
ndian Railways Safety & Predictive
Analytics Dashboard
Predictive Insights
Historical Trends
Accident Analysis
Human error factors
Maintenance Factors
Environment Impacts
Financial Trends
Geospatial Trends

Historical Accident Trends

1,228 Total Accidents

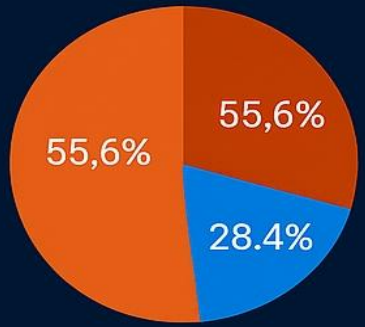
55.6% Derailments

462 Comparing

Year-wise Trends

Accidents by State

Month-wise Trends



Accidents by Type

Accidents by Type

Railway Accident Analysis

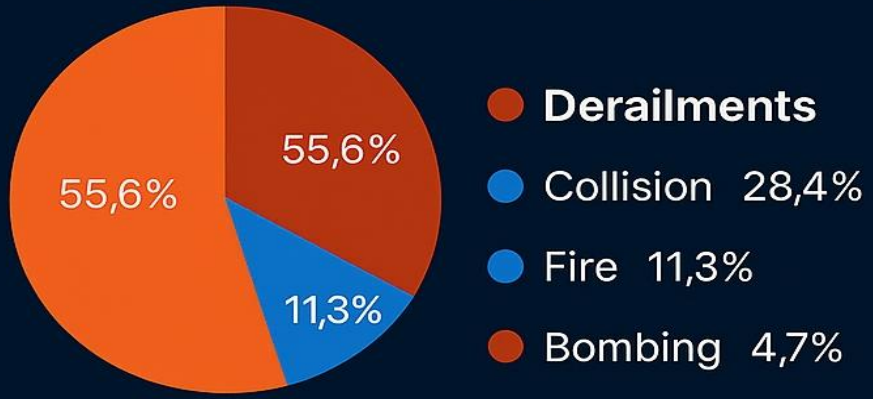
1,228
Total Accidents

55.6%
Derailments

462
Technical Faults

Technical Faults

Distribution by Accident Type



Breakdown by Cause

Trends Filtered by Zone/Type

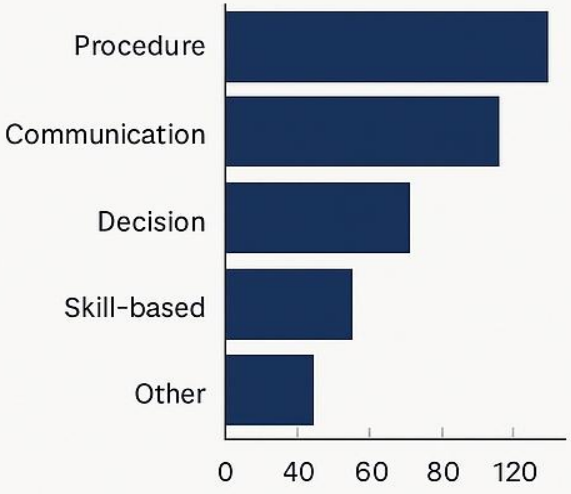
Avg rescue time by Location Type

(2005–2022)

