS set to maintain safe distance with warning if safety distance is breached
- Engine control system to prevent the vehicle from exceeding set speed
- Lane departure warnings thru cameras & sensors
- Seat belts, air bags etc.

Monitoring & Inspection

- Monitor vehicle efficiency, track wear and tear, and ensure vehicle safety levels are well-maintained.
- Reporting structure & removing the vehicle with ill-maintained safety systems

SAFER ROAD USERS

To reinforce the importance of road safety initiatives:

- Organizations should have incentive schemes in place to recognize good driving behaviour and penalize poor performance
- Communicate the outcome of road safety program – a process to share info on fleet safety issues & activities at regular intervals

To build a company of road safe users organization should:

- Driver / Contractor selection, Management & On-going assessment
- Health check of drivers & skill assessment – good eyesight is fundamental to safe driving coupled with driving skills
- Robust distracted driving policy must be in place (no use of mobiles etc.)
- Establish driver fatigue standard & rules- breaks between driving

POST-CRASH RESPONSE

- Employees / Drivers must be trained to respond effectively in the event an accident does happen
- Post crash preparedness include knowledge to provide basic first-aid help – vehicles must have emergency medical kit
- Accident investigation soon after the crash is reported
- **Sharing the lessons' learnt is paramount.**

Artificial intelligence can make driving safer. One interesting example of that is Intelligent Speed Assistance (ISA): With half of all accidents caused by driver error related to speed, ISA is a new feature that uses cameras and GPS data to recognize the velocity of a vehicle, automatically informing drivers if they accelerate beyond the speed limit.
EC has included ISA as a key safety measure in their regulation to minimize road accidents.

Nayara – Initiatives taken / underway

- Organized company wide massive defensive driving training by IRTE
  - ✓Covering TT crew
  - ✓Own Employees
- Journey risk management for selective routes with the help of IRTE
- VTS installation & continuous monitoring
- Night Driving Restrictions

Nayara – Initiatives taken / underway

- Covering all employees of Marketing Division in "Accident-Incident Investigation" workshop.
- Reporting of all Road Incidents & Investigations thereof
- Compulsory Safety devices in cars – 04 airbags
- Publication of positive behaviour in in-house journals

WAY FORWRAD

Find/Identify	Observe	Utilize	Standardize
Accident trend Analysis Injury rate Analysis Define the problem	Observation Take incident picture Discuss contributing factors Root causes	Discuss in team Brainstorm / ideas for improvement Assign ownership Schedule date of completion	Team Meeting Share best practices Follow-up Measure

- **Some Final Thoughts on accident prevention…**

Human Paradoxes - Overcome

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Paradoxes

- **Deep rooted Human propensities**

Paradoxes

- **Averse to Change Management**
- **Assimilation versus Acquisition**

Paradoxes

- **Over dependence on Contractors**
- **Communication Barrier**

Paradoxes Impacting Safety

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Deep rooted Human propensities:

- Incident investigation reports reveal mostly the same Old Story of Failure
- Refuse to Learn though we appear to give high importance to Lessons Learnt
- Not Challenging the Learning Process
- Too Knowledgeable is our attitude
- Not learning from the Mistakes

Paradoxes Impacting Safety

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Acquiring Vs. Assimilating: State-of-the-art technology

- What actions we take to imbibe technology?
- Do we focus on training & education?
- Do we coach juniors / subordinates?
- Do we identify Hazards & Assess risks?

Do we cerate a climate for contribution!!

Paradoxes Impacting Safety

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Over-Dependence on AMCs

- Many of the jobs are outsourced - Reality
- Do we study Contractor's safety process?
- Who supervisees the Contractor's work?
- Do we educate contract workers'?

Over-dependence on Contractor!!

Paradoxes Impacting Safety

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Averse to Change Management

- **Bypass of protective layers : Inter-locks / VTS**
- **Identify risks upon addition of facilities**
- **Hazard & Operability Study**

No concern for proper documentation.

Paradoxes Impacting Safety

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Communication Barrier

- Do we ask questions?
- Do we solve the problems together?
- Do we allow dissent views?
- Do we facilitate problem solving process?
- Do we engage employees?

We Instruct!!

Fundamental Principles of Safety

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- **Five (5) basic principles:**
  - **Human errors are inevitable,**
  - **Blaming an error equivalent to suppressing systemic deficiencies,**
  - **Even minor errors are due to failure of the system,**
  - **RCA & error prevention go hand in hand**

Thank you

Caption

Caption

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