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in brief

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- The five-port average crane rate improved from 26.6 in the March quarter to 26.9 containers per hour for the June quarter 2002. This is the highest five-port average crane rate ever recorded in *Waterline*.
- New highs were also recorded in the five-port elapsed labour rate (30.7 containers per hour) and in the ship rate (42.1 containers per hour).
- The five-port total container traffic decreased to 1.694 million teus during January–June 2002.
- Berth availability was 95 per cent in the June quarter.
- A new series is introduced to the Port Interface Cost Index.



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Container terminal productivity—pages 4 & 5



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September 2002

STEVEDORING PRODUCTIVITY

Table I presents the June quarter 2000 to June quarter 2002 indicators of stevedoring productivity at the five major Australian container ports, *expressed in container moves per hour*. Figures I to 6 presents these data over the June quarter 1996 to June 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 increased in the June quarter 2002 compared with the March quarter 2002. The elapsed labour rate and the ship rate also increased.

In summary:

Waterline

- the five-port average *crane rate* (productivity *per crane* while the ship is worked) was 26.9 containers per hour for the June quarter 2002, compared with 26.6 in the March quarter 2002;
- the five-port average *elapsed labour rate* (productivity *per ship* based on the time labour is aboard the ship) of 30.7 containers per hour in the June quarter 2002 increased compared with 29.6 in the March quarter 2002; and
- the five-port average ship rate (productivity per ship while the ship is worked) increased to 42.1 containers per hour from 41.4 in the March quarter 2002.

The Brisbane (P&O Ports, Patrick) average crane rate was 27.2 containers per hour in the June quarter 2002, up from 26.6 in the March quarter 2002. The elapsed labour rate of 23.2 containers per hour and the ship rate of 37.2 containers per hour were both up compared with the previous quarter's figures.

The Sydney (P&O Ports, Patrick) average crane rate increased to 27.4 containers per hour in the June quarter 2002 from 26.9 in the March quarter 2002. The elapsed labour rate of 34.3 containers per hour and the ship rate of 46.1 containers per hour were both up compared with the previous quarter's figures.

The *Melbourne* (P&O Ports, Patrick) average crane rate increased to 26.7 containers per hour in the June quarter 2002 from 26.3 in the March quarter 2002. Both the elapsed labour rate of 31.9 containers per hour and the ship rate of 44.0 containers per hour were up compared with the previous quarter's figures.

The Adelaide (CSX World Terminals) average crane rate was 24.0 containers per hour in the June quarter 2002, down from 25.5 in the March quarter 2002. The elapsed labour rate of 34.3 containers per hour and the ship rate of 37.1 containers per hour were both up compared with the previous quarter's figures.

The *Fremantle* (P&O Ports, Patrick) average crane rate increased to 27.4 containers per hour in the June quarter 2002 from 27.1 in the March quarter 2002. The elapsed labour rate of 26.7 containers per hour was up, and the ship rate of 35.5 containers per hour was down compared with the previous quarter's figures.

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.







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TABLE I CONTAINER TERMINAL PERFORMANCE INDICATORS—PRODUCTIVITY IN CONTAINERS PER HOUR

