COMMERCIAL IN CONFIDENCE

Report on Review of ARTC's Access Undertaking Submission to ACCC

Prepared for

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1.0 Executive Summary

The conclusions of this review are that -

- The application of a DORC valuation is supported
- The overall method employed to construct the DORC is supported
- The DORC is based on a greenfields approach and this is supported
- A random audit of two segments of the network indicate that the ORC could be approximately 10% too low. Given the varying nature of the data used as the basis for the ORC a level of accuracy of plus or minus 10% could be expected.
- The limited work undertaken in regard to optimisation is supportable under current circumstances but would not be sufficient for future DORC revaluations
- The DORC includes an allowance for growth and this is supported
- The assumptions underlying the allocation of costs to segments for the Floor Limit is supported
- The application of the CPI to the DORC within the ceiling revenue equation is questionable
- Given that the DORC is calculated as a fixed percentage of ORC over the period of the undertaking, it is questionable whether it is a reasonable approach to include in the calculation of the revenue ceiling limit, the costs associated with MPM, a proportion of routine maintenance and the depreciation cost associated with signalling and communications
- There are a number of inconsistencies in the application of different 'methods' for depreciation for some asset classes. These would require clarification or the provision of additional information before they could be supported

2.0 Introduction

The Australian Competition and Consumer Commission (ACCC) is currently assessing the draft access undertaking submitted by the Australian Rail Track Corporation (ARTC) setting out the conditions under which users may access interstate rail assets under their control in South Australia, Victoria and Western Australia.

On 22 February 2001, the ARTC lodged an access undertaking with the ACCC. The undertaking sets out the terms and conditions of providing access to the interstate mainline standard gauge track linking Kalgoorlie in Western Australia, Adelaide, Wolseley and Crystal Brook in South Australia, Broken Hill in NSW and Melbourne and Wodonga in Victoria.

Part IIIA of the *Trade Practices Act 1974* (TPA) requires the ACCC to assess the undertaking. If the ACCC accepts the undertaking, then the services covered by the undertaking cannot be declared. This removes the opportunity for access seekers to have the ACCC arbitrate access disputes in relation to services covered by the undertaking, as a first option. Acceptance of the undertaking means that the undertaking forms the basis for access. (Australian Competition and Consumer Commission 2001)

The ACCC has commissioned Currie & Brown to provide an independent desktop review of the Depreciated Optimised Replacement Cost (DORC) valuation prepared by Booz-Allen Hamilton (BAH) on behalf of the ARTC, which supports ARTC's access undertaking. The review was carried out over a sort time frame (4 weeks).

Currie & Brown have also been requested by the ACCC to do a desk audit of the information used by the ARTC to determine operations and maintenance expenditure, to review ARTC's methodology for allocating costs between segments of their business and to comment on the reasonableness of the assumptions underlying the estimation of floor and ceiling revenues.

3.0 DORC Methodology and Audit

3.1 Background

The proposed use and application of DORC in this undertaking is consistent with the Queensland Competition Authority's view that there is a general trend amongst regulatory bodies in Australia to adopt the depreciated optimised replacement cost as the appropriate method to determine asset values for the purpose of setting maximum revenue streams for monopoly infrastructure providers (Queensland Competition Authority 1999)

3.2 DORC Methodology

The following is an 'ideal' approach to a DORC valuation, against which to compare the valuation under review.

DORC represents the unconsumed portion of an asset (i.e. that value which reflects its remaining service life) based on an optimal network. The application of the DORC approach involves the following steps:

1. Network system optimisation;
2. Optimised replacement cost of the asset base; and
3. Asset depreciation.

A further issue relates to whether an optimisation process should be undertaken on a Greenfield (where construction is assumed to exist across an area free of any development) or Brownfield (where all existing infrastructure is assumed to exist) basis.

The rationale for using a DORC to value assets, in preference to other valuation systems, is based on the belief that it provides a greater indication of the opportunity cost to the owner of the assets. It is therefore considered more consistent with the value that would be ascribed to an asset in a competitive market (assuming there is an issue of monopoly pricing for the use of the asset). For example, when an asset such as a computer is superseded, it is quickly devalued in the (competitive) secondary market, irrespective of the original cost of its acquisition.

