

# **2006/2007 NSW Lease Annual Condition Report**

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## Executive Summary

In accordance with the lease, this document presents the Annual Condition Report for NSW Lease Assets. This third report covers the period July 2006 to June 2007. September 2004 being the commencement of the lease.

### **(a) Material Changes in Condition**

There have been no adverse changes in the general condition of the Land, the Infrastructure and the ARTC Infrastructure during the period covered by this Annual Condition Report.

### **(b) Performance against KPI's**

#### **Total Transit Time Delay, by KPI region, by month (Schedule 7, CI 2.2(a))**

The Annual Limit was met for the KPI Network for all train categories.

No adjustments due to Force Majeure incidents or increased maintenance were made to the results for 2006/07.

Where applicable, adjustments are made to account for Force Majeure or increased maintenance when KPI's are exceeded, otherwise these impacts are ignored.

#### **Five Year Rolling Average of Total Transit Time Delay (Schedule 7, CI 2.2(b))**

As this is only the third year of the lease, the Five Year Rolling Average of Total Transit Time Delay will not yet be reported.

#### **Track Geometry (Schedule 7, CI 2.2(c))**

No Geometry measures for Top, Twist, Line and Gauge exceeded the Annual Limits, calculated as per Schedule 7, section 4.1 and 4.2.

As this is only the third year of the lease, the Five Year Rolling Average of the Track Geometry measures will not yet be reported.

#### **Three-Year Rolling Average of Large Rail Defects (Schedule 7, CI 2.2(d))**

The Three-Year Rolling Average for Large Rail Defects was 39.4. This is within the limit of 48.86, calculated as per Schedule 7, section 11.4

### **New Sleepers on KPI Network, excluding the Hunter Valley (Schedule 7, CI 2.2(e))**

A total of 359,790 sleepers (Timber – 127497; Steel – 22958; Concrete – 209335 and Other - 0) were installed during the reporting period. The Network including the sleepers replaced, now consists of Timber 63.6%, Steel 10.9%, Concrete 25.5% and Other 0.0%.

### **Bridges (Schedule 7, CI 2.2(f))**

2 bridges totalling 212.2m have been replaced with 2 concrete structures totalling 212.0m during the reporting period. This has resulted in a net change to the bridge type and length, from the original list supplied at the date of commencement of the lease.

Currently 7 Bridges are under restriction, which is below the Bridge Limit of 20

### **Signals (Schedule 7, CI 2.2(g))**

The total number of signal failures on the KPI network for each month has been provided.

### **Percentage of Healthy Trains Achieving On-Time Exit, by month (Schedule 7, CI 2.2(h))**

As required by clause 5.2, ARTC has measured the full journey performance of services on the ARTC network (including the NSW Lease network).

The measurement of ARTC's service reliability has been calculated to reflect -

1. the full journey performance of all services (including performance on the CRN network); and
2. the full journey performance of all services (excluding those originating or terminating on the CRN Network)

The YTD Monthly Average % of Healthy Services Achieving On-time Exit (July 2006 – June 2007) is:

1. 94.2% (including CRN Network performance) against a Service Reliability result of 91.6%. This result is calculated as per lease schedule 7.3 (a) 'Service Reliability Limit' as being the monthly average of Percentage of Healthy Trains Achieving on Time Exit for the year ending 12 months after the lease commencement date (September 2004 to August 2005).
2. 96.8% (excluding CRN Network originating/terminating services) against a Service Reliability limit of 94.0%. As above, the limit is calculated as per lease schedule 7.3 (a) 'Service Reliability Limit'.

**Maximum allowable speed and axle load combinations applying to the KPI Network (Schedule 7, CI 2.2(i))**

Since the commencement of the Lease there has been no change in the maximum allowable speed and axle load combinations on the KPI network.

**Permitted Permanent Speed Restrictions (Schedule 7, CI 2.2(j))**

7 Permanent Speed restrictions were changed between July 2006 and June 2007. They are regarded as Permitted Permanent Speed Restrictions as they have the effect of reducing the Base Transit Time.

**(c) Register of ARTC Infrastructure**

**Building Works**

During the reporting period, a total of \$3,698,165 of Building Works was completed.

**Infrastructure Investment Programme and Major Works**

A total of \$324,507,000 was invested on the Major Works Investment Program during the reporting period. The following Projects are included in the total spend and were commenced during the period covered by this report;

- North Coast Improvement Works
- Main South Improvement Works
- Hunter Valley Improvement Works
- Train Control Consolidation

A total of \$134,569,000 has been invested in Corridor Works (including RCRM, MPM and Corridor Capital Works) during the reporting period.

A further \$884,661,000 will be invested on Major Works in future years.

| <b>Summary of Major Works Investment and Corridor MPM &amp; Capital since lease commencement</b> |   |                      |                      |               |
|--|---|----------------------|----------------------|---------------|
|  | 2004 / 05<br>(from Lease<br>Commencement<br>Date) | 2005/06              | 2006/07              | Total         |
| Major Works Investment   | \$5,695,500                                       | \$83,518,000         | \$324,507,000        | \$413,720,500 |
| Corridor MPM & Capital   | \$58,869,000                                      | \$97,234,000         | \$94,685,000         | \$250,788,000 |
| <b>Total</b>   | <b>\$64,564,500</b>                               | <b>\$180,752,000</b> | <b>\$419,192,000</b> |               |

## 1. Material Changes in Condition

There have been no adverse changes in the general condition of the Land, the Infrastructure and the ARTC Infrastructure during the period covered by this Annual Condition Report.

## 2. Performance Against KPI's.

### (a) Total Transit Time Delay, by KPI Region, by month

This section deals with transit time reporting as required under Schedule 7, section 2.2(a) of the lease. The information has been presented in two tables. The first table includes all Temporary Speed Restrictions. The second table excludes abnormal events identified as Force Majeure and Increased Maintenance (none were excluded for 06/07) as KPI's were not exceeded. Line closures due to significant flooding in the Hunter Valley during June 2007 did not impact on Transit Time results and therefore have not been excluded. Limited services were running within 7 days with full services restored after 14 days.

| Including Force Majeure and Increased Maintenance Events |          |          |          |          |          |          |          |          |          |          |          |          |                                       |                                       |                                     |               |
|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|---------------------------------------|---------------------------------------|-------------------------------------|---------------|
| Category   | Jul-2006 | Aug-2006 | Sep-2006 | Oct-2006 | Nov-2006 | Dec-2006 | Jan-2007 | Feb-2007 | Mar-2007 | Apr-2007 | May-2007 | Jun-2007 | 04/05 Period Avg (incl Force Majeure) | 05/06 Period Avg (incl Force Majeure) | 06/07 Period Avg (no Force Majeure) | Annual Limit* |
| <b>Hunter Valley</b>                                     |          |          |          |          |          |          |          |          |          |          |          |          |                                       |                                       |                                     |               |
| Freight  | 3.6      | 2.2      | 12.6     | 7.4      | 4.1      | 3.1      | 4.1      | 6.0      | 24.6     | 9.8      | 5.2      | 7.1      | 9.6                                   | 7.4                                   | 7.5                                 | 12.2*         |
| Super Freight  | 7.7      | 5.2      | 19.8     | 10.5     | 7.5      | 5.0      | 6.6      | 9.5      | 39.9     | 18.8     | 7.3      | 10.8     | 17.3                                  | 10.6                                  | 12.4                                | 21.6*         |
| XPT  | 1.1      | 1.1      | 10.5     | 5.0      | 0.8      | 0.0      | 0.0      | 0.0      | 12.0     | 3.8      | 2.7      | 3.6      | 5.8                                   | 5.2                                   | 3.4                                 | 3.7*          |
| <b>North Coast</b>                                       |          |          |          |          |          |          |          |          |          |          |          |          |                                       |                                       |                                     |               |
| Freight  | 5.1      | 10.1     | 6.7      | 10.9     | 16.2     | 5.6      | 6.0      | 11.3     | 14.2     | 15.6     | 16.5     | 6.5      | 20.7                                  | 12.2                                  | 10.4                                | 42.6*         |
| Super Freight  | 11.5     | 18.3     | 13.8     | 21.6     | 28.3     | 10.9     | 11.7     | 21.2     | 23.6     | 25.5     | 25.5     | 11.7     | 33.3                                  | 21.9                                  | 18.6                                | 68.1*         |
| XPT  | 4.7      | 7.6      | 6.3      | 8.7      | 9.8      | 5.0      | 5.4      | 8.5      | 10.3     | 10.9     | 10.2     | 4.0      | 12.0                                  | 8.1                                   | 7.6                                 | 21.0*         |
| <b>South</b>   |          |          |          |          |          |          |          |          |          |          |          |          |                                       |                                       |                                     |               |
| Freight  | 6.4      | 7.8      | 8.9      | 15.0     | 15.0     | 10.1     | 12.1     | 9.6      | 8.3      | 5.8      | 4.4      | 10.1     | 12.6                                  | 11.4                                  | 9.4                                 | 16.4*         |
| Super Freight  | 11.0     | 13.8     | 15.9     | 25.0     | 23.9     | 18.0     | 21.6     | 17.9     | 16.0     | 11.0     | 7.2      | 15.6     | 23.0                                  | 21.2                                  | 16.4                                | 30.5*         |
| XPT  | 3.3      | 4.8      | 4.8      | 14.8     | 12.6     | 7.3      | 7.6      | 6.2      | 4.9      | 3.7      | 1.9      | 3.3      | 8.0                                   | 9.5                                   | 6.3                                 | 10.1*         |
| <b>West</b>  |          |          |          |          |          |          |          |          |          |          |          |          |                                       |                                       |                                     |               |
| Freight  | 16.2     | 18.1     | 23.4     | 17.4     | 7.0      | 19.0     | 10.7     | 29.2     | 27.4     | 19.9     | 10.8     | 7.9      | 27.4                                  | 20.9                                  | 17.2                                | 27.0*         |
| Super Freight  | 30.1     | 39.5     | 49.0     | 31.5     | 16.8     | 31.3     | 25.9     | 68.9     | 57.4     | 37.5     | 20.3     | 16.0     | 54.9                                  | 42.5                                  | 35.3                                | 45.2*         |
| XPT  | 9.8      | 11.9     | 26.7     | 19.0     | 4.8      | 12.7     | 6.7      | 22.5     | 13.1     | 4.5      | 2.7      | 2.7      | 20.1                                  | 17.0                                  | 11.4                                | 14.6*         |
| <b>Totals</b>  |          |          |          |          |          |          |          |          |          |          |          |          |                                       |                                       |                                     |               |
| Freight  | 31.3     | 38.2     | 51.6     | 50.7     | 42.2     | 37.7     | 32.9     | 56.1     | 74.4     | 51.1     | 36.9     | 31.6     | 70.3                                  | 51.9                                  | 44.6                                | 98.1*         |
| Super Freight  | 60.4     | 76.8     | 98.6     | 88.6     | 76.5     | 65.2     | 65.7     | 117.6    | 136.8    | 92.8     | 60.2     | 54.1     | 128.4                                 | 96.2                                  | 82.8                                | 165.4*        |
| XPT  | 18.9     | 25.3     | 48.3     | 47.5     | 27.9     | 25.1     | 19.7     | 37.2     | 40.4     | 22.8     | 17.5     | 13.5     | 45.8                                  | 39.8                                  | 28.7                                | 49.4*         |

\* Annual Limit as agreed between ARTC and RIC.