					Quarter				
Port / Indicator J	un-00	Sep-00	Dec-00	Mar-Ol	Jun-Ol	Sep-OI	Dec-Ol	Mar-02	Jun-02
Five ports									
Ships handled	808	840	814	787	813	825	846	824	868
Total containers	505 802	531 700	545 075	472 797	502 037	575 130	591 070	544 135	591 247
Crane rate	23.1	24.9	25.5	26.4	26.8	25.8	26.1	26.6	26.9
Elapsed labour rate	30.3	28.5	27.9	28.8	28.7	29.5	29.6	29.6	30.7
Ship rate	37.5	38.0	39.5	40.4	40.4	41.4	41.4	41.4	42.1
Elapsed time not worked (per cen	it) 19	25	29	29	29	29	29	29	27
40-foot containers (per cent)	32	33	34	34	32	33	33	33	33
Brisbane									
Ships handled	178	187	179	167	188	175	198	202	211
Total containers	71 679	80 366	83 082	63 177	84 854	81 935	88 669	78 160	94 230
Crane rate	24.0	25.8	26.3	27.4	27.4	25.4	25.3	26.6	27.2
Elapsed labour rate	26.3	23.3	23.1	22.8	23.5	22.5	22.4	22.2	23.2
Ship rate	33.4	34.9	34.4	35.1	36.3	36.4	35.8	36.6	37.2
Elapsed time not worked (per cen	it) 21	33	33	35	35	38	37	39	38
40-foot containers (per cent)	27	29	30	30	28	29	27	28	29
Sydney									
Ships handled	218	223	211	201	202	208	206	196	203
Total containers	166 212	173 988	176 106	148 316	152 650	179 506	184 559	167 278	172 599
Crane rate	22.8	24.3	24.3	25.3	25.3	25.5	25.7	26.9	27.4
Elapsed labour rate	32.6	29.6	28.6	29.0	28.4	31.4	31.2	32.1	34.3
Ship rate	40.9	39.5	40.9	41.3	40.3	44.4	44.0	44.3	46.1
Elapsed time not worked (per cen	it) 20	25	30	30	29	29	29	28	26
40-foot containers (per cent)	35	37	37	37	34	35	37	37	37
Melbourne									
Ships handled	217	227	218	214	215	243	249	234	251
Total containers	178 156	189 306	189 580	170 250	174 149	214 752	221 647	205 435	221 786
Crane rate	23.0	25.0	25.8	26.5	27.2	25.4	26.3	26.3	26.7
Elapsed labour rate	30.7	30.5	30.5	31.5	31.3	30.5	31.6	31.5	31.9
Ship rate	37.6	40.1	42.7	43.2	43.7	42.2	42.9	43.4	44.0
Elapsed time not worked (per cen	it) 18	24	29	27	28	28	26	28	28
40-foot containers (per cent)	33	34	35	33	31	33	33	33	33
Adelaide									
Ships handled	56	62	63	57	57	57	57	54	59
Total containers	25 245	26 836	27 800	25 051	25 928	28 369	28 857	24 505	32 735
Crane rate	23.0	25.3	25.3	26.0	26.0	26.1	25.9	25.5	24.0
Elapsed labour rate	30.3	32.1	29.3	33.1	34.9	31.4	32.1	32.5	34.3
Ship rate	34.0	35.5	32.6	36.1	38.5	34.7	35.2	35.8	37.1
Elapsed time not worked (per cen	it) 11	10	10	8	9	10	9	9	8
40-foot containers (per cent)	21	15	27	29	28	23	27	30	28
Fremantle									
Ships handled	139	141	143	148	151	142	136	138	144
Total containers	64 510	61 204	68 507	66 003	64 456	70 568	67 338	68 757	69 897
Crane rate	23.3	24.9	26.8	27.5	28.5	28.5	27.9	27.1	27.4
Elapsed labour rate	27.5	24.1	24.4	25.4	26.4	28.6	27.2	25.2	26.7
Ship rate	34.1	32.1	35.9	37.8	38.2	39.8	39.4	35.8	35.5
Elapsed time not worked (per cen	it) 19	25	32	33	31	28	31	30	25
40-foot containers (per cent)	31	35	36	36	33	32	35	30	34

na not available

Notes 1. The definitions used in compiling the stevedoring productivity data are detailed in Waterline 26, pages 2-3.

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 net rate.

Sources Patrick, P&O Ports and CSX World Terminals

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CONTAINER TERMINAL PRODUCTIVITY











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Note These figures are based on 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

The Waterline reliability indicators provide partial measures of the variability of waterfront performance for container traffic at major Australian ports. They cover the timeliness of selected port services, sources of other 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 June quarter 2002. It indicates the extent to which selected port services were available at the scheduled or confirmed time.

