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- The five-port average crane rate decreased slightly to 26.0 containers per hour in the December quarter 2002 from 26.4 containers per hour in the September quarter 2002.
- The five-port elapsed labour rate decreased to 30.7 containers per hour in the December quarter 2002 from 31.9 containers per hour in the September quarter 2002.
- The five-port ship rate decreased to 43.4 containers per hour in the December quarter 2002 from 44.0 containers per hour in the September quarter 2002.
- The five-port total container traffic increased to a record level of 1.988 million teus during July-December 2002.
- The overall tonnage of cargo to be moved under coastal permits decreased by 5 per cent to 12.0 million tonnes in 2002.
- Berth availability was 94 per cent in the December quarter.

New Publishing Arrangements

Improvements in electronic publishing now enable us to distribute *Waterline* more quickly and effectively using the Web. We will therefore rely mainly on the Web to distribute future issues to our readers. Hard copies will be provided on only a limited basis. *Waterline* can be accessed at http://www.btre.gov.au/wline.htm

On our new biannual schedule. *Waterline* will be published around the last Wednesday of March and September. If you wish to be on the email alert list, please contact us at waterline@dotars.gov.au.

New Indicators for Waterline

In the last issue we announced upcoming changes to *Waterline*. Work on the changes is progressing, and we will shortly be inviting key interest groups and industries to comment on the proposed new indicators. If you wish to participate in this process, please contact us at waterline@dotars.gov.au.

The Waterline Team

Container terminals' productivity—pages 4 & 5







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STEVEDORING PRODUCTIVITY

Waterline

Table I presents the December quarter 2000 to December quarter 2002 indicators of stevedoring productivity at the five major Australian container ports, expressed in container moves per hour. Figures I to 6 present these data over the December quarter 1996 to December quarter 2002 period. The data for Brisbane, Sydney, Melbourne and Fremantle are weighted averages for the container terminals operated by P&O Ports and Patrick. The Adelaide data are for the CSX World Terminals container terminal.

National crane rate productivity, as measured by the five-port average, has decreased in the December quarter 2002. While the crane rate has dropped slightly, the number of containers moved in the December quarter continued to rise, achieving new record levels for all ports except Adelaide. The high traffic levels, and unusual demand peaks, contributed to the decrease in the crane rate.

In summary:

- the five-port average *crane rate* (average productivity *per crane* while the ship is worked) was 26.0 containers per hour for the December quarter 2002, compared with 26.4 in the September quarter 2002;
- the five-port average elapsed labour rate (productivity per ship based on the time labour is aboard the ship) was 30.7 containers per hour for the December quarter 2002, compared with 31.9 in the September quarter 2002; and
- the five-port average *ship rate* (productivity *per ship* for total period ship is worked) was 43.4 containers per hour for the December quarter 2002, compared with 44.0 in the September quarter 2002.

The Brisbane (P&O Ports, Patrick) average crane rate increased to 26.7 containers per hour in the December quarter 2002, from 26.1 in the September quarter 2002. The elapsed labour rate of 24.1 containers per hour was virtually unchanged and the ship rate of 40.4 containers per hour was up compared with the previous quarter's figures.

The Sydney (P&O Ports, Patrick) average crane rate decreased to 25.2 containers per hour in the December quarter 2002 from 26.3 in the September quarter 2002. The elapsed labour rate of 32.7 containers per hour and the ship rate of 44.2 containers per hour were both down compared with the previous quarter's figures.

The Melbourne (P&O Ports, Patrick) average crane rate decreased to 26.1 containers per hour in the December quarter 2002 from 26.9 in the September quarter 2002. Both the elapsed labour rate of 32.0 containers per hour and the ship rate of 45.3 containers per hour were down compared with the previous quarter's figures.

The Adelaide (CSX World Terminals) average crane rate increased to 24.0 containers per hour in the December quarter 2002, from 23.3 in the September quarter 2002. The elapsed labour rate of 34.0 containers per hour and the ship rate of 38.2 containers per hour were both up compared with the previous quarter's figures.

The Fremantle (P&O Ports, Patrick) average crane rate increased to 28.1 containers per hour in the December quarter 2002, from 27.1 containers per hour in the September quarter 2002. The elapsed labour rate of 28.9 containers per and the ship rate of 41.2 containers per hour were both up compared with the previous quarter's figures.

The stevedoring rate, which previously appeared in table 4, Stevedoring and Ship Arrival Reliability, has been renamed to crane-rate variability and moved to table 1. Crane-rate variability provides a partial indicator of the variability of stevedoring productivity at each port. It is defined as the proportion of ship visits where the average crane rate for the ship is within two containers per hour (plus or minus) of the quarterly average crane rate for the terminal. A high percentage indicates little variation in the crane rate. Variability data are not available for Adelaide.

Overall, crane-rate variability changed little in the December quarter 2002 compared with the September quarter 2002. Variability increased at Melbourne and Sydney, but decreased at Brisbane.

Teus per hour

Table 13 presents the stevedoring productivity indicators in terms of teus per hour. These data are retained in *Waterline* for the purpose of long-term historical comparison. They are not directly comparable with the data in table 1 because indicators based on teus per hour may be affected by changes in the mix of 20-foot and 40-foot containers from one period to the next.



TABLE I



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| CONTAINER TERMINAL PERFORMANCE INDICATORS—PRODUCTIVITY IN |
|---|
| CONTAINERS PER HOUR |
| Quarter |