| <b>Excluding Force Majeure and Increased Maintenance Events</b> |          |          |          |          |          |          |          |          |          |          |          |          |  |  |   |                  |
|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|---|------------------|
| Category  | Jul-2006 | Aug-2006 | Sep-2006 | Oct-2006 | Nov-2006 | Dec-2006 | Jan-2007 | Feb-2007 | Mar-2007 | Apr-2007 | May-2007 | Jun-2007 | 04/05<br>Period<br>Avg<br>(excl<br>Force<br>Majeure) | 05/06<br>Period<br>Avg<br>(excl<br>Force<br>Majeure) | 06/07<br>Period<br>Avg (no<br>Force<br>Majeure<br>excluded) | Annual<br>Limit* |
| <b>Hunter Valley</b>  |          |          |          |          |          |          |          |          |          |          |          |          |  |  |   |                  |
| Freight   | 3.6      | 2.2      | 12.6     | 7.4      | 4.1      | 3.1      | 4.1      | 6.0      | 24.6     | 9.8      | 5.2      | 7.1      | 9.6  | 7.4  | 7.5   | 12.2*            |
| Super Freight   | 7.7      | 5.2      | 19.8     | 10.5     | 7.5      | 5.0      | 6.6      | 9.5      | 39.9     | 18.8     | 7.3      | 10.8     | 17.3   | 10.6   | 12.4  | 21.6*            |
| XPT   | 1.1      | 1.1      | 10.5     | 5.0      | 0.8      | 0.0      | 0.0      | 0.0      | 12.0     | 3.8      | 2.7      | 3.6      | 5.8  | 5.2  | 3.4   | 3.7*             |
| <b>North Coast</b>  |          |          |          |          |          |          |          |          |          |          |          |          |  |  |   |                  |
| Freight   | 5.1      | 10.1     | 6.7      | 10.9     | 16.2     | 5.6      | 6.0      | 11.3     | 14.2     | 15.6     | 16.5     | 6.5      | 20.7   | 12.2   | 10.4  | 42.6*            |
| Super Freight   | 11.5     | 18.3     | 13.8     | 21.6     | 28.3     | 10.9     | 11.7     | 21.2     | 23.6     | 25.5     | 25.5     | 11.7     | 33.3   | 21.9   | 18.6  | 68.1*            |
| XPT   | 4.7      | 7.6      | 6.3      | 8.7      | 9.8      | 5.0      | 5.4      | 8.5      | 10.3     | 10.9     | 10.2     | 4.0      | 12.0   | 8.1  | 7.6   | 21.0*            |
| <b>South</b>  |          |          |          |          |          |          |          |          |          |          |          |          |  |  |   |                  |
| Freight   | 6.4      | 7.8      | 8.9      | 15.0     | 15.0     | 10.1     | 12.1     | 9.6      | 8.3      | 5.8      | 4.4      | 10.1     | 12.6   | 11.4   | 9.4   | 16.4*            |
| Super Freight   | 11.0     | 13.8     | 15.9     | 25.0     | 23.9     | 18.0     | 21.6     | 17.9     | 16.0     | 11.0     | 7.2      | 15.6     | 23.0   | 21.2   | 16.4  | 30.5*            |
| XPT   | 3.3      | 4.8      | 4.8      | 14.8     | 12.6     | 7.3      | 7.6      | 6.2      | 4.9      | 3.7      | 1.9      | 3.3      | 8.0  | 9.5  | 6.3   | 10.1*            |
| <b>West</b>   |          |          |          |          |          |          |          |          |          |          |          |          |  |  |   |                  |
| Freight   | 16.2     | 18.1     | 23.4     | 17.4     | 7.0      | 19.0     | 10.7     | 29.2     | 27.4     | 19.9     | 10.8     | 7.9      | 23.5   | 17.8   | 17.2  | 27.0*            |
| Super Freight   | 30.1     | 39.5     | 49.0     | 31.5     | 16.8     | 31.3     | 25.9     | 68.9     | 57.4     | 37.5     | 20.3     | 16.0     | 49.7   | 36.5   | 35.3  | 45.2*            |
| XPT   | 9.8      | 11.9     | 26.7     | 19.0     | 4.8      | 12.7     | 6.7      | 22.5     | 13.1     | 4.5      | 2.7      | 2.7      | 15.7   | 12.6   | 11.4  | 14.6*            |
| <b>Totals</b>   |          |          |          |          |          |          |          |          |          |          |          |          |  |  |   |                  |
| Freight   | 31.3     | 38.2     | 51.6     | 50.7     | 42.2     | 37.7     | 32.9     | 56.1     | 74.4     | 51.1     | 36.9     | 31.6     | 66.3   | 48.8   | 44.6  | 98.1*            |
| Super Freight   | 60.4     | 76.8     | 98.6     | 88.6     | 76.5     | 65.2     | 65.7     | 117.6    | 136.8    | 92.8     | 60.2     | 54.1     | 123.3  | 90.2   | 82.8  | 165.4*           |
| XPT   | 18.9     | 25.3     | 48.3     | 47.5     | 27.9     | 25.1     | 19.7     | 37.2     | 40.4     | 22.8     | 17.5     | 13.5     | 41.5   | 35.4   | 28.7  | 49.4*            |

\* Annual Limit as agreed between ARTC and RIC.

The Annual Limit, has been met for the KPI Network for all train categories. No adjustments due to Force Majeure incidents or increased maintenance were made to the results for 2006/07.

### **(b) Five Year Rolling Average of Total Transit Time Delay**

As this is only the third year of the lease, the Five Year Rolling Average of Total Transit Time Delay will not yet be reported. This will be reported in later years as data is accumulated.

## (c) Track Geometry

### i. Geometry Values

No geometry measures exceeded the Annual Limits, and track geometry improved in 9 of the 16 measures during 06/07.

#### South

| Region | Measure | Annual Limit * | 04/05 | 05/06 | 06/07 | 06/07 vs Annual Limit |
|--------|---------|----------------|-------|-------|-------|-----------------------|
| South  | Top     | 8.55 *         | 7.77  | 7.09  | 6.72  | TARGET MET            |
|        | Twist   | 7.84 *         | 7.45  | 7.15  | 7.35  | TARGET MET            |
|        | Line    | 10.20 *        | 9.29  | 8.31  | 8.33  | TARGET MET            |
|        | Gauge   | 6.48 *         | 6.07  | 6.01  | 5.89  | TARGET MET            |

#### North Coast

| Region | Measure | Annual Limit * | 04/05 | 05/06 | 06/07 | 06/07 vs Annual Limit |
|--------|---------|----------------|-------|-------|-------|-----------------------|
| North  | Top     | 7.04 *         | 5.79  | 5.12  | 5.02  | TARGET MET            |
|        | Twist   | 7.54 *         | 6.38  | 6.02  | 6.02  | TARGET MET            |
|        | Line    | 13.52 *        | 11.79 | 11.15 | 11.11 | TARGET MET            |
|        | Gauge   | 6.89 *         | 6.73  | 6.62  | 6.47  | TARGET MET            |

#### West

| Region | Measure | Annual Limit * | 04/05 | 05/06 | 06/07 | 06/07 vs Annual Limit |
|--------|---------|----------------|-------|-------|-------|-----------------------|
| West   | Top     | 9.10 *         | 8.98  | 8.43  | 8.27  | TARGET MET            |
|        | Twist   | 8.15 *         | 7.79  | 7.93  | 7.48  | TARGET MET            |
|        | Line    | 8.31 *         | 7.79  | 5.85  | 6.49  | TARGET MET            |
|        | Gauge   | 5.83 *         | 4.56  | 4.62  | 4.63  | TARGET MET            |

#### Inland Route

| Region | Measure | Annual Limit * | 04/05 | 05/06 | 06/07 | 06/07 vs Annual Limit |
|--------|---------|----------------|-------|-------|-------|-----------------------|
| Inland | Top     | 9.98 *         | 8.99  | 8.15  | 8.57  | TARGET MET            |
|        | Twist   | 9.30 *         | 8.77  | 8.67  | 8.91  | TARGET MET            |
|        | Line    | 10.79 *        | 8.99  | 8.26  | 8.32  | TARGET MET            |
|        | Gauge   | 6.46 *         | 5.86  | 5.97  | 5.85  | TARGET MET            |

\* Annual Limit as agreed between ARTC and RIC.



ii. **Five Year Rolling Average for each Top Value, Line Value, Twist Value, and Gauge Value.**

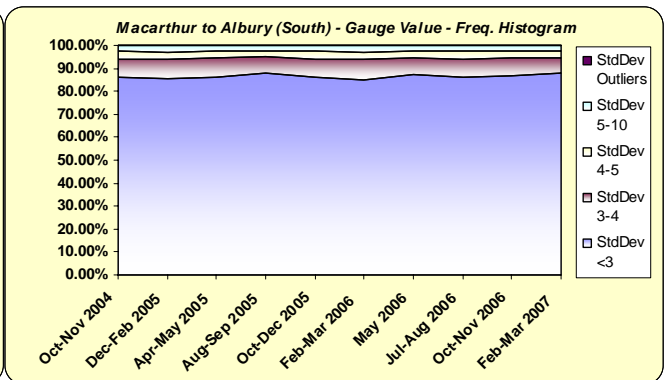
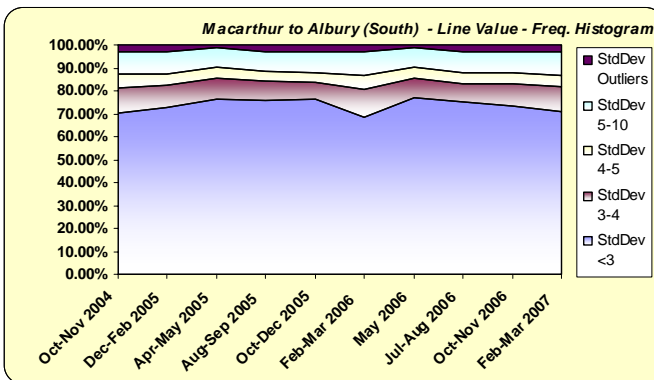
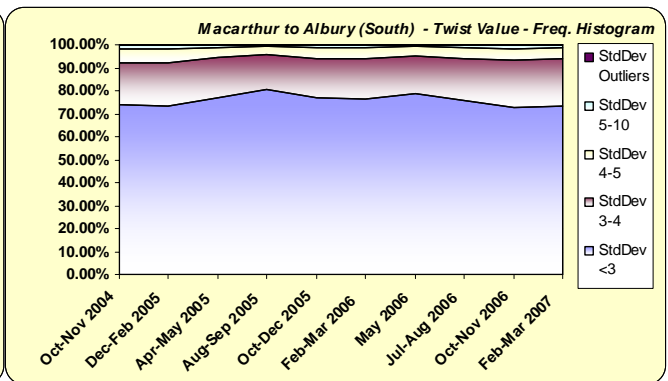
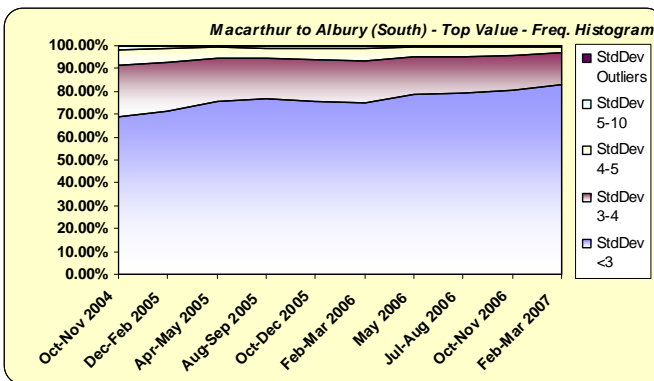
As this is only the third year of the lease, the Five Year Rolling Average of Track Geometry will not yet be reported. This will be reported in later years as data is accumulated.

iii. **Trending Graphs**

The trending graphs consist of all geometry readings taken for a KPI region up to 30 June 2007. A rising slope in the graph shows an improvement in track geometry.