The sample for the lune quarter 2002 covers 192 ship calls, equivalent to around 22 per cent of total ship calls at the major container terminals during the period. The proportion of ship calls covered at individual ports ranges from 13 per cent at Brisbane to 31 per cent at Adelaide. 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

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

				(Nuп	nber o	of ship d	alls)			
				De	elay (hrs)			Total no. of ship	Availability indicator
Port/operation	0		2	3	4	5-10	II-20	>20	calls	(per cent)
Brisbane Berth availability Pilotage Towage	27 28 28	0 0 0	0 0 0	1 0 0	0 0 0	0 0 0	0 0 0	0 0 0	28 28 28	
Sydney Berth availability Pilotage Towage	58 58 58	0 0 0	58 58 58							
Melbourne Berth availability Pilotage Towage	53 62 62	0 0 0	0 0 0	2 0 0	2 0 0	2 0 0	3 0 0	0 0 0	62 62 62	
Adelaide Berth availability Pilotage Towage	15 18 18	0 0 0	0 0 0	0 0 0	0 0 0	0 0 0	2 0 0	1 0 0	18 18 18	
Fremantle Berth availability Pilotage Towage	25 26 26	0 0 0	0 0 0	0 0 0	0 0 0	1 0 0	0 0 0	0 0 0	26 26 26	
Five ports Berth availability Pilotage Towage	178 192 192	0 0 0	0 0 0	3 0 0	2 0 0	3 0 0	5 0 0	1 0 0	192 192 192	95.3 100.0 100.0

Note Inter-port comparisons should be interpreted with caution as there is significant variation between ports in factors such as sample sizes and ship call patterns.

Sources Data for a sample of ship calls provided by shipping lines.

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 95 per cent in the June quarter 2002. This was slightly lower 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 15 hours in the June quarter 2002, a fall from 19 hours in the previous quarter.

The average berth waiting time for the December quarter 2001 published in Waterline 30 and 31 was incorrect. The average berth waiting time was 14 hours, not 13 hours as stated. The BTRE regrets any inconvenience caused by this error.

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 in the June quarter 2002, a slight improvement over the previous quarter. The proportion was also 100 per cent for the towage indicator in the June quarter 2002, again slightly higher than in the March quarter 2002. 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 June quarter 2002. The shipping lines identified a total of 107 incidents (affecting 84 ship calls) for the sample of ship calls over this period. These incidents involved both shiprelated and waterfront factors.

The total waiting time attributable to particular incident

OTHER SHIP WAITING TIME INCIDENTS AT TARLER THE FIVE MAINLAND CAPITAL CITY PORTS. JUNE QUARTER 2002

	(Numbe	r of in	cidents	5)			
			Shi	p wait	ing time	(hrs)		Total no. of
Incident type		2	3	4	5-10	II-50	>20	incidents
Awaiting labour	8	5	2	6	7	2	1	31
Other	7	4	2	1	0	0	0	14
Weather or tides	4	3	0	0	2	3	0	12
Stevedoring finished early	4	3	0	1	2	0	0	10
Crane breakdown	5	2	1	1	1	0	0	10
Pilot/tug booking not at preferred time	4	3	3	0	0	0	0	10
Early ship arrival	3	1	3	1	1	0	0	9
Late ship arrival	1	1	0	0	2	0	4	8
Ship repairs or maintenance	0	0	0	0	3	0	0	3
Stevedoring finished late	0	0	0	0	0	0	0	0
Industrial action	0	0	0	0	0	0	0	0
Total incidents	36	22	11	10	18	5	5	107 ^a
a. These incidents affected 84 of the	e 192 si	hip calls	covered i	in table 2	2.			btre

Sources Data for a sample of ship calls provided by shipping lines.

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 June quarter 2002 was the category of awaiting labour, which accounted for 33 per cent of total waiting time. Late ship arrival accounted for 26 per cent of total waiting time, and tides or weather was related to a further 14 per cent of total waiting time.

In the June quarter 2002, 44 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 34 per cent in the March quarter 2002. The average duration of other waiting time incidents was 5.8 hours per affected ship call in the June guarter 2002, virtually unchanged from 6.0 hours per affected ship call in the previous quarter.

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

Stevedoring

Table 4 presents the available information on two aspects of stevedoring reliability at major container terminals — stevedoring rate and cargo receival. Data were not available for Adelaide.



Waterline



Stevedoring rate provides a partial indicator of the variability of stevedoring productivity at each port. It measures how consistently each port achieved its average crane rate for the quarter. Stevedoring rate 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. The stevedoring rate in the June quarter 2002 remained similar at Brisbane compared with that for the March quarter 2002, while falling at Sydney. There were increases at Melbourne and Fremantle.