The advantages of a DORC approach include:

1. The optimisation process ensures that obsolete, poorly sized or poorly located assets are not included in the capital base and consequently are not paid for by users; optimisation is a particularly complex issue. It involves a complex interaction between track infrastructure and rolling stock assets.

The capacity of a rail system depends upon the capacity of trains operating, the number of movements the infrastructure can accommodate, and cycle times. In turn, the capacity of a train is determined by factors such as the gauge of the track, the length of passing loops, grades, curves, topography and so on.

2. As past inflation greatly alters the historical values of similar assets it simplifies the comparison of asset values by valuing assets at current costs; and
3. It establishes asset values that will minimise incentives for 'inefficient' by-pass of the network.

The disadvantages of a DORC approach include:

1. Costly examination and assessment procedures and more subjective judgement in determining the optimal network configuration and the degree of excess capacity deemed to be 'efficient'.
2. Additional complexity is added to the process due to the need to reconcile the existing asset's service capacity and cost profile with that of the optimised configuration.
3. The complexity of implementing a DORC valuation method can exacerbate a price setting body's informational disadvantage relative to the network owner. (Queensland Competition Authority 1999; Ministry of Economic Development 2000)

An assessment of the approach adopted by BAH indicates that it is consistent with the above ‘ideal’ in regard to 2 out of the 3 primary steps. Development of ‘replacement costs’ and ‘depreciation’ has been carried out satisfactorily (see the comments below for more detail). BAH has noted- “Producing a fully optimised network layout normally requires extensive analysis of traffic requirements and detailed computer simulation of the network operation. *Such a rigorous approach has not been possible within the timeframe available to carry out this DORC*. Given the relatively simple nature of ARTC's network, the optimisation process was essentially limited to reviewing the number and placement of crossing loops and associated train control systems, plus reviewing the track structure required for present and future traffic.”

This limited optimisation may be sufficient under conditions where the infrastructure is subject to significant inter-modal competition and the ceiling revenue limit is well above the indicative ‘market’ charges likely to be achievable from the network. It is therefore unlikely to impact on the application of pricing and competition between now and when the next valuation is due. Under these circumstances the approach is not unreasonable. However, it could not be supported for future re valuations.

3.3 Approach to Audit of the DORC

Currie & Brown's approach in reviewing the DORC valuation was firstly to obtain copies of all data given to BAH by ARTC in order to establish the extent and detail of information and data on which the DORC was based.

Meetings were convened with BAH and ARTC and discussions held on various issues.

The unit rates used in calculation of the replacement cost in the report were then benchmarked against rates established recently for similar projects. Currie & Brown have carried out commissions for a number of organisations which have required detailed estimating processes to be adopted. These have included commissions to the Rail Access Corporation of New South Wales and Track Access in South Australia.

The basis of optimizing was then reviewed and compared with other similar exercises.

The method of the depreciation of the replacement costs was then reviewed. A workshop review was carried out which assessed the methodology and approach adopted for each major component of the assets.

Currie & Brown then conducted an audit on two of the segments used by ARTC, starting from the base data provided by ARTC to BAH, then retrieving quantities and applying benchmark unit rates and location factors to arrive at an ORC value for the chosen segments for comparison with the BAH valuation. This desk audit of two segments included bulk checking the quantities adopted for each segment, and reviewing whether all the major components were included accurately.

The methodology adopted by BAH to derive a DORC from the base data was also reviewed. This included reviewing the associated spreadsheet data and inherent formulae.

3.4 Source of Data

The BAH Report was based on detailed data prepared for the ARTC in previous asset studies.

These studies included:

- For South Australian / Western Australian Segments

  Connell Wagner information used in their 1997 Asset Re-Valuation Project for Track Access (ARTC's predecessor)

- For Victorian Segments

  Sinclair Knight Merz detailed asset condition study prepared in 2000 for the Department of Infrastructure Victoria and the ARTC.