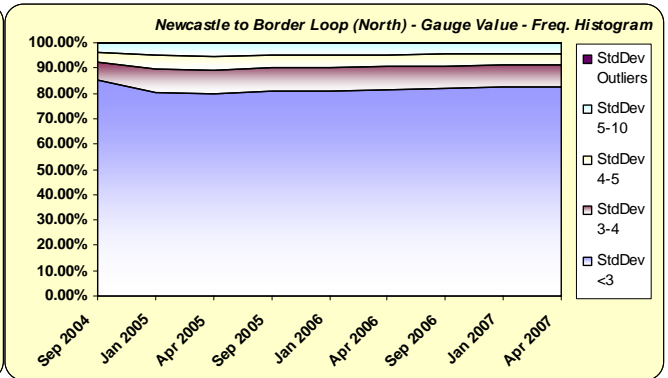
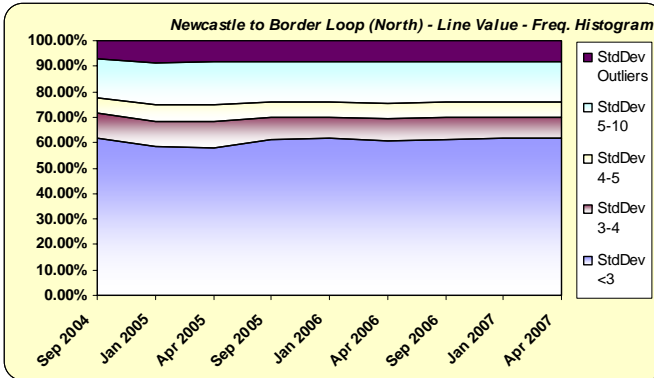
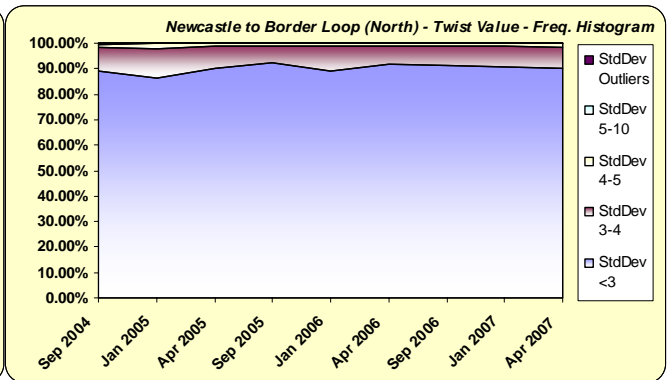
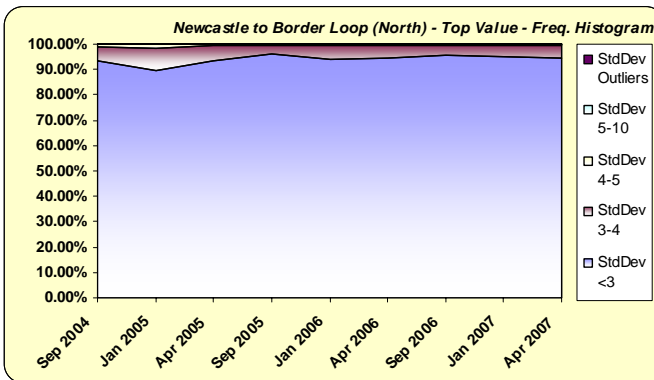
**South (July 2006 to June 2007)**

| South (May 06) | StdDev <3 | StdDev 3-4 | StdDev 4-5 | StdDev 5-10 | StdDev Outliers |
|----------------|-----------|------------|------------|-------------|-----------------|
| <b>Top</b>     | 83.04%    | 13.70%     | 2.76%      | 0.50%       | 0.00%           |
| <b>Twist</b>   | 73.09%    | 20.56%     | 5.17%      | 1.18%       | 0.00%           |
| <b>Versine</b> | 70.68%    | 10.92%     | 5.15%      | 10.17%      | 3.08%           |
| <b>Gauge</b>   | 87.81%    | 6.99%      | 2.86%      | 2.30%       | 0.04%           |



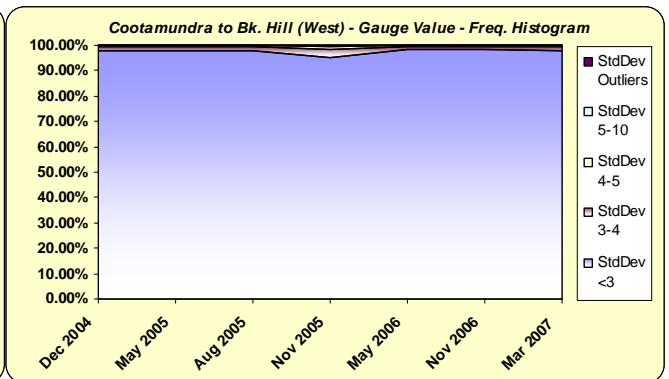
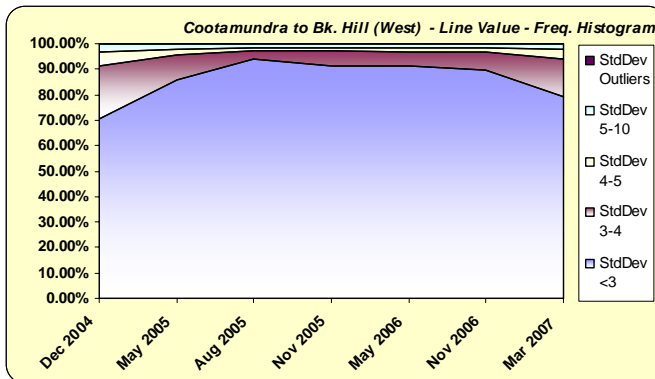
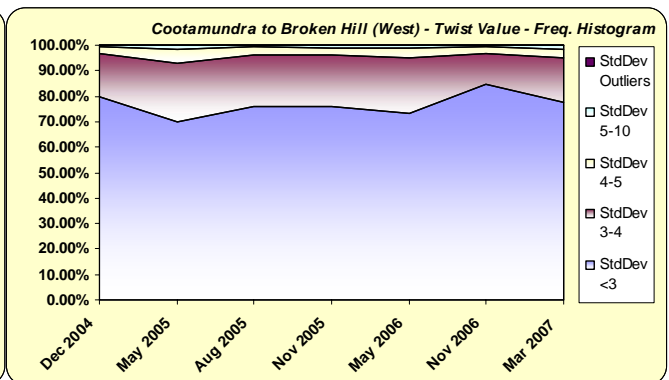
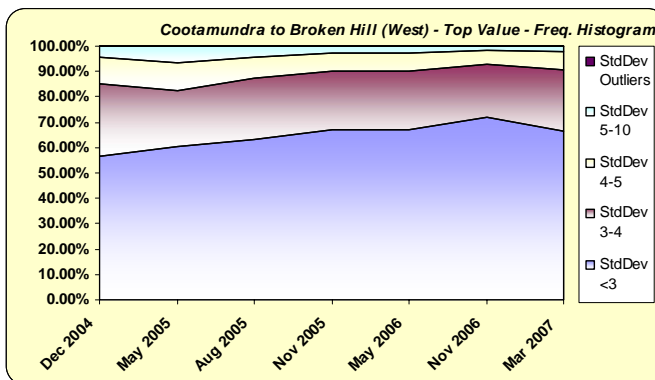
**North Coast (July 2006 to June 2007)**

| North Coast (Apr 06) | StdDev <3     | StdDev 3-4   | StdDev 4-5   | StdDev 5-10   | StdDev  Outliers |
|----------------------|---------------|--------------|--------------|---------------|------------------|
| <b>Top</b>           | <b>94.62%</b> | <b>4.76%</b> | <b>0.57%</b> | <b>0.05%</b>  | <b>0.00%</b>     |
| <b>Twist</b>         | <b>90.24%</b> | <b>8.26%</b> | <b>1.29%</b> | <b>0.20%</b>  | <b>0.00%</b>     |
| <b>Versine</b>       | <b>61.96%</b> | <b>7.93%</b> | <b>5.97%</b> | <b>15.77%</b> | <b>8.37%</b>     |
| <b>Gauge</b>         | <b>82.76%</b> | <b>8.69%</b> | <b>4.38%</b> | <b>4.14%</b>  | <b>0.03%</b>     |



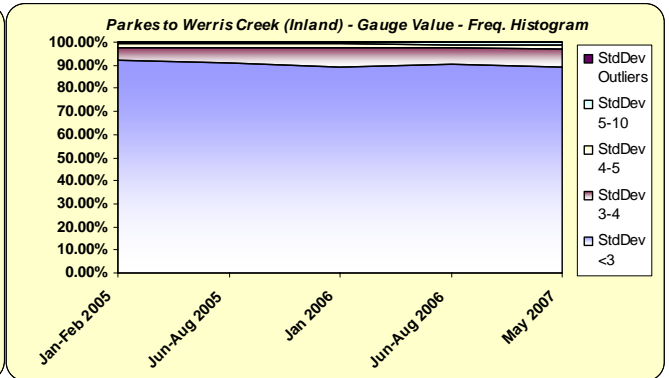
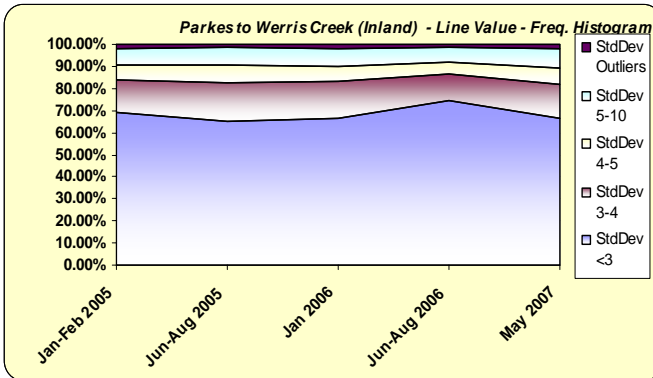
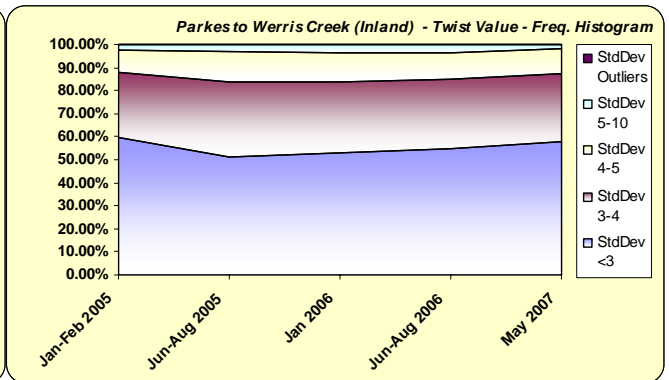
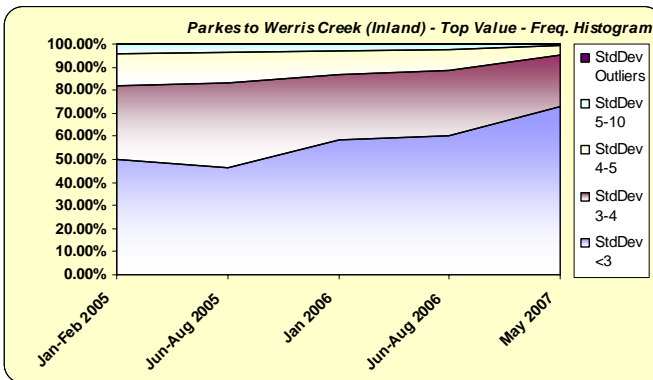
**West (July 2006 to June 2007)**

| West (May 06) | StdDev <3 | StdDev 3-4 | StdDev 4-5 | StdDev 5-10 | StdDev Outliers |
|---------------|-----------|------------|------------|-------------|-----------------|
| Top           | 66.71%    | 23.82%     | 7.25%      | 2.22%       | 0.00%           |
| Twist         | 77.74%    | 17.15%     | 3.70%      | 1.40%       | 0.00%           |
| Versine       | 79.22%    | 14.83%     | 3.91%      | 1.92%       | 0.13%           |
| Gauge         | 98.02%    | 1.44%      | 0.38%      | 0.15%       | 0.01%           |



