An Analysis of Australian Port Pricing Policy with Particular Reference to the Australian Automotive Industry

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Abstract:

The Commonwealth Government's waterfront reform process has concentrated on improved productivity on the waterfront but has not completely addressed the high cost structure of Australian ports relative to their overseas counterparts. The relativity of such costs is of importance to Australian import and export trades.

This paper is based on research carried out in the Australian automotive industry in 1991. It details the costs in four major Australian ports, by category of cost and unit/method of charging, based on an industry-agreed cargo scenario. A comparison is then made with a number of overseas ports of importance to the automotive trade. Using a series of benchmarks, developed from this analysis, a target level is then recommended for the various categories of port costs which have to be met by automotive industry importers or exporters.

These benchmark costs are then used to calculate the level of savings which would accrue to the automotive industry if a more world-competitive costing environment applied in Australian ports.

In broad terms the paper shows that the charges in the four Australian ports studied are at least twice as high as are those in overseas ports involved in the automotive import/export trade. The targets proposed reduce this imbalance substantially.

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Christopher
Introduction
This paper is based on the results of a research consultancy carried out for the Federal Chamber of Automotive Industry (FCAI) in 1991. The purpose of the consultancy was to develop a set of benchmarks that would reduce the import/export costs of automotive products. Such benchmarks needed to be supported by quantitative data which could be used in industry representations to Government organisations or the Waterfront Industry Reform Authority (WIRA).

Aim
The aim of this paper is to recommend a series of benchmark port costs which would put Australian automotive importers and exporters on a more equal footing with their overseas competitors.

Methodology
This consultancy required the compilation of specific port costs, in Australia and overseas, which applied to the automotive industry. The emphasis throughout the study was on the import and export of automobiles, either in completely built-up (CBU) or completely knocked-down (CKD) form. In the past some of the criticism of port costs had been on a subjective, and to some extent anecdotal, basis. The FCAI was aware of the need to be able to produce quantitative data which would reinforce the general perception in the industry that Australian port costs were high in comparison to overseas costs.

Before the quantitative data analysis was attempted a series of interviews was conducted to determine the views of the automotive manufacturers and importers, and their supporting automotive parts manufacturers, toward port costs and service. These interviews were supplemented by further discussions with port authorities, shipping lines and stevedores.

Interview results
The interviews produced some specific industry views on the subjects of port costs. These industry views are summarized below with explanatory comments.

- Port authority charges levied on Pure Car Carriers (PCCs) in Melbourne and Sydney are unduly high.

  Comment. These charges are based on the high Gross Revenue Tonnage (GRT) of PCCs. As a result of the high GRT charges one manufacturer, Nissan, moved the port of import for CBUs from Sydney to Brisbane and the automotive manufacturers in Melbourne demanded, and received, a concession of about 30% on GRT charges for PCCs. A similar concession had earlier been granted by the Maritime Services Board in Sydney.

- There is a lack of consultation and transparency in the port authority charges.

  Comment. The automotive industry was concerned that port authorities were putting in place charging structures without taking into account the views of their clients. This was alleged by the industry, had been particularly noticeable in the charging structure introduced into the Port of Melbourne in October 1990. The relationship between some of the charges, and the items on which they were levied, was not clear. In this regard it should be pointed out that a revised charging policy for the Port of Melbourne has been the subject of much discussion in 1992, and a structure acceptable to shipping lines, stevedores, shippers and the port authority has still not been achieved.

- Damage levels to CBU and CKD cargo are considered excessive.

  Comment. The definition of damage to CBUs is a problem. Although FCAI has guidelines on what constitutes damage these may not be applicable to more expensive vehicles. A more specific example is damage to CKD consignments. Compared with one major automotive manufacturer world-wide acceptance criterion of not more than 0.75% of CKD consignments suffering damage of any description, the figures for Melbourne and Sydney in 1991 were:

  - Melbourne. Approximately 3.4% of consignments damaged in some form. In 1990 damage had peaked at 5.9% but dropped to 0.48% after remedial measures were introduced.
  - Sydney. CKD consignments from conventional shipping suffered damage rates of 4.15% of the number of CKDs landed. For Roll-On/Roll-Off (RO/RO) and PCC shipments of CKDs the damage rates were much lower at 1.55%.