Both these studies were used as a basis for BAH to prepare a desktop DORC required by the ARTC for their access undertaking.

The data and subsequent DORC was divided into geographical segments of the track matching those adopted by the ARTC in their undertaking namely:

Pricing Segment Code	**Geographical Name**
1	Adelaide to Parkeston, subdivided into
1.1	Dry Creek (inclusive) to Crystal Brook
1.2	Crystal Brook (inclusive) to Port Augusta
1.3	Port Augusta (inclusive) to Tarcoola
1.4	Tarcoola (inclusive) to Parkeston (inclusive)
2	Crystal Brook to Broken Hill (Kanandah) (inclusive)
3	Dry Creek to Melbourne (Spencer Street) (inclusive)
4	Dry Creek to Adelaide Outer Harbour (inclusive)
5	Melbourne (Tottenham) to Wodonga (inclusive)
6	Port Augusta (Spencer Junction) to Whyalla (inclusive)
7	Melbourne (Appleton Dock Junction) to Melbourne (Appleton Dock) (inclusive)

The track from Tarcoola to Alice Springs was not included in the DORC valuation, as ARTC will soon lease this segment to the Asian Pacific Transport Consortium.

3.5 Replacement Costs

BAH in arriving at the replacement cost have broken up the cost into readily definable components of the asset. They then used the source data and applied unit rates derived from first principles or taken from the Connell Wagner study.

Currie & Brown has been able to benchmark and consider the suitability of the unit rates by comparing them with rates used for similar recent exercises.

All replacement costs were adjusted to include for the main contractor's margins, and design and the authorities management fees.

The replacement cost does not include for the cost of land or project financing costs.

The replacement cost is based on a greenfields site ie. across an area devoid of community development and existing infrastructure. This was also the case for RAC valuation, but the brownfields option was adopted by Queensland Rail. Currie & Brown concur with BAH that, with the exception of the urban areas (which represent a very small portion of the overall track), the largely rural areas through which the ARTC assets were constructed were effectively greenfield developments.

The replacement cost also does not include allowance for replacement occurring under traffic ie. while track still operates. This is in line with the RAC & QR valuations.

3.5.1 Location Factors

BAH have applied a location factor established by Connell Wagner to account for increased costs due to distance from source of product or labour.

Currie & Brown agree that there could possibly be such a factor, but that it would vary for each component of the replacement cost and would be very difficult to establish. Currie & Brown question the degree of accuracy reflected in the location factors of 1%.

3.5.2 Track

Track includes rail, sleepers, fastenings and ballast. BAH have adopted a 50-53kg/m rail size for the total track with concrete sleepers. This would seem suitable.

The quantity of track has been taken from Connell Wagner and SKM data and optimised.

The unit rate used for track before location factors are added is $422,000 per kilometre, and with location factors an average of $445,000/km (not $455,000 as BAH report)

- This compares with Currie & Brown unit rates of $450,000 to $500,000/km

Currie & Brown consider that the rate used by BAH is marginally low and could be increased by 8% to $480,000/km.

3.5.3 Turnouts

Separated as

- Primary turnout – connecting directly to ARTC line
- Secondary turnout – connecting to non main line track

Quantities for turnouts are based on Connell Wagner and SKM numbers and optimised.

The unit rate used for turnouts with location factors is on average

- Primary $140,000
- Secondary $127,000

- This compares with Currie & Brown unit rates of $200,000 and $140,000

Currie & Brown consider the rates used for turnouts to be low by approximately 10%.

3.5.4 Structures

Structures includes underbridges and culverts, but excludes overbridges and footbridges.

Quantities for structures are based on Connell Wagner and SKM databases for South Australia, Western Australia and Melbourne to Wodonga, with pro-rata Adelaide to Victoria border used for the Victoria border to Melbourne.

Unit rates used by BAH are as used by Connell Wagner for the ARTC re-valuation plus 10% for inflation to 2001. We have assumed the Victorian section which is based on SKM data is priced using Connell Wagner rates.