**Inland Route (July 2006 to June 2007)**

| Inland (June 2006) | StdDev <3 | StdDev 3-4 | StdDev 4-5 | StdDev 5-10 | StdDev Outliers |
|--------------------|-----------|------------|------------|-------------|-----------------|
| Top                | 73.00%    | 21.92%     | 4.46%      | 0.62%       | 0.00%           |
| Twist              | 57.77%    | 29.75%     | 10.56%     | 1.91%       | 0.00%           |
| Versine            | 66.40%    | 15.17%     | 7.93%      | 8.60%       | 1.88%           |
| Gauge              | 89.44%    | 7.69%      | 1.91%      | 0.94%       | 0.02%           |



**(d) Three-Year Rolling Average of Large Rail Defects**

**Large Rail Defects**

Shown below is the Three –Year Rolling Average of Large Rail Defects occurring on the four KPI regions. All years record the non-Vertical and Vertical Split Head defects. The large rail defect limit of 48.86 (as per correspondence of October 2005) was not exceeded.

|               | 02/03 | 03/04 | 04/05 | 05/06 | 06/07 | 3 Year Rolling Average |
|---------------|-------|-------|-------|-------|-------|------------------------|
| <b>Inland</b> | 4     | 1     | 1     | 4     | 0     | 1.7                    |
| <b>North</b>  | 38    | 4     | 9     | 11    | 14    | 11.3                   |
| <b>South</b>  | 25    | 22    | 25    | 18    | 31    | 24.7                   |
| <b>West</b>   | 8     | 7     | 0     | 1     | 4     | 1.7                    |
| <b>Total</b>  | 75    | 34    | 35    | 34    | 49    | 39.4                   |

The three year rolling average has increased from 34.3 in 2004/2006 to 39.4 in 2006/2007 but is still below the 2004/2005 three year rolling average of 48.86

**(e) Cumulative Number of Sleepers replaced**

**i. New Sleepers installed on the four regions of the KPI Network excluding the Hunter Valley (Schedule 7, CI 2.2(e))**

|          | 04/05  | 05/06   | 06/07   |
|----------|--------|---------|---------|
| Timber   | 49,678 | 181,872 | 127,497 |
| Steel    | 2,618  | 6,768   | 22,958  |
| Concrete | 532    | 11,622  | 209,335 |
| Other    | 0      | 0       | 0       |

**ii. Sleeper Type on the four regions of the KPI Network on the last day of the ACR period (including sleepers replaced during the reporting period)**

|          | 04/05 | 05/06 | 06/07 |
|----------|-------|-------|-------|
| Timber   | 67.4% | 67.3% | 63.6% |
| Steel    | 11.1% | 11.0% | 10.9% |
| Concrete | 21.5% | 21.7% | 25.5% |
| Other    | 0.0%  | 0.0%  | 0.0%  |

**(f) Bridges**

**i. Length of Bridges Replaced during Annual Condition Reporting period**

2 bridges (1 steel & 1 Iron) totalling 212.2m have been replaced with 2 concrete structures totalling 212.0m during the reporting period. This has resulted in a net change to the bridge type and length, from the original list supplied at the date of commencement of the lease.

**ii. Percentage of Bridges for which repair work warrants a Temporary Speed Restriction, or a reduction in permitted axle load on the last day of the ACR period.**

Temporary Speed Restrictions are applied to 7 Bridges, well below the Bridge Limit of 20.

| <b>Number of Speed Restricted Bridges</b> |                       |                      |                       |                      |                       |                      |               |
|---|-----------------------|----------------------|-----------------------|----------------------|-----------------------|----------------------|---------------|
|   | 04/05 Total Length(m) | 04/05 No of Bridges: | 05/06 Total Length(m) | 05/06 No of Bridges: | 06/07 Total Length(m) | 06/07 No of Bridges: | % of Bridges: |
| Timber                                    | 0                     | 0                    | 0                     | 0                    | 50.0                  | 1                    | 5.88%         |
| Iron                                      | 145.2                 | 1                    | 145.2                 | 1                    | 145.2                 | 1                    | 33.33%        |
| Masonry                                   | 0                     | 0                    | 0                     | 0                    | 0                     |                      | 0%            |
| Steel                                     | 496.8                 | 3                    | 668.9                 | 4                    | 871.4                 | 5                    | 1.47%         |
| Concrete                                  | 0                     | 0                    | 0                     | 0                    | 0                     |                      | 0%            |
| Other (incl. brick)                       | 0                     | 0                    | 0                     | 0                    |                       |                      | 0%            |
| <b>Total</b>                              | <b>642.0</b>          | <b>4</b>             | <b>814.1</b>          | <b>5</b>             | <b>1066.6</b>         | <b>7</b>             | <b>0.88%</b>  |

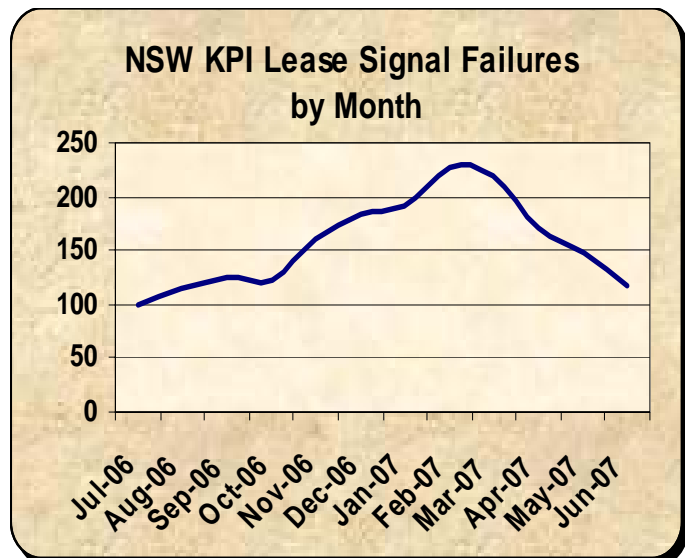
**iii. Bridge Type on the entire KPI Network on the last day of the ACR period.**

| <b>Summary of KPI Network Bridge Types</b> |                       |                      |                       |                      |                       |                      |
|--|-----------------------|----------------------|-----------------------|----------------------|-----------------------|----------------------|
|  | 04/05 Total Length(m) | 04/05 No of Bridges: | 05/06 Total Length(m) | 05/06 No of Bridges: | 06/07 Total Length(m) | 06/07 No of Bridges: |
| Timber                                     | 264.7                 | 17                   | 264.7                 | 17                   | 264.7                 | 17                   |
| Iron                                       | 460.5                 | 4                    | 460.5                 | 4                    | 260.5                 | 3                    |
| Masonry                                    | 54.9                  | 1                    | 54.9                  | 1                    | 54.9                  | 1                    |
| Steel                                      | 17233.4               | 347                  | 17205.4               | 342                  | 17193.2               | 341                  |
| Concrete                                   | 4582.8                | 405                  | 4630.0                | 410                  | 4842.0                | 412                  |
| Other (incl. brick)                        | 946.6                 | 24                   | 946.6                 | 24                   | 946.6                 | 24                   |
| <b>Total</b>                               | <b>23542.9</b>        | <b>798</b>           | <b>23562.1</b>        | <b>798</b>           | <b>23561.9</b>        | <b>798</b>           |

**(g) Signal failures, by month**

**i. Total signal failures per month for the KPI Network (excluding level crossings)**

|      | 04/05 | 05/06 | 06/07 |
|------|-------|-------|-------|
| July | -     | 102   | 100   |
| Aug  | -     | 86    | 116   |
| Sept | 43    | 82    | 125   |
| Oct  | 88    | 120   | 122   |
| Nov  | 89    | 124   | 161   |
| Dec  | 105   | 136   | 183   |
| Jan  | 111   | 171   | 191   |
| Feb  | 110   | 153   | 227   |
| Mar  | 99    | 111   | 220   |
| Apr  | 71    | 107   | 172   |
| May  | 109   | 112   | 148   |
| Jun  | 88    | 118   | 118   |



For completeness, the revised numbers for previous years have been updated with the latest available data.



**(h) Percentage of Healthy Trains Achieving On-Time Exit, on the KPI Network, by month**

**i. Scope of Measured Services (5.1)**

- Application of this clause 5 will be to all Trains that are contracted to a scheduled train path and which pass across a part of the KPI Network.  
*All scheduled ARTC services which pass across a part of the KPI Network, (ie the South, West, Inland route and North Coast regions) have been included in the report.*
- Trains contracted to a scheduled train path are those that have a network entry and exit location and time specified in an Access Agreement.  
*ARTC contracted scheduled services that have a network entry/exit location and time specified have been included in the report.*
- Trains operating under cyclic arrangements such as those carrying coal are not subject to the application of this measure.  
*The cyclical services referred to in clause 5.1 (c) have been excluded from the measurement.*

**ii. Measurement and Calculation (5.2)**

- (a) For each month, ARTC will, in accordance with clause 5.2(b), identify Trains as a Healthy Train or otherwise and Healthy Trains as achieving On Time exit or otherwise. ARTC will calculate Percentage of Healthy Trains Achieving On Time Exit in accordance with clause 5.2(f) of this Schedule 7.  
*Refer to the Graphs below.*
- A "**Healthy Train**" means a Train that, having regard to the Daily Train Plan applicable on the day:
  - presents to the ARTC network On Time, is configured to operate to its schedule and operates in a way that it remains able to maintain its schedule;
  - or
  - is running late only due to causes within the ARTC network but only where the root cause is not due to:
    - any act or omission of an Access Purchaser; or
    - any defect, breakdown or other failure of any Train or Rolling Stock; or
    - is running On Time, regardless of previous delays.

*The services measured meet the criteria of a Healthy Train service as per clause 5.2 (b).*

- **"On Time"** means scheduled time at a location including a fifteen minute tolerance.  
*On-time performance for all services measured are in accordance with the definition of 'On-time'*
- Measurement will be undertaken using ARTC's access management system.  
*The services measured have been calculated using ARTC's access management system*
- The identification of a Train as a Healthy Train or otherwise, and the identification of a Healthy Train as achieving On Time Exit will be made having regard to performance with respect to a scheduled train path as it exists over the whole of the ARTC network, including that subject to this Deed. As such, exit performance of a Train will be measured at the location where the Train exits the ARTC network, including that subject to this Deed.  
*As defined by clause 5.2 (e), ARTC has measured the full journey performance of services on the ARTC network (incl the NSW Lease network).  
For example, a Sydney – Melbourne service is considered to exit the ARTC Network at Dynon and conversely will enter the ARTC Network at Dynon for Melbourne – Sydney services.*

*The graphs below illustrate the KPI performance for July 2006 – June 2007.*

*Graph 1: shows the full journey performance of all services (including performance on the CRN network),*

*Graph 2: shows the full journey performance of all services (excluding those originating or terminating on the CRN Network)*

- **(b) "Percentage of Healthy Trains Achieving On-Time Exit"** for a month will be calculated as:

$$\frac{\text{Number of Healthy Trains achieving On Time exit for a month}}{\text{Number of Healthy Trains for a month.}} \times 100$$

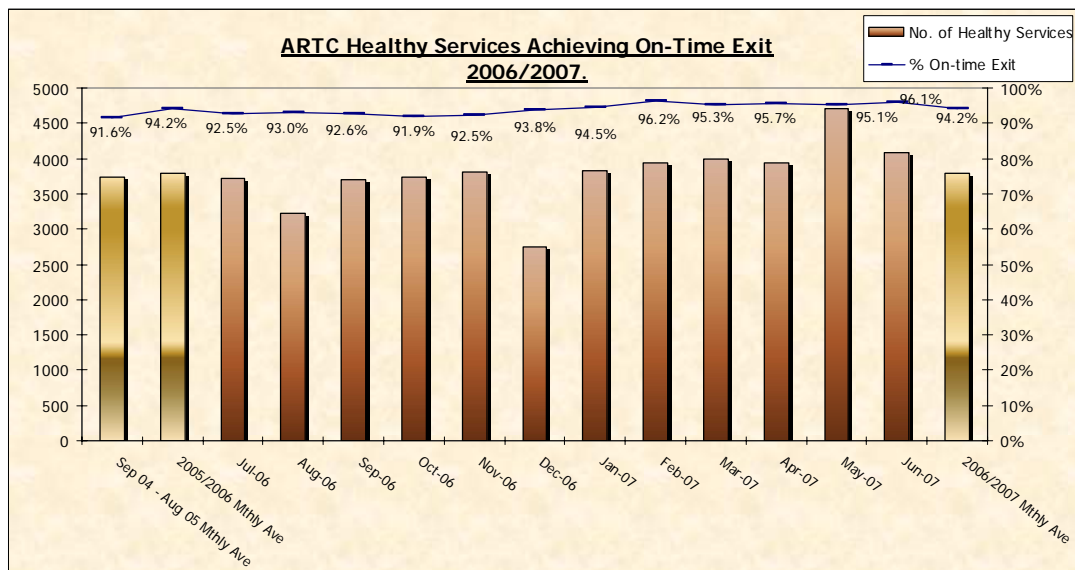
*The % of Healthy Services achieving On-time Exit has been calculated in line with the above formula.*

- The parties acknowledge that definition of Healthy Train in this clause 5 is intended to be consistent the definition of Healthy Train as contemplated in Access Agreements. If there is a material change in the definition of Healthy Train as contemplated in Access Agreements, ARTC and the Lessor will review the definition of Healthy Train in this clause 5.