- Additional inventory had to be held to cover delays in clearing containers from the port or for insuring against delay in shipment of exports.

  Comment. In an interview with the Holden Engine Company (HEC) logistics manager the point was made that, in 1991, delays in clearing containers from the port resulted in the need to hold additional inventory to ensure that production was not delayed. Another automotive parts manufacturer stated that his overseas contract required the holding of an additional 40 foot container of components in the United States of America as insurance against delays in delivery from Australia. The comment was made several times during the consultancy interviews that Japanese manufacturers insisted on absolute compliance with contract delivery schedules and that Australian exporters were placed at a significant disadvantage when waterfront delays made it difficult for them to meet this criterion. Critics may say that this anecdotal and that some recent improvements in the shipping and waterfront sectors of the Australian maritime industry mean that such views have little significance. Nevertheless, these views were still held by a number of major manufacturers of automotive products as late as November 1991.

- There are no discernible benefits, in terms of cost reductions, for shippers flowing from the WIRA reforms.

  Comment. This is one of the most contentious issues arising from the qualitative stage of the analysis and has been criticised by some as arguable and not true. From the industry point-of-view the statement that shipping and stevedoring costs have not risen during the period of the WIRA reforms is not adequate justification for a continuation of the present level of charges. The automotive industry asserted in its submission to the PSA inquiry into land-based charges in Australian ports that the benefits from the waterfront reform had not been passed on to that industry.
Enterprise Agreements were seen as a forward step but the automotive industry was critical of the lack of shipper involvement in the negotiations leading to such agreements, particularly with regard to the threshold of bonus payments.

Comment. In subsequent discussions the stevedoring companies made the point that such negotiations involved up to 30 people and were essentially a matter for the stevedores and the unions concerned. Further, the cost of incentive payments would be more than compensated for by the resultant increased productivity eg such arrangements would see an increase in container throughput from 18 TEU (Twenty Foot equivalent units) per crane hour to 25 TEU per crane hour, with consequent savings in ship turn-around time and associated port costs. However, the important aspect of the automotive industry view is not that bonus payments in themselves are wrong but that the industry, as the shipper, was not given some opportunity to comment on what would be an appropriate threshold for the commencement of bonus payments.

The relationship between the shipping companies and their stevedores is close, as would be expected from the contractual arrangements involved. However the shipper has little input into this arrangement and, in many cases has no choice but to accept the stevedore the shipping company has engaged.

Comment: There was a widespread belief in the automotive industry that contact between the industry and a stevedore about CBU and CKD unloading arrangements was discouraged by the shipping companies. Further, the shipping charges, which include a stevedoring element, were almost impossible to dissect. Another criticism was that the industry, and some shipping companies, view that the industry could force stevedores to provide flow-on cost reductions resulting from waterfront reform was unrealistic given the limited freedom that shippers had to choose their own stevedores. The automotive industry felt that there should be much greater transparency of stevedoring costs, including those forming part of the shipping company total cost, and that the shipper should have more freedom to discuss cargo exchange operations with the stevedoring company concerned.

The role of the port authority should be essentially that of a landlord in the port and should not include paying dividends to State governments but should concentrate on self-funding procedures which would facilitate the operation of commercial enterprises in the port.

Comment. The extent to which the port authorities were involved in the setting of port costs was a matter of concern to the automotive industry. Many of the costs, the industry felt, were of a type that should be set by commercial organisations based on normal market place pressures. The requirement for port authorities to pay dividends to State governments was seen as a form of hidden taxation which had the inevitable effect of raising overall port costs eg in 1991 the Maritime Services Board paid the NSW Government $30 million as a dividend payment despite the fact that there had been a five per cent increase in port charges. A similar comment was made by the Australian Shipping Users Group in a March 1991 letter to the Premier of Victoria on Port Reform Proposals for the Port of Melbourne. With regard to port pricing, the letter proposed that:

"The ports affairs should be restructured so that the Authority's (Port of Melbourne Authority) costs and revenues relate only to:
(a) the safe movement of vessels to and from, and within the port;
(b) the leasing of areas within the port under the control of the Authority for the purpose of seaborne trade facilitations and recreational and other boating/shipping activities."