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 June quarter 2002 changed little compared with the previous quarter at any of the ports providing data.

Ship arrival

Table 4 includes data for two indicators of ship arrival advice. Data were not available for Melbourne for the March quarter 2002 or the June 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 Brisbane, Adelaide and Sydney, while remaining similar at Fremantle, in the June 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 June quarter 2002 this indicator improved at Fremantle, fell slightly at Adelaide , while remaining similar at Brisbane and Sydney.

TABLE 4STEVEDORING AND SHIP ARRIVAL RELIABILITY INDICATORS,
MARCH AND JUNE QUARTERS 2002

				(per	cent)					
Indicator	Bris Jan-Mar J	bane Apr-Jun	Syd Jan-Mar	lney Apr-Jun	Melbou Jan-Mar A	irne pr-Jun	Adelaic Jan-Mar Ap	i∈ or-Jun	Freman Jan-Mar Ap	tle or-Jun
Stevedoring Stevedoring rate Cargo receival	55 97	54 97	56 84	46 85	59 94	62 94	na na	na na	35 96	40 94
Ship arrival Advice at 24 hrs Advice inside 24 hrs	73 97	61 96	67 99	58 98	na na	na na	70 96	59 93	54 80	52 89
na not available Sources AAPMA, Patrick a	nd P&O Ports.									btre



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PORT PERFORMANCE—NON-FINANCIAL

Previously, the non-financial indicators for a half-year period have been compared to the previous half-year period. While this is a valid comparison, there appear, presently, to be no seasonality effects that are statistically significant when considering half-year aggregates, BTRE will in future compare each half-year period with the same half-year of the previous year.

In this issue, the comparison will be made between the half-year period January–June 2002 and the previous half-year period, July–December 2001, as well as January–June 2001, the same period one year earlier. In future issues of Waterline, the BTRE intends to only publish data and comparisons for the relevant half-year period and the corresponding period 12 months earlier.

The January–June 2001 to January–June 2002 non-financial indicators for the five mainland capital city ports are presented in table 5.

Cargo throughput

Total cargo throughput at the five ports was 51.4 million tonnes for January–June 2002, compared with 50.4 million tonnes for the previous half-year and 49.5 million tonnes for January–June 2001. This represented an increase of 2 per cent in total cargo throughput for the five ports compared with July–December 2001 and an increase of 4 per cent for the five ports compared with January–June 2001.

Total cargo throughput increased 1 per cent at Brisbane, 6 per cent at Melbourne, 3 per cent at Fremantle and 13 percent at Adelaide. Total throughput declined at Sydney by 5 per cent for January–June 2002 when compared with the previous half-year.

Compared with January–June 2001, total cargo throughput increased 1 per cent at Sydney, 10 per cent at Melbourne, 3 per cent at Fremantle and 10 percent at Adelaide. Total throughput declined at Brisbane by 1 per cent for January–June 2002

Non-containerised general cargo throughput at the five ports was 1.962 million tonnes for January-June 2002, compared with 1.872 million tonnes for July–December 2001 and 1.569 million tonnes for January–June 2001. This represented an increase of 5 per cent from the previous half-year and 25 per cent from the corresponding previous half-year.

Total container traffic throughput for the five ports was 1.694 million teus for January-June 2002, compared with 1.740 million teus for July–December 2001 and 1.547 million teus for January–June 2001. This represented a decrease of 3 per cent from the previous half-year and an increase of 10 per cent from January-June 2001.

Loaded teus decreased by 4 per cent, with loaded imports decreasing by 7 per cent and loaded exports decreasing by 1 per cent compared with figures for July–December 2001. Compared with January–June 2001, loaded teus increased by 9 per cent, with loaded imports increasing by 13 per cent and loaded exports increasing by 5 per cent.

Compared with the 2000–2001 financial year, the 2001–2002 five-port total container traffic increased by 6 per cent to 3.43 million teus.