| Quarter | | | | | | | | | |
|------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Port / Indicator | Dec-00 | Mar-Ol | Jun-OI | Sep-Ol | Dec-Ol | Mar-02 | Jun-02 | Sep-02 | Dec-02 |
| Five ports | | | | | | | | | |
| Ships handled | 814 | 787 | 813 | 825 | 846 | 824 | 868 | 858 | 856 |
| Total containers | 545 075 | 472 797 | 502 037 | 575 130 | 591 070 | 544 135 | 591 247 | 645 506 | 685 458 |
| Crane rate | 25.5 | 26.4 | 26.8 | 25.8 | 26.1 | 26.6 | 26.9 | 26.4 | 26.0 |
| Elapsed labour rate | 27.9 | 28.8 | 28.7 | 29.5 | 29.6 | 29.6 | 30.7 | 31.9 | 30.7 |
| Ship rate | 39.5 | 40.4 | 40.4 | 41.4 | 41.4 | 41.4 | 42.1 | 44.0 | 43.4 |
| Elapsed time not worked (per cent) | 29 | 29 | 29 | 29 | 29 | 29 | 27 | 28 | 29 |
| 40-foot containers (per cent) | 34 | 34 | 32 | 33 | 33 | 33 | 33 | 36 | 37 |
| Brisbane | | | | | | | | | |
| Ships handled | 179 | 167 | 188 | 175 | 198 | 202 | 211 | 216 | 216 |
| Total containers | 83 082 | 63 177 | 84 854 | 81 935 | 88 669 | 78 160 | 94 230 | 103 537 | 107 692 |
| Crane rate | 26.3 | 27.4 | 27.4 | 25.4 | 25.3 | 26.6 | 27.2 | 26.1 | 26.7 |
| Elapsed labour rate | 23.1 | 22.8 | 23.5 | 22.5 | 22.4 | 22.2 | 23.2 | 24.2 | 24.1 |
| Ship rate | 34.4 | 35.1 | 36.3 | 36.4 | 35.8 | 36.6 | 37.2 | 37.9 | 40.4 |
| Elapsed time not worked (per cent) | 33 | 35 | 35 | 38 | 37 | 39 | 38 | 36 | 40 |
| 40-foot containers (per cent) | 30 | 30 | 28 | 29 | 27 | 28 | 29 | 32 | 34 |
| Crane-rate variability (per cent) | 54 | na | 51 | 68 | 65 | 55 | 54 | 53 | 57 |
| Sydney | | | | | | | | | |
| Ships handled | 211 | 201 | 202 | 208 | 206 | 196 | 203 | 204 | 210 |
| Total containers | 176 106 | 148 316 | 152 650 | 179 506 | 184 559 | 167 278 | 172 599 | 200 825 | 215 863 |
| Crane rate | 24.3 | 25.3 | 25.3 | 25.5 | 25.7 | 26.9 | 27.4 | 26.3 | 25.2 |
| Elapsed labour rate | 28.6 | 29.0 | 28.4 | 31.4 | 31.2 | 32.1 | 34.3 | 35.8 | 32.7 |
| Ship rate | 40.9 | 41.3 | 40.3 | 44.4 | 44.0 | 44.3 | 46.1 | 47.4 | 44.2 |
| Elapsed time not worked (per cent) | 30 | 30 | 29 | 29 | 29 | 28 | 26 | 25 | 26 |
| 40-foot containers (per cent) | 37 | 37 | 34 | 35 | 37 | 37 | 37 | 38 | 40 |
| Crane-rate variability (per cent) | 49 | 48 | 48 | 53 | 66 | 56 | 46 | 59 | 56 |
| Melbourne | | | | | | | | | |
| Ships handled | 218 | 214 | 215 | 243 | 249 | 234 | 251 | 250 | 243 |
| Total containers | 189 580 | 170 250 | 174 149 | 214 752 | 221 647 | 205 435 | 221 786 | 239 564 | 250 679 |
| Crane rate | 25.8 | 26.5 | 27.2 | 25.4 | 26.3 | 26.3 | 26.7 | 26.9 | 26.1 |
| Elapsed labour rate | 30.5 | 31.5 | 31.3 | 30.5 | 31.6 | 31.5 | 31.9 | 33.4 | 32.0 |
| Ship rate | 42.7 | 43.2 | 43.7 | 42.2 | 42.9 | 43.4 | 44.0 | 46.7 | 45.3 |
| Elapsed time not worked (per cent) | 29 | 27 | 28 | 28 | 26 | 28 | 28 | 28 | 29 |
| 40-foot containers (per cent) | 35 | 33 | 31 | 33 | 33 | 33 | 33 | 36 | 37 |
| Crane-rate variability (per cent) | 44 | 49 | 59 | 57 | 59 | 59 | 62 | 66 | 63 |
| Adelaide | | | | | | | | | |
| Ships handled | 63 | 57 | 57 | 57 | 57 | 54 | 59 | 55 | 58 |
| Total containers | 27 800 | 25 051 | 25 928 | 28 369 | 28 857 | 24 505 | 32 735 | 28 815 | 30 214 |
| Crane rate | 25.3 | 26.0 | 26.0 | 26.1 | 25.9 | 25.5 | 24.0 | 23.3 | 24.0 |
| Elapsed labour rate | 29.3 | 33.1 | 34.9 | 31.4 | 32.1 | 32.5 | 34.3 | 32.6 | 34.0 |
| Ship rate | 32.6 | 36.1 | 38.5 | 34.7 | 35.2 | 35.8 | 37.1 | 34.5 | 38.2 |
| Elapsed time not worked (per cent) | 10 | 8 | 9 | 10 | 9 | 9 | 8 | 6 | 11 |
| 40-foot containers (per cent) | 27 | 29 | 28 | 23 | 27 | 30 | 28 | 30 | 30 |
| Crane-rate variability (per cent) | na |
| Fremantle | | | | | | | | | |
| Ships handled | 143 | 148 | 151 | 142 | 136 | 138 | 144 | 133 | 129 |
| Total containers | 68 507 | 66 003 | 64 456 | 70 568 | 67 338 | 68 757 | 69 897 | 72 765 | 81 010 |
| Crane rate | 26.8 | 27.5 | 28.5 | 28.5 | 27.9 | 27.1 | 27.4 | 27.1 | 28.1 |
| Elapsed labour rate | 24.4 | 25.4 | 26.4 | 28.6 | 27.2 | 25.2 | 26.7 | 26.5 | 28.9 |
| Ship rate | 35.9 | 37.8 | 38.2 | 39.8 | 39.4 | 35.8 | 35.5 | 37.7 | 41.2 |
| Elapsed time not worked (per cent) | 32 | 33 | 31 | 28 | 31 | 30 | 25 | 30 | 30 |
| 40-foot containers (per cent) | 36 | 36 | 33 | 32 | 35 | 30 | 34 | 36 | 37 |
| Crane-rate variability (ner cent) | 34 | 36 | 38 | 22 | 36 | 35 | 40 | 35 | 36 |

na not available

Note variable
Notes 1. The definitions used in compiling the stevedoring productivity data are detailed in Waterline 33, pages 15–17.
2. Data from CSX World Terminals at Brisbane are incorporated from the December quarter 1999 until June quarter 2001.
3. The data in this table are expressed in container moves per hour and therefore are not directly comparable with the teus per hour data in table 13.
4. Elapsed time not worked is the difference between the ship and elapsed rates as a percentage of the ship rate.

Sources Patrick, P&O Ports and CSX World Terminals.

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CONTAINER TERMINAL PRODUCTIVITY













CONTAINER TERMINAL PRODUCTIVITY







Note
 These figures are based on the data contained in table I. Readers should refer to the notes in that table.

 Sources
 Patrick, P&O Ports and CSX World Terminals.



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WATERFRONT RELIABILITY

Waterline

Waterline reliability indicators provide partial measures of the variability of waterfront performance for container movements at major Australian ports. They cover the timeliness of selected port services, factors contributing to ship waiting time, aspects of stevedoring performance and the accuracy of ship arrival advice.

Berth availability, pilotage, towage

Table 2 presents information on berth availability, pilotage and towage for a sample of ship calls in the December quarter 2002. It indicates the extent to which selected port services were available at the scheduled or confirmed time.

sample for The the December guarter 2002 covers 191 ship calls, equivalent to around 22 per cent of total ship calls at the five major container terminals during the period. The proportion of ship calls covered at individual ports ranges from 17 per cent at Brisbane to 26 per cent at Sydney. The figures for Brisbane should be treated with caution due to the low proportion of ship calls included in the data. The sample includes calls by container ships operating to and from Europe, the Mediterranean, the Middle East, North America, Asia and New Zealand.

The berth availability indicator measures the proportion of ship arrivals where a berth is available within four hours of the scheduled berthing time. Figure 7 shows that berth availability for the sample of ship calls was 94 per cent in

TABLE 2 AVAILABILITY OF BERTH, PILOTAGE AND TOWAGE SERVICES AT THE SCHEDULED/CONFIRMED TIME, DECEMBER QUARTER 2002

| | | | | D | elau (| hrs) | | | Total no. of ship | Availability indicator |
|----------------------|----------|----------|------------------------|----------|--------------------|--------------------------|--------------|------------|----------------------|---------------------------|
| Port/operation | 0 | 1 | 2 | 3 | 4 | 5-10 | II-20 | >20 | calls | (per cent) |
| Brisbane | | | | | | | | | | |
| Berth availability | 32 | 0 | 0 | 0 | 0 | 4 | 0 | 0 | 36 | |
| Pilotage | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| Towage | 36 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 36 | |
| Sydney | | | | | | | | | | |
| Berth availability | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | |
| Pilotage | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | |
| Towage | 54 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 54 | |
| Melbourne | | | | | | | | | | |
| Berth availability | 42 | 0 | 3 | 1 | 2 | 4 | 0 | 3 | 55 | |
| Pilotage | 55 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | |
| Towage | 55 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 55 | |
| Adelaide | | | | | | | | | | |
| Berth availability | 13 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 14 | |
| Pilotage | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| Towage | 14 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 14 | |
| Fremantle | | | | | | | | | | |
| Berth availability | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| Pilotage | 32 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| Towage | 31 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 32 | |
| Five ports | | | | | | | | | | |
| Berth availability | 173 | 0 | 3 | 1 | 2 | 9 | 0 | 3 | 191 | 93.7 |
| Pilotage | 191 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 191 | 100.0 |
| Towage | 190 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 191 | 100.0 |
| Note Inter-port comp | arisons | should | be inte | rpreted | with ca | aution as t | here is sign | ificant va | riation | |
| Sources Data for a s | sample o | f shin a | as sailif calls nro | ovided h | s and s ov shin | nip can pe ning lines | merris. | | | btre |

the December quarter 2002. This was slightly higher than in the previous quarter. Caution should be used in undertaking inter-port comparisons of the berth availability data, as there is significant variation between ports in sample sizes and ship call patterns.

Average waiting time for ships unable to obtain a berth within four hours of the scheduled berthing time was 14 hours in the December quarter 2002, a decrease from 16 hours in the previous quarter.

The *pilotage and towage* indicators reported in *Waterline* measure the proportion of ship movements where the service is available to the ship within one hour of the confirmed ship arrival/departure time. The proportion was 100 per cent for the pilotage indicator, and for the towage indicator in the December quarter 2002, the same as in the previous quarter in both cases. Performance has been at similar levels since the first data (covering the March quarter 1997) were published in *Waterline*.





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Other waiting time

The five shipping lines that supplied information for table 2 also provided data on other ship waiting time. This category incorporates waiting time that is attributable to factors other than the unavailability of a berth, pilot or towage service at the scheduled/confirmed time. The data on other ship waiting time reported in *Waterline* exclude ship schedule adjustments.

Table 3 summarises the data on other waiting time incidents, which had a duration of at least one hour, in the December quarter 2002. The shipping lines identified a total of 147 incidents (affecting 105 ship calls) for the sample of ship calls over this period. These incidents involved both ship-related and waterfront factors.