The issues highlighted in the interviews fell into three distinct categories. These were:

1. Organisational Problems - internal problems within the automotive industry itself which prevented it from acting as a unified association as does, for example, the Australian Peak Shippers' Association (APSA). These problems are now being addressed.

2. Operational Problems - the problems the automotive industry experiences in maintaining adequate links with all elements of the waterfront - the port authorities, shipping companies and stevedores. Generally the contact between automotive industry organisations and the shipping lines (or their agents) is reasonably close but this is not necessarily the case in regard to contact with the stevedores or the port authorities.

3. Waterfront Charges - the total of the costs resulting from port authority, shipping line and stevedore charges. The emphasis in this consultancy analysis was on port authority charges and, in this case, a major issue has been the change in port pricing from a cargo-oriented to a slip (tonnage) based system. This system has advantages for the shipper, if the method of calculating the tonnage charge impacts evenly on all shipping, because of the greater visibility of the components of the GRT charge compared with the more general application of cargo-based charges such as Wharffe. In the case of PCCs, the tonnage (GRT) charges in Sydney and Melbourne placed such vessels at a disadvantage compared with other shipping because of the very high GRT of the PCCs compared with the cargo carried.

The last issue, port authority charges, was the subject of the quantitative research carried out during the consultancy and is discussed in the next part of this paper. To conclude this section on automotive industry qualitative perceptions of the waterfront, it is emphasised that the fact that there has been little or no downward movement of waterfront charges to shippers is a matter of considerable concern to car manufacturers.

The automotive industry is moving to a "cost down" rather than "cost plus" policy and cannot see why other suppliers of services cannot do the same.

Quantitative research

The methodology involved in the quantitative research phase of the consultancy was designed to establish a relativity of Australian and overseas port costs for a given consignment of automotive products. The industry view was that such a consignment should be based on CBUs carried as part of PCC cargo.

It could be argued that basing relativity on one consignment of CBUs constrained the validity of the research. However the data base, for relativity purposes, was dependent more on the number of ports surveyed than on the size of the consignment involved. In this case a specific consignment of 230 CBUs landed in Adelaide was used as the comparator. Other consignments could have been used but this would only have changed the quantum of costs. It would have not altered the relativity of port costs because overseas costs would have varied in the same ratio to those of Australian ports as the size of the consignment rose or fell. The chosen scenario was...
discussed with the automotive industry and Australian port authorities and was accepted as a sound basis for establishing a comparative costing pattern.

The four ports of importance to the automotive industry, as stipulated in consultancy briefings, were Brisbane, Sydney, Melbourne and Adelaide. Fremantle was not included because the automotive import trade for West Australia is not as significant as it is in the other ports, and no automotive exports of any significance are processed through Fremantle.

Major automotive manufacturer import and export figures for 1990, on a national basis, are shown in Table 1 below. The automotive manufacturers at the time of the consultancy were Ford, GMHA, Toyota, Mitsubishi and Nissan.

Table 1: Manufacturers’ National Import/Export Figures - 1990

<table>
<thead>
<tr>
<th></th>
<th>CBU (by numbers)</th>
<th>CKD (by cube)</th>
<th>TEU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Import</td>
<td>146139</td>
<td>750619m³</td>
<td>16540</td>
</tr>
<tr>
<td>Export</td>
<td>35880</td>
<td>(Note 1)</td>
<td>2500</td>
</tr>
</tbody>
</table>

(Note 1: Ford CKD exports to New Zealand are included in the TEU figures.)

By far the most important export port is Melbourne. In 1990, 96% of new assembled (CBU) exports went to the USA and New Zealand from the Port of Melbourne. The relativity of the total (import/export) trade to the four major and eastern southern ports is shown in Table 2.

