

# Fatigue Management

**A case study**

Fatigue Management Conference Melbourne  
July 2008

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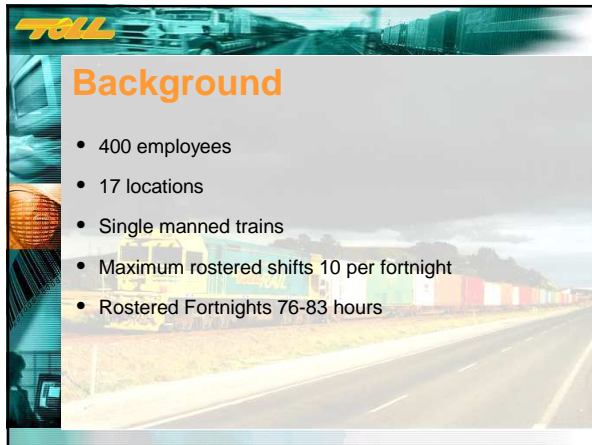
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## Background

- 400 employees
- 17 locations
- Single manned trains
- Maximum rostered shifts 10 per fortnight
- Rostered Fortnights 76-83 hours

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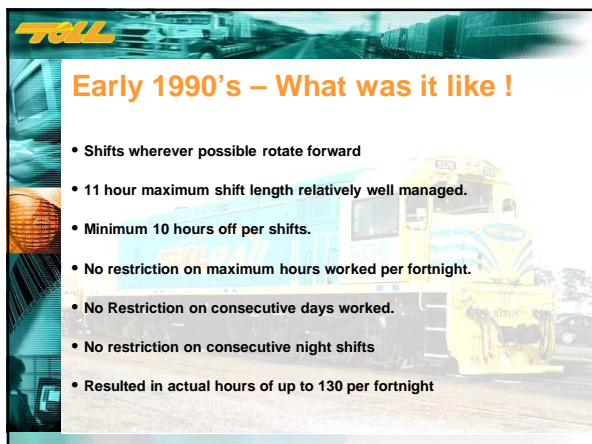
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## Early 1990's – What was it like !

- Shifts wherever possible rotate forward
- 11 hour maximum shift length relatively well managed.
- Minimum 10 hours off per shifts.
- No restriction on maximum hours worked per fortnight.
- No Restriction on consecutive days worked.
- No restriction on consecutive night shifts
- Resulted in actual hours of up to 130 per fortnight

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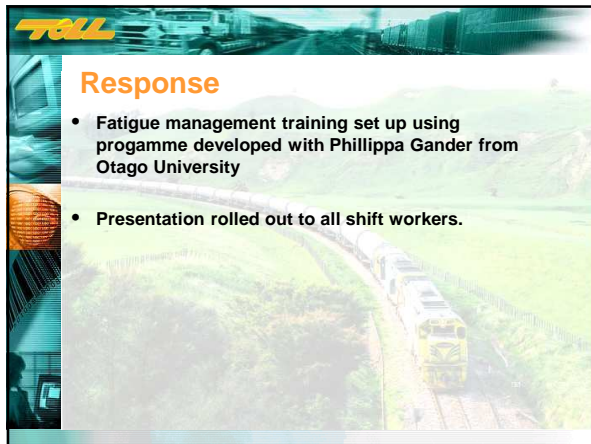
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## Response

- Fatigue management training set up using programme developed with Phillippa Gander from Otago University
- Presentation rolled out to all shift workers.

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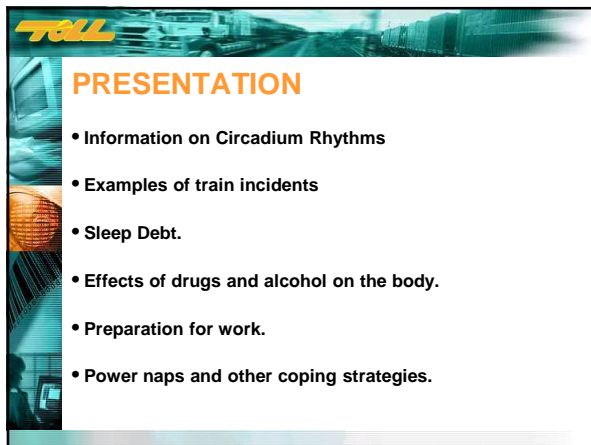
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## PRESENTATION

- Information on Circadian Rhythms
- Examples of train incidents
- Sleep Debt.
- Effects of drugs and alcohol on the body.
- Preparation for work.
- Power naps and other coping strategies.