*There has been no change to the definition of a Healthy Service as contemplated in clause 5 of the Access Agreement.*

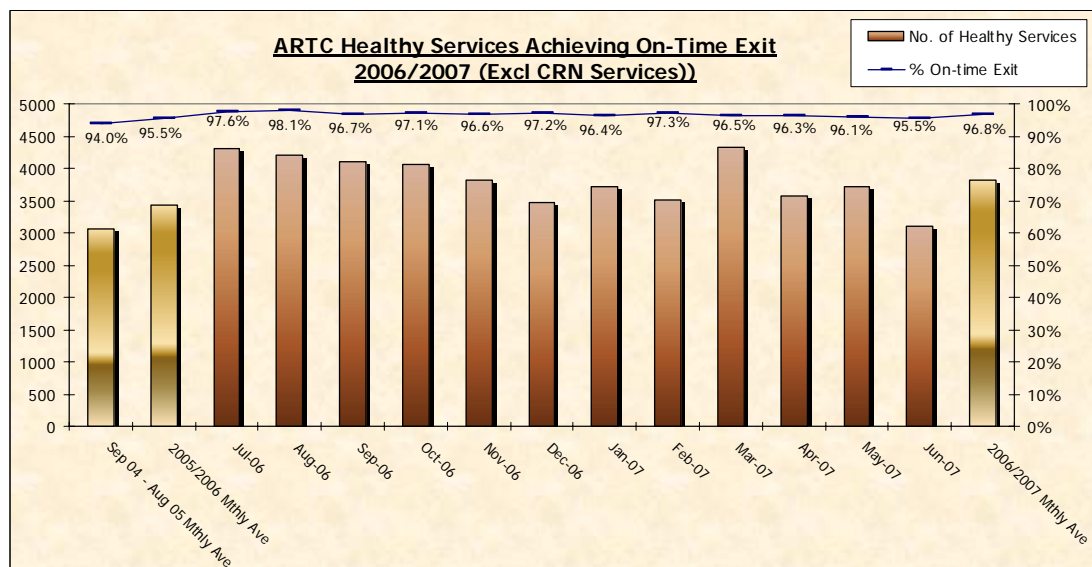
The CityRail Southern Highlands passenger services have been included in the on time exit of healthy services calculation since December 2005.

**Graph 1 - All Healthy Services with an On-time Exit (including CRN Network performance):**



The monthly average including CRN services for 06/07 of 94.2% exceeds the Service Reliability result of 91.6%. The result is calculated as per lease schedule 7.3 (a) 'Service Reliability Limit as being the monthly average of Percentage of Healthy Trains Achieving on Time Exit for the year ending 12 months after the lease commencement date (September 2004 to August 2005).

**Graph 2 - All Healthy Services with an On-time Exit (excluding CRN Network originating/terminating services):**



The monthly average excluding CRN services for 06/07 of 96.8% exceeds the Service Reliability limit of 94.0%. The limit is calculated as per lease schedule 7.3 (a) 'Service Reliability Limit' as being the monthly average of Percentage of Healthy Trains Achieving on Time Exit for the year ending 12 months after the lease commencement date (September 2004 to August 2005).

**(i) Maximum allowable speed and axle load combination applying on the KPI Network**

As per lease schedule 2.1 (d) (ii), the maximum allowable speed and axle load combinations applying from the lease commencement date to five years after the commencement date are to be not less than that at commencement date.

The table below describes the maximum allowable speed and axle load combination on the KPI network as at the final business day of the reporting period.

| <b>KPI Region</b> | <b>Segment</b>  | <b>General Freight</b> | <b>Super Freighter</b> | <b>XPT</b>      |
|-------------------|---|------------------------|------------------------|-----------------|
| Inland Route      | Werris Creek to The Gap   | 80kph @ 23 TAL         | 115kph @ 19.5 TAL      | 160kph @ 19 TAL |
| North Coast       | Maitland to Qld Border  | 80kph @ 23 TAL         | 115kph @ 19.5 TAL      | 160kph @ 19 TAL |
| South             | Macarthur to Albury   | 80kph @ 23 TAL         | 115kph @ 19.5 TAL      | 160kph @ 19 TAL |
| South             | Moss Vale to Unanderra  | 80kph @ 23 TAL         | 115kph @ 19.5 TAL      | NA              |
| West              | Parkes (Goobang) to Broken Hill   | 80kph @ 23 TAL         | 115kph @ 21 TAL        | 145kph @ 19 TAL |
| West              | Cootamundra to Stockinbingal,<br>Stockinbingal to Parkes (Goobang)                                | 80kph @ 21 TAL         | 100kph @ 19.5 TAL      | NA              |
| Inland Route      | Parkes (Goobang) to Narromine<br>Narromine to Dubbo<br>Dubbo to Merrygoen<br>Gulgong to Merrygoen | 80kph @ 21 TAL         | 100kph @ 19.5 TAL      | NA              |
| Inland Route      | Merrygoen to Binnaway<br>Binnaway to The Gap  | 80kph @ 21 TAL         | 100kph @ 19.5 TAL      | 100kph @ 19 TAL |

Maximum allowable speed and axle load combinations for the KPI network are not less than that as at the commencement date.

## (j) Permitted Permanent Speed Restrictions

- i) 7 Permanent Speed restrictions were changed between July 2006 and June 2007.
- The following 7 permanent speed restrictions are regarded as permitted as per Schedule 7, section 1.2(aa) (i) as they have the effect of reducing the Base Transit Time.

Permanent speed restrictions were changed as a result of the following Major Works:

- Sandgate Flyover,
- Wagga Wagga Murrumbidgee Bridge replacement,
- CTC commissioning at Islington Junction and Muswellbrook to Gulgong.

All of these works have the effect of reducing transit time.

| North - Broadmeadow to Brisbane Section 1B.  |            |            |            |            |                 |
|--|------------|------------|------------|------------|-----------------|
| The following speeds were revised on 17 April 2007 due to the commissioning of the Sandgate Flyover. |            |            |            |            |                 |
| km   | Down       |            | Up         |            | Comment         |
|  | Norm       | XPT        | Norm       | XPT        |                 |
| 168.090  | 80         | 90         | 90         | 110        | no change       |
| <b>169.000</b>   | <b>X25</b> |            |            |            | <b>inserted</b> |
| <b>169.214</b>   | <b>115</b> | <b>140</b> | <b>110</b> | <b>120</b> | <b>inserted</b> |
| 170.110  | 115        | 120        | 80         | 90         | deleted         |
| <b>170.738</b>   |            |            | <b>115</b> | <b>140</b> | <b>inserted</b> |
| <b>170.759</b>   | <b>100</b> | <b>100</b> |            |            | <b>inserted</b> |
| 171.600  | 115        | 160        | 115        | 150        | deleted         |
| <b>171.800</b>   |            |            | <b>X25</b> |            | <b>inserted</b> |
| <b>171.693</b>   | <b>115</b> | <b>160</b> | <b>100</b> | <b>100</b> | <b>inserted</b> |
| <b>171.930</b>   |            |            | <b>X70</b> |            | <b>inserted</b> |
| <b>172.060</b>   |            |            | <b>115</b> | <b>115</b> | <b>inserted</b> |
| 175.000  |            |            | 115        | 160        | no change       |
| 176.800  | 115        | 150        |            |            | no change       |

| West - Muswellbrook to Dubbo Section 5.  |           |     |      |     |                 |
|--|-----------|-----|------|-----|-----------------|
| The following speeds were revised on 4 June 2007 as part of the introduction of CTC Muswellbrook to Gulgong. |           |     |      |     |                 |
| km   | Down      |     | Up   |     | Comment         |
|  | Norm      | XPT | Norm | XPT |                 |
| 310.160  | 105       |     |      |     | no change       |
| <b>313.650</b>   | <b>85</b> |     |      |     | <b>inserted</b> |
| 314.450  | 85        |     |      |     | deleted         |

| North - Broadmeadow to Brisbane Section 1B.  |      |     |           |           |                 |
|--|------|-----|-----------|-----------|-----------------|
| The following speeds were revised on 20 June 2007 as part of the Islington Junction CTC commissioning. |      |     |           |           |                 |
| km   | Down |     | Up        |           | Comment         |
|  | Norm | XPT | Norm      | XPT       |                 |
| <b>165.478</b>   |      |     | <b>95</b> | <b>95</b> | <b>inserted</b> |
| 166.840  |      |     | 115       | 150       | no change       |

| West - Cootamundra to Parkes Section 8.  |            |     |            |     |                 |
|--|------------|-----|------------|-----|-----------------|
| The following speeds were revised on 22 January 2007 due to bridge renewals and level crossing upgrades. |            |     |            |     |                 |
| km   | Down       |     | Up         |     | Comment         |
|  | Norm       | XPT | Norm       | XPT |                 |
| 555.626  | 100        |     | 30         |     | no change       |
| 594.048  |            |     | 100        |     | no change       |
| <b>594.400</b>   |            |     | <b>100</b> |     | <b>inserted</b> |
| <b>594.660</b>   | <b>90</b>  |     |            |     | <b>inserted</b> |
| 594.705  | 20         |     |            |     | no change       |
| <b>595.000</b>   | <b>20x</b> |     |            |     | <b>inserted</b> |
| 595.065  |            |     | 20         |     | no change       |
| 595.965  | 90         |     |            |     | no change       |

x - Level crossing speed warning sign as per ARTC safe Notice 2005, 2-116

| South - Sydney to Albury Section 1.  |           |           |           |           |                 |
|--|-----------|-----------|-----------|-----------|-----------------|
| The following speeds were revised on 22 January 2007 due to renewal of the Murrumbidgee River bridge at Wagga Wagga. |           |           |           |           |                 |
| km   | Down      |           | Up        |           | Comment         |
|  | Norm      | XPT       | Norm      | XPT       |                 |
| 516.520  | 80        | 80        | 90        | 110       | no change       |
| 517.900  |           |           | 80        | 80        | no change       |
| <b>519.200</b>   |           |           | <b>20</b> | <b>80</b> | <b>deleted</b>  |
| <b>519.200</b>   |           |           | <b>80</b> | <b>80</b> | <b>inserted</b> |
| 519.400  | 20        | 20        |           |           | deleted         |
| 519.670  |           |           | 20        | 20        | deleted         |
| 519.870  | 20        | 80        |           |           | deleted         |
| <b>519.870</b>   | <b>80</b> | <b>80</b> |           |           | <b>inserted</b> |
| 520.440  |           |           | 80        | 80        | no change       |

