

BHP Billiton Iron Ore Railroad

Presentation to Analysts June 2005



Mike Darby, Vice President Rail

Iron Ore



Rail System Location Map

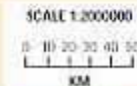
The Nelson Point -
Newman Railway is
426km

Port Hedland-Yarrie
Railway is 208km

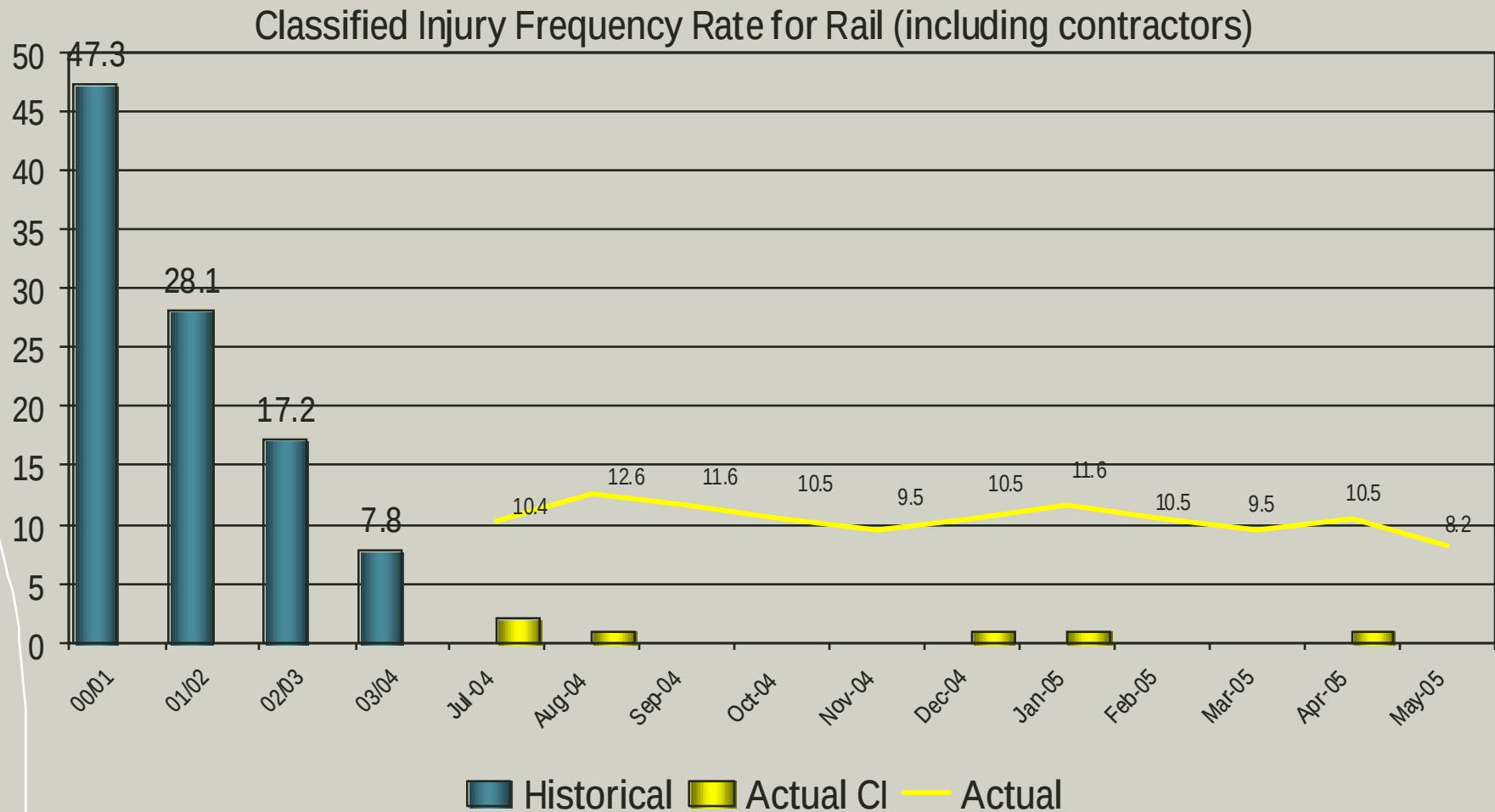
Yandi spur line is
30km

Area C spur line
extension from
Yandi is 38km

Jimblebar spur line is
32km



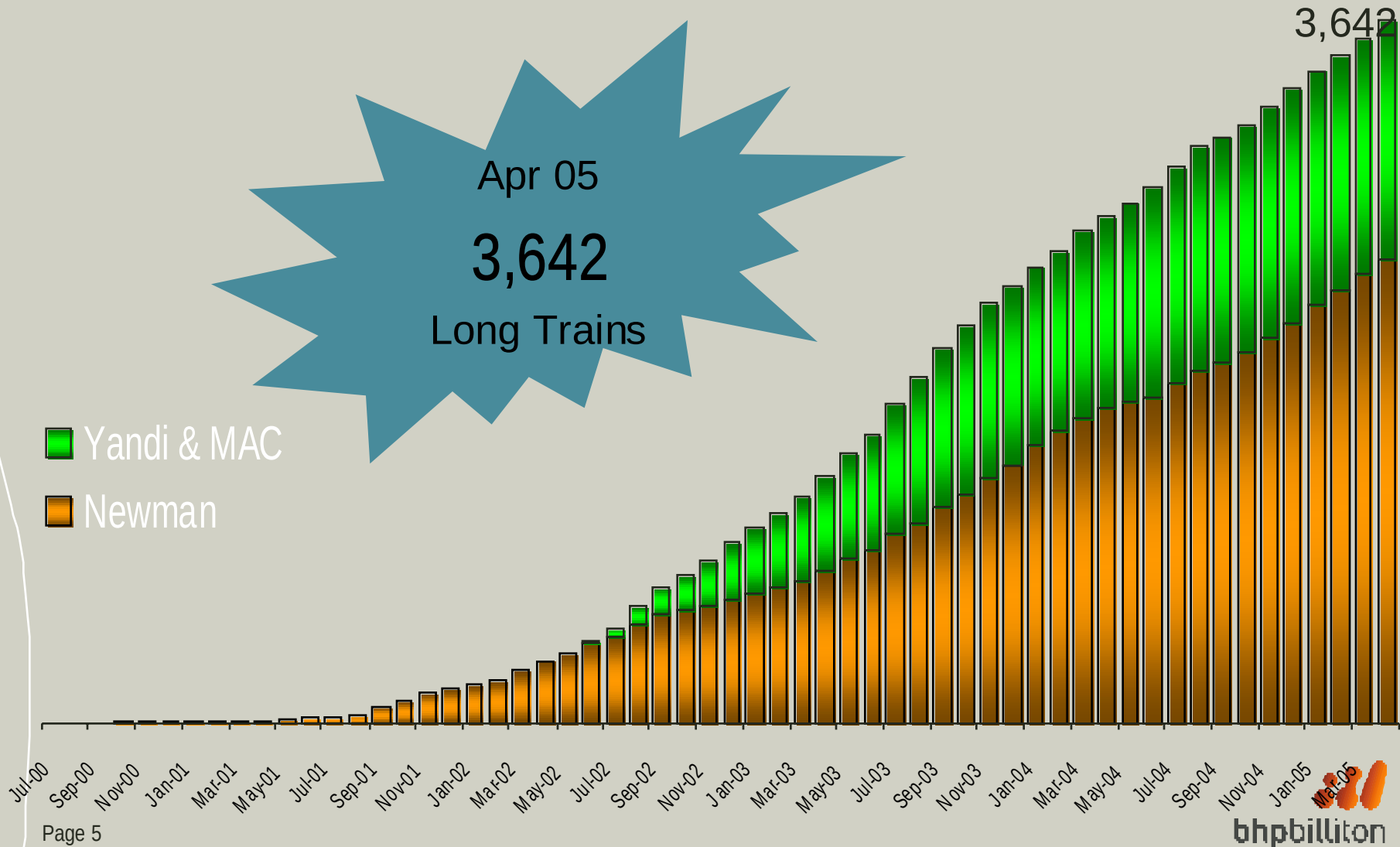
Safety Performance - Rail Classified Injuries



