

Steel Authority of India Limited

IISCO Steel Plant, Burnpur, West Bengal

Measures taken to Improve Road Safety

Background

Road accidents in India kill almost 1.5 lakh people annually. Accordingly, India accounts for almost 11% of the accident-related deaths in the World. Globally, 54% of accident-related deaths are pedestrians, cyclists and motor cyclists. This results in considerable economic losses not only to individuals, their families, but also to the nations as a whole. Since there are large number of employees and workers in a steel plant and there is also heavy vehicle movement inside the plant, it is essential to ensure road safety in the plant premises. SAIL-ISP has implemented many road safety initiatives as it is committed to the safety and well-being of its employees and workers. These safety measures are noteworthy as they have made a huge impact towards enhancing the road safety.

Problem Description

Road accidents are multi-causal and are the result of an interplay of various factors. These can broadly be categorized into :

Human Error

- Traffic rules violations: Over speeding
- Using Mobile Phone while Driving
- Non-use of safety devices – Helmets and Seatbelts

Accidents due to Road Environment

- Accidents happening in a particular area
- Accidents due to road features like potholes, culverts, curved road etc.
- Accidents due to road junction type & traffic control like T-junction, Y-junction, Round about etc.
- Accidents due to weather condition like rainy season, foggy season etc.

Accidents due to Vehicular condition

- Over-aged vehicles
- Overloading etc.

Major Areas of Concern in SAIL-ISP

- Road-dispatch of finished goods/products increased vis-a-vis rise in movement of trailers.

- Traffic inside the plant premises increased on account of increased motorized vehicles also.
- Movement of Haulpak dumpers/Tippers/Trailers & Other Heavy Vehicles increased for shifting/ dumping of wastes/ scraps.
- Road Safety Violation by the commuters.

Challenges faced in SAIL-ISP

- Unsafe act by Trailer drivers and lifters.
- Increased Dumper's movement inside plant.
- Unsafe condition due to haphazard parking and movement of trailers.
- Violation of Speed limit norms.
- Parking issues during restricted timing of heavy vehicle movement.

Implementation/execution details:

Various engineering, technical & design interventions have been made along with behavioural safety measures. These are:

- Widening of Roads and dedicated parking area for trailers. (Fig. 1)



Road has been widened at the entrance to Bar Mill area



Separate area has been developed for parking of dispatch vehicles.

Fig. 1 : Widening of Roads and dedicated parking area

- Display of safety posters at various locations. (Fig. 2)



Display of safety poster across road area outside Mills



Display of safety poster across road near PBS Crossing

Fig. 2 : Display of Safety Posters

- Retro-reflective signages at vulnerable locations.
- Installation of Blind Corner Convex mirrors at vulnerable locations. (Fig. 3)



Retro-reflective signage are placed at vulnerable locations to caution commuters.



Retro-reflective signages are placed at vulnerable locations



Installation of Blind Corner Convex Mirrors at vulnerable locations

Fig. 3 : Retro-reflective signages and blind corner convex mirrors

- Regular dumper speed checking by speed gun.
- Traffic management by traffic assistant. Posting of Traffic attendants at various vulnerable locations. (Fig. 4)



Traffic management by Traffic Assistant



Dumper speed checking by speed gun

Fig. 4 : Traffic management and dumper speed checking

- All the Haulpaks are equipped with side indicators along with Hooters for audio-visual alarm while turning.
- All the Haulpaks are equipped with rear view mirrors on both sides for clear visibility.
- Operator ensures side clearance before turning, especially to the right-side turn. (Fig. 5)



All the Haulpaks are equipped with rear view Mirrors on both sides for clear visibility



All the Haulpaks are equipped with side indicators/turning indicators along with Hooters for audio-visual alarm while turning

Fig. 5 : Initiatives for Haulpak movement

- Non plying hours for heavy vehicles have been fixed keeping in mind the duty hours of personnel.
- Haulpaks permitted on pre-defined routes only. Regular checking of Haulpaks as per checklist. (Fig. 6)

DUMPER NO:- 09		DATE:- 11.02.2019	
SL. NO.	JOB DESCRIPTION	OBSERVATION	ACTION TAKEN
1	SIDE INDICATOR LIGHT RIGHT	OK	
2	SIDE INDICATOR LIGHT LEFT	OK	
3	FRONT INDICATOR LIGHT RIGHT	OK	
4	FRONT INDICATOR LIGHT LEFT	OK	
5	REAR INDICATOR LIGHT RIGHT	OK	
6	REAR INDICATOR LIGHT LEFT	OK	
7	SIDE INDICATOR BUZZER RIGHT	OK	
8	SIDE INDICATOR BUZZER LEFT	OK	
9	BACK LIGHT	OK	New Bulb Change
10	REVERSE GEAR BUZZER	OK	
11	PARKING BRAKE LIGHT	OK	
12	HEAD LIGHTS RIGHT	OK	
13	HEAD LIGHTS LEFT	OK	
14	FOG LIGHT RIGHT	OK	New Fog light Bulb Fitted
15	FOG LIGHT LEFT	OK	
16	BATTERY TERMINAL CLEANING	OK	Battery Terminal Cleaning
17	BATTERY POLE FIXTURES	OK	Battery Pol Fixed
18	DALLA HAULING POSITION ALARM LIGHT	OK	
19	ALTERNATOR BELT & ALTERNATOR MOUNTINGS	OK	
20	ALTERNATOR WIRE CONNECTION	OK	
21	SELF WIRE CONNECTION & MOUNTINGS	OK	Self wire Connection Tight
22	AMMETER METER	OK	
23	VOLT METER	OK	
24	DASH BOARD LIGHTS	OK	
25	WATER TEMP GAUGE	OK	
26	WIPER		
27	HOUR METER	OK	
28	WIRE HARNESS	OK	
29	CABIN FAN	OK	New Cabin Fan Change