Table 2: Relativity of Automotive to Other Classes of Imports and Exports (in Revenue Tonnes - 1990/1991)

<table>
<thead>
<tr>
<th>Port</th>
<th>Percentage of Import/Export Trade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brisbane</td>
<td>0.5</td>
</tr>
<tr>
<td>Sydney</td>
<td>2.6</td>
</tr>
<tr>
<td>Melbourne</td>
<td>10.5</td>
</tr>
<tr>
<td>Adelaide</td>
<td>5.9</td>
</tr>
</tbody>
</table>

(Source: Information received from Port Authorities in Brisbane, Sydney, Melbourne and Adelaide during the consultancy.)

It became evident early in the consultancy that it was necessary to consider port costs under their appropriate categories. These are shown at Appendix 1.

For the purpose of analysis a particular actual scenario was chosen. The details of this scenario are as follows:

- **Vessel:** Australian Seawood
- **Cargo:** 230 x CBU @ 10m³
- **Time alongside:** 5 hours

The K Line estimate for this scenario for Australian ports is at Appendix 2 and the relevant Port Tariffs are listed in the References at the end of this paper. These figures have been cross-checked with the port authorities concerned and, with one or two exceptions, are agreed as realistic. The figure quoted by K Line for launch and line men in Melbourne is considered high by PMA but the K Line spokesman reiterated that the figures agreed with normal costing procedure.

This comparison of Australian port charges was useful for two reasons. First, it established the cost relativity of the four ports studied. It must be noted that the Melbourne charges do not include the 30% concession on tonnage for PCCs which became effective on 1 January 1992 (these concessions were not in force at the time of the consultancy). Secondly, it highlighted costs in each of the ports which seemed to be higher than in the other Australian ports. An example of this is the cost of tugs in the Port of Adelaide.

For the consultancy analysis to be meaningful it was necessary to apply the same scenario to a number of overseas ports of importance to the automotive industry. Data was obtained on ten overseas ports which are listed at Appendix 3.

Appendix 4 shows the port charges which would apply to the selected scenario in overseas ports for each specific category of charge. To determine the cheapest individual charge a single in or out cost was calculated.

In the case of pilotage, towage and mooring/unmooring the costs shown in Appendix 4 would apply both on entrance and exit i.e., the total charge for these categories would be twice the figure shown. For the other charges a single cost applies. The two figures shown for the Japanese ports for Navigation Charges represent the first yearly charge and the subsequent charge for visits that year.

The automotive industry also required that 'best practice' be established for the various categories of costs in overseas ports. By this the industry meant 'lowest' cost. It is accepted that 'lowest cost' need not necessarily mean 'best practice', but to the automotive importer/exporter such a distinction does not carry a great deal of weight.

Given an appropriate quality of service (which, in the industry's view does exist in the overseas ports listed in Appendix 3) those ports with lower charges than others were considered to represent 'best practice'.

A larger and smaller Australian port (Melbourne and Brisbane) were then compared with the lowest costs established from the overseas port analysis. This comparison is at Appendix 5. This gives a measure of the extent to which costs in the two Australian ports exceed comparable overseas costs. However it should be noted also that no overseas port meets all the minimum costs shown. Some specific Australian costs eg State duties, Commonwealth light charges and, in the case of Brisbane, Harbour dues, have not been compared in the Appendix.

Appendix 6, based on similar cargo exchange scenarios, demonstrates that, for selected charges, the two Australian ports are about twice as expensive as Zeebrugge and Wellington. The comparison with Nagoya must be qualified by the influence that a major
Christopherson

Japanese automotive manufacturer (Toyota) has on that port.

To satisfy the requirements of the consultancy it was necessary to devise appropriate benchmarks which could be used as targets for cost reduction recommendations in Australian port charges if world standards were to be approximately achieved. These benchmarks were based on the range of overseas port charges shown in Appendix 7. A set of suggested benchmarks is shown at Appendix 8. They were chosen with a bias towards the upper end of the scale of overseas port charges and represent, it is suggested, targets towards which the automotive industry should press for a more competitive Australian port charge environment. Indeed some areas of the automotive industry were somewhat critical of the benchmarks because they felt they did not come close enough to the lowest overseas charges.