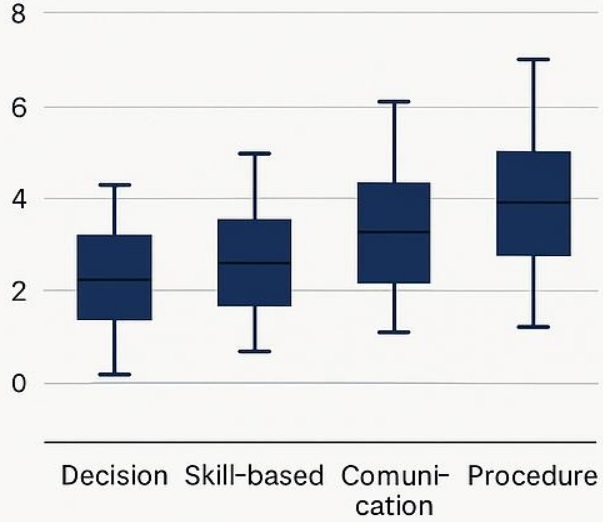
Human Error & Crew Analytics

420	20%	5.8 h	6.1 h
TOTAL ERRORS	ERROR RATE	AVG. SLEEP HOURS	AVG. DUTY HOURS

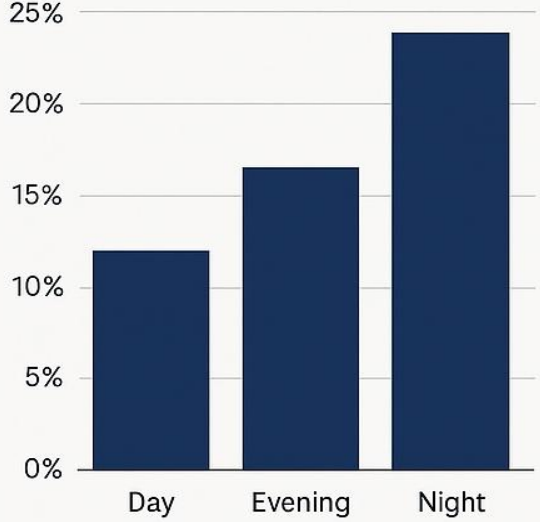
Error Types



Sleep Hours by Error Type



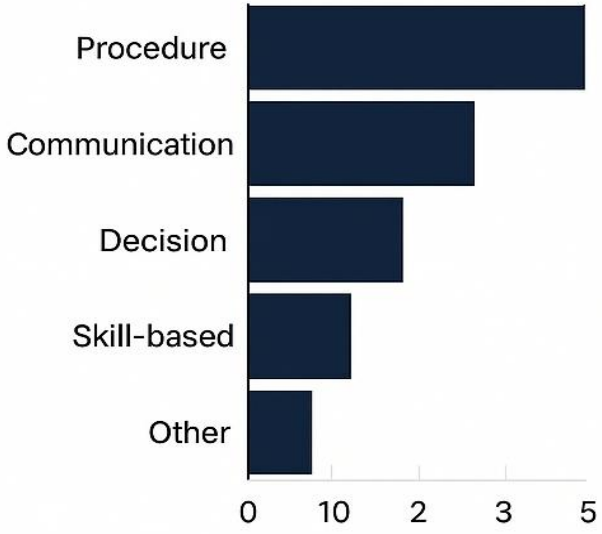
Failure Rate by Shift



Maintenance Status

250	36%	25%	$750k
TOTAL ASSETS	PAST DUE	OVERDUE	MAINT. COST

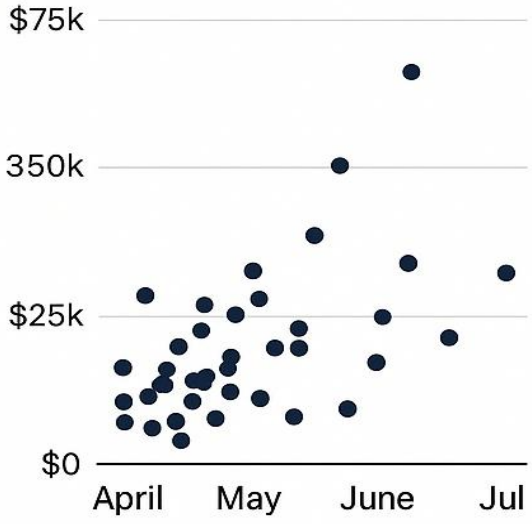
Condition Scores



Maintenance Due

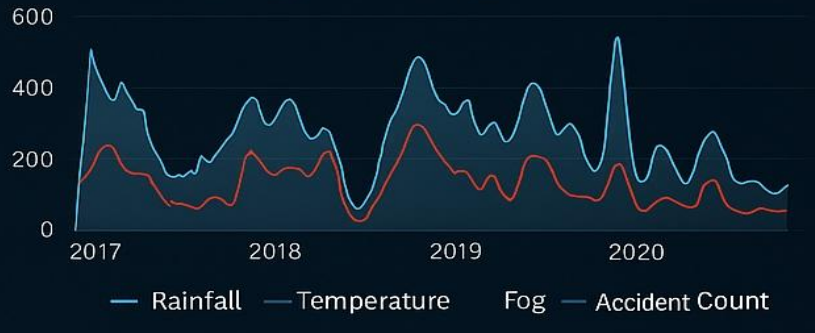
Asset	Due Date
Pump A	2024-05-01
Generator D	2024-05-03
Conveyor B	2024-05-07
Motor C	2024-05-10
HVAC F	2024-05-12

Repair Costs



Environmental & Weather Impacts

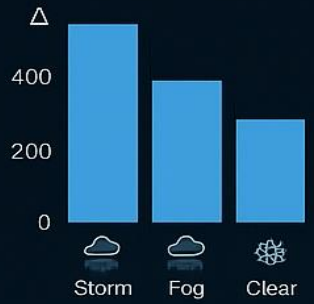
Accident Count by Weather Type



Environmental Correlation with Accident Rate

	Vegetation Density	Proximilty to Water	Soil Type	Weather
Vegetation Density	0.22	0.76	0.39	0.35
Proximity to Water	0.12	0.63	0.14	0.33
Soil Type	0.44	0.25	0.36	0.15
Elevation	0.13	0.18	0.49	0.39

Accident Count by Weather Type



Accident Count by Region

ACCIDENT SPIKE ZONES