The total waiting time attributable to particular incident types reflects the number of incidents and the waiting time associated with individual incidents. The largest single source of other ship waiting time in the December quarter 2002

| THE FIVE MAINLAND CAPITAL CITY PORTS. DECEMBER QUARTER 2002 | | | | | | | | |
|--|--|--|--|--|--|--|--|--|
| (Number of incidents) | | | | | | | | |
| Ship waiting time (hrs) | | | | | | | | |

TABLE 3 OTHER SHIP WAITING TIME INCIDENTS AT

| | | | of | | | | | |
|---|-----------------------|-------------------------|--------------------------|------------------|------|-------|-----|------------------|
| Incident type | | 2 | 3 | 4 | 5-10 | II-20 | >20 | incidents |
| Awaiting labour | 9 | 6 | 4 | 4 | 19 | 15 | 4 | 61 |
| Crane breakdown | 10 | 6 | 6 | 1 | 7 | 1 | 0 | 31 |
| Weather or tides | 0 | 4 | 0 | 2 | 4 | 1 | 0 | 11 |
| Pilot/tug booking not at preferred time | 2 | 6 | 0 | 0 | 1 | 0 | 0 | 9 |
| Early ship arrival | 1 | 1 | 3 | 0 | 1 | 1 | 0 | 7 |
| Stevedoring finished early | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 5 |
| Stevedoring finished late | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 3 |
| Ship repairs or maintenance | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 3 |
| Industrial action | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 2 |
| Late ship arrival | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Other | 2 | 1 | 3 | 0 | 2 | 5 | 1 | 14 |
| Total incidents | 25 | 26 | 19 | 7 | 38 | 26 | 6 | 147 ^a |
| a. These incidents affected 105 of t Sources Data for a sample of ship cal | he 191 : Is provid | ship calls ded by sl | s covered hipping lin | in table nes. | 2. | | | btre |

was the category of awaiting labour, which accounted for 52 per cent of total waiting time. Crane breakdown accounted for 10 per cent of total waiting time, and closed portholidays was related to a further 8 per cent of total waiting time.

In the December quarter 2002, 55 per cent of ship calls in the sample were affected by other waiting time incidents that had a duration of at least one hour, up from 51 per cent in the September quarter 2002. The average duration of other waiting time incidents was 9.2 hours per affected ship call in the December quarter 2002, an increase over 7.2 hours per affected ship call in the previous quarter.

Figure 8 provides information on other ship waiting time over the period since the December quarter 1997. It indicates the proportion of ship calls affected and the average duration of other waiting time per affected ship call in each quarter.



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Stevedoring

Table 4 presents the available information on an aspect of stevedoring reliability at major container terminals —cargo receival. Data were not available for Adelaide.

Stevedoring rate is no longer recorded in table 4. From this issue it appears in table 1 under the name crane rate variability.

Cargo receival is the proportion of receivals (exports) completed by the stevedore's cut-off time. It provides a partial measure of one factor that can affect container terminal performance. Cargo receival in the December quarter 2002 increased at Sydney, changed little at Brisbane, was unchanged at Fremantle, and fell at Melbourne compared with the previous quarter.

Ship arrival

Table 4 includes data for two indicators of ship arrival advice. Data were not available for Melbourne for the September quarter 2002 or the December quarter 2002.

The first indicator is the proportion of ship arrivals within one hour (plus or minus) of the most recently advised arrival time available to the port authority/corporation at 24 hours prior to actual arrival. Compared with the previous quarter, this indicator fell at Sydney, Brisbane and Fremantle, and rose at Adelaide, in the December quarter 2002.

The second indicator is the proportion of ship arrivals within one hour (plus or minus) of the last scheduled arrival time *advised inside the 24 hours prior to actual arrival*. In the December quarter 2002 this indicator increased at Sydney and Fremantle, was unchanged at Adelaide, and fell at Brisbane.

| TABLE 4 | TABLE 4 STEVEDORING AND SHIP ARRIVAL RELIABILITY INDICATORS. SEPTEMBER AND DECEMBER QUARTERS 2002 | | | | | | | | | | | | | |
|--|---|--|----------|----------|----------|----------|----------|----------|----------|----------|----------|--|--|--|
| | <i>(per cent)</i> Brishans Sudacu Melhouras Adelaide Enemantic | | | | | | | | | | | | | |
| Indicator | Jul- | Brisbane Sydney Melbourne Adelaide Fremani Jul-Sep Oct-Dec Jul-Sep Oct-Dec Jul-Sep Oct-Dec Jul-Sep Oc | | | | | | | | | | | | |
| Stevedoring Cargo receival | | 96 | 95 | 87 | 92 | 92 | 89 | na | na | 94 | 94 | | | |
| Ship arrival Advice at 24 hrs Advice inside 24 | hrs | 66 90 | 61 88 | 51 93 | 48 97 | na na | na na | 44 91 | 52 91 | 56 87 | 47 91 | | | |
| na not available Sources AAPMA, | Patrick and P&O P | orts. | | | | | | | | | btre | | | |



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PORT PERFORMANCE—NON-FINANCIAL

The July–December 1999 to July–December 2002 non-financial indicators for the five mainland capital city ports are presented in table 5 [page 10].

Cargo throughput

Total cargo throughput at the five ports was 52.1 million tonnes for July-December 2002, compared with 51.4 million tonnes for the previous half-year and 50.4 million tonnes for July-December 2001. This represented an increase of 1 per cent in total cargo throughput for the five ports compared with January-June 2002 and an increase of 3 per cent for the five ports compared with July-December 2001.

Compared with July–December 2001, total cargo throughput increased 7 per cent at Brisbane, 8 per cent at Melbourne, 2 per cent at Fremantle and 5 per cent at Adelaide. Total throughput declined 3 per cent at Sydney.

Non-containerised general cargo throughput at the five ports was 2.138 million tonnes for July–December 2002, compared with 1.962 million tonnes for January–June 2002 and 1.872 million tonnes for July–December 2001. This represented an increase of 9 per cent from the previous half-year and 14 per cent from the corresponding previous half-year.

Total container traffic for the five ports was 1.988 million teus for July-December 2002, compared with 1.694 million teus for January-June 2002 and 1.740 million teus for July-December 2001. This represented an increase of 17 per cent from the previous half-year and 14 per cent from July-December 2001.

Compared with July–December 2001, loaded teus increased by 11 per cent, with loaded imports increasing by 17 per cent and loaded exports increasing by 3 per cent.

The 2002 five-port total container traffic increased by 12 per cent to 3.682 million teus from 2001.







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TABLE 5 NON-FINANCIAL PERFORMANCE INDICATORS, SELECTED AUSTRALIAN PORTS, 1999-2002