To determine to what extent the benchmarks would have resulted in savings a costing comparison was then done based on selected Australian port charges for the agreed scenario, and the port charges that would have applied if the benchmark targets were used. This comparison is shown at Appendix 9. It represents substantial savings per CBU particularly in the Navigation Charge category. The extent to which such savings can be achieved depends very much on the pressure that can be exerted by the automotive industry. It also depends on the willingness of Australian port authorities to recognise that their costs are substantially in excess of overseas costs including New Zealand ports.

The targets shown in Appendix 8 represent a basis for discussions with the Australian ports when costing procedures are being discussed. They should form the basis for any "cost-down" policy.

The Trans-Tasman trade

The Trans-Tasman trade is important to the automotive industry because New Zealand, at present, ranks second to the USA as a market for CBU exports.

Shipping arrangements between Australia and New Zealand are constrained by the Trans Tasman Accord. This agreement between the maritime unions of both countries restricts trade between Australia and New Zealand to shipping manned by either Australian or New Zealand seamen. As a result any use of foreign PCCs, returning partly or fully empty from Australian ports, to carry CBUs to New Zealand ports is banned.

Initial industry objections to the cost of the Trans Tasman trade centred on the high wharfgate-to-wharfgate cost which exceeded $900 for a 10m³ CBU. Subsequent negotiations have reduced the quoted wharfgate-wharfgate cost for a motor vehicle to $680. It is understood that lower charges (in the vicinity of $650) have been negotiated by some companies. It has been suggested that foreign PCCs (crossover vessels) could provide wharfgate to wharfgate services for about $500 per CBU but this has not been tested by the industry.

A separate issue in the Trans-Tasman trade is the cost of handling CBUs through the Port of Melbourne. Based on studies carried out by the Trans Tasman Trade Facilitation Forum in 1991 it is estimated that 16% of the wharfgate-to-wharfgate rate of $680 per motor vehicle represents port costs per vehicle in Melbourne. At approximately $108 per vehicle such costs compare unfavourably with the CBU port charges for other overseas destinations ($98).

Conclusion

The present impasse in port pricing policy in Australia is an amalgam of a number of separate but interrelated issues. The question has become more heated because shippers have become disillusioned with a process which apparently passes on no costs savings from substantial productivity improvements. This, coupled with a lack of transparency in port pricing and an industry-perceived inability of port authorities to institute cost reduction has resulted in significant discord in all the major ports. For the sake of Australia's export competitiveness an efficient waterfront is essential and the increase in stevedoring productivity must be accompanied by an equitable pricing system in other areas of the ports. As the PMA General Manager Marketing commented:

"Attitudes of blaming each other for the inefficiencies, talking about each other rather than to each other should now be put aside so that we all can participate as a port community in the real benefits that are achievable to ensure that the Port of Melbourne provides a comparable international competitive port gateway for our trade." (Gent, 1992)

Unless Australian port costs can be reduced to a more competitive level with overseas charges the concept of a "a comparable international competitive port gateway" will elude the port community. The development of benchmarks for the various categories of port costs will give some guidance to the degree of variance between Australian and overseas ports. The benchmarks suggested in this paper refer only to a specific trade - more work needs to be done on a broader range of commodities and types of shipping.
APPENDIX 1

Components of Port Costs

1. Ship Related
   - PILOTAGE
   - TOWAGE
   - MOORING
   - BERTH
   - NAVIGATION (Tonnage Based)
   - OTHER SERVICES

   Paid Directly by
   - SHIPPING AGENT
   - IMPORTER
   - STEVEDORE

2. Cargo Related
   - WHARFAGE
   - AREA
   - SORTING AND STACKING

References

Australian Shippers Users Group (1991) Port Reform Proposals  Canberra


MSB Sydney Ports Authority (1991) Price List Sydney

NYK Line (1991) PCC Charge List - (All Ports) includes CKDs/CBUs) Melbourne

Port of Brisbane Authority (1991) Port Charges (As At June 1990) Brisbane

Port of Brugge - Zeebrugge (1990) Harbour Duties and Taxes Zeebrugge

Port of Melbourne Authority (1991) Schedule of Port Charges, 1st September 1991 Melbourne