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## Rostering Changes

- Maximum 3 at Risk shifts.
- At Risk defined as :-
  - Commencing between 2000- 0359 hours.
  - Other nominated shifts commencing before 2000 hours and finishing after 0300 hours.
- Following 3 at risk shifts a mandatory rostered 54 hour break applied before the next rostered shift.
- Maximum 98 hours rostered time per fortnight.

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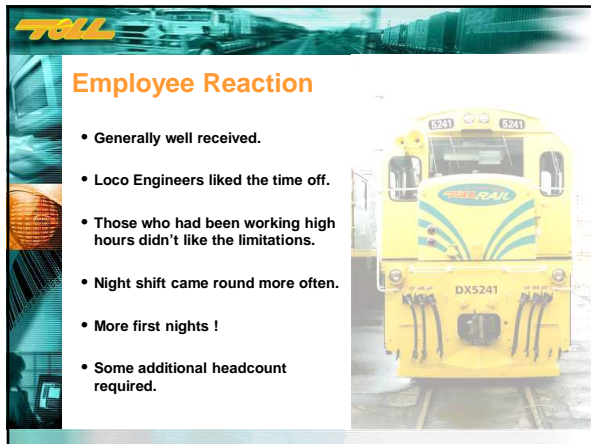
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## Employee Reaction

- Generally well received.
- Loco Engineers liked the time off.
- Those who had been working high hours didn't like the limitations.
- Night shift came round more often.
- More first nights !
- Some additional headcount required.




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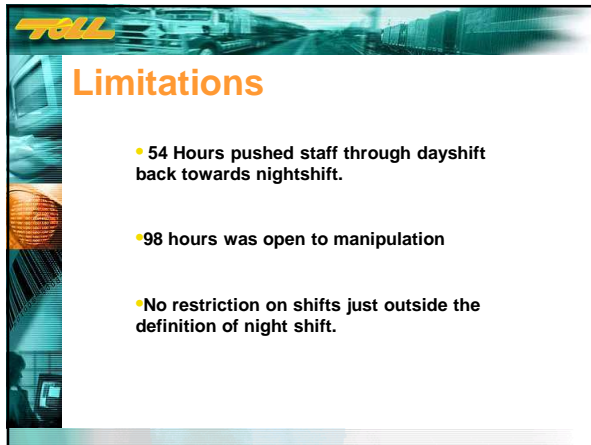
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## Limitations

- 54 Hours pushed staff through dayshift back towards nightshift.
- 98 hours was open to manipulation
- No restriction on shifts just outside the definition of night shift.

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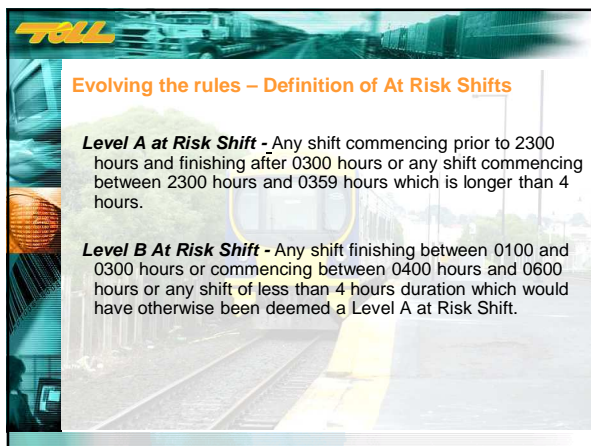
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## Evolving the rules – Definition of At Risk Shifts

**Level A at Risk Shift** - Any shift commencing prior to 2300 hours and finishing after 0300 hours or any shift commencing between 2300 hours and 0359 hours which is longer than 4 hours.

**Level B At Risk Shift** - Any shift finishing between 0100 and 0300 hours or commencing between 0400 hours and 0600 hours or any shift of less than 4 hours duration which would have otherwise been deemed a Level A at Risk Shift.