| North - Newcastle Regional Area Section 1C.  |            |            |            |            |                 |
|--|------------|------------|------------|------------|-----------------|
| The following speeds were revised on 17 April 2007 due to the commissioning of the Sandgate Flyover. |            |            |            |            |                 |
| km   | Down       |            | Up         |            | Comment         |
|  | Norm       | XPT        | Norm       | XPT        |                 |
| 168.575  | 115        | 135        |            |            | no change       |
| 170.000  |            |            | 115        | 135        | deleted         |
| 170.340  | 100        | 110        |            |            | deleted         |
| <b>170.340</b>   | <b>100</b> | <b>110</b> | <b>110</b> | <b>110</b> | <b>inserted</b> |
| <b>170.790</b>   | <b>85</b>  | <b>90</b>  |            |            | <b>inserted</b> |
| 170.800  |            |            | 100        | 110        | deleted         |
| <b>171.270</b>   |            |            | <b>85</b>  | <b>90</b>  | <b>inserted</b> |
| <b>171.335</b>   |            |            | <b>X55</b> |            | <b>inserted</b> |
| <b>171.502</b>   |            |            | <b>X70</b> |            | <b>inserted</b> |
| <b>171.520</b>   | <b>X70</b> |            |            |            | <b>inserted</b> |
| <b>171.700</b>   | <b>X70</b> |            |            |            | <b>inserted</b> |
| <b>171.800</b>   | <b>80</b>  | <b>80</b>  |            |            | <b>inserted</b> |
| 172.000  |            |            | 20         | 110        | deleted         |
| 172.300  | 40         | 40         |            |            | deleted         |
| <b>172.310</b>   | <b>115</b> | <b>120</b> | <b>110</b> | <b>110</b> | <b>inserted</b> |
| 172.400  |            |            | 20         | 20         | deleted         |
| 172.630  |            |            | 115        | 120        | deleted         |
| 172.800  | 40         | 160        |            |            | deleted         |
| <b>172.800</b>   | <b>115</b> | <b>160</b> | <b>115</b> | <b>120</b> | <b>inserted</b> |
| 173.900  | 115        | 160        |            |            | deleted         |
| 174.200  |            |            | 115        | 160        | no change       |

| North - Broadmeadow to Werris Creek Section 3.  |      |     |      |     |           |
|---|------|-----|------|-----|-----------|
| The following speeds were revised on 8 September 2006 due to the commissioning of automated level crossing equipment. |      |     |      |     |           |
| km  | Down |     | Up   |     | Comment   |
|   | Norm | XPT | Norm | XPT |           |
| 321.500   |      |     | 115  | 160 | no change |
| 321.750   |      |     | 60   | 60  | deleted   |
| 323.500   |      |     | 115  | 160 | no change |

### 3. Register of ARTC Infrastructure.

**(a) Building Works added to Assets Register during 2006/07**

| Location     | Asset No | Asset  | Cost               |
|--------------|----------|--|--------------------|
| Maitland     |          | New Provisioning Centre                      | \$9,860            |
| Newcastle    |          | New Provisioning Centre                      | \$550,000          |
| Muswellbrook |          | New Provisioning Centre                      | \$539,949          |
| Wagga Wagga  |          | New South / West Asset Office                | \$1,400,000        |
| Junee        |          | Administration / Train Control Storm Repairs | \$93,000           |
| The Rock     |          | Station Masters Residence Garage             | \$11,000           |
| Broadmeadow  | 0009184  | Project Office                               | \$28,160.00        |
| Broadmeadow  | 0009185  | CTC  | \$63,638.60        |
| Casino       | 0009289  | Provisioning Centre                          | \$1,784.55         |
| Goulburn     | 0009468  | Provisioning Centre                          | \$196,182.64       |
| Maitland     | 0009519  | Provisioning Centre                          | \$6,250.00         |
| Kooragang    | 0009612  | Refurbish Admin Building                     | \$54,424.47        |
| Broken Hill  | 0009717  | Provisioning Centre                          | \$102,231.00       |
| Port Waratah | 0009806  | Provisioning Centre                          | \$641,685.09       |
| <b>TOTAL</b> |          |  | <b>\$3,698,165</b> |

## 4. Infrastructure Investment Program - Major Works

### (b) Major Works Investment Program

| Major Project                                 | 2005/06             | 2006/07              | Future Expenditure   | Total Budget           |
|---|---------------------|----------------------|----------------------|------------------------|
| North Coast Improvement Works                 | \$7,027,000         | \$80,903,000         | \$152,268,000        | \$227,151,000          |
| Main South Improvement Works                  | \$17,754,000        | \$102,312,000        | \$227,150,000        | \$352,253,000          |
| Southern Sydney Freight Lines                 | \$2,989,000         | \$3,408,000          | \$238,225,000        | \$245,096,000          |
| Western NSW Improvement Works                 | \$1,079,000         | \$5,679,000          | \$13,442,000         | \$20,200,000           |
| Hunter Valley Improvement Works               | \$45,921,000        | \$56,977,000         | \$218,899,000        | \$363,694,000          |
| Train Control Consolidation                   | \$3,386,000         | \$67,192,000         | \$19,838,000         | \$88,257,000           |
| Wayside                                       | \$1,508,000         | \$2,407,000          | \$9,242,000          | \$13,095,000           |
| Communications Upgrade                        |                     | \$3,810,000          | \$5,390,000          | \$9,200,000            |
| Australian Land Transport Development Funding | \$3,854,000         | \$2,827,000          | \$18,173,000         | \$21,000,000           |
| Plant & Equipment                             |                     | \$80,903,000         | \$152,268,000        | \$227,151,000          |
| <b>Major Works Program Total</b>              | <b>\$83,518,000</b> | <b>\$324,507,000</b> | <b>\$884,661,000</b> | <b>\$1,336,437,000</b> |

### (c) Corridor Works Summary

|                                     | 2005/06              | 2006/07              |
|-------------------------------------|----------------------|----------------------|
| Corridor RCRM                       | \$43,894,000         | \$39,884,000         |
| Corridor MPM                        | \$64,184,000         | \$59,088,000         |
| Corridor Capital                    | \$33,050,000         | \$35,597,000         |
| <b>Corridor Works Program Total</b> | <b>\$141,128,000</b> | <b>\$134,569,000</b> |

**(d) Major Works Underway - Indicative Cash Flow**

The indicative year to year cash flows for the Major Works Investment Program is detailed in the following table:

| Project                                  | 2007/08             | 2008/09             | Beyond 2009         | Total Forecast       |
|--|---------------------|---------------------|---------------------|----------------------|
| <b>Hunter</b>                            |                     |                     |                     |                      |
| Ulan Line CTC                            | \$3,445,000         |                     |                     | \$3,445,000          |
| Ardglen Tunnel                           | \$141,000           |                     |                     | \$141,000            |
| Muswellbrook loop and junction           | \$1,652,000         |                     |                     | \$1,652,000          |
| Loop Enhancements                        | \$12,777,000        | \$7,809,000         | \$3,327,000         | \$23,913,000         |
| Newdell Junction                         | \$4,868,000         | \$1,179,000         |                     | \$6,047,000          |
| Sandgate Grade Separation                | \$477,000           |                     |                     | \$477,000            |
| Third Track Prov Sig – Minimbah & Nundah | \$2,720,000         | \$18,456,000        | \$45,915,000        | \$67,091,000         |
| Ulan Line Crossing Loops                 | \$4,817,000         | \$19,901,000        | \$14,598,000        | \$39,316,000         |
| Antiene to Grasstree Stage 1 Duplication | \$20,959,000        | \$374,000           |                     | \$21,333,000         |
| Bi-Dir. Sig - Maitland to Branxton       | \$3,975,000         | \$9,486,000         |                     | \$13,461,000         |
| Ardglen to Kankool                       | \$3,245,000         | \$9,349,000         |                     | \$12,594,000         |
| Bi-Dir. Sig - Whittingham to Newdell     |                     | \$9,806,000         | \$1,302,000         | \$11,108,000         |
| Bi-Dir. Sig - Newdell to Drayton         |                     | \$1,019,000         | \$6,114,000         | \$7,132,000          |
| Drayton Junction Remodelling & Upgrade - | \$3,060,000         | \$1,362,000         |                     | \$4,422,000          |
| Bridge Strengthening - Hunter Valley     | \$3,594,000         |                     |                     | \$3,594,000          |
| Allandale bank for 8 min headway         |                     | \$1,093,000         |                     | \$1,093,000          |
| 80km approach - Sig - Minimbah           | \$6,000             |                     |                     | \$6,000              |
| Noise and Vibration Amelioration Works   | \$470,000           |                     |                     | \$470,000            |
| 10-minute Headway                        | \$1,603,000         |                     |                     | \$1,603,000          |
| <b>Hunter Valley Total</b>               | <b>\$67,809,000</b> | <b>\$79,834,000</b> | <b>\$71,256,000</b> | <b>\$218,899,000</b> |





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| <b>North Coast</b>                       | <b>2007/08</b>       | <b>2008/09</b>     | <b>Beyond 2009</b> | <b>Total Forecast</b> |
|--|----------------------|--------------------|--------------------|-----------------------|
| Bridge Rehabilitation - Leeville Bridge  | \$894,000            |                    |                    | \$894,000             |
| Bridge Rehabilitation - Two Mile Creek   | \$624,000            |                    |                    | \$624,000             |
| Resilient Fastening                      | \$696,000            |                    |                    | \$696,000             |
| Weld Straightening - Border L - Casino   | \$252,000            |                    |                    | \$252,000             |
| Crossing Loop Upgrades - Kungala         | \$1,286,000          |                    |                    | \$1,286,000           |
| Crossing Loop Upgrades - Glenapp         | \$1,293,000          |                    |                    | \$1,293,000           |
| Crossing Loop Upgrades - Bromelton       | \$1,292,000          |                    |                    | \$1,292,000           |
| Speed Boards                             | \$304,000            | \$456,000          |                    | \$760,000             |
| Crossing Loop Upgrades - Paterson        | \$884,000            | \$84,000           |                    | \$968,000             |
| Crossing Loop Upgrades - Killawarra      | \$913,000            |                    |                    | \$913,000             |
| Crossing Loop Upgrades - Rappville       | \$1,861,000          |                    |                    | \$1,861,000           |
| Crossing Loop Upgrades - Taree           | \$914,000            |                    |                    | \$914,000             |
| Crossing Loop Upgrades - Johns River     | \$910,000            |                    |                    | \$910,000             |
| Crossing Loop Upgrades - Kempsey         | \$914,000            |                    |                    | \$914,000             |
| Bridge Rehabilitation - Kalang Bridge    | \$687,000            |                    |                    | \$687,000             |
| QLD Border to Grafton Level Crossings    | \$266,000            |                    |                    | \$266,000             |
| Grafton to Kempsey Level Crossings       | \$685,000            |                    |                    | \$685,000             |
| Kempsey to Craven Level Crossings        | \$428,000            |                    |                    | \$428,000             |
| Craven to Maitland Level Crossings       | \$428,000            | \$31,000           |                    | \$459,000             |
| Bridge Rehabilitation - Repton Bridge    | \$414,000            |                    |                    | \$414,000             |
| Crossing Loop Upgrades - Wallarobba      | \$537,000            |                    |                    | \$537,000             |
| Crossing Loop Upgrades - Stroud Road     | \$535,000            |                    |                    | \$535,000             |
| Crossing Loop Upgrades - Bulliac         | \$535,000            |                    |                    | \$535,000             |
| Crossing Loop Upgrades - Telegraph Point | \$535,000            |                    |                    | \$535,000             |
| Crossing Loop Upgrades - Nambucca Heads  | \$535,000            |                    |                    | \$535,000             |
| Crossing Loop Upgrades - Boambee Beach   | \$533,000            |                    |                    | \$533,000             |
| Crossing Loop Upgrades - Lawrence Road   | \$536,000            |                    |                    | \$536,000             |
| Crossing Loop Upgrades - Kyogle          | \$301,000            |                    |                    | \$301,000             |
| Crossing Loop Upgrades - Eungai          | \$536,000            |                    |                    | \$536,000             |
| Concrete re-sleepering                   | \$60,195,000         |                    |                    | \$60,195,000          |
| Crossing Loop Extensions                 | \$62,829,000         | \$8,145,000        |                    | \$70,974,000          |
| <b>North Coast Total</b>                 | <b>\$140,218,000</b> | <b>\$8,601,000</b> |                    | <b>\$152,268,000</b>  |



