BHP Iron Ore Railroad Overview

September 2003
World Class Heavy Haul Railway

✓ Best Practice
✓ Innovation
✓ High Technology
✓ Cost Minimisation
Operational Excellence

Safety
“Good Safety is Good Business”

Behavioural Focused

People
motivated and “can do”
majority of staff AWA

Technology
leading edge
drives efficiency
Rail Classified Injuries

Classified injury rate for Rail

Historical  Actual CI  Actual  Targets

<table>
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<tr>
<th>Month</th>
<th>01/02</th>
<th>02/03</th>
<th>03/03</th>
<th>01/04</th>
<th>02/04</th>
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Graph indicates a decrease in injury rates over time.
• Long trains ran for July is a record of 156,

Number of Train Runs

January 03

1000

Long Trains

Yandi

Newman
Top 5 Railing Months

July-03: 7.500
Aug-03: 7.368
May-03: 7.039
Aug-02: 6.662
Oct-02: 6.651
Train Cycle Time Improvement

- **Newman & Sat**
- **Yandi**
- **Combined**

Year:
- 2001: 39.1
- 2002: 36.1
- 2003: 33.2
- Jul-03: 31.2

Yandi:
- 2001: 30.6
- 2002: 32.2
- 2003: 31.3
- Jul-03: 29

Combined:
- 2001: 34.9
- 2002: 33.2
- 2003: 31.3
- Jul-03: 29
In Track Flash Butt Welder
**Instrumented Ore Car**

1- Onboard GPS & Cell Phone  
- Track Location & Train Speed

2- Instrumented Couplers  
- In-train Forces

3- Side Frame Accelerometer  
- Car Body Acceleration Levels  
- Indication of Rail Impact Load  
(Wheel-rail Interaction)

4- Spring Nests Instrument  
- Spring Nests Deflection  
(Vehicle- Track Interaction)
Rail / Wheel Interface

Ore Car Wheel Life
Million Tonne Kms

Rail Life (Tangent Track)
Million Gross Tonnes

1980 2002
0.34 1.858

1980 2002
350 1,172
Ore Car Fleet

- Present
- Total Ore Car Fleet Now 2360

- Second Set of 120 Cars to be added by November 03
- Third Set of 120 cars ordered
Train Lengths / Cycle Time

Train Lengths
Cars per Train

Train Cycle Time
Hours
Current Train Operations

Newman Line
- 9 ore trains per day
- 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
Environmental & Efficiency

Locomotive Fuel Consumption

Litres per Wet tonne

- 1978: 1.45
- 2003: 0.68

Contributing Factors

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

Short Term

    Purchased 8 used SD-40 locomotives

Medium Term

    Tendering for 10 – 30 additional locomotives

Long Term

    Fleet Replacement beyond
What’s in the Future

• Continued Safety Focus

• Human Resource Efficiency

• Higher Axle Loads

• Moving to Automated Trains (software nearing completion)
  – Driver assist
  – Meet Pass Planning
  – “Cruise Control”
  – Full Automation

• Increased Tonnage Customer Demand