| | Jul-Dec 1999 | un-Jan-Jun 2000 | Jul-Dec 2000 | nuL-neL 1005 | Jul−D€c 2001 | Jan-Jun 2002 | Jul-Dec 2002 |
|--|--|--|--|--|--|--|--|
| Brisbane Total cargo throughput ('000 tonnes) Non-containerised general cargo ('000 tonnes) ^a | 11 190 328 | 11 859 330 | 11 529 308 | 11 618 262 | 11 366 302 | 11 516 302 | 12 164 311 |
| Containensed cargo (teus exchanged) Full import Empty import Full export Empty export | 80 820 27 606 85 819 14 652 | 77 990 32 583 92 838 20 308 | 83 701 34 317 92 078 16 151 | 69 785 40 258 102 095 14 654 | 87 135 37 226 100 322 17 122 | 85 682 32 114 95 935 21 391 | 114 655 35 719 100 647 41 683 |
| TOTAL Average total employment ^b Port turnaround time (hrs) ^c | 208 897 220 | 223 719 234 | 226 247 216 | 226 792 218 | 241 805 206 | 235 122 212 | 292 704 215 |
| Median result 95th percentile | 32 60 | 30 66 | 30 52 | 31 56 | 34 53 | 32 52 | 32 55 |
| Total cargo throughput ('000 tonnes) Non-containerised general cargo ('000 tonnes) ^a Containerised cargo (teus exchanged) | 12 543 375 | 11 811 348 | 13 005 311 | 11 684 241 | 12 462 291 | 11 838 279 | 12 073 319 |
| Full import Empty import Full export Empty export | 275 821 11 319 155 479 78 921 | 242 228 8 312 139 587 98 842 | 274 119 8 602 157 448 97 683 | 217 570 11 303 148 651 73 591 | 270 691 13 341 159 494 78 535 | 236 594 8 853 147 918 94 027 | 309 070 8 071 154 314 123 810 |
| TOTAL Average total employment ^b Port turnaround time (hrs) ^c | 521 540 189 | 488 969 188 | 537 852 183 | 451 115 192 | 522 061 195 | 487 392 199 | 595 265 198 |
| Median result 95th percentile | 43 84 | 35 67 | 32 60 | 32 57 | 32 68 | 30 55 | 36 63 |
| Total cargo throughput ('000 tonnes) Non-containerised general cargo ('000 tonnes) ^a Containerised cargo (teus exchanged) | 11 120 1 093 | 10 846 1 092 | 11 157 1 110 | 11 078 605 | 11 452 753 | 12 138 834 | 12 388 896 |
| Full import Empty import Full export Empty export TOTAL | 295 480 42 995 249 443 60 374 648 292 | 278 325 41 992 251 730 67 456 639 503 | 307 289 45 993 265 442 69 562 688 286 | 263 888 52 401 258 077 54 013 628 379 | 310 034 60 384 273 910 68 761 713 089 | 295 343 58 936 279 866 73 547 707 692 | 358 818 52 600 291 272 104 266 806 956 |
| Average total employment ^b Port turnaround time (hrs) ^c Median result | 80 43 | 80 39 | 83 36 | 89 34 | 93 36 | 96 35 | 95 37 |
| 95th percentile | 85 | 71 | 65 | 57 | 68 | 63 | 68 |
| Adelaide Total cargo throughput ('000 tonnes) Non-containerised general cargo ('000 tonnes) ^a Containerised cargo (teus exchanged) | 3 112 167 | 3 604 168 | 3 407 180 | 4 039 159 | 3 934 189 | 4 446 239 | 4 130 251 |
| Full import Empty import Full export Empty export | 17 378 6 877 27 505 | 18 049 9 325 27 581 | 20 143 9 923 32 174 5 790 | 17 865 11 136 31 120 | 21 097 11 714 34 482 4 117 | 19 591 15 055 35 793 3 377 | 21 864 11 715 37 358 |
| TOTAL Average total employment ^b Port turnaround time (hrs) ^c | 56 354 156 | 59 152 151 | 68 030 147 | 65 206 149 | 71 410 98 | 73 816 95 | 76 597 97 |
| Median result 95th percentile | 21 43 | 19 35 | 20 40 | 19 50 | 22 43 | 21 43 | 19 29 |
| Total cargo throughput ('000 tonnes) Non-containerised general cargo ('000 tonnes) ^a Containerised cargo (teus exchanged) | 10 698 342 | 10 174 338 | 11 447 364 | 11 132 301 | 11 147 337 | 11 476 309 | 11 348 361 |
| Full import Empty import Full export Empty export TOTAL Average total employment ^b | 60 132 11 960 49 716 12 480 134 288 167 | 62 132 21 682 61 863 17 398 163 075 169 | 73 078 21 656 61 508 22 723 178 965 167 | 63 416 25 926 64 066 21 771 175 179 166 | 77 136 21 815 69 768 22 796 191 515 167 | 76 825 19 829 72 686 20 954 190 294 193 | 93 919 19 560 75 792 27 145 216 416 199 |
| Port turnaround time (hrs) ^C Median result 95th percentile | 25 50 | 23 49 | 24 66 | 20 47 | 21 46 | 22 52 | 25 60 |
| Five ports ^d Total cargo throughput ('000 tonnes) Non-containerised general cargo ('000 tonnes) ^a Containerised cargo ('usu explanad) | 48 663 2 305 | 48 294 2 276 | 50 545 2 274 | 49 551 1 569 | 50 362 1 872 | 51 413 1 962 | 52 101 2 138 |
| Full import Full export Empty export | 729 631 100 757 567 962 171 021 | 678 724 113 894 573 599 208 201 | 758 330 120 491 608 650 211 909 | 632 524 141 024 604 009 169 114 | 766 093 144 480 637 976 191 331 | 714 035 134 787 632 198 213 296 | 898 326 127 665 659 383 302 564 |
| IOTAL Average total employment ^b Port turnaround time (hrs) ^C Median result | 1 569 371 812 - | 1 574 418 822 - | 1 699 380 796 - | 1 546 671 814 - | 1 739 880 759 - | 1 694 316 795 - | 1 987 938 803 - |
| - not applicable | - | - | - | - | - | - | - |

a. Excludes bulk cargoes.

b. Comparisons between ports are not appropriate because each port authority/corporation has a different structure.

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Port furnaround times refer only to ships calling at container terminals. Comparisons between ports are not appropriate because each port has a different set of parameters to measure the turnaround time. Normally, only inter-temporal comparison at individual ports is of use.

d. Components may not sum to totals due to rounding.

Source AAPMA.

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PORT INTERFACE COST INDEX

The port interface cost index provides a measure of shore-based shipping costs (charges) for containers moved through Australian mainland capital city ports. Data for January–June and July-December 2002 are presented in tables 6 to 10. The port interface cost index is based on an indicative approach; that is, the index is not an average of all costs, but is based on those costs typically charged by service providers in most instances.

Port and related charges

Table 6 provides the parameters used to determine the port and related charges in tables 7 and 8. These parameters relate to a representative port call by container ships (Lloyd's ship classification UCC) in the 15 000 to 20 000 GRT and 35 000 to 40 000 GRT ranges.

TABLE 6 PARAMETERS USED IN THE PORT INTERFACE COST INDEX, 2001–2002

| | Bris | sbane | Sy | dney | Melb | | Adel | aide | Frem | antle |
|-----------------------------------|------------------|-----------------|-----------------|-----------------|-------------------|-----------------|-------------------|--------------|--------------|--------------|
| | 2005 2005 | 2005 2002 | 2005 2002 | 2005 2002 | 2005 2002 | 2005 2002 | 2005 | 2005 2005 | 2005 2002 | 2005 2002 |
| Indicative vessel size | GRT 17215 | | | | | | | | | |
| Average teus exchang | jed ^a | | | | | | | | | |
| All | 483 | 601 | 989 | 983 | 916 | 934 | na | na | 778 | 1129 |
| Loaded | 402 | 455 | 809 | 824 | 786 | 801 | na | na | 618 | 846 |
| Empty | 81 | 146 | 180 | 159 | 129 | 133 | na | na | 160 | 283 |
| Loaded inwards | 222 | 283 | 499 | 527 | 381 | 374 | na | na | 310 | 504 |
| Loaded outwards | 180 | 172 | 310 | 298 | 405 | 427 | na | na | 308 | 342 |
| Ship call parameters ^a | | | | | | | | | | |
| Number of port calls | 6 | 5 | 3 | 3 | 4 | 4 | na | na | 5 | 6 |
| Elapsed berth time (hrs) | 23 | 25 | 35 | 37 | 36 | 33 | na | na | 24 | 30 |
| Indicative vessel size | GRT 3739 | 4 | | | | | | | | |
| Average teus exchang | jed ^b | | | | | | | | | |
| All | 965 | 1085 | 1520 | 1811 | 1769 | 1901 | 787 | 721 | 561 | 613 |
| Loaded | 733 | 787 | 1217 | 1413 | 1512 | 1577 | 578 | 549 | 444 | 511 |
| Empty | 231 | 298 | 303 | 398 | 258 | 324 | 209 | 171 | 117 | 102 |
| Loaded inwards | 338 | 391 | 776 | 1008 | 746 | 875 | 195 | 211 | 262 | 255 |
| Loaded outwards | 395 | 396 | 441 | 405 | 766 | 702 | 382 | 338 | 182 | 257 |
| Ship call parameters ^t | b | | | | | | | | | |
| Number of port calls | 4 | 4 | 3 | 4 | 3 | 4 | 3 | 5 | 4 | 5 |
| Elapsed berth time (hrs) | 18 | 26 | 31 | 41 | 34 | 41 | 20 | 17 | 20 | 24 |
| a. Mean value for ships b | etween 15 000 | and 20 000 (| GRT. | | | | | | | |
| b. Mean value for ships b | etween 35 000 | and 40 000 0 | GRT. | | | | | | | |
| na not available | | | | | | | | | | btre |
| Sources BTRE estimates b | ased on shin c | all data sunnli | ied by relevant | nort authoritie | es/cornorations a | nd other port s | service providers | | | |

Tables 7 and 8 provide the port and related charges at the five mainland capital city ports for the 15 000 to 20 000 GRT range and the 35 000 to 40 000 GRT range respectively, for January–June and July–December 2002. Port and related charges comprise ship-based charges and cargo-based charges.

Ship-based charges

Overall ship-based charges changed little in July–December 2002. There were some significant changes in charges per teu, mainly reflecting the variation in the average number of teus exchanged per ship call.

Compared to the previous period, the overall changes in total ship-based charges per teu in July–December 2002 for ships in the 15 000 to 20 000 GRT range were:

- at Brisbane—a 14 per cent decrease;
- at Sydney—a I per cent decrease;
- at Melbourne-a 4 per cent decrease; and
- at Fremantle-a 31 per cent decrease.