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TABL	.es non- Ausi	FINAN	CIAL F N POR	PERFOF STS, 20	RMANCE		ATORS, 9	SELECTE	۵										
						-		:	-			-		i					Ţ
Indicato	E	Jan-Jun 2001	Brisban Jul-Dec 2001	Jan-Jun 2002	Jan-Jun 2001	Jul-Dec	Jan-Jun 2002	Jan-Jun 2001	elbourn Jul-Dec 2001	e Jan-Jun 2002	A . nuL-neL ZOOI	delaide Jul-Dec J ZOOI	an-Jun 2002	Jan-Jun 2001	Jul-Dec	Jan-Jun 2002	Jan-Jun 2001	-IVE port Jul-Dec ZOOI	Jan-Jun 2002
Total car through ('000 to	rgo put 'nn€s)	11 618	11 366	11 516	11 684	12 462	11 838	11 078	11 452	12138	4 039	3 934	4 446	11 132	11 147	11 476	49 551	50 362	51 413
Non-con cargo ('C	tainerised gene 300 tonnes) ^a	eral 262	302	302	241	291	279	605	753	834	159	189	239	301	337	309	1 569	1872	1 962
Containe (teus exc Full impor	erised cargo changed) rt	69 785	87 135	85 682	217 570	270 691	236 594	263 888	310 034	295343	17 865	21 097	19 591	63 416	77 136	76 825	632 524	766 093	714 035
Empty im Full expor	port rt	40 258 102 095	37 226 100 322	32 114 95 935	11 303 148 651	13 341 159 494	8 853 147 918	52 401 258 077	60 384 273 910	58936 279866	11 136 31 120	11 714 34 482	15 055 35 793	25 926 64 066	21 815 69 768	19 829 72 686	141 024 604 009	144 480 637 976	134 787 632 198
Empty ex TOTAL	port	14 654 226 792	17 122 241 805	21 391 235 122	73 591 451 115	78 535 522 061	94 027 487 392	54 013 628 379	68 761 713 089	73547 707692	5 085 65 206	4 117 71 410	3 377 73 816	21 771 175 179	22 796 191 515	20 954 190 294	169 114 1 546 671	191 331 1 739 880	213 296 1 694 316
Average employm	total ient ^b	218	206	212	192	195	199	89	6 6	96	149	88	95	166	167	193	814	759	795
Port tur time (hrs Median re 95th perce	naround 5) ^C ssult entile	31 56	34 53	32 52	32 57	32 68	30 55	34 57	36 68	35 63	19 50	22 43	21 43	20 47	21 46	22 52			
- nota a. Excl b. Com c. Port d. Com	<pre>tpplicable udes bulk cargoes. parisons between p, turmaround times re, nally, only inter-temp oonents may not sun</pre>	orts are not fer only to s. oral compa m to totals d	appropriat hips calling rison at inc ue to roum	ie because e. g at containe dividual ports ding.	ach port author r terminals. Cc s is of use.	ity/corporai omparisons	tion has a diffe between port.	arent structure. s are not appro	priate bec	ause each port	has a different	set of para	meters to me	asure the turn	around tim	9			2 S

Source AAPMA.



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FORECASTS OF AUSTRALIA'S SEABORNE CONTAINERISED FREIGHT

The BTRE shall shortly release Working Paper 50 Australia's Seaborne Containerised Freight: Forecasts to 2010–11. The econometric modelling underlying the forecasts suggests that combined Australian containerised imports and exports are expected to increase at an average annual rate of 5 per cent over the period 2001–02 to 2010–11. In absolute numbers, this represents about 3.8 million import and export containers expected to be handled in 2010–11 compared with 2.2 million in 2000–01.

The BTRE study forecasts that domestic containers will increase at an average annual rate of about 8 per cent over the period 2001–02 to 2010–11. Domestic containers comprise transhipment containers (import containers that are discharged at an Australian port and then transhipped to another Australian port) and local containers (containers carried on the coastal trade; that is, from one Australian port to another). This relatively high growth rate is expected because the larger ships entering the liner trade will not be able to berth at some ports, thereby increasing the number of transhipped containers.

The proportion of 40-foot containers currently handled at all Australian ports is around 31 per cent (the average for the five major ports is about 33 per cent). The most likely forecast is that the proportion for all ports would average around 35 per cent during the forecast period. Compared with 20-foot containers, using 40-foot containers is more cost-effective for importers and exporters and the 40-foot containers are easier to load onto, and unload from, ships with 40-foot cells.