Port of Seattle (1990) Terminals Tariff No 3 Seattle

Port of Singapore (1991) Main Charges for Container Operations at Tanjong Pagar Terminal Singapore

Port of Singapore (1991) Main Charges for Conventional Cargo Operations Singapore

Ports of South Australia (1991) Wharfage Rates and Port Charges, 1st October 1990 Adelaide


Swire Tokyo/AJCL Trade (1991) Terminal Charge/Navigation Charge for AJCL Trade Vessels at Osaka Tokyo

Thompson Clarke: Shipping (1991) Port of Los Angeles Port Charges  Melbourne


Port Pricing in the Automotive Industry

Components of Port Costs

1. Ship Related
   - PILOTAGE
   - TOWAGE
   - MOORING
   - BERTH
   - NAVIGATION (Tonnage Based)
   - OTHER SERVICES

   Paid Directly by
   - SHIPPING AGENT
   - IMPORTER
   - STEVEDORE

2. Cargo Related
   - WHARFAGE
   - AREA
   - SORTING AND STACKING

References

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MSB Sydney Ports Authority (1991) Price List Sydney

NYK Line (1991) PCC Charge List - (All Ports) includes CKDs/CBUs) Melbourne

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Swire Tokyo/AJCL Trade (1991) Terminal Charge/Navigation Charge for AJCL Trade Vessels at Osaka Tokyo

Thompson Clarke: Shipping (1991) Port of Los Angeles Port Charges  Melbourne


APPENDIX 2

Conference Line Comparative Costing (AUD)

"Australian Searoad" (230 CBU @ 10m³; 5 hours alongside)

<table>
<thead>
<tr>
<th>IMPORT</th>
<th>Brisbane</th>
<th>Sydney</th>
<th>Melbourne</th>
<th>Adelaide</th>
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<tbody>
<tr>
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<td>5620</td>
<td>4000</td>
<td>2164</td>
</tr>
<tr>
<td>Towage</td>
<td>7200</td>
<td>5436</td>
<td>6725</td>
<td>9160</td>
</tr>
<tr>
<td>Launch</td>
<td>320</td>
<td>-</td>
<td>1425</td>
<td>138</td>
</tr>
<tr>
<td>Lineemen</td>
<td>1100</td>
<td>2560</td>
<td>3120</td>
<td>250</td>
</tr>
<tr>
<td>Berth Cost</td>
<td>2476</td>
<td>4830</td>
<td>530</td>
<td>837</td>
</tr>
<tr>
<td>State Duties</td>
<td>1745</td>
<td>9460</td>
<td>5391</td>
<td>2859</td>
</tr>
<tr>
<td>Port Navigation</td>
<td>3117</td>
<td>3117</td>
<td>3117</td>
<td>3117</td>
</tr>
<tr>
<td>C’wealth Lights</td>
<td>-</td>
<td>650</td>
<td>246</td>
<td>-</td>
</tr>
<tr>
<td>SUB-TOTAL</td>
<td>19448</td>
<td>31673</td>
<td>30273</td>
<td>18525</td>
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<table>
<thead>
<tr>
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<tr>
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<td>4554</td>
<td>5750</td>
<td>4416</td>
<td>6969</td>
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<tr>
<td>Cargo Charge Harbour Dues</td>
<td>3979</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>TOTAL</td>
<td>27981</td>
<td>37423</td>
<td>34689</td>
<td>25494</td>
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</table>


APPENDIX 3

Overseas Ports

1. USA
   - Seattle
   - New York
   - New Jersey
   - Los Angeles

2. Japan
   - Osaka
   - Nagoya

3. Europe
   - Tilbury
   - Zeebrugge

4. New Zealand
   - Wellington

5. Singapore (limited data only).
APPENDIX 4

Best (Cheapest) Practice (AUD)