The tabulated unit rates used for underbridges and culverts are considered appropriate.

3.5.5 Earthworks

Earthworks comprise the earthworks for cuttings and embankments required to support the tracks. Quantities are taken directly from the Connell Wagner database for South Australia and Western Australia with an assumption made for the volume of cut and fill for the Victorian segments applied to lengths given by SKM. Currie & Brown concur with this assumption.

The unit rates used for embankments and cuttings and for drainage along the length of each are acceptable.

3.5.6 Signalling, Train Control and Safe Working

Replacement Safe Working System and Signalling Equipment is described in Table 9 of the BAH report. The unit rates for Single Line Sections appear low, Level crossings do not appear to have been priced in the model and therefore appear to have been excluded.

3.5.7 Communications

Information supplied is very basic but adequate to establish an indicative replacement cost.

Unit rates used by BAH represent a fair basis for replacement cost.

3.5.8 Fences and Level Crossings

Fences have been included for one side of the entire track length at $15,000 per kilometre. This would seem excessive but the extra cost is not a major proportion of the DORC valuation.

Level crossings are based on quantities provided by SKM for Victoria with one crossing per 4 kilometres outside of Victoria. This would seem adequate. The unit rate for crossings of $12,700 is appropriate.

3.6 Depreciation

In the preparation of the DORC, BAH have adopted a number of methodologies for the depreciation of major components of the assets. There has been reliance on asset and condition data prepared by Connell Wagner and (SKM). The Connell Wagner data has been utilised for the South Australian and Western Australia part of the network and the SKM data for the Victoria part of the network.

3.0 DORC Methodology and Audit (continued)

Outlined below is a summary of the methodologies used for the major components of the network.

Component	***Rate of Depreciation***		***Type of Depreciation***	
	WA, SA	***VIC***	***WA, SA***	***VIC***
Rail	SL	SL	Usage	%condition
Ballast*	SL	SL	% condition	% condition
Sleepers	SL	SL	Condition	Usage*
Turnouts	SL	SL	Condition of turnout	Condition of adjacent track/rail
Earthworks	SL to 50% then Capped	SL to 50% then capped	Age	Age
Structures	SL	SL	Age - relife for 10 years if life greater than 100 years	Age – relife for 10 years if life greater than 100 years
Level Crossing	SL	SL	Age 50% life consumed	Age
Signals	SL	SL	Age – 3 year relife if older than 30 years	Age – 3 year relife if older than 30 years
Communications	SL	SL	Age Radio – 15 years Cable – 20 years	Age Radio – 15 Years Cable – 20 Years

We discuss below the methodology adopted for each major component of the infrastructure.

3.6.1 Rail

The methodology adopted for depreciating the rail assets differs between the network in South Australia and Western Australia, and the network in Victoria. This is because the asset data base for SA and WA generally identifies the age of the assets, but does not provide sufficient condition data to enable a condition based depreciation methodology to be adopted. The SA and WA rail's life consumed has therefore been based on usage(estimated tonnage carried). The asset database for the infrastructure in Victoria does contain condition information and accordingly this has been used to assess the life consumed of rail.

We note that the depreciation for rail assets in Victoria varies from 39% to 57%, and for the Segments in Western Australia and South Australia varies between 29% and 56%.

3.6.2 Sleepers

For the SA and WA segments which is based on Connell Wagner data, a similar approach was adopted as for the rail above, which was usage expressed in MGT. It is not clear why this has been expressed and related to a sleeper life of 50 years and therefore the depreciation methodology is not clear from the report.

For the assets in Victoria a condition based methodology has been used and this is considered appropriate.

3.6.3 Ballast

BAH have based the consumed life of ballast on TRC data for the whole network. We concur with this approach.

3.6.4 Turnouts

There is a lack of data supporting the condition of the turnouts in South Australia and Western Australia. It has been assumed in the BAH report that turnouts are therefore in the same condition as the adjacent track. We would expect turnouts to depreciate faster than the adjacent track.

The turnouts in Victoria have been depreciated based on condition data in the Sinclair Knight Merz approach. This is a reasonable approach.