**Australian Rail Track Corporation Ltd.**  
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| <b>Main South</b>                     | <b>2007/08</b>       | <b>2008/09</b>       | <b>Beyond 2009</b>  | <b>Total Forecast</b> |
|---------------------------------------|----------------------|----------------------|---------------------|-----------------------|
| Concrete re-sleepering                | \$89,972,000         | \$68,336,000         |                     | \$158,308,000         |
| Murrumbidgee River Bridge Wagga       | \$46,000             |                      |                     | \$46,000              |
| Re-railing                            | \$2,970,000          |                      |                     | \$2,970,000           |
| Passing Lanes - Harden to Wallendbeen | \$249,000            |                      |                     | \$249,000             |
| Removal of Speed Restrictions         | \$2,893,000          |                      |                     | \$2,893,000           |
| Reposition speed boards               | \$1,027,000          | \$562,000            |                     | \$1,589,000           |
| Gauge Clearance Improvements          | \$182,000            |                      |                     | \$182,000             |
| Gerogery – Table Top                  | \$12,315,000         |                      |                     | \$12,315,000          |
| Henty – Culcairn                      | \$12,100,000         |                      |                     | \$12,100,000          |
| The Rock – Yerong Creek               | \$9,018,000          |                      |                     | \$9,018,000           |
| Wagga – Uranquinty                    | \$7,806,000          |                      |                     | \$7,806,000           |
| Harefield – Bowen                     | \$11,395,000         | \$1,364,000          |                     | \$12,759,000          |
| Main South Refurbishment              | \$959,000            |                      |                     | \$959,000             |
| Maintenance Crossovers                | \$461,000            | \$1,404,000          |                     | \$1,865,000           |
| Weld Straightening                    | \$2,394,000          | \$1,697,000          |                     | \$4,091,000           |
| <b>Main South Total</b>               | <b>\$153,787,000</b> | <b>\$71,999,000</b>  |                     | <b>\$227,150,000</b>  |
| <b>TCC</b>                            | <b>2007/08</b>       | <b>2008/09</b>       | <b>Beyond 2009</b>  | <b>Total Forecast</b> |
| TCC – North                           | \$4,931,000          |                      |                     | \$4,931,000           |
| TCC - South                           | \$14,907,000         |                      |                     | \$14,907,000          |
| <b>TCC Total</b>                      | <b>\$19,838,000</b>  |                      |                     | <b>\$19,838,000</b>   |
| <b>TOTAL</b>                          | <b>\$384,986,000</b> | <b>\$161,913,000</b> | <b>\$71,256,000</b> | <b>\$618,155,000</b>  |

## 5. Addendum – Revised TQI Calculation Proposal

### (a) Introduction

ARTC has reviewed the Track Quality Index (TQI) calculation across its network and proposes to introduce a consistent approach to how it is calculated. The new approach differs slightly to the way it is defined in the lease Schedule 7, clause 4. The following changes are proposed to the calculation of Top and Twist readings only:

| Parameter                | Current Method of Measurement   | Proposed Method of Measurement  |
|--------------------------|---|---|
| Top Up and Down readings | Vertical alignment of the down rail expressed as a versine measured at 1.8m along a 10m chord | 20m Inertial Top – average of Left and Right rail standard deviation    |
| Twist readings           | The difference in super-elevation between locations that are 2.7m apart                       | The difference in super-elevation between locations that are 2.0m apart |

Benefits associated with the change in TQI calculation include the following:

- Improved exchange of information and communication between ARTC staff in different states or regions due to consistent reporting and terminology (break down state based approach).
- Reduction in training time for AK Car and performance monitoring staff due to consistent approach and reporting methods.
- Reduces the number of reports and systems needing support on the AK Car.
- Facilitates the comparison of track in different states or regions, with the potential to improve understanding of factors influencing track geometry.
- Removal of cross level from the TQI calculation in SA / WA / Vic removes an artificial increase of the TQI figures due to curves and curve transitions.
- Reduces the potential for error when making changes to AK car reports etc at state boundaries.

## **(b) Risk**

The change in TQI calculation method will not result in any change to ARTC's risk profile and is not considered to be of sufficient magnitude to warrant a formal risk assessment.

## **(c) Detail of Proposal**

### Twist

It is proposed to align the way TQI is reported across the network by replacing the Twist over 2.7m with Twist over 2m in NSW. Historically the short twist parameters have been different in SA/Vic and NSW due to the fact that both had different measuring vehicles with different sampling rates ie 0.9m in NSW (RVX4) and 0.5m for SA/Vic (EM80 and now AK Car). It is proposed to move to the Twist over 2m for the entire ARTC network for the following reasons:

- This is a similar distance to typical axle spacing on a bogie for most of the freight wagons on the ARTC network.
- The new NCoP Track Geometry standard uses the Twist over 2m parameter.
- This is consistent with the 0.5m sample rate used by the AK car and does not require calculation of an interpolated value.

### Top

The AK Car reports different parameters for Top in SA/Vic and NSW. Since the introduction of the AK Car, SA and Victoria have adopted the inertial 20m top parameter reported directly by the car however NSW have used the emulated chord based parameter (1.8/10m chord top) to approximate top measurements recorded by the RVX4 pre AK Car. Use of an inertial measuring system to calculate and emulate a chord based top parameter does not fully utilise the measuring capability of the car. Reviews of the inertial top data have revealed that the raw inertial data from the AK Car shows a very close comparison with track faults and measurements taken in the field. For this reason it is proposed to replace the emulated chord based NSW top parameter and adopt the 20m inertial top parameter. This would also align results with the top parameter proposed in the NCoP Track Geometry standard.

## **(d) Effect of Proposed Changes on KPI Targets**

The proposed changes to Top and Twist parameters used in the TQI Calculation, results in a small increase in Top results, with a similar small decrease in Twist results. The effect is demonstrated in the following table, together with the proposed changes to the lease KPI Targets (Annual and Five Year Limits) based on use of the new calculation method TQI.

## Proposed Geometry KPI Targets

### South

| Region | Measure | Current Lease Annual Limit | Current Lease 5 Year Limit | Current Method 06/07 Result | Proposed Method 06/07 Result | Variation between Current & Proposed | Proposed Lease Annual Limit | Proposed Lease 5 Year Limit |
|--------|---------|----------------------------|----------------------------|-----------------------------|------------------------------|--------------------------------------|-----------------------------|-----------------------------|
| South  | Top     | 8.55                       | 7.37                       | 6.72                        | 8.79                         | 2.07                                 | 10.62                       | 9.44                        |
|        | Twist   | 7.84                       | 7.45                       | 7.35                        | 6.20                         | -1.15                                | 6.69                        | 6.30                        |
|        | Line    | 10.20                      | 8.91                       | 8.33                        | 9.05                         |                                      | 10.20                       | 8.91                        |
|        | Gauge   | 6.48                       | 5.94                       | 5.89                        | 5.90                         |                                      | 6.48                        | 5.94                        |

### North Coast

| Region | Measure | Current Lease Annual Limit | Current Lease 5 Year Limit | Current Method 06/07 Result | Proposed Method 06/07 Result | Variation between Current & Proposed | Proposed Lease Annual Limit | Proposed Lease 5 Year Limit |
|--------|---------|----------------------------|----------------------------|-----------------------------|------------------------------|--------------------------------------|-----------------------------|-----------------------------|
| North  | Top     | 7.04                       | 5.92                       | 5.02                        | 7.09                         | 2.07                                 | 9.11                        | 7.99                        |
|        | Twist   | 7.54                       | 6.89                       | 6.02                        | 5.03                         | -0.99                                | 6.55                        | 5.90                        |
|        | Line    | 13.52                      | 11.92                      | 11.11                       | 11.61                        |                                      | 13.52                       | 11.92                       |
|        | Gauge   | 6.89                       | 6.64                       | 6.47                        | 6.47                         |                                      | 6.89                        | 6.64                        |

### West

| Region | Measure | Current Lease Annual Limit | Current Lease 5 Year Limit | Current Method 06/07 Result | Proposed Method 06/07 Result | Variation between Current & Proposed | Proposed Lease Annual Limit | Proposed Lease 5 Year Limit |
|--------|---------|----------------------------|----------------------------|-----------------------------|------------------------------|--------------------------------------|-----------------------------|-----------------------------|
| West   | Top     | 9.10                       | 8.45                       | 8.27                        | 10.34                        | 2.07                                 | 11.17                       | 10.52                       |
|        | Twist   | 8.15                       | 8.00                       | 7.48                        | 6.22                         | -1.26                                | 6.89                        | 6.74                        |
|        | Line    | 8.31                       | 6.45                       | 6.49                        | 7.01                         |                                      | 8.31                        | 6.45                        |
|        | Gauge   | 5.83                       | 4.66                       | 4.63                        | 4.57                         |                                      | 5.83                        | 4.66                        |

### Inland Route

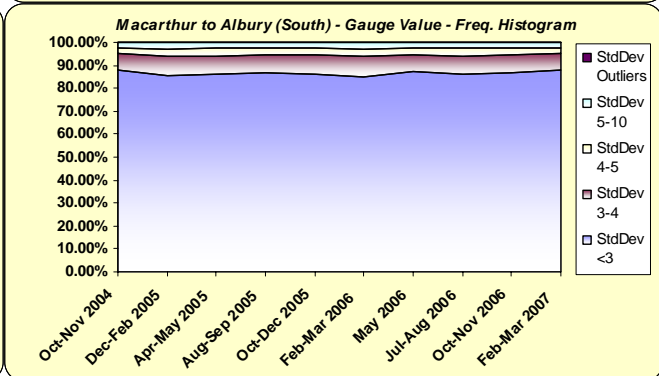
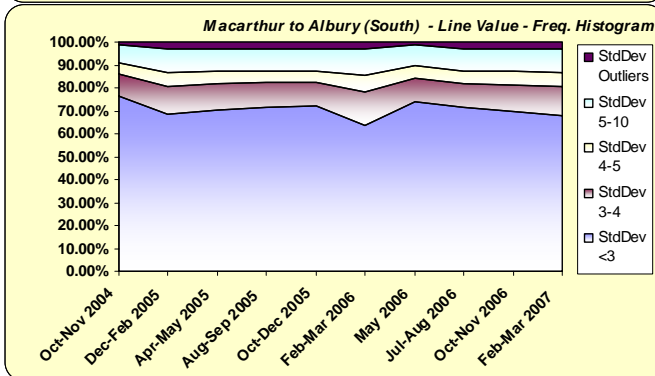
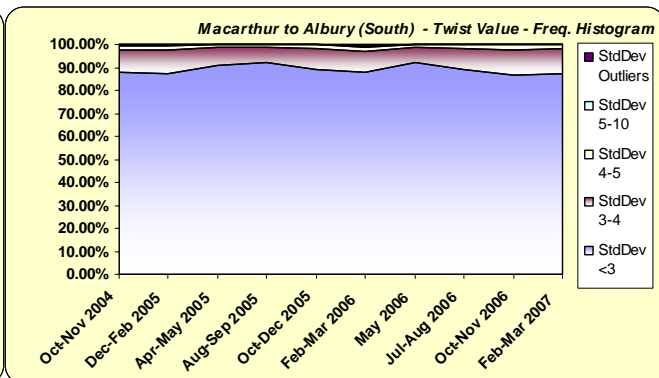
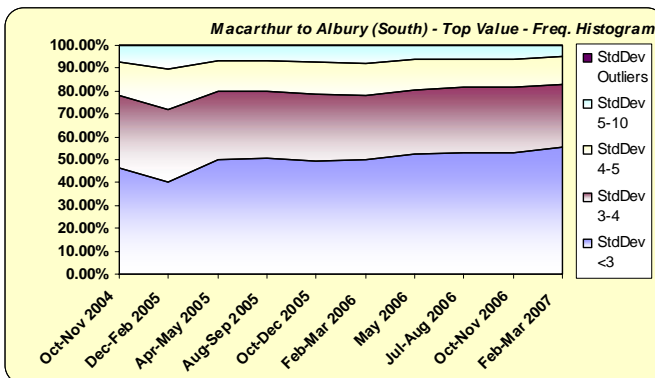
| Region | Measure | Current Lease Annual Limit | Current Lease 5 Year Limit | Current Method 06/07 Result | Proposed Method 06/07 Result | Variation between Current & Proposed | Proposed Lease Annual Limit | Proposed Lease 5 Year Limit |
|--------|---------|----------------------------|----------------------------|-----------------------------|------------------------------|--------------------------------------|-----------------------------|-----------------------------|
| Inland | Top     | 9.98                       | 8.57                       | 8.44                        | 10.92                        | 2.48                                 | 12.46                       | 11.30                       |
|        | Twist   | 9.30                       | 8.91                       | 8.69                        | 7.45                         | -1.24                                | 8.06                        | 7.75                        |
|        | Line    | 10.79                      | 8.32                       | 8.88                        | 8.88                         |                                      | 10.79                       | 9.22                        |
|        | Gauge   | 6.46                       | 5.85                       | 5.99                        | 5.99                         |                                      | 6.46                        | 5.84                        |