<table>
<thead>
<tr>
<th></th>
<th>USA</th>
<th>JAPAN</th>
<th>EUROPE</th>
<th>NZ</th>
<th>SINGAPORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilotage(3)</td>
<td>588(1)</td>
<td>1163</td>
<td>3241</td>
<td>880</td>
<td>Not Available</td>
</tr>
<tr>
<td>Towage(3)</td>
<td>478(1)</td>
<td>674</td>
<td>1061</td>
<td>1039</td>
<td>Not Available</td>
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<tr>
<td>Mooring(3)</td>
<td>1456</td>
<td>342(1)</td>
<td>448</td>
<td>415</td>
<td>Not Available</td>
</tr>
<tr>
<td>Berth</td>
<td>1357</td>
<td>21528(2)</td>
<td>322(1)</td>
<td>415</td>
<td>291</td>
</tr>
<tr>
<td>Navigation</td>
<td>Nil</td>
<td>13805 (2642)</td>
<td>3521</td>
<td>775(1)</td>
<td>Not Available</td>
</tr>
<tr>
<td>Wharfage</td>
<td>1725</td>
<td>1120(1)(4)</td>
<td>18377</td>
<td>6900</td>
<td>8050</td>
</tr>
<tr>
<td>Stevedore</td>
<td>15548</td>
<td>Not Avail</td>
<td>Included Wharfage</td>
<td>N/Av 6049(1)</td>
<td></td>
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<tr>
<td>Area Hire</td>
<td>Not Avail</td>
<td>Not Avail</td>
<td>Not Avail</td>
<td>N/Av 3972(1)</td>
<td></td>
</tr>
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</table>

Notes:
(1) Best (Cheapest) Practice.
(2) Inc. (Terminal Charge) Berth, Wharfage and Stevedoring Costs at Osaka.
(3) Represents either entry or exit charge.
(4) Wharfage at Nagoya.

Sources: Port Tariffs - see References.

APPENDIX 5

Comparison - Australian & Overseas Ports (AUD)

<table>
<thead>
<tr>
<th></th>
<th>World</th>
<th>Melbourne</th>
<th>Brisbane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilotage</td>
<td>588</td>
<td>2000(1)</td>
<td>1745(1)</td>
</tr>
<tr>
<td>Towage</td>
<td>478</td>
<td>3362(1)</td>
<td>3600(1)</td>
</tr>
<tr>
<td>Mooring</td>
<td>342</td>
<td>2273(1)(2)</td>
<td>71(1)(2)</td>
</tr>
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<td>Berth</td>
<td>291</td>
<td>530</td>
<td>2476</td>
</tr>
<tr>
<td>Navigation</td>
<td>775</td>
<td>5719</td>
<td>Nil</td>
</tr>
<tr>
<td>Wharfage</td>
<td>1120</td>
<td>4416</td>
<td>4454</td>
</tr>
</tbody>
</table>

Notes:
(1) Represents either entry or exit charges ie 50% of the charges at Appendix 3.
(2) Sum of linesmen and launch costs for either entry or exit. See Note (1) above.

Sources:
2. Overseas Costs - Port tariffs listed in References (see end of paper).
APPENDIX 6
Comparison of Selected Charges with Foreign Ports of World Class
Melbourne, Brisbane, Nagoya, Zeebrugge, Wellington

<table>
<thead>
<tr>
<th>Charge</th>
<th>M</th>
<th>B</th>
<th>N</th>
<th>Z</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilotage</td>
<td>4000</td>
<td>3490</td>
<td>2326</td>
<td>6481</td>
<td>1660</td>
</tr>
<tr>
<td>Towage</td>
<td>6725</td>
<td>7200</td>
<td>1348</td>
<td>2122</td>
<td>2078</td>
</tr>
<tr>
<td>Mooring</td>
<td>4545</td>
<td>1420</td>
<td>684</td>
<td>896</td>
<td>830</td>
</tr>
<tr>
<td>Berth</td>
<td>530</td>
<td>2476</td>
<td>-</td>
<td>322</td>
<td>581</td>
</tr>
<tr>
<td>Navigation</td>
<td>5719</td>
<td>-</td>
<td>3642</td>
<td>3323</td>
<td>775</td>
</tr>
<tr>
<td>Wharfage</td>
<td>4416</td>
<td>8533(1)</td>
<td>1120</td>
<td>-</td>
<td>6900</td>
</tr>
<tr>
<td>TOTALS</td>
<td>25935</td>
<td>23119</td>
<td>9120</td>
<td>13144</td>
<td>12824</td>
</tr>
</tbody>
</table>

Notes: (1) Sum of Wharfage and Harbour Dues - see Appendix 3.