3.6.5 Structures

A consistent approach has been used across the network. The rationale behind linking a good, poor and fair condition to a 15% differential is not clear.

3.6.6 Earthworks

The BAH report states that "Earthworks are assumed to be a perpetual asset in that given appropriate maintenance they do not wear out". Earthworks are then depreciated on a straight line and capped at 50% if older than 50 years. If earthworks do not wear out, we question whether they should be depreciated.

We understand that the earthworks component of the assets also includes drainage to the track formation. Whilst this is a minor component of the cost, this element would in fact depreciate.

3.6.7 Signalling and Communications

These assets have been depreciated on the basis of age relative to assessed economic lives of 30 years for signalling, train control and safeworking assets, 15 years for radio equipment and 20 years for cabled communications. This is a reasonable basis.

3.6.8 Level Crossings and Fences

The basis for depreciation of the assets in Victoria was the Sinclair Knight Merz condition data. All fences and level crossings outside of Victoria have been assumed to be 50% life consumed.

We note that in Victoria the Tottenham to Wodonga segment has been depreciated by 17%, and the South Australian border to Spencer Street by 24%.

3.7 Future demand /Levels of traffic

It is generally accepted that a DORC valuation should include an allowance for future demand. BAH have interpreted this requirement narrowly as only including an allowance for growth. The justification for

allowing for growth in a regulated asset base is that even in competitive markets, future demand is not known with certainty and a certain amount of excess capacity is 'normal', particularly when investment decisions involve a significant time lag. To only allow the infrastructure provider to recover the costs of capacity actually in use at any point in time would be particularly harsh and could potentially discourage investment. (Ministry of Economic Development 2000) Regulators therefore allow the infrastructure owner to recover the costs of investing 'ahead of demand' even though current demand may not make full use of the capacity. The valuers note that in NSW, IPART allows 5 years of growth to be considered in the DORC valuation.(BAH, 2001)

ARTC puts forward the view that the BAH valuation understates the value of the Network in that it does not fully address the future demand characteristics of the Network. ARTC points to the need to more fully comprehend user demand for increased capacity and performance levels. This demand has been characterized by standards required of the Network, agreed by the Australian Transport Council in November 1997, relating to the extent of speed restrictions, maximum and average train speeds on the Network at various axle loads, and allowable train lengths. ARTC expects that over the Term of the Undertaking, floor and ceiling revenue limits will become insufficient to reflect the network value and allowance should be made in the current assessment to mitigate this risk. (Australian Rail Track Corporation 2001).

It is difficult to locate methodological or specific data to support the position adopted by ARTC in regard to these matters. There is strong support for the view however that the DORC is designed to ‘reduce’ the level of valuation and that it is inappropriate for it to be a measure of what the access provider would like it to be (Ministry of Economic Development 2000). The approach adopted by BAH is therefore supported.

3.8 Random Segment Audit

Currie & Brown conducted an audit of two segments of the Network.

The two segments chosen were:

- Port Augusta (inclusive) to Tarcoola
- Melbourne (Tottenham) to Wodonga (inclusive)

The choice was made on the basis that one used the Connell Wagner re-evaluation data and one used the SKM condition data.

The audit used the base data as optimised in the BAH Report and applied Currie & Brown replacement costs and location factors.

Both segments audited showed an increase in the ORC of approximately 10%. The differences being mainly in track and signalling components.

Considering the varying nature of the data used, Currie & Brown consider the 10% differential as being a reasonable level of accuracy. Based on the level of detail available it could be expected that an assessment of replacement cost would have a degree of accuracy of plus or minus 10%.

4.0 Operating and Maintenance Costs

Routine maintenance refers to track maintenance that is necessary to ensure a segment remains operational. It has been categorised as either track maintenance or signals and communications maintenance (S&C).

It is difficult to benchmark the maintenance expenditure meaningfully against other comparative data. We do however consider these costs to be low. There is reference in the Queensland Competition Authority's report on Queensland Rail to inspections and routine maintenance costs being $14,000 per km per year.