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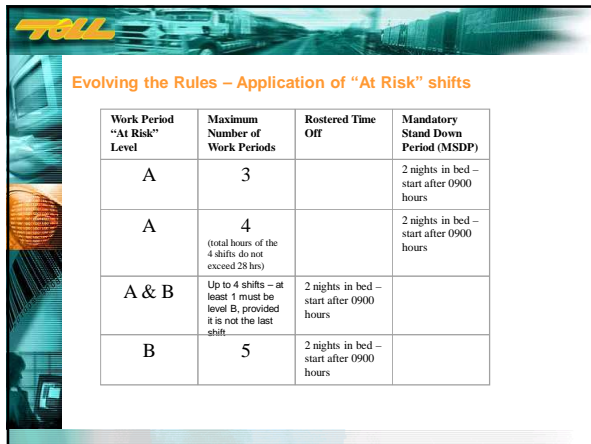
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### Evolving the Rules – Application of “At Risk” shifts

Work Period “At Risk” Level	Maximum Number of Work Periods	Rostered Time Off	Mandatory Stand Down Period (MSDP)
A	3		2 nights in bed – start after 0900 hours
A	4 <small>(total hours of the 4 shifts do not exceed 28 hrs)</small>		2 nights in bed – start after 0900 hours
A & B	Up to 4 shifts – at least 1 must be level B, provided it is not the last shift.	2 nights in bed – start after 0900 hours	
B	5	2 nights in bed – start after 0900 hours	

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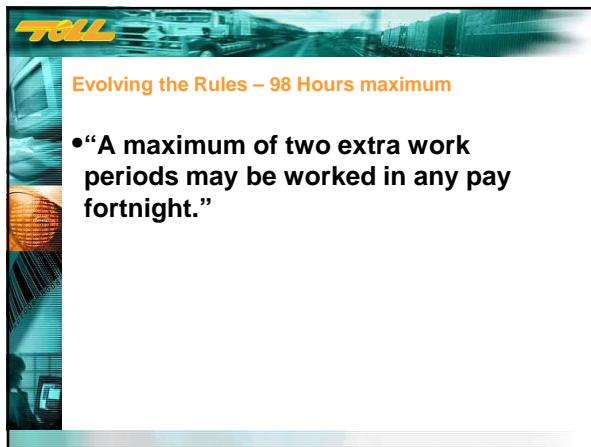
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### Evolving the Rules – 98 Hours maximum

- “A maximum of two extra work periods may be worked in any pay fortnight.”

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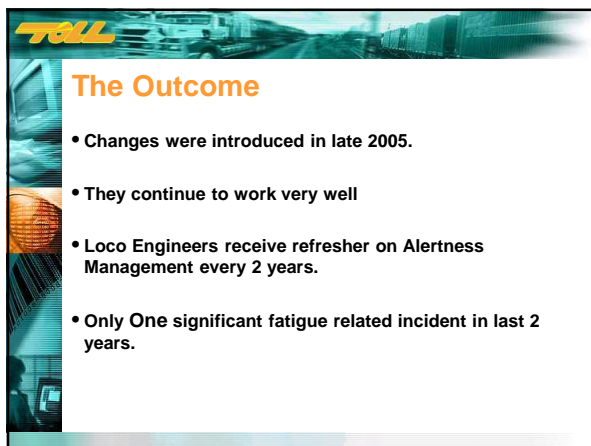
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### The Outcome

- Changes were introduced in late 2005.
- They continue to work very well
- Loco Engineers receive refresher on Alertness Management every 2 years.
- Only One significant fatigue related incident in last 2 years.

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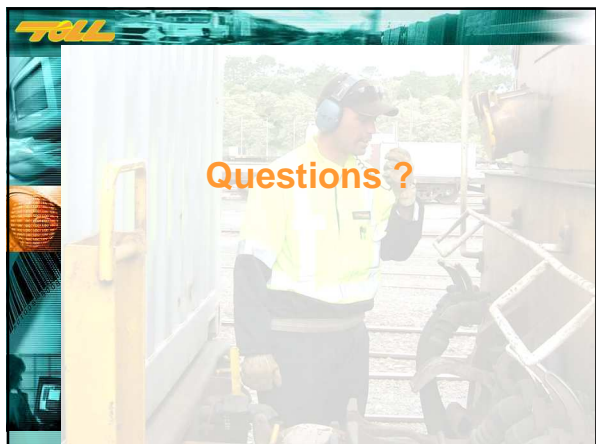
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