Sources: 1. Australian Port Costs - Kawasaki (Australia)
2. Overseas Port Costs - Overseas port tariffs - see References.

APPENDIX 7
Range of Overseas Port Charges (based on scenario)

<table>
<thead>
<tr>
<th>Charge</th>
<th>USA</th>
<th>Japan</th>
<th>EUR</th>
<th>NZ</th>
<th>Singapore</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilotage</td>
<td>588</td>
<td>1163</td>
<td>3241</td>
<td>830</td>
<td>N/A</td>
</tr>
<tr>
<td>Towage</td>
<td>478</td>
<td>674</td>
<td>1061</td>
<td>1039</td>
<td>N/A</td>
</tr>
<tr>
<td>Mooring</td>
<td>1456</td>
<td>342</td>
<td>448</td>
<td>415</td>
<td>N/A</td>
</tr>
<tr>
<td>Berth (per hr)</td>
<td>271</td>
<td>4300(1)</td>
<td>65</td>
<td>83</td>
<td>58</td>
</tr>
<tr>
<td>Navigation (per GRT)</td>
<td>0.14</td>
<td>0.31</td>
<td>0.36</td>
<td>0.08</td>
<td>N/A</td>
</tr>
<tr>
<td>(per M3)</td>
<td>0.75</td>
<td>0.5(2)</td>
<td>7.99</td>
<td>21.40</td>
<td>3.5</td>
</tr>
<tr>
<td>Area Hire (per M3)</td>
<td>6.76</td>
<td>(1)</td>
<td>(3)</td>
<td>N/A</td>
<td>2.63</td>
</tr>
<tr>
<td>Wharfage costs included in Wharfage.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes: (1) The Berth charge includes Wharfage and Stevedoring at Osaka.
(2) Wharfage at Nagoya.
(3) Stevedoring costs included in Wharfage.

Sources: Overseas Port Tariffs - see References for list.
APPENDIX 8
Benchmark Targets - Port Costs - PCC Trade (CBU/CKD)

<table>
<thead>
<tr>
<th>Service</th>
<th>Brisbane</th>
<th>Sydney</th>
<th>Melbourne</th>
<th>Adelaide</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilotage</td>
<td>3490</td>
<td>5620</td>
<td>4000</td>
<td>2164</td>
<td>3000</td>
</tr>
<tr>
<td>Towage</td>
<td>7200</td>
<td>5346</td>
<td>6725</td>
<td>9160</td>
<td>4000</td>
</tr>
<tr>
<td>Mooring/Unmooring</td>
<td>1420</td>
<td>2500</td>
<td>4545</td>
<td>388</td>
<td>1000</td>
</tr>
<tr>
<td>Berth</td>
<td>2476</td>
<td>4830</td>
<td>590</td>
<td>837</td>
<td>500</td>
</tr>
<tr>
<td>Navigation</td>
<td>8533(2)</td>
<td>5750</td>
<td>4416</td>
<td>6969</td>
<td>4600</td>
</tr>
<tr>
<td>Wharfage</td>
<td>2854</td>
<td>9460</td>
<td>5719</td>
<td>2859</td>
<td>3392</td>
</tr>
<tr>
<td>Area Hire</td>
<td>23119</td>
<td>33626</td>
<td>25935</td>
<td>22377</td>
<td>16492</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Saving per CBU with Target Costs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>28.81</td>
</tr>
</tbody>
</table>

Notes:
1. The costings above do not include Commonwealth Light Duties, State Duties or Port Utilities as these were not part of the Benchmark study.
2. The Wharfage charge for Brisbane includes Wharfage ($4554) and Cargo Charge (Harbour dues) ($3979).