The allocation of projected routine maintenance to the various segments is based on information provided by contracted maintenance providers, Transfield and EDI. We understand this has been extracted from historical records for this category of maintenance. This is a reasonable approach. Other expenditure which is not readily identifiable with a segment has been allocated on the basis of 60% GTK and 40% track kms.

It could be expected the track km related allocation to be higher than 40%, say 50 or 60%, but it is not possible to be more precise without access to daily work records or similar.

The outsourcing of maintenance to Transfield and EDI is an approach which has been adopted across a range of industries in the 1990s. Currie & Brown have been involved with numerous organisations who have procured maintenance with this approach in an effective and efficient way. We note that whilst this procurement method is likely to attract competitive pricing for the services delivered, this does not in itself guarantee efficient infrastructure maintenance practice. We also note that ARTC has moved towards "alliance" agreements with its maintenance providers.

In addition to routine maintenance, Major Periodic Maintenance (MPM) is also carried out. The projected expenditure on MPM has been derived from the 5, 10, 15 year Asset Management Plan for the network (dated 19 April 2000). The projected MPM plan comprises a number of individual "projects" to retain functional condition by renovating or replacing infrastructure. The projections of work are forecast for each year to year 15 and have been included in the regulatory revenue limit calculations as a levelised amount. The levelised amount is the average of annual expenditure on MPM over the 15 years of the asset management plan. This is a reasonable approach.

MPM has been further categorised into track maintenance, and signals and communications maintenance. The preparation of an asset management plan and the projection of anticipated expenditure on MPM is in itself good practice in maintaining an asset.

4.0 Operating and Maintenance Costs (continued)

Maintenance contract management is performed by personnel in the Infrastructure and Engineering Group of ARTC. This represents a 6% mark up on ARTC's annual contract maintenance and capital expenditure. This expenditure has been allocated on the basis of train kms. An alternative approach would be to allocate this expenditure in proportion to the maintenance and capital expenditure for each segment.

Train control, planning and safety management expenditure is forecast at approximately $5m in 2001/2002 and $5.5m in 2005/2006. ARTC have benchmarked these costs against various sources on the basis of $ per train kms. The costs compare favourably.

Expenditure on train control functions and planning has been allocated to segments on the basis of train kms. This is a reasonable approach.

System management costs which include IT, property management, billing/credit, security, strategic planning and corporate activities have been allocated to segments on the basis of train kms. This is reasonable.

5.0 ARTC Ownership

In discussions with ARTC and ACCC we understand that ARTC are in possession of documentation which effectively transfers ownership of the South Australian and West Australian assets, and that the ACCC has a copy of the lease documents for assets in Victoria.

We have not pursued any further substantiation of asset ownership.

6.0 Floor and Ceiling Price Limits

6.1 Floor Limit

The Floor Limit means the charges which, if applied to all operators on a segment or group of segments, would generate revenue for ARTC sufficient to cover the incremental cost of that segment or group of segments. Incremental costs mean the costs that could have been avoided if a segment was removed from the network excluding depreciation and a return on assets employed.

ARTC have made a series of assumptions in allocating costs to segments. The avoidable costs include some or all of the maintenance cost directly associated with a segment, some or all of the indirect maintenance costs allocated to a segment, and some or all of the indirect train control and management costs allocated to a segment.

Track, signals and communications maintenance costs have been assumed to be 100% avoidable with respect to key trunk segments (Dry Creek – Parkeston, Dry Creek – Spencer Street, Tottenham – Albury, Crystal Brook – Broken Hill). It has been assumed that other parts of the network only have 75% of maintenance expenditure to be avoidable. Currie & Brown concur that this is a reasonable assumption given that a proportion of costs to deliver maintenance to the network would remain fixed even if other smaller parts of the network were “removed”.

Contract management costs have been assumed to be 50% avoidable for key trunk segments, and not avoidable for other segments. Whilst this is a subjective assumption, it is considered that the avoidable cost for the key segments could exceed this 50% assumption.