Figure 9 shows forecasts for combined export and import containers (20-foot and 40-foot). The green columns represent the most likely forecast and the blue columns represent the forecast incorporating a high growth scenario for 40-foot containers.



Under the high-growth scenario for 40-foot containers, their proportion could rise to up to 56 per cent during the forecast period. A rising proportion of 40-foot containers means that the number of larger and heavier containers transported domestically by road and rail would also increase substantially. The forecast growth both in overall containers and in the proportion of 40-foot containers are, therefore, important considerations in the planning and provision of port, road and rail infrastructure.

As with any forecast, these results are based on a number of assumptions. In this case, the assumptions involve Australia's economic growth rates and those of its major trading partners. The key economic factors are Australia's gross domestic product (GDP), trade weighted index (TWI) and the GDPs of OECD or G7 countries. The extent of availability of empty containers can also have some effect on containerised exports.





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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 2001 through January–June 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 a container ship (Lloyd's ship classification UCC) in both the 15 000 to 20 000 GRT and 35 000 and 40 000 GRT range.

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

	las lus	Brisba	ne Inc Ive	las lus	Sydney	laa lua	Me	lbourne		las lus	Adelaide		F	remanti	e Inn lun
	2001	200I	2005 2002	200I	2001 2001	2005	2001	200I	2005	200I	200I	2002	200I	2001	2002
Vessel size GRT 1721	5														
Average Teus exchan	igeda														
All	540	493	483	834	1085	989	1215	1048	916	608	626	na	533	784	778
Loaded	418	382	373	669	894	780	1011	858	745	468	487	na	401	601	584
Empty	122	111	110	165	191	209	204	190	171	140	139	na	132	183	194
Loaded inwards	170	177	176	397	563	480	511	456	382	171	185	na	200	315	207
Loaded outwards	248	204	197	271	332	300	500	403	362	297	302	na	202	285	377
Ship call parameters	5a														
Number of port calls	5	4	6	3	3	3	3	3	4	3	2	na	4	5	5
Elapsed berth time (hrs)	22	24	23	37	40	35	36	37	36	23	22	na	20	21	24
Vessel size GRT 373	394														
Average Teus exchan	iged ^b														
All	478	1055	965	1032	1295	1520	2002	1661	1769	619	732	787	564	582	561
Loaded	370	818	745	828	1067	1199	1666	1360	1438	476	570	591	424	446	441
Empty	108	237	220	204	228	321	336	301	331	143	162	196	140	136	120
Loaded inwards	150	380	351	492	671	738	842	722	738	173	216	209	211	234	226
Loaded outwards	220	438	393	336	396	461	824	638	700	302	353	382	213	212	214
Ship call parameters	5 ^b														
Number of port calls	4	5	4	5	4	3	4	4	3	2	3	3	5	4	4
Elapsed berth time (hrs)	28	32	18	27	30	31	36	37	34	17	22	20	21	21	20
 a. Mean value for ships b. Mean value for ships 	between between	15 000 a 35 000 a	nd 20 000 nd 40 000) GRT.) GRT.											all i
na Not Available	2 3 0 311													b	tre
Sources PTPE estimates	hacad an	chin coll	data sun	plied by rol	ovant no	t authorit	ios/corpora	lione and	l othor not	t convico pre	widore			1	Sund

Tables 7 and 8 provides the port and related charges at the five mainland capital city ports for January–June 2001 through January–June 2002 for the 15 000 to 20 000 GRT range and the 35 000 to 40 000 GRT range respectively. Port and related charges are comprised of ship–based charges and cargo–based charges.

Ship-based charges

On a per teu basis, the change in the charges is reflected by the rise and fall of the average number of teus exchanged per ship.

In the 15 000 to 20 000 GRT range, the average number of teus exchanged fell at Brisbane, Melbourne, Sydney and Fremantle in January–June 2002 when compared to the previous period. The decreases were 2 per cent at Brisbane, 9 per cent at Sydney, 13 per cent at Melbourne, and 1 per cent at Fremantle. There were no visits from ships in this range at Adelaide during the January–June 2002 period.