Tonnes Railed

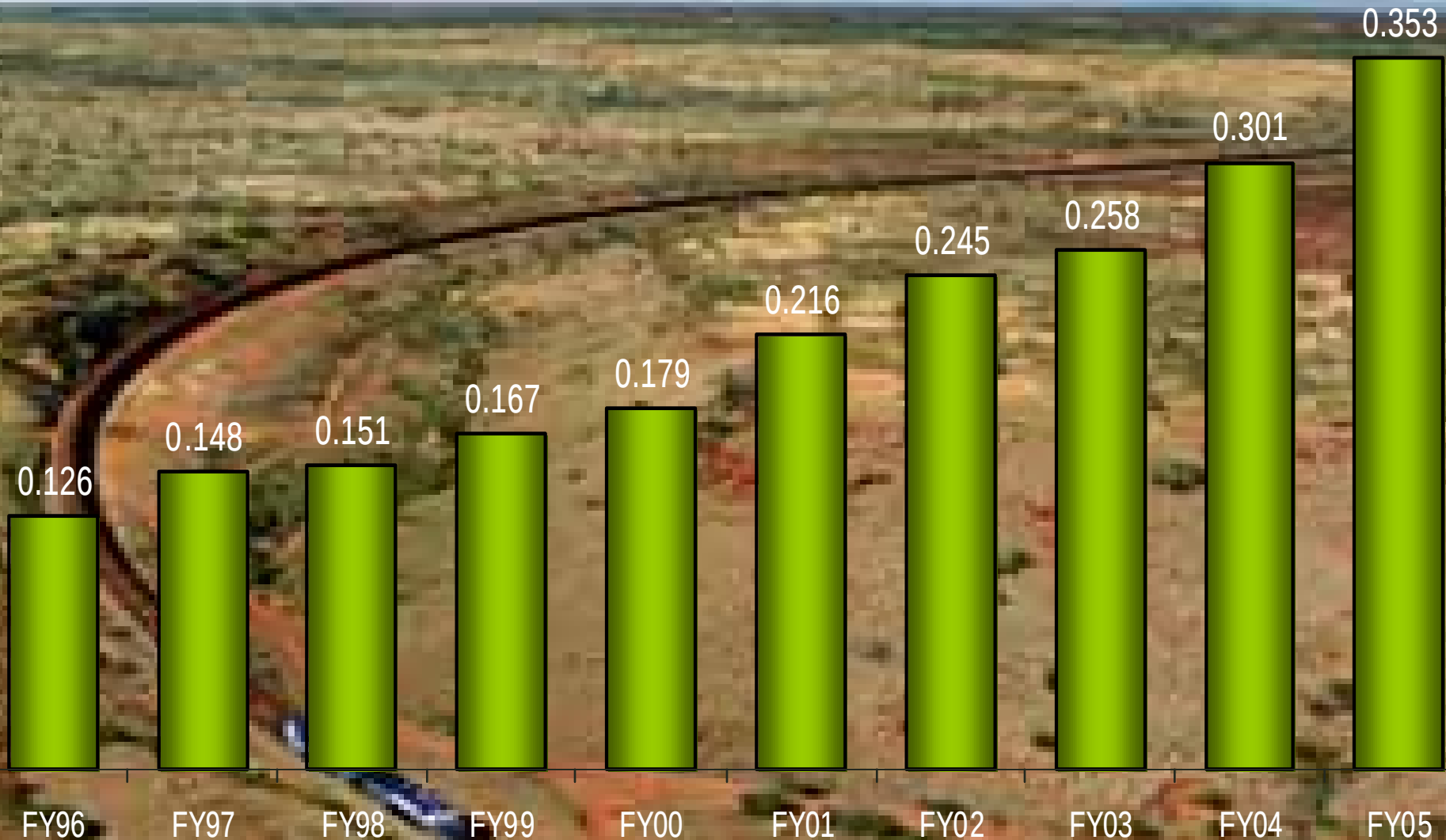


Rail KPI's - Long Trains (300-336 Cars)