Train Control and Communications have been assumed to be 100% avoidable for the key trunk segments and not avoidable for the other segments. This is a fair assumption.

Train planning and safety administration, and system management and administration have been assumed to be 50% avoidable for the key trunk segments and not avoidable for the other segments. These are fair assumptions.

6.2 Ceiling Limit

In this instance, the proposed ceiling limit is substantially above the proposed indicative charges. Several of the submissions, in response to the draft access regime, have highlighted the disparity and the potential detrimental impact of this on access seekers. Whilst the DORC approach has achieved ‘hegemony’ (Productivity Commission 2001) there is evidence of modifications and departures from the DORC approach in Australia and these are driven by the particular circumstances of the access regime.

In relation to the access arrangements for the proposed central Australian rail line, the National Competition Council concluded it was prepared to accept the mandating of DORC on condition that the Regime specified that its application in this context should take account of the cash and asset subsidies granted by the State and Federal Governments.

The valuers of the ARTC Network, BAH, have indicated that under current conditions it seems unlikely the ceiling test will be a binding constraint on pricing. (BAH, 2001) The question that arises is, given the factors outlined above, how long will current conditions pertain and will there be further changes which will impact the competitive and monopoly position of the ARTC. It is not inconceivable that ARTC's monopoly position will be 'enhanced' or at least could be, if Commonwealth aspirations are achieved. Under those circumstances it seems highly prudent to take a conservative position in regard to structuring the pricing regime. In the short term, and ignoring that potential, it may seem desirable, to access seekers (as set out in some submissions by current ARTC customers) that a lower ceiling revenue limit be established and that a present value approach to future cash flows may provide this.

Given that it is not inconceivable that the monopoly conditions of ARTC may 'grow', then the current approach towards valuation and pricing through the use of DORC should be maintained and is the preferred position, especially to protect the price available to access seekers. However, if the investment made by Government in relation to the track controlled by ARTC is considered to be consistent with the application of funds by governments in relation to the central Australian rail line, then this would provide some reduction to the DORC calculation and would reduce the value arrived at for the ceiling revenue limit.

ARTC have not included any depreciation as a cost to the track, formation and structure related assets. This approach has been adopted on the basis that sufficient MPM is forecast to be applied to these assets to maintain the assets in a steady state. If the assumptions underlying the projected expenditure in the asset management plan are sound then this approach is reasonable. If the projected expenditure on MPM is insufficient then it follows that the DORC would further reduce overtime.

6.3 The Revenue Ceiling Equation

A renewals annuity approach has been applied to the majority of the asset base for the purposes of calculating the ceiling revenue limit. The useful life of ARTC's assets is kept at a "steady state standard in perpetuity" through regular maintenance, which is expensed and passed on to operators as part of the access charge. As the assets do not decay, the component of the depreciation charge, which is intended to reflect the gradual erosion of the assets' physical capabilities, is zero. As for the economic life of the

asset base, ARTC considers that neither loss of rail freight business nor technological changes are likely to render the tracks "stranded". As such, track assets are deemed to have an infinite economic life and thus no depreciation is required. However, some assets are deemed to have a limited economic life due to the possibility of technological obsolescence, viz., signalling and train control assets, communications equipment and cabling. A depreciation charge of $6.8 million is included in the revenue-ceiling limit in respect of these assets. (Australian Competition and Consumer Commission 2001)

The ORC is inflated over the period of the undertaking by application of the CPI. The DORC is then calculated as a fixed percentage of the ORC over the same period. This effectively inflates the DORC by CPI. It is not clear what relevance a CPI inflator would have to a DORC valuation as it is questionable whether a movement of DORC values would be consistent with movements in an index such as CPI.

In the calculation of the Ceiling Limit, if the DORC remains as a fixed percentage of the ORC which is inflated by CPI, it is also questioned whether it is then appropriate to include further expenditure on MPM, a proportion of routine maintenance and depreciation on signalling and communications assets. The approach to MPM, routine maintenance and depreciation on signalling and communications would seem reasonable if the DORC was adjusted to reflect diminution of the asset base over time for the period of the undertaking.