Wakil Ahmad
SIGNATURE

Fig. 6 : Inspection checklist for Haulpaks

- 12 Dumper Operators attended training at BEML- Dhanbad for improving their competency.
- Driving Simulator installed for training of Dumper Operators.
- In-house training on “Behavioural Based Safety” on imparted to the moving machine Operators.
- Parking Space for trailers expanded near WRM-Furnace, In-front of Mills Despatch area. (Fig. 7)

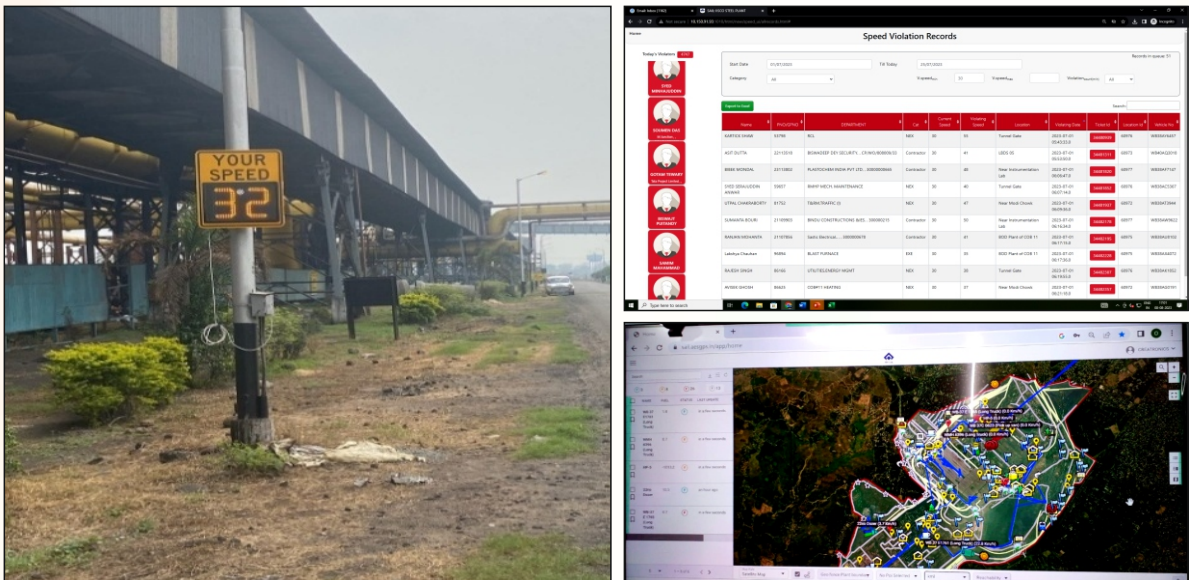


Designated Parking space has been earmarked in front of Mills for heavy vehicles/ trailers for Road dispatch of finished products.

Fig. 7 : Designated parking space

Digital Intervention in Road Safety Management:

- Installation of GPS System on Heavy Earth Moving Equipment for real time surveillance.
- Installation of real time speed cameras at 9 strategic locations having Automatic Number plate recognition system for monitoring & identifying the offenders which are also counselled later. (Fig. 8)



Installation of GPS System on Heavy Earth Moving Equipments & real time speed monitoring cameras at 9 strategic locations to enhance road safety

Fig. 8 : Real Time Speed monitoring through digital intervention

Awareness Drives/Campaigns for Promoting Safe Behaviour:

- Road Safety Week Campaign held on quarterly basis and daily Road Safety surveillance done.
- Traffic Guards deployed inside the plant to improve Road Safety.
- Shop Floor Safety training and Safety talks are imparted on topics: Road Safety, Defensive Driving & Behavioral Based Safety to employees to avert road accidents. (Fig. 9)



Regular training/awareness programmes are organized to enhance road safety

Fig. 9 : Awareness Drives/Campaigns for Promoting Safe Behaviour

Conclusion:

Road safety initiatives in SAIL-ISP has shown remarkable improvement in safety culture across the organization. These initiatives need to be continued to achieve better outcomes in the future. Also, other areas of concern need to be addressed to improve safety in a comprehensive and holistic manner. Safe and healthy workforce will add value to the organization and consequently productivity will automatically improve. SAIL being an employee-welfare oriented organization always strives to promote safety at workplace and leaves no stone unturned to implement safety measures and strict safety standards. We sincerely believe that our continual efforts for improving road safety standards shall definitely result in creating a safer working environment and a more responsible workforce. The same will further improve the availability of human resource by reducing loss of man-days due to road incidents, resulting in a boost in man power productivity.