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PORT AND RELATED CHARGES FOR SHIPS IN THE IS 000-20 000 TABLE 7 GRT RANGE, 2002

| | Bris Jan-Jun 2002 | ibane Jul-Dec 2002 | Syo Jan-Jun 2002 | iney Jul-Dec 2002 | Melb Jan-Jun 2002 | Jul-Dec 2002 | Adel Jan-Jun 2002 | aide Jul-Dec 2002 | Frem Jan-Jun 2002 | antle Jul-Dec 2002 |
|---|------------------------------------|--|--|---------------------------------------|--|---|--------------------------------|--------------------------------|---------------------------------------|---------------------------------------|
| Ship-based charges (\$/teu) Conservancy Tonnage Pilotage Towage Mooring, unmooring Berth hire ^a Total ^b | 2.48 11.71 18.48 3.89 | 3.98 9.71 14.84 3.05 31.59 | 7.47 3.35 9.01 3.50 - 23.33 | 7.51 3.37 9.06 3.19 23.13 | 5.58 6.89 10.01 1.15 7.63 31.26 | 5.52 6.75 9.81 1.12 6.74 29.94 | na na na - - na | na na na - - na | 3.59 2.95 7.10 1.56 15.19 | 2.47 2.04 4.89 1.07 10.47 |
| Cargo-based charges (\$/teu) Wharfage Imports Exports Harbour dues Berth charge | 28.60 28.60 46.20 | 28.60 28.60 46.20 | 66.00 49.50 - | 66.00 49.50 - | 29.70 29.70 - - | 30.36 30.36 - - | 58.30 58.30 - - | 58.30 58.30 - - | 49.50 49.50 - 15.29 | 49.50 49.50 - 15.29 |
| Total port and related charges (\$/teu) ^b Loaded imports Loaded exports | 111 111 | 106 106 | 89 73 | 89 73 | 61 61 | 60 60 | na na | na na | 80 80 | 75 75 |
| Charges per ship visit (\$/visit) Total ship-based charges Empty teus ^c | 17 637 1 258 | 18 974 2 275 | 23 076 | 22 752 | 28 615 | 27 959 | na - | na - | 11 819 | 11 820 - |

not applicable

-

Charged by stevedores and itemised separately from basic stevedoring charge. а. ь. b.

Components may not sum to totals due to rounding.

Sum of wharfage, harbour dues and berth charge per empty teu, multiplied by average exchange of empty teus. C.

na. not available

Note Port and related charges are based on the parameters described in table 6.

Sources BTRE estimates based on: ship call data supplied by relevant port authorities/corporations, and price schedules of relevant port authorities/corporations, towage operators and pilotage service providers.

TABLE 8 PORT AND RELATED CHARGES FOR SHIPS IN THE 35 000-40 000 GRT RANGE, 2002

| | Bris Jan-Jun 2002 | bane Jul-Dec 2002 | Syc Jan-Jun 2002 | iney Jul-Dec 2002 | Melb 2002 | ourne Jul-Dec 2002 | Adela Jan-Jun 2005 | aide Jul-Dec 2002 | Frem Jan-Jun 2002 | antle Jul-Dec 2002 |
|--|-------------------------|-------------------------|------------------------|-------------------------|--------------|--------------------------|--------------------------|-------------------------|-------------------------|--------------------------|
| Ship-based charges | | | | | | | | | | |
| (\$/teu) | | | | | | | | | | |
| Conservancy | 5.39 | 4.79 | | - | - | | 4.46 | 3.25 | | |
| Tonnage | - | | 10.55 | 8.86 | 6.28 | 5.89 | 8.27 | 8.24 | 10.80 | 9.87 |
| Pilotage | 8.45 | 7.74 | 3.71 | 3.11 | 4.53 | 4.21 | 4.74 | 5.18 | 4.10 | 3.75 |
| Towage | 11.68 | 10.39 | 6.24 | 5.24 | 5.54 | 5.15 | 24.91 | 27.20 | 13.65 | 12.48 |
| Mooring, unmooring | 1.94 | 1.69 | 2.84 | 2.38 | 0.59 | 0.55 | | | 2.16 | 1.97 |
| Berth hire ^a | - | - | | - | 3.76 | 4.18 | - | - | | |
| Total ^b | 27.46 | 24.60 | 23.34 | 19.58 | 20.70 | 19.99 | 42.38 | 43.86 | 30.71 | 28.07 |
| Cargo-based charges (\$/teu) | | | | | | | | | | |
| Importo | 20 60 | 20 60 | 66.00 | 66.00 | 20.70 | 20.26 | E9 20 | E9 20 | 40.50 | 40.50 |
| Exports | 20.00 | 20.00 | 40.50 | 40.50 | 29.70 | 30.30 | 58.30 | 58.30 | 49.50 | 49.50 |
| Harbour duos | 20.00 | 20.00 | 49.00 | 49.00 | 25.70 | 30.30 | 30.30 | 50.50 | 49.00 | 49.00 |
| Berth charge | 40.20 | 40.20 | - | - | - | - | - | - | 15.29 | 15.29 |
| Total port and related charges (\$/teu) ^b | | | | | | | | | | |
| Loaded imports | 102 | 99 | 89 | 86 | 50 | 50 | 101 | 102 | 96 | 93 |
| Loaded exports | 102 | 99 | 73 | 69 | 50 | 50 | 101 | 102 | 96 | 93 |
| Charges per ship visit (\$/visit) | | | | | | | | | | |
| Total ship-based charges | 26 488 | 26 685 | 35 468 | 35 468 | 36 618 | 37 994 | 33 337 | 31 599 | 17 222 | 17 223 |
| Empty teus ^c | 3 613 | 4 655 | - | | - | - | | - | - | - |

not applicable -

Charged by stevedores and itemised separately from basic stevedoring charge. a.

b.

Components may not sum to totals due to rounding. Sum of wharfage, harbour dues and berth charge per empty teu, multiplied by average exchange of empty teus. C.

Note Port and related charges are based on the parameters described in table 6.

Sources BTRE estimates based on: ship call data supplied by relevant port authorities/corporations, and price schedules of relevant port authorities/corporations, towage operators and pilotage service providers.





March 2003

Waterline



For ships in this range, the average number of teus exchanged changed little at Sydney, but increased at Brisbane by 24 per cent, Melbourne by 2 per cent, and Fremantle by 45 per cent when compared to the previous period. There were no visits from ships in this range at Adelaide for 2002.

Compared to the previous period, the overall changes in total ship-based charges per teu in July–December 2002 for ships in the 35 000 to 40 000 GRT range were:

- at Brisbane—a 10 per cent decrease;
- at Sydney—a 16 per cent decrease;
- at Melbourne—a 3 per cent decrease;
- at Adelaide—a 3 per cent increase; and
- at Fremantle—a 9 per cent decrease.

In the 35 000 to 40 000 GRT range, the average number of teus exchanged rose at Brisbane, Sydney, Melbourne and Fremantle, but fell at Adelaide in July–December 2002 when compared to the previous period. The increases were 12 per cent at Brisbane, 19 per cent at Sydney, 7 per cent at Melbourne, and 9 per cent at Fremantle. Adelaide decreased by 8 per cent.

Fremantle had the lowest ship-based charges on a per ship visit basis for the indicative ships in table 6.

Cargo-based charges

In July–December 2002, cargo-based charges increased at Melbourne by 2 per cent. There were no changes in cargo–based charges at Brisbane, Sydney, Adelaide or Fremantle compared with January–June 2002.

Stevedoring charges per teu

The stevedoring charges used in this issue of *Waterline* are those published in the most recently available ACCC report on stevedoring prices (October 2002). As the report does not include charges beyond the first half of 2002, the July–December 2002 stevedoring charges included in the port interface cost index are provisional figures and will be updated in *Waterline* 35.

Land-based charges per teu

Average customs brokers' fees and road transport rates for January–June and July–December 2002 are included in tables 9 and 10. These charges are based on data provided by 30 customs brokers and 31 road transport operators.

Customs brokers' fees for imports are higher than fees for exports, reflecting the more complex clearance procedures for import containers. During July–December 2002 the average fee for imports increased at Brisbane (4 per cent), Adelaide (1 per cent) and Fremantle (9 per cent), and decreased at Sydney (1 per cent) and Melbourne (2 per cent). For exports the average fee increased at Brisbane (3 per cent), Sydney (4 per cent) and Melbourne (1 per cent), and decreased at Adelaide (5 per cent) and Fremantle (2 per cent).

Road transport charges decreased at Brisbane (4 per cent), Adelaide (2 per cent), and Fremantle (1 per cent), and increased at Sydney (1 per cent) and Melbourne (5 per cent). One of the parameters used to estimate road transport charges is the time taken to move containers between the wharf and the customer's warehouse. Both distance and traffic congestion impact on this parameter and therefore, to some extent, help explain the significant difference between road transport charges at Melbourne and Sydney compared with Brisbane, Adelaide and Fremantle.