### Effects on Trending Graphs

These trending graphs consist of all geometry readings taken for a KPI region up to 30 June 2007, calculated using the revised parameters for Top and Twist. There is no discernable change in the trending graphs as a result of the proposed change.

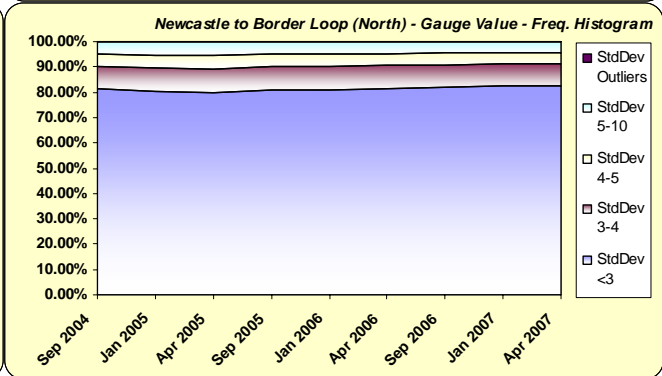
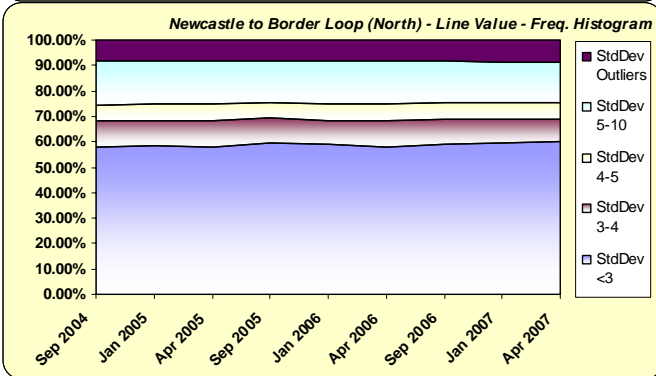
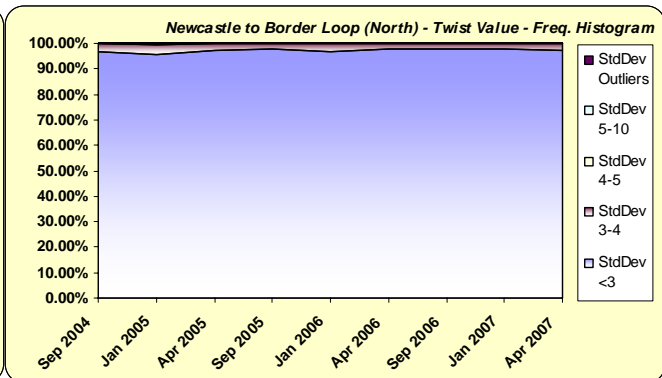
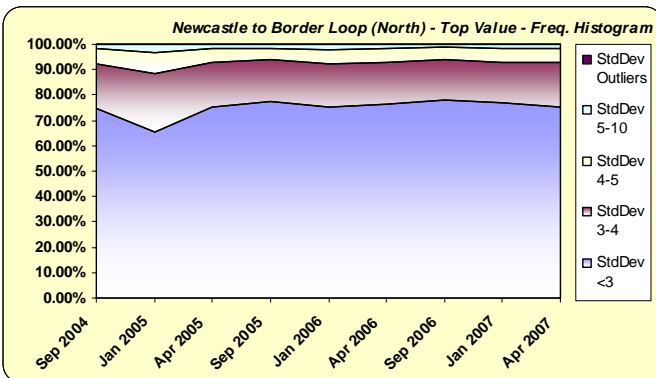
#### South (July 2006 to June 2007)

| South (May 06) | StdDev <3 | StdDev 3-4 | StdDev 4-5 | StdDev 5-10 | StdDev Outliers |
|----------------|-----------|------------|------------|-------------|-----------------|
| Top            | 55.48%    | 27.72%     | 11.69%     | 5.10%       | 0.00%           |
| Twist          | 87.42%    | 10.95%     | 1.47%      | 0.17%       | 0.00%           |
| Versine        | 67.72%    | 13.07%     | 5.92%      | 10.31%      | 2.98%           |
| Gauge          | 88.10%    | 6.90%      | 2.76%      | 2.20%       | 0.04%           |



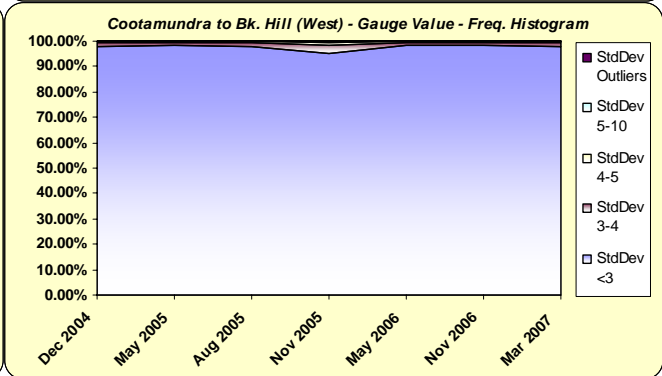
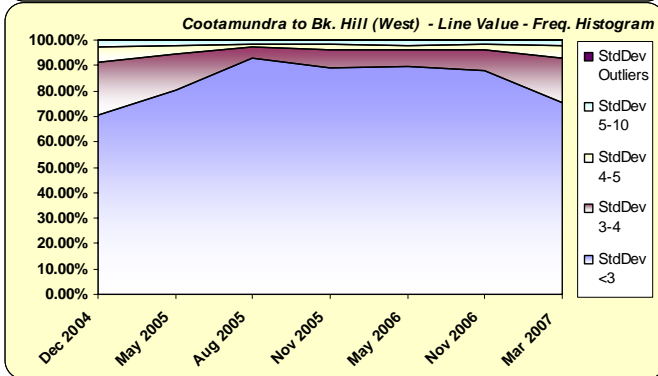
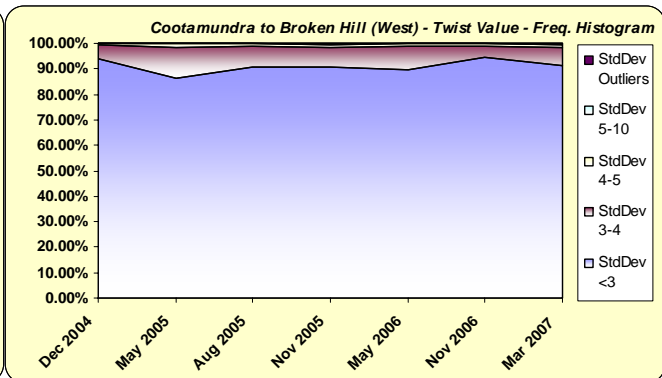
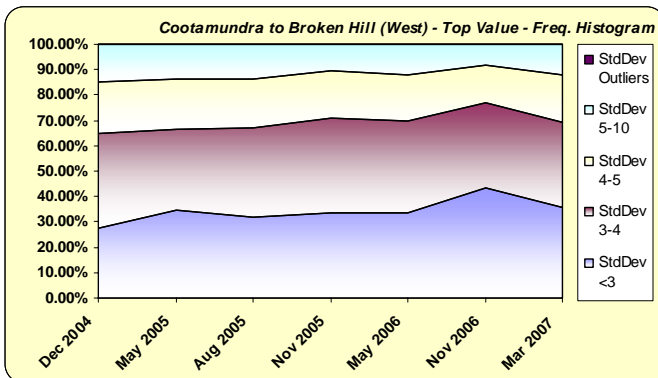
**North Coast (July 2006 to June 2007)**

| North Coast (Apr 06) | StdDev <3     | StdDev 3-4    | StdDev 4-5   | StdDev 5-10   | StdDev  Outliers |
|----------------------|---------------|---------------|--------------|---------------|------------------|
| <b>Top</b>           | <b>75.47%</b> | <b>17.28%</b> | <b>5.39%</b> | <b>1.86%</b>  | <b>0.00%</b>     |
| <b>Twist</b>         | <b>97.18%</b> | <b>2.59%</b>  | <b>0.22%</b> | <b>0.01%</b>  | <b>0.00%</b>     |
| <b>Versine</b>       | <b>60.03%</b> | <b>8.86%</b>  | <b>6.55%</b> | <b>16.04%</b> | <b>8.52%</b>     |
| <b>Gauge</b>         | <b>82.76%</b> | <b>8.70%</b>  | <b>4.38%</b> | <b>4.14%</b>  | <b>0.03%</b>     |



**West (July 2006 to June 2007)**

| West (May 06) | StdDev <3 | StdDev 3-4 | StdDev 4-5 | StdDev 5-10 | StdDev Outliers |
|---------------|-----------|------------|------------|-------------|-----------------|
| Top           | 35.61%    | 33.72%     | 18.49%     | 12.12%      | 0.06%           |
| Twist         | 91.06%    | 7.41%      | 1.25%      | 0.27%       | 0.00%           |
| Versine       | 75.56%    | 17.61%     | 4.59%      | 2.12%       | 0.13%           |
| Gauge         | 98.03%    | 1.43%      | 0.38%      | 0.15%       | 0.01%           |





**Inland Route (July 2006 to June 2007)**

| Inland (June 2006) | StdDev <3 | StdDev 3-4 | StdDev 4-5 | StdDev 5-10 | StdDev Outliers |
|--------------------|-----------|------------|------------|-------------|-----------------|
| <b>Top</b>         | 31.51%    | 34.76%     | 20.84%     | 12.86%      | 0.04%           |
| <b>Twist</b>       | 74.64%    | 21.58%     | 3.05%      | 0.73%       | 0.00%           |
| <b>Versine</b>     | 64.70%    | 17.75%     | 8.10%      | 7.97%       | 1.48%           |
| <b>Gauge</b>       | 90.60%    | 6.66%      | 1.55%      | 0.97%       | 0.22%           |

