



Jurong Island Vision Zero Forum

Implementing Safety Features To Prevent Driver's Fatigue

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Topics Today



01

Driving in Fatigue and Its Effects

02

Driver's Health and Education

03

Pre-Driving Checks

04

Operational Management and Measurement



Driving in Fatigue:

Driving in the condition of tiredness which resulted from mental or physical exertion or illness.

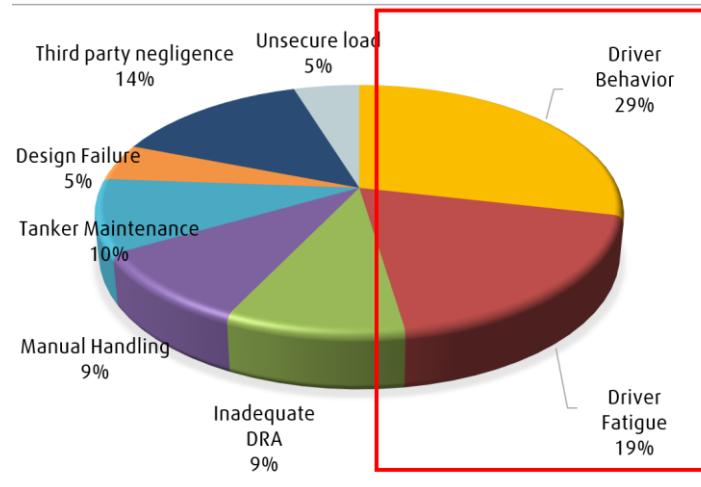


Fatigue played a role in **9 – 10%** of all crashes

Questionnaire studies, mobility and transport - road safety, European Commission

684 deaths from drowsy-driving-related crashes in 2021

National Highway Traffic Safety Administration, US Department of Transportation



19% of road incidents are related to driver fatigue.

Linde road incident data analysis,
2017

Drivers in Fatigue Would Tend To:

- Take risks
- Forget or ignore checks or procedures
- Be unable to absorb critical driving information and respond to it
- Be unable to solve problems
- Be unable to decide on the best actions to take to address a hazard and execute the necessary responses.
- Be unable to judge distance, speed and time



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Managing a Driver's Health Is the First Gateway to managing Driver's Fatigue

- Certain medical conditions are associated with fatigue; for instance, anemia (iron deficiency), heart disease, sleep apnea (breathing repeatedly stops and starts)
- Regular consumption of drugs or alcohol could also lead to fatigue conditions
- Working with the medical professionals to match the health status of the drivers before employing them would lower the risk of having drivers driving in fatigue.
- Having a routine health check up for existing drivers would also allow health conditions to be detected at an earlier stage.
- Transparency by the drivers with the management is crucial.



Driver's Knowledge on What Leads to Fatigue

- Quality of sleep
- After work activities
- Long term medication
- Weather
- Work load
- Following scheduled break times
- Being aware of the conditions like weather, sitting position, air conditioning quality that may lead to fatigue
- What to do when they are in fatigue – stop and escalate for help



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Breathalyser Alcohol Test

- Alcohol consumption before driving would most likely lead to feelings of relaxation and drowsiness.
- Once the driver fails the test, the driver is stopped from driving and executive management is alerted

Fatigue Test

- A simple macro based test to record the amount of time that a driver takes to click from numbers 1 to 20.
- The time taken is compared to his last three tests and any deviation would result in an escalation to the executive management.

Driver Briefing

- A dialogue between the driver and the supervisor on the requirements on the day; approximately 2 to 3 minutes.
- An avenue for supervisors to observe any anomalies by asking questions.
- An avenue for driver to voice concerns over physical state and any other matters

**Daily gateways
to reduce driving in fatigue**

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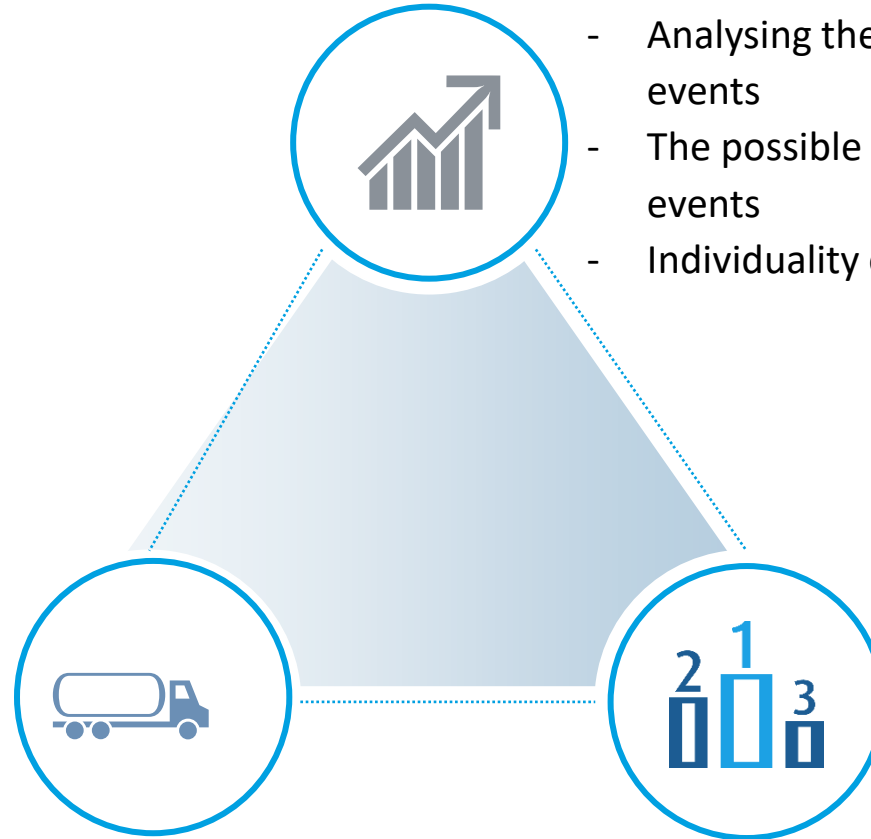


04

Operational Management and Measurement

Planning and Execution

- Responsibility of route planners on work load which would influence fatigue levels in drivers
- Accountability of line supervisors and managers to ensure drivers take the appropriate routes and scheduled rest times.
- Reduce waiting time at delivery points to avoid exceeding working hours.
- Working hours management and ensure change in shift patterns are managed (day to night, night to day)



Fatigue Statistics

- Tracking fatigue instances
- Analysing the severity of the fatigue events
- The possible time and location of the events
- Individuality of the events

Resources Planning

- Staffing according to the nominal business volume and catering for surges
- Maintaining budgets to support infrastructure like fatigue devices to monitor driver's fatigue events



Thank you for your attention.

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