Indices for individual ports

Table 9 indicates that, for ships in the 15 000 to 20 000 GRT range between January–June and July–December 2002, costs per teu for import containers at Sydney were virtually unchanged, and costs per teu for export containers increased by 1 per cent. Costs per teu for import containers at Melbourne increased by 1 per cent and costs per teu for exports increased by 2 per cent.



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TABLE 9 PORT INTERFACE COSTS FOR SHIPS IN THE IS 000-20 000 GRT RANGE, 2002

| | Bris Jan-Jun 2002 | bane Jul-Dec 2002 | Syo Jan-Jun 2002 | dney Jul-Dec 2002 | M∈lb Jan-Jun 2002 | ourne Jul-Dec 2002 | Adel Jan-Jun 2002 | aide Jul-Dec 2002 | Frem Jan-Jun 2002 | antle Jul-Dec 2002 |
|---------------------------|-------------------------|-------------------------|------------------------|-------------------------|-------------------------|--------------------------|-------------------------|-------------------------|-------------------------|--------------------------|
| Import | | | | | | | | | | |
| Ship-based charges | 37 | 32 | 23 | 23 | 31 | 30 | na | na | 15 | 10 |
| Cargo-based charges | 75 | 75 | 66 | 66 | 30 | 30 | 58 | 58 | 65 | 65 |
| Stevedoring | 165 ^r | 165 ^p | 165 ^r | 165 ^p | 165 ^r | 165 ^p | 165 ^r | 165 ^p | 165 ^r | 165 ^p |
| Customs brokers' fees | 143 | 148 | 142 | 141 | 130 | 127 | 129 | 130 | 147 | 160 |
| Road transport charges | 218 | 209 | 335 | 337 | 283 | 296 | 190 | 187 | 194 | 193 |
| Import total ^a | 637 | 629 | 732 | 733 | 638 | 648 | na | na | 586 | 593 |
| Export | | | | | | | | | | |
| Ship-based charges | 37 | 32 | 23 | 23 | 31 | 30 | na | na | 15 | 10 |
| Cargo-based charges | 75 | 75 | 50 | 50 | 30 | 30 | 58 | 58 | 65 | 65 |
| Stevedoring | 165 ^r | 165 ^p | 165 ^r | 165 ^p | 165 ^r | 165 ^p | 165 ^r | 165 ^p | 165 ^r | 165 ^p |
| Customs brokers' fees | 74 | 76 | 105 | 110 | 87 | 88 | 96 | 92 | 88 | 87 |
| Road transport charges | 218 | 209 | 335 | 337 | 283 | 296 | 190 | 187 | 194 | 193 |
| Export total ^a | 568 | 557 | 678 | 685 | 596 | 609 | na | na | 527 | 519 |
| 0 1 | | | | | | | | | | |

Components may not sum to totals due to rounding. a.

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Provisional, will be updated after the release of the next ACCC stevedoring monitoring report p.

Notes 1. Based on parameters described in table 6.

2. Waterline data on customs brokers' fees and road transport charges are collected for the purpose of monitoring trends in charges over time. They should not be used for inter-port comparisons, as sample characteristics may vary between ports. 3. The stevedoring charge used in Waterline is monitored by the ACCC and is the weighted average for Brisbane, Sydney, Melbourne, Adelaide, Fremantle and

Burnie. Stevedoring charges vary between ports but detailed data for individual ports are not publicly available.

Sources BTRE estimates based on: ship call data supplied by relevant port authorities/corporations; price schedules of relevant port authorities/ corporations, towage operators and pilotage service providers; surveys of customs brokers and road transport operators; and stevedoring charge data supplied by the ACCC.



Table 10 indicates that, for ships in the 35 000 to 40 000 GRT range, costs per teu for import and export containers changed little at Sydney and Adelaide. Costs per teu for imports and exports increased by 2 per cent at Melbourne.

TABLE IO PORT INTERFACE COSTS FOR SHIPS IN THE 35 000-40 000 GRT RANGE. 2002

| | Bris Jan-Jun 2002 | bane Jul-Dec 2002 | Syc Jan-Jun 2002 | iney Jul-Dec 2002 | Melb Jan-Jun 2002 | ourne Jul-Dec 2002 | Adel Jan-Jun 2002 | aide Jul-Dec 2002 | Frem Jan-Jun 2002 | antle Jul-Dec 2002 |
|---------------------------|-------------------------|-------------------------|------------------------|-------------------------|-------------------------|--------------------------|-------------------------|-------------------------|-------------------------|--------------------------|
| Import | | | | | | | | | | |
| Ship-based charges | 27 | 25 | 23 | 20 | 21 | 20 | 42 | 44 | 31 | 28 |
| Cargo-based charges | 75 | 75 | 66 | 66 | 30 | 30 | 58 | 58 | 65 | 65 |
| Stevedoring | 165 ^r | 165 ^p | 165 ^r | 165 ^p | 165 ^r | 165 ^p | 165 ^r | 165 ^p | 165 ^r | 165 ^p |
| Customs brokers' fees | 143 | 148 | 142 | 141 | 130 | 127 | 129 | 130 | 147 | 160 |
| Road transport charges | 218 | 209 | 335 | 337 | 283 | 296 | 190 | 187 | 194 | 193 |
| Import total ^a | 628 | 622 | 732 | 729 | 628 | 638 | 585 | 584 | 602 | 610 |
| Export | | | | | | | | | | |
| Ship-based charges | 27 | 25 | 23 | 20 | 21 | 20 | 42 | 44 | 31 | 28 |
| Cargo-based charges | 75 | 75 | 50 | 50 | 30 | 30 | 58 | 58 | 65 | 65 |
| Stevedoring | 165 ^r | 165 ^p | 165 ^r | 165 ^p | 165 ^r | 165 ^p | 165 ^r | 165 ^p | 165 ^r | 165 ^p |
| Customs brokers' fees | 74 | 76 | 105 | 110 | 87 | 88 | 96 | 92 | 88 | 87 |
| Road transport charges | 218 | 209 | 335 | 337 | 283 | 296 | 190 | 187 | 194 | 193 |
| Export totala | 559 | 550 | 678 | 681 | 585 | 599 | 552 | 546 | 543 | 537 |

Components may not sum to totals due to rounding. a.

Provisional, will be updated after the release of the next ACCC stevedoring monitoring report p.

Notes 1. Based on parameters described in table 6.

2. Waterline data on customs brokers' fees and road transport charges are collected for the purpose of monitoring trends in charges over time. They should not be used for inter-port comparisons, as sample characteristics may vary between ports.

3. The stevedoring charge used in Waterline is monitored by the ACCC and is the weighted average for Brisbane, Sydney, Melbourne, Adelaide, Fremantle and Burnie. Stevedoring charges vary between ports but detailed data for individual ports are not publicly available.

Sources BTRE estimates based on: ship call data supplied by relevant port authorities/corporations; price schedules of relevant port authorities/ corporations, towage operators and pilotage service providers; surveys of customs brokers and road transport operators; and stevedoring charge data supplied by the ACCC.





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For Brisbane, costs per teu for imports decreased by I per cent and costs per teu for exports decreased by 2 per cent for both GRT ranges when compared with the previous period. Costs per teu for imports at Fremantle increased by I per cent, and costs per teu for exports decreased by 2 per cent.

These results should be interpreted with caution, given the provisional nature of the reported stevedoring charges. Moreover, the use of a single stevedoring charge for all ports reflects the scope of the available information, which is not disaggregated on an individual port basis. In practice, container stevedoring charges tend to vary between ports.

National index

Figure 9 provides the national port interface cost index for ships in the 15 000 to 20 000 GRT range from 1993 onwards. In current prices, the national index for imports increased from \$655 in January–June 2002 to \$659 per teu in July–December 2002. The index for exports increased from \$607 to \$612 per teu.



In real terms (in 1999 prices, using ABS chain volume and current price statistics to calculate the deflator), the national index per import teu has declined by 19 per cent since 1993. The charge per export teu has declined by 17 per cent.