Elevation > 370 m
Vegetation Density > 0.5

12% increase

Water influence

TERRAIN SENSITIVITY

Black & red soil areas see higher raintall impact

30% rise

Seasonal weather extremes

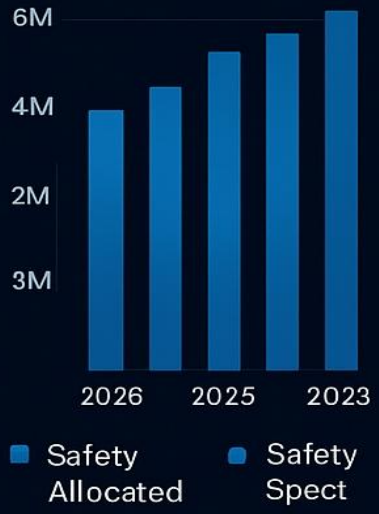
Winter months
see higher rintall impics

Financial Trends & Resource Use

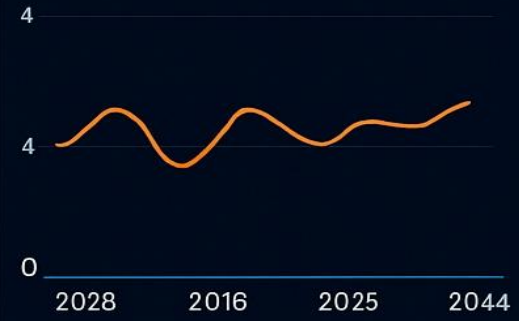
$5.0M	$4.6M	320	2.8
Safety Allocated	Safety Spent	Accidents	Severity pe Incident

Safety Allocations & Expenditures

Safety Allocated v. Spent



Incident Severity



Geographic Risk & Hotspots

Mangapatnam

Bonsvestnent Deralment
1992-130 deasks

Incident Severity Score: 2.9

Zone Reform Index 19%

Weather Risk Overlay 19%

3.8 2.5 18%

Predictive Model Outputs

fx	Random forest	Decision Tree	Logistic Regression
Accuracy	0.81	0.88	0.79
Precision	0.88	0.92	0.84
Recall	0.92	0.83	0.72

assification:

High_Severity was defined as accidents resulting in fatalities or injuries above the nedian severity threshold, or critical accident types such as Derailment or Collision with significant operational impact.