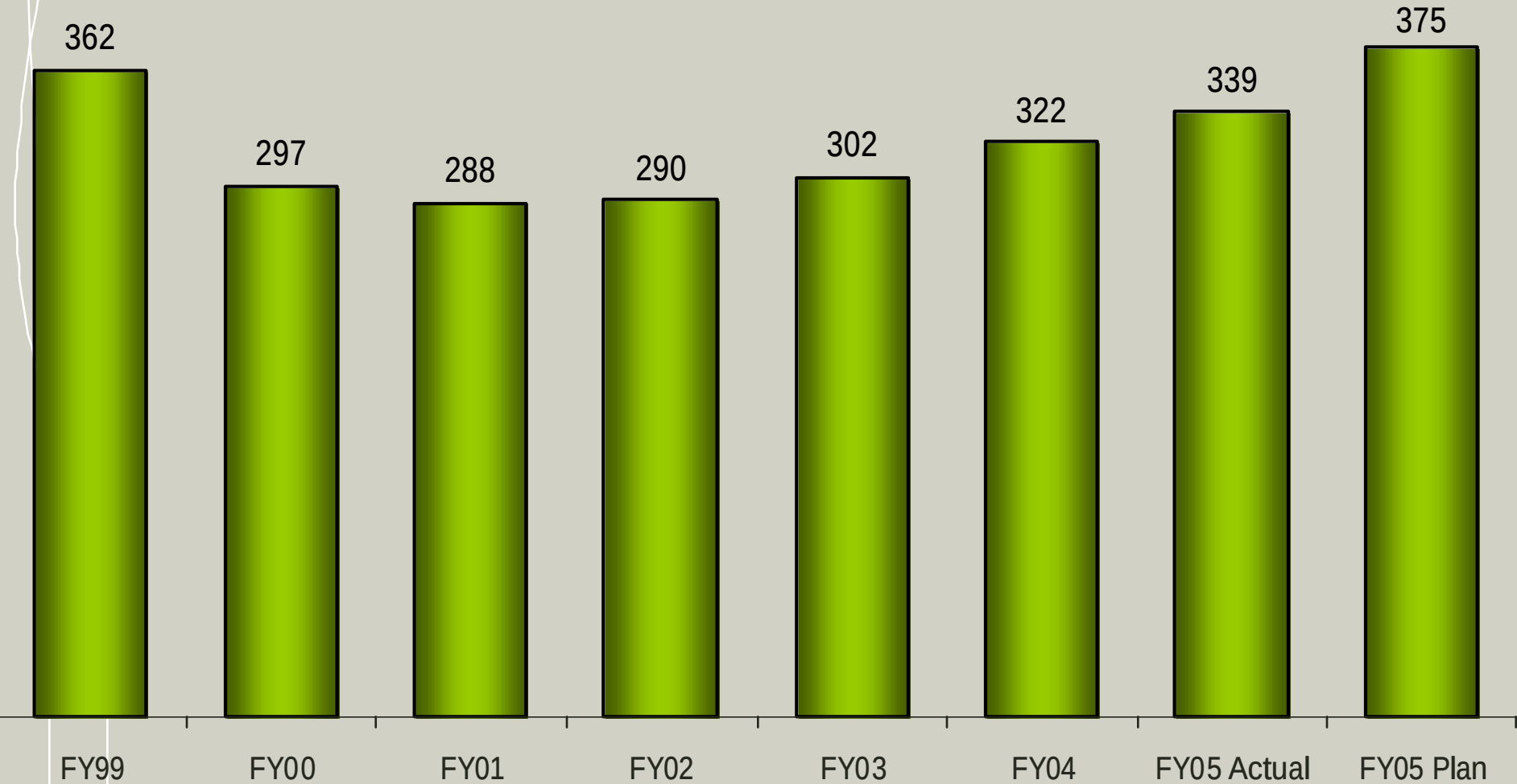


Million Tonnes Railed Per Employee

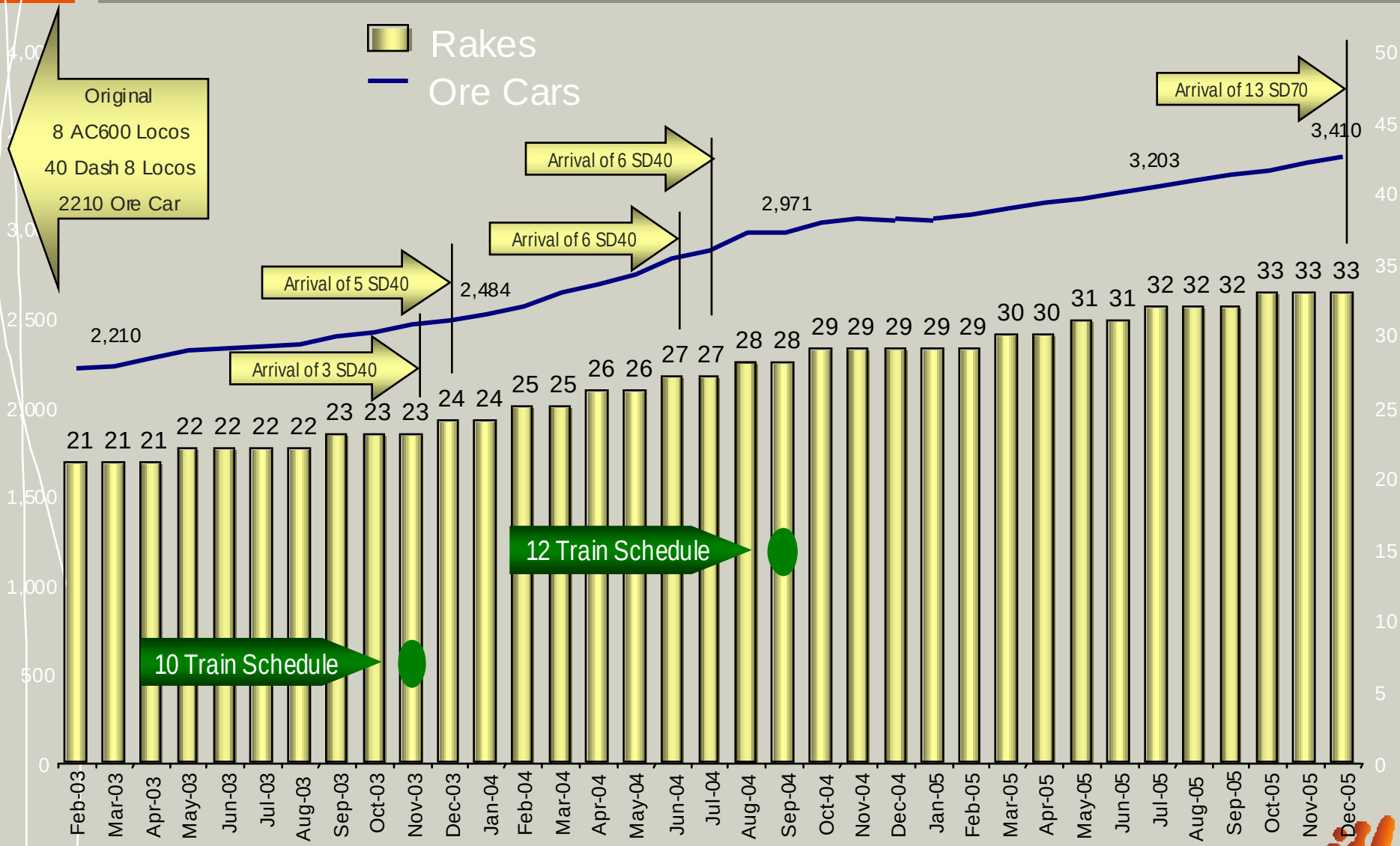
Employee Productivity Tripled in the last 10 years