Table 11 shows the national port interface cost index from January–June 2001 for ships in the 35 000 to 40 000 GRT range. The national index for imports increased from \$653 in January–June 2002 to \$657 per teu in July–December 2002. The index for exports increased from \$602 to \$606 per teu.

| TABLE II THE from | NATIONAL P n former, pre- | ORT INTERf | ACT COST IN e, ABS tables | ID€X— ₅ |
|--------------------------------|------------------------------|--------------|------------------------------|--------------|
| | Jan-Jun 2001 | Jul-Dec 2001 | Jan-Jun 2002 | Jul-Dec 2002 |
| IMPORTS in current prices | 659 | 651 | 653 | 657 |
| Imports in 1999 constant price | ces 614 | 602 | 596 | 591 |
| EXPORTS in current prices | 601 | 595 | 602 | 606 |
| Exports in 1999 constant pri | ces 560 | 551 | 550 | 546 |

Sources BTRE estimates based on: ship call data supplied by port authorities/corporations; price schedules of port authorities/corporations, towage operators and pilotage service providers; surveys of customs brokers and road transport operators; stevedoring charges data supplied by the ACCC and industry sources; and ABS 5206.041 National Accounts table.



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COASTAL SHIPPING PERMITS

Total pre-voyage estimated tonnages of cargo provided by applicants under SVPs and CVPs fell around 5 per cent from 12.6 million tonnes in 2001 to 12.0 million tonnes in 2002.

Single voyage permits

Figure 10 illustrates the number of SVPs issued, and the pre-voyage estimation of tonnes of cargo to be carried, between July–December 1990 and July–December 2002. The number of SVPs issued in July–December 2002 increased by 18 per cent compared with January–June 2002, and by 10 per cent compared with



July–December 2001. The associated tonnes of cargo to be carried increased by 8 per cent compared with January–June 2002, and by 2 per cent compared with July–December 2001.

On an annual basis the total number of SVPs issued in 2002 was 699, compared with 675 in 2001. This represented an increase of 4 per cent. Over the same period, estimated SVP cargo fell from 10.4 million tonnes to 9.7 million tonnes, a decrease of 7 per cent.

Table 12 gives a breakdown of SVPs by cargo types for July–December 2002. General cargo (including containerised cargo) permits continue to lead the tally for SVPs issued. However, bulk cargo accounts for over 95 per cent of the total tonnage moved under SVPs.

TABLE I2 SUMMARY OF SINGLE VOYAGE PERMITS ISSUED, JULY-DECEMBER 2002

| Cargo Category | Caregory Permits Cargo ium Products 44 ed Gas 46 Sulk Liquids 28 lk 116 ral Cargo 145 379 Cargory Permits | Tonnes | | | |
|---|---|------------------|--|--|--|
| Bulk Cargo | Permits Tonnes 44 1 326 100 46 105 145 28 197 996 116 3 060 083 145 157 487 379 4 846 811 | | | | |
| Petroleum Products | 44 | 1 326 100 | | | |
| Liquefied Gas | 46 | 105 145 | | | |
| Other Bulk Liquids | 28 | 197 996 | | | |
| Cargo Category Bulk Cargo Petroleum Products Liquefied Gas Other Bulk Liquids Dry Bulk General Cargo Total | 116 | 3 060 083 | | | |
| General Cargo | rgo 1 I Products 44 1 326 100 Gas 46 105 145 k Liquids 28 197 996 116 3 060 083 I Cargo 145 157 487 379 4 846 811 | | | | |
| Total | 379 | 4 846 811 | | | |
| Source Transport Regulation Divis | ion of the Department of Transport & Region | al Services btre | | | |



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Continuing voyage permits

Although CVPs were available prior to 1998, they were rarely requested or issued during this period. However, as shown in figure 11, since 1998 there have been significant fluctuations in both the number of permits issued and the tonnage to be carried. During 2002 there were 87 CVPs issued, compared with 123 in 2001. A total of 2.2 million tonnes of coastal trade were to be moved using CVPs in 2002, representing an increase of 4 per cent compared with 2001. Recent changes to CVPs mean one CVP now typically extends for a period of three months, and is now approximately equivalent to three SVPs.

More information on coastal permits can be found on the Department of Transport and Regional Services' internet site at http://www.dotars.gov.au/transreg/str_permits.htm.





ABBREVIATIONS

С

| AAPMA | Association of Australian Ports and Marine Authorities | GRT |
|-------|---|-----|
| | | MUA |
| ABS | Australian Bureau of Statistics | NRT |
| ACCC | Australian Competition and Consumer Commission | teu |
| BTRE | Bureau of Transport and Regional Economics | UCC |

Gross Registered Tonnage Maritime Union of Australia Net Registered Tonnage Twenty-foot equivalent unit Container ship



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CONTAINER TERMINAL PERFORMANCE INDICATORS. SELECTED AUSTRALIAN PORTS— PRODUCTIVITY IN TEUS PER HOUR TABLE 13