Railroad Manning

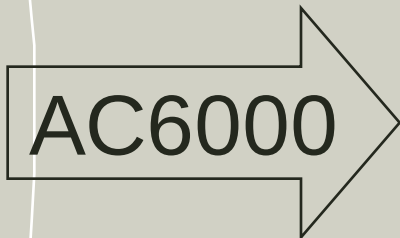
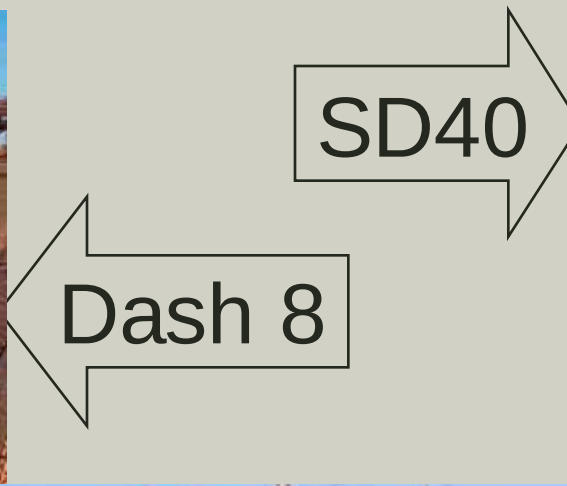


Rolling Stock Fleet Expansion Program

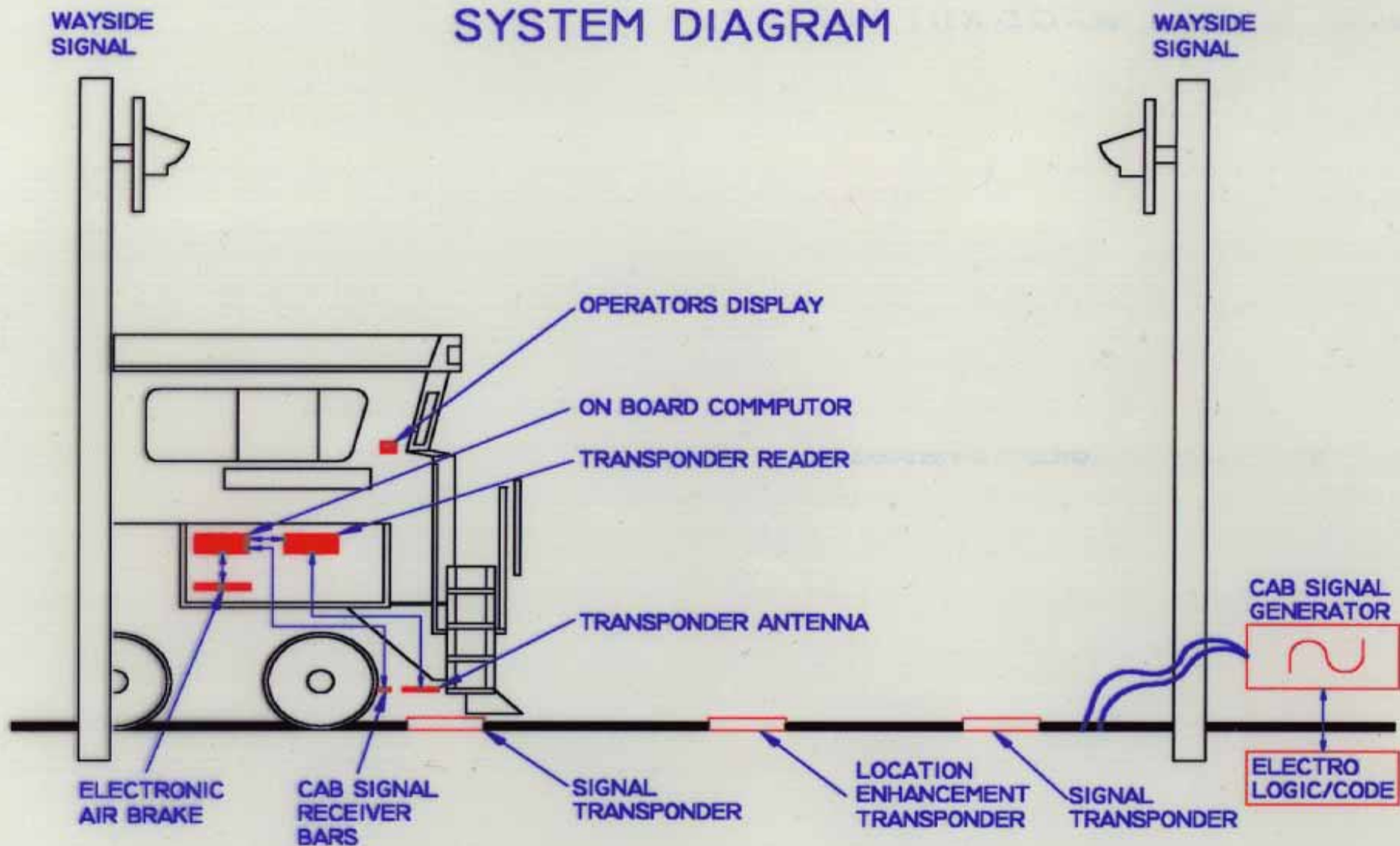


Locomotive Fleet

	Dash 8	AC6000	SD40	SD70ace
Number	40	8	20	13 (Oct05)
Traction Horsepower	4,000	6,000	3,000	4,300



Automatic Train Protection - ATP System



Current Train Operations

Newman Line

- 12 ore trains per day / 14 trains 1 July 05
- Flexibility of One / Two / Three Rake Trains
- Train configuration:
 - 1 rake = 104 ore cars = 12,480 tonnes of ore
 - 2 rakes = 208 ore cars = 24,960 tonnes of ore
 - 3 rakes = 312 ore cars = 37,440 tonnes of ore

- ## Goldsworthy Line

- 4 ore trains per day
- Train configuration:
 - 90 ore cars = 7,650 tonne of ore

Asset Protection

- ✓ 12 Hotbox / Hot Wheel Detectors
- ✓ 1 Cold Wheel Detector
- ✓ 1 Wheel Impact Monitor
- ✓ 3 in Motion Weighbridges
- ✓ Acoustic Bearing Detection
- ✓ Dragging Equipment Detectors
- ✓ Auto Locomotive Downloads
- ✓ Video Imaging

Instrumented Ore Cars (IOC)

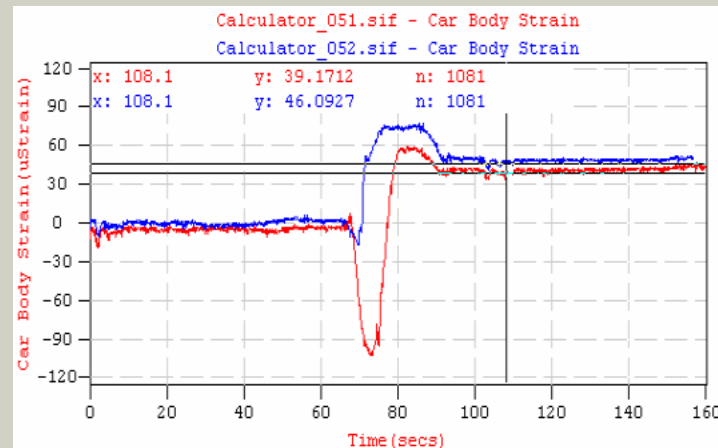
- Vertical suspension travel (ride quality)
- Wheel-rail acceleration (rail condition)
- In-train forces
- Lateral stability (hunting)
- Longitudinal acceleration
- Car body / draft gear pocket strains
- Temperature
- Brake pipe pressure



IOC Reporting



Dumping Forces Measured



Car side wall strains

IOC Other Applications

- Bearing Temperature & Brake Pressure
- Track Assessment Sensors
- Improve Car Body Life

Strain Gauge on Sidewalls

Measure Car Body Dumping Strains

Control Service Dumping Peaks



Strain Gauge on Draft Gear Pocket

Measure Longitudinal Train Forces

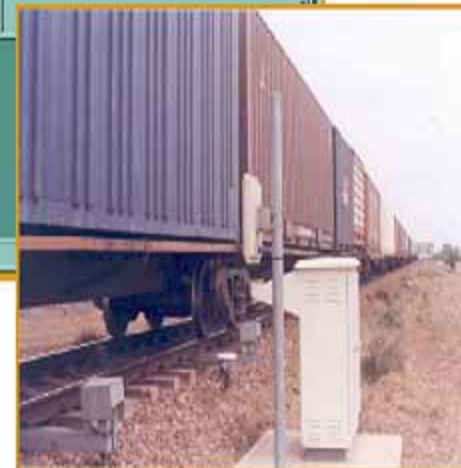
Control Service Loading

Peaks & In Train Forces

Acoustic Bearing Detection

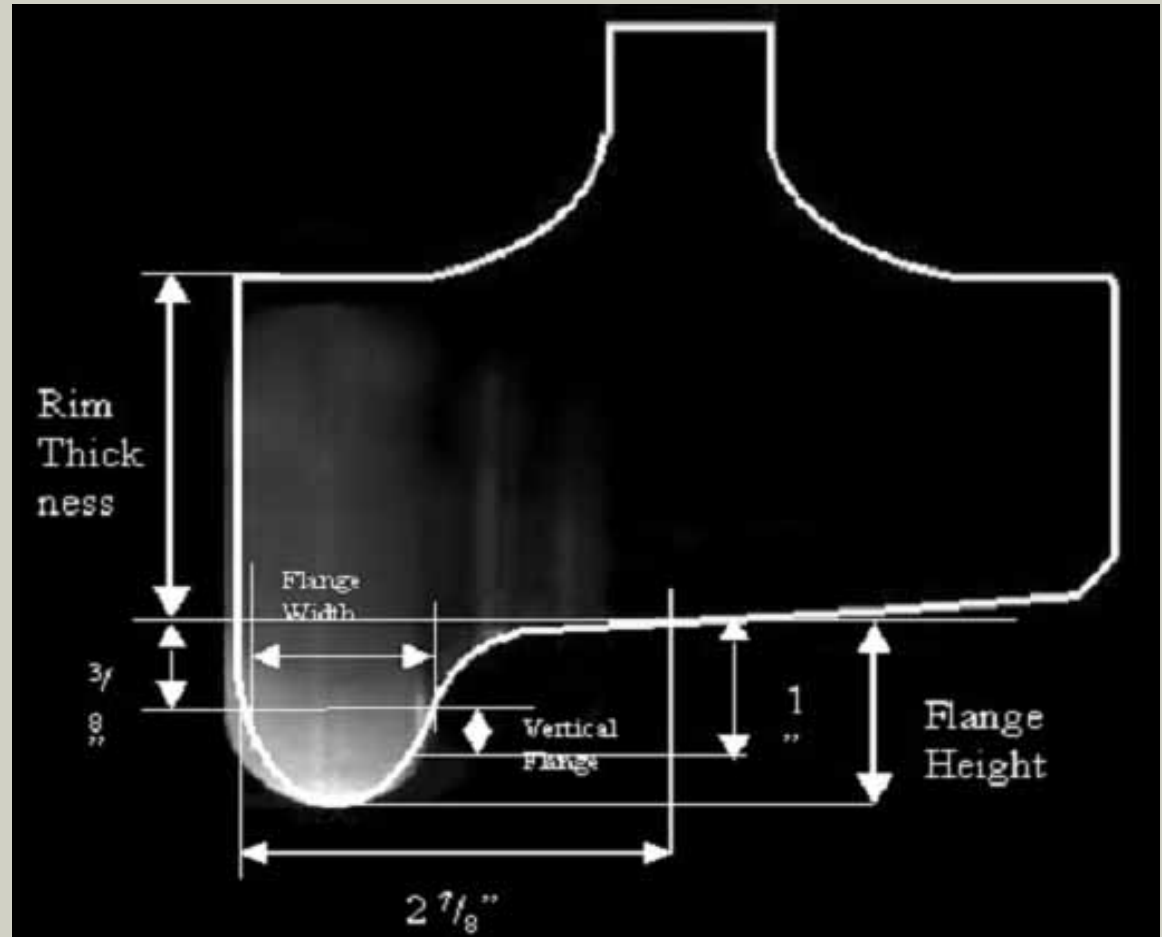
The following bearing faults are detected:

- Cone Faults
- Roller Faults
- Audible Wheel Flats
- Cup Faults
- Looseness / fretting
- Noisy Wheel sets (flanging)



Video Imaging Technology

- Flange Height
- Flange Width
- Vertical Flange
- Hollowing Depth
- Rim Thickness
- Wheel Diameter