| | Sep-93 | Dec-93 | Mar-94 | Jun-94 | Sep-94 | Dec-94 N | Aar-95 | Jun-95 | Sep-95 | Dec-95 | Mar-96 | Jun-96 | Sep-96 | Dec-96 | Mar-97 | Jun-97 | Sep-97 | Dec-97 | |
|--------------------------|-----------------|--------------|--------------|------------|------------|--------------|--------------|-------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-----------|--|
| Five Ports | | | | | | | | | | | | | | | | | | | |
| Ships handled | 683 | 796 | 655 | 814 | 782 | 809 | 782 | 739 | 721 | 728 | 748 | 827 | 871 | 206 | 865 | 891 | 907 | 963 | |
| Total TEUS | 350 553 | 382 726 | 361984 | 394 865 | 403 096 | 445 041 | 421 149 | 407 145 | 433 594 | 425 731 | 411 538 | 440 098 | 497 140 | 519 206 | 441 697 | 483 372 | 549 247 | 585 474 | |
| Crane rate | 20.9 | 19.9 | 18.8 | 19.2 | 18.5 | 18.9 | 19.9 | 18.9 | 19.5 | 19.2 | 20.2 | 21.3 | 22.2 | 21.2 | 22.8 | 22.8 | 23.2 | 23.3 | |
| Elapsed labour rate | 23.4 | 21.0 | 19.2 | 19.9 | 18.9 | 20.4 | 21.9 | 21.2 | 22.5 | 21.7 | 23.3 | 22.7 | 23.6 | n/a | 23.1 | 23.8 | 26.0 | 25.8 | |
| Ship rate | 28.2 | 25.3 | 25.0 | 25.0 | 23.4 | 25.4 | 26.1 | 25.0 | 26.5 | 25.3 | 27.1 | 28.4 | 29.2 | 27.2 | 29.0 | 29.5 | 31.0 | 30.8 | |
| Brisbane | | | | | | | | | | | | | | | | | | | |
| Ships handled | 106 | 111 | 112 | 140 | 140 | 187 | 136 | 123 | 135 | 132 | 124 | 133 | 140 | 141 | 156 | 164 | 162 | 177 | |
| Total teus | 49 622 | 46 529 | 37 820 | 52 983 | 51 596 | 50 574 | 41723 | 47 065 | 58 851 | 46 439 | 39 037 | 51 008 | 66 115 | 62 904 | 47 471 | 65 572 | 73 184 | 71 043 | |
| Crane rate | 21.2 | 21.1 | 20.4 | 20.8 | 20.3 | 18.9 | 18.4 | 18.0 | 18.6 | 18.9 | 19.9 | 19.8 | 20.6 | 20.6 | 20.0 | 20.5 | 20.2 | 20.5 | |
| Elapsed labour rate | 26.6 | 24.6 | 20.9 | 22.6 | 21.5 | 19.6 | 17.8 | 18.6 | 19.5 | 21.0 | 21.5 | 20.6 | 20.9 | 21.1 | 20.3 | 20.6 | 21.2 | 20.8 | |
| Ship rate | 29.4 | 27.5 | 23.9 | 25.9 | 25.7 | 23.4 | 20.9 | 21.6 | 22.5 | 24.6 | 24.5 | 24.3 | 25.0 | 24.9 | 22.7 | 23.3 | 24.0 | 24.2 | |
| Sydney | | | | | | | | | | | | | | | | | | | |
| Ships handled | 205 | 238 | 177 | 240 | 223 | 221 | 218 | 202 | 192 | 203 | 206 | 216 | 228 | 249 | 251 | 249 | 243 | 266 | |
| Total teus | 124 028 | 139 321 | 116 914 | 129 586 | 142 659 | 152 326 | 144 868 | 140 113 | 148 431 | 143 746 | 146 038 | 148 290 | 156 344 | 174 982 | 158 323 | 167 705 | 183 978 | 201 535 | |
| Crane rate | 19.8 | 20.4 | 16.4 | 18.5 | 16.9 | 16.0 | 18.9 | 18.1 | 19.3 | 18.5 | 19.5 | 19.9 | 20.3 | 19.6 | 22.3 | 22.6 | 23.5 | 23.5 | |
| Elapsed labour rate | 22.6 | 22.0 | 18.7 | 20.8 | 19.4 | 20.3 | 21.6 | 20.7 | 23.4 | 21.8 | 23.8 | 22.1 | 23.2 | n/a | 22.7 | 23.6 | 28.0 | 28.2 | |
| Ship rate | 29.4 | 28.3 | 28.3 | 29.1 | 25.0 | 26.3 | 28.0 | 26.6 | 29.9 | 25.7 | 28.0 | 27.9 | 29.4 | 28.9 | 32.2 | 32.7 | 36.1 | 35.5 | |
| | | | | | | | | | | | | | | | | | | | |
| Shins handled | 235 | 306 | 211 | 265 | 267 | 244 | 265 | 228 | 221 | 702 | 228 | 262 | 274 | 282 | 230 | 249 | 268 | 281 | |
| Total teus | 129 687 | 143 350 | 153 420 | 158 849 | 159 039 | 180 134 | 173 338 | 152 983 | 161.943 | 173 566 | 162.911 | 170 884 | 203.371 | 202 376 | 162 156 | 177 070 | 208 200 | 223 465 | |
| Crane rate | 22.3 | 18.0 | 10.7 | 101 | 18.5 | 20.2 | 2008 | 10.4 | 10.8 | 10.6 | 20.6 | 22.3 | 24.6 | 22.0 | 23.6 | 23.5 | 23.6 | 23.6 | |
| Elansed labour rate | 25.9 | 20.0 | 19.5 | 19.2 | 17.9 | 21.5 | 23.9 | 23.7 | 24.1 | 22.8 | 24.5 | 25.0 | 26.5 | 22.1 | 24.3 | 25.1 | 26.0 | 25.2 | |
| Ship rate | 29.3 | 22.9 | 23.8 | 22.7 | 21.3 | 25.8 | 26.9 | 25.9 | 26.6 | 26.4 | 28.3 | 31.7 | 32.2 | 27.2 | 28.7 | 29.7 | 29.9 | 28.7 | |
| | | | | | | | | | | | | | | | | | | | |
| Adelaide | | | | | | | | | | | | | | | | | | | |
| Ships handled | 21 | 26 | 28 | 34 | 31 | 33 | 35 | 20 | 34 | 42 | 47 | 63 | 20 | 74 | 69 | 65 | 68 | 99 | |
| Total teus | 9 650 | 12 616 | 13 243 | 12 461 | 13 167 | 15 038 | 16 832 | 21676 | 14 319 | 17 318 | 15 955 | 18 803 | 20 519 | 23 351 | 21 963 | 20 933 | 25 982 | 25 188 | |
| Crane rate | 19.8 | 20.9 | 20.6 | 19.1 | 19.8 | 20.2 | 21.5 | 20.2 | 20.9 | 21.4 | 21.5 | 21.5 | 22.7 | 24.0 | 24.6 | 26.0 | 26.1 | 26.0 | |
| Elapsed labour rate | 23.1 | 25.5 | 27.8 | 24.7 | 24.6 | 24.2 | 24.9 | 24.9 | 24.9 | 26.1 | 26.6 | 26.1 | 26.2 | 27.7 | 30.2 | 35.1 | 35.2 | 35.4 | |
| Ship rate | 26.1 | 26.6 | 29.8 | 25.7 | 26.0 | 25.7 | 25.3 | 25.7 | 26.5 | 26.7 | 27.2 | 26.7 | 26.8 | 28.3 | 30.9 | 36.0 | 36.2 | 36.5 | |
| Fremantle | | | | | | | | | | | | | | | | | | | |
| Ships handled | 116 | 115 | 127 | 135 | 121 | 124 | 128 | 136 | 139 | 124 | 143 | 153 | 159 | 161 | 159 | 164 | 166 | 173 | |
| Total teus | 37 566 | 40 910 | 40 587 | 40 986 | 36 635 | 46 969 | 44 388 | 45 308 | 50 050 | 44 662 | 47 597 | 51 113 | 50 791 | 55 593 | 51 784 | 52 092 | 57 903 | 64 243 | |
| Crane rate | 19.0 | 19.8 | 19.8 | 19.3 | 21.6 | 22.9 | 20.2 | 19.3 | 19.5 | 19.2 | 21.3 | 23.4 | 20.7 | 21.5 | 23.3 | 22.9 | 23.1 | 23.6 | |
| Elapsed labour rate | 13.1 | 15.5 | 15.2 | 14.6 | 14.9 | 16.5 | 17.7 | 15.5 | 17.7 | 15.8 | 18.3 | 17.6 | 16.1 | 18.6 | 19.7 | 19.5 | 21.0 | 22.2 | |
| Ship rate | 19.4 | 21.0 | 19.8 | 19.5 | 21.8 | 23.4 | 21.6 | 20.5 | 21.1 | 19.8 | 22.3 | 23.5 | 22.6 | 24.2 | 25.0 | 24.0 | 25.5 | 28.8 | |
| na not available | | | | | | | | | | | | | | | | | | | |
| Notes 1. Data from CSX W | forld Terminals | s at Brisban | e are incorp | orted from | the Decemb | er quarter 1 | 1999 until J | une quarte. | r 2001. | | | | | | | | | - Antonia | |
| Sources Patrick, P&O Poi | rts and CSX M | Vorld Termin | als. | | | | | | | | | | | | | | | | |

Notes 1. Data from CSX World Terminals at Brisbane are incorported from the December quarter 1999 until June quarter 2001. Sources Patrick, P&O Ports and CSX World Terminals.

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| TABLE | |

| 2 Jun-O2 Sep-O2 Dec-O2 | 4 868 858 851 1 788 900 876 522 938 911 4 35.9 35.9 35.9 35.4 42.1 6 41.1 43.4 42.3 59.9 59.4 | 2 211 216 211 3 121920 136 771 14388; 1 35.2 34.6 35.6 5 30.0 32.0 32.3 9 48.2 50.2 53.3 | 6 203 204 211 3 235 664 277 733 302 261 8 37,4 36.2 35.5 9 46.7 49.4 45.6 7 62.8 65.5 61.7 | 4 251 250 24: 8 295 284 325 945 342 68- 1 35.6 36.6 35.7 0 42.4 45.5 43.8 9 58.5 63.6 61.9 | 4 59 55 51 5 41829 37317 3935, 0 30.7 30.2 31.5 2 43.9 42.2 44.5 5 47.4 44.7 49.7 | 8 144 133 12: 2 93 393 98 756 110 72! 4 36.6 36.8 38.4 8 35.7 36.0 39.5 5 47.4 51.2 56.5 | btre |
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| -01 Sep-01 | 813 825 326 762 202 5.2 34.2 7.8 39.2 3.3 55.0 | 188 175 810 105 746 5.1 32.7 0.2 28.7 6.5 46.8 | 202 208 126 242 823 4.0 34.4 8.2 42.5 4.1 60.1 | 215 243 400 285 947 5.7 33.9 1.0 40.7 7.3 56.2 | 57 57 308 34 867 3.4 32.1 4.9 38.6 9.5 42.7 | 151 142 582 92 819 77.9 37.4 37.8 5.0 37.8 52.3 | |
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| . 00-1aM 99 | 33 875 90 678 046 1.8 26.6 1.8 33.3 7.8 41.7 | 32 219 96 97 431 4.6 26.4 7.0 29.8 3.1 36.1 | 44 221 27 229 014 2.1 224.8 3.1 34.0 3.8 43.0 | 66 247 47 243 277 5.5 27.9 3.4 33.8 0.4 43.0 | 62 56 97 27 736 7.2 29.4 5.9 36.8 3.8 39.7 | 29 132 23 80 588 7.2 27.4 7.9 33.0 8.8 41.6 | until June quar |
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| Mar | Five Ports Ships handled Total TEUS Crane rate Elapsed labour rate Ship rate | Brisbane Ships handled Total teus Crane rate Elapsed labour rate Ship rate | Sydney Ships handled Total teus Crane rate Elapsed labour rate Ship rate | Melbourne Ships handled Total teus Crane rate Elapsed labour rate Ship rate | Adelaide Ships handled Total teus Crane rate Elapsed labour rate Ship rate | Fremantle Ships handled Total teus Crane rate Elapsed labour rate Ship rate | na not available Notes 1. Data from CSX V |

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acknowledgements

This issue of *Waterline* was compiled by Shelby Canterford. The reliability article was written by Dr Michael Simpson. Desktop publishing by Thomas Smith.

The BTRE is particularly grateful for the assistance of the Transport and Infrastructure Policy Division and the Transport Regulation Division of the Department of Transport & Regional Services; the Association of Australian Ports and Marine Authorities; individual port authorities/corporations; Queensland Transport; shipping lines; ship operators; customs brokers; road transport operators; pilot, tug and mooring operators; and the stevedoring companies Patrick, P&O Ports and CSX World Terminals.

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The Bureau of Transport and Regional Economics operates within the Commonwealth Department of Transport and Regional Services ISSN 1324-4043

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