Video Imaging Reporting

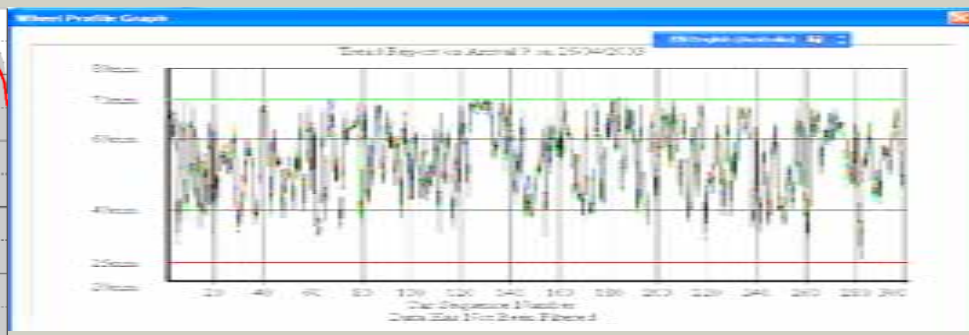
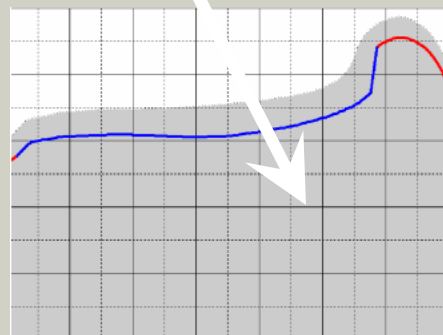
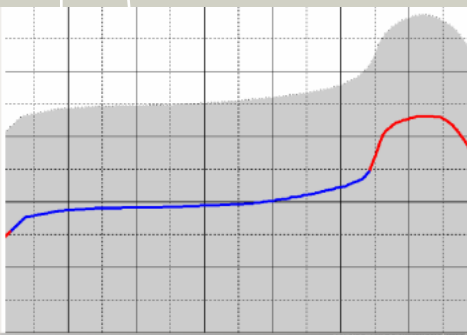
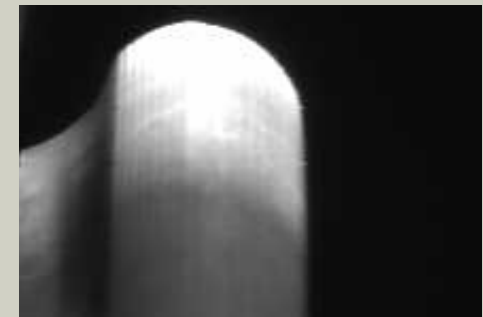
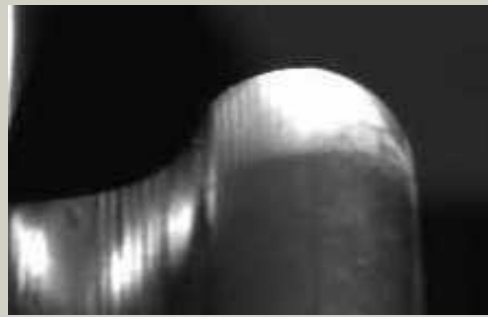
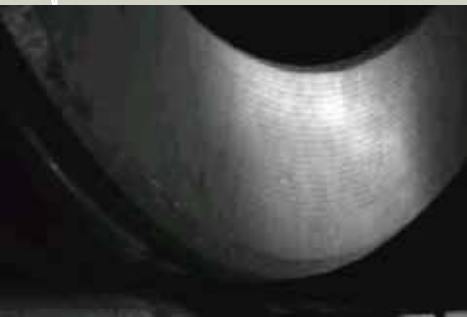
1. Tabulated

2. Pictorial

3. Graphical

Hollowing Depth Report on Train 7 on 30/10/2002

Car Seq	Car ID#	L1	L2	L3	L4
36 [2] Dep	1391	0.40mm	2.16mm	0.00mm	0.30mm
43 [2] Dep	1181	2.88mm	1.57mm	0.00mm	0.00mm
63 [2] Dep	4313	0.82mm	0.00mm	0.00mm	0.00mm
72 [2] Dep	1301	0.01mm	0.00mm	0.43mm	0.40mm
100 [2] Dep	2323	0.35mm	0.00mm	0.82mm	0.35mm
125 [1] Dep	1761	0.00mm	1.08mm	1.73mm	0.97mm
159 [1] Dep	1412	1.30mm	0.67mm	3.46mm	0.67mm
181 [1] Dep	1711	1.73mm	0.78mm	3.98mm	1.44mm
197 [1] Dep	1701	0.78mm	0.59mm	3.98mm	3.98mm
207 [1] Dep	2573	0.59mm	2.19mm	3.24mm	1.08mm



Wheels Ultrasonic Testing



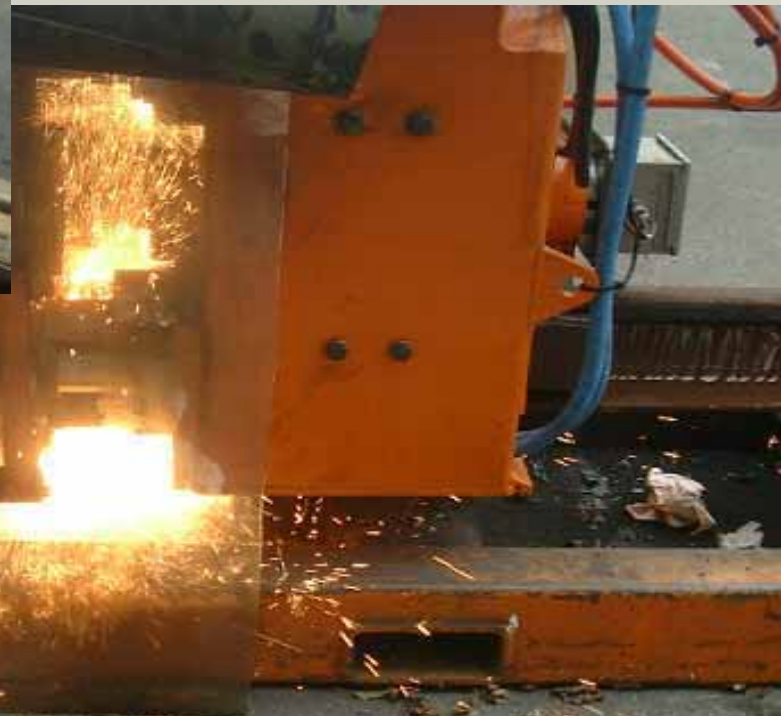
Train Driving Simulator



Aluminothermic / Flash Butt



In Track Flash Butt Welder



Rail KPI's Broken Rails



Best Practice

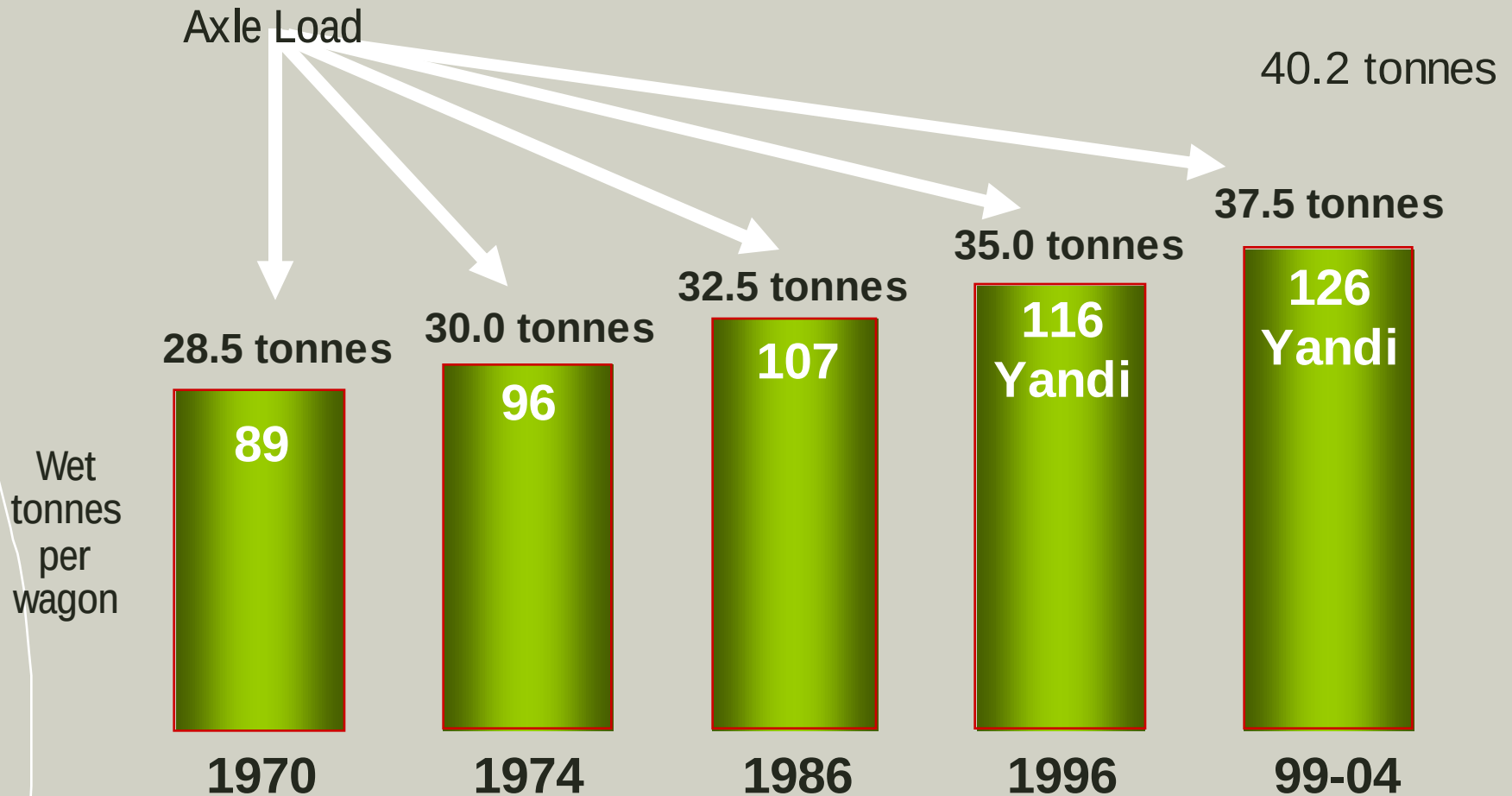
R&D programme since 1970, combination of 'in-house & Monash University

It focuses on four main areas:-

- Rail / Wheel Interface
- Higher Axle Load
- Train Lengths / Cycle Time
- Components Life

Higher Axle Load

Operating Improvements



Rail / Wheel Interface

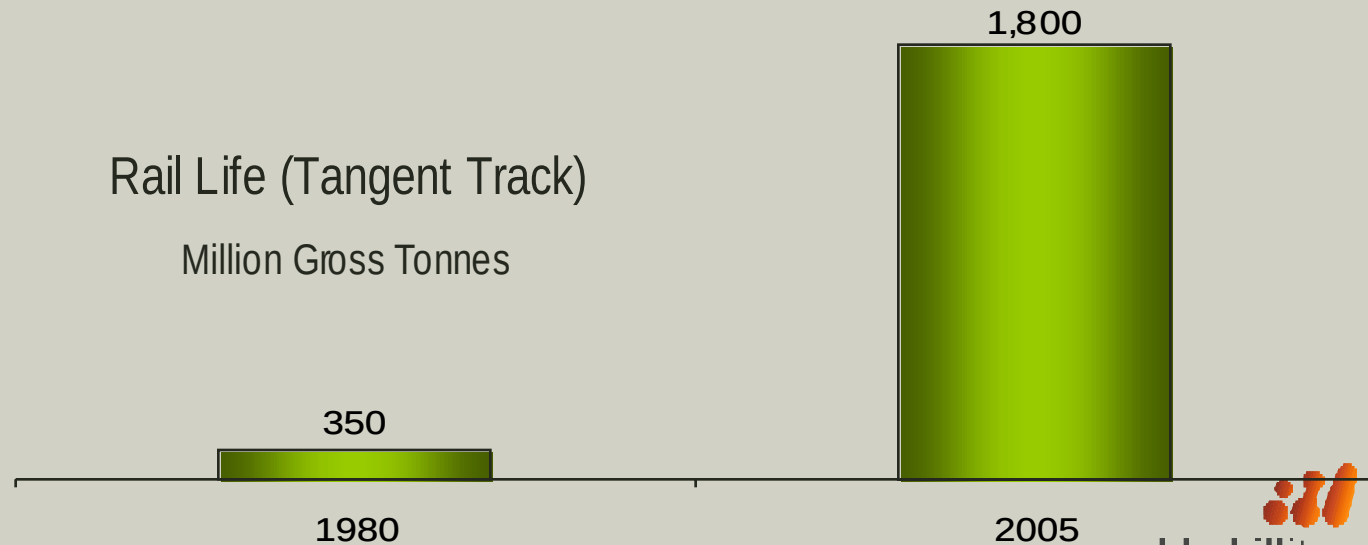
Ore Car Wheel Life

Million Tonne Kms



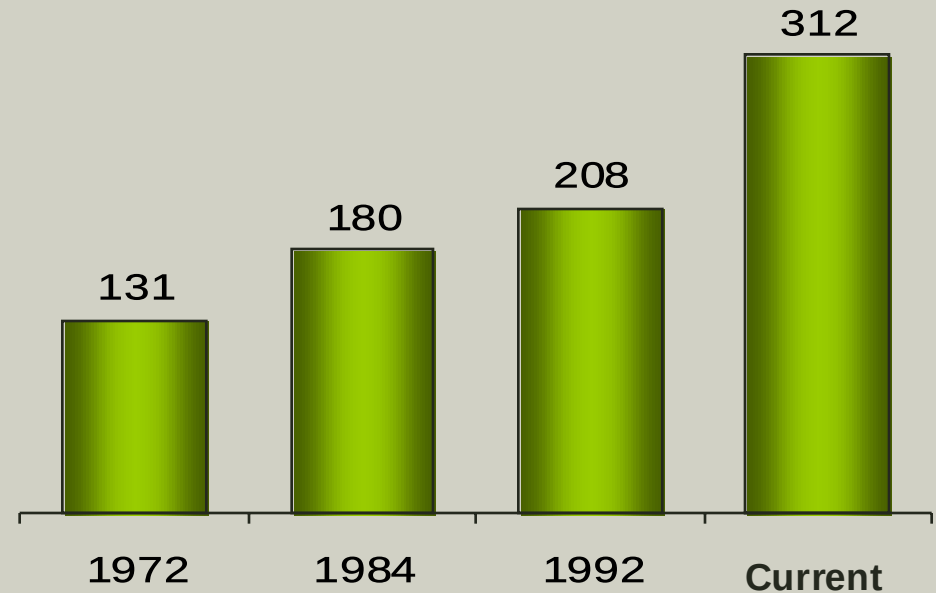
Rail Life (Tangent Track)

Million Gross Tonnes

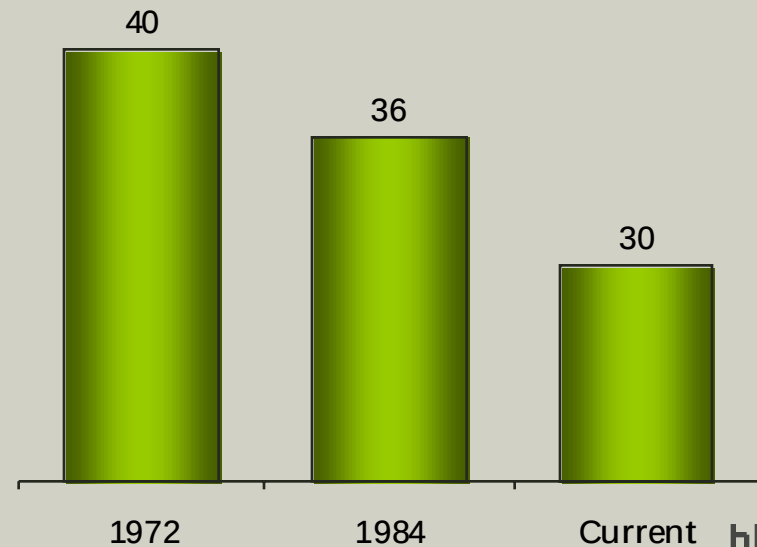


Train Lengths / Cycle Time

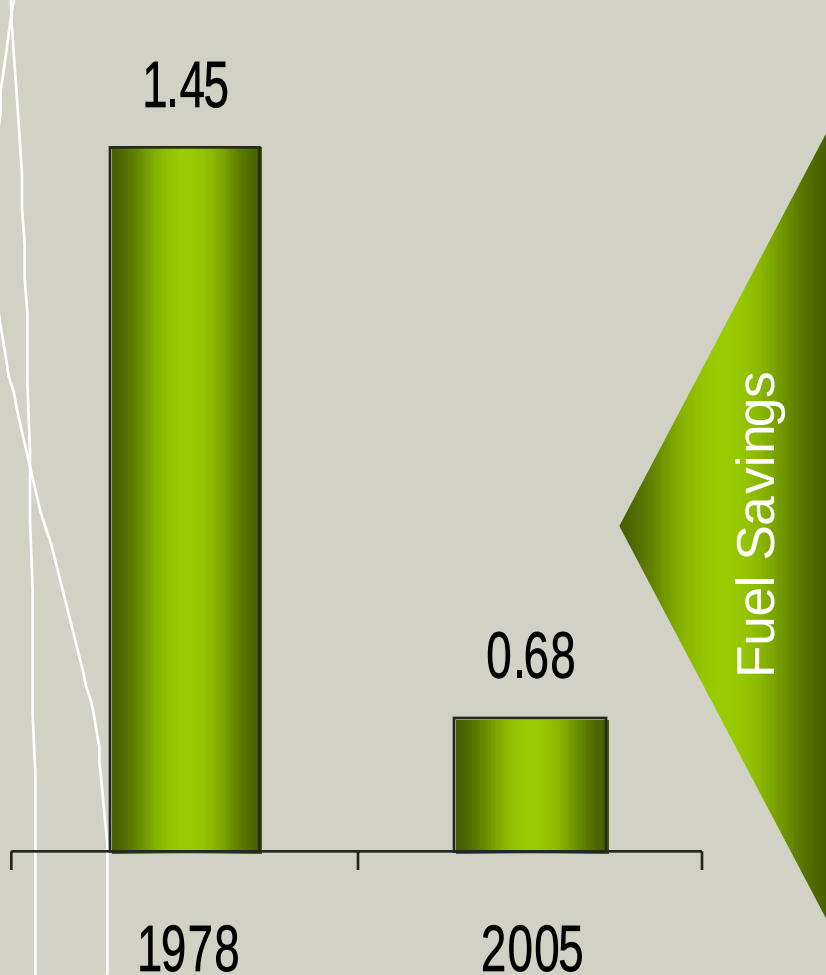
Train Length
Cars / Train



Train Cycle Time
Hours



Environmental & Efficiency



Contributing Factors

- Rail / Wheel profile
- Aerodynamic Ore Cars
- Efficient Locomotives
- Distributed Power
- Higher Axle Load
- Longer Trains
- Driver Strategy

What's in the "Future"

- Continued Safety Focus
- 40 tonne axle loading
- "Cruise Control"
- Train Automation
- Electric Brake Trials
- Increased Tonnage (16 train schedule arrival based)