In the 35 000 to 40 000 GRT range, the average number of teus exchanged rose at Sydney, Melbourne and Adelaide but fell at Brisbane and Fremantle in January–June 2002 when compared to the previous period. The changes were a 9 per cent decrease at Brisbane, a 17 per cent increase at Sydney, a 7 per cent increase at Melbourne, a 8 per cent increase at Adelaide, and a 4 per cent decrease at Fremantle.

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TABLE 7 PORT AND RELATED CHARGES FOR SHIPS IN THE IS 000-20 000 GRT RANGE, 2001-2002

	Jan-Jun.	Brisba Jul-Dec	ne Jan-Jun	Jan-Jun .	Sydney Jul-Dec .	Jan-Jun	M Jan-Jun.	elbourne Jul-Dec .	Jan-Jun	Jan-Jun .	Adelaide Jul-Dec	Jan-Jun	F Jan-Jun	remanti Jul-Dec	e Jan-Jun
	2001	2001	EUUE	2001	EUUI	EUUE	2001	EUUI	EUUE	2001	EUUI	EUUE	2001	2001	EUUE
Ship-based charges (\$/teu)	5														
Conservancy	4.27	4.68	2.48	-	-	-	-	-	-	2.72	3.70	na	-	-	-
Tonnage	-			8.86	6.81	7.47	4.07	4.88	5.58	7.82	7.52	na	5.23	3.56	3.59
Pilotage	10.47	11.47	11.71	3.98	3.05	3.35	4.96	5.86	6.89	4.25	4.13	na	4.31	2.93	2.95
Towage	14.79	16.21	18.48	9.45	7.26	9.01	6.11	7.08	10.01	21.61	20.98	na	11.06	7.52	7.10
Mooring, unmooring	3.47	3.90	3.89	4.15	3.19	3.50	0.85	0.99	1.15	-			2.27	1.54	1.56
Berth hirea	-	-		-	-	-	5.67	6.74	7.63	-	-		-	45.50	45 40
Totals	33.01	30.20	30.55	20.44	20.31	23.33	21.00	25.54	31.20	36.40	30.33	na	22.87	15.50	15.19
Cargo-based charge (\$/teu) Wharfage	E5														
Imports	28.60	28.60	28.60	66.00	66.00	66.00	29.10	29.70	29.70	58.30	58.30	na	49.50	49.50	49.50
Exports	28.60	28.60	28.60	49.50	49.50	49.50	29.10	29.70	29.70	58.30	58.30	na	49.50	49.50	49.50
Harbour dues	9.90	9.90	9.90		-		-	-	-	-	-	-		-	-
Berth charge	-			-			-			-			15.29	15.29	15.29
Total port and relat charges (\$/teu) ^b	€d														
Loaded imports	108	111	111	92	86	89	51	55	61	95	95	na	88	80	80
Loaded exports	108	111	111	76	70	73	51	55	61	95	95	na	88	80	80
Charges per ship vi (\$/visit)	sit														
Total ship-based charges Empty teus ^c	17813 1906	17857 1734	17637 1718	22043	22042	23076	26323	26774	28615	22140	22754	na -	12193 1016	12194 1409	11819 0

not applicable

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

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

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

na No data available for this range.

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, 200I-2002

	Jan-Jun.	Brisba Jul-Dec . 2001	an-Jun 2002	Jan-Jun . 2001	Sydney Jul-Dec . 2001	Jan-Jun 2002	Me . nuL-neL 1005	lbourne Jul-Dec 2 2001	lan-Jun 2002	, . nuL-neL 1005	Adelaide Jul-Dec 2001	lan-Jun 2002	F _ Jan-Jun 2001	remanti Iul-Dec J 2001	e lan-Jun 2002
Ship-based charges	2001	2001	LUUL	2001	2001	LUUL	2001	2001	LUUL	2001	2001	LUUL	2001	2001	LUUL
Conservancy	10.48	4.75	5.39	_	-		-	_	_	5.67	3.99	4.46		_	-
Tonnage	-	-	-	15.54	12.39	10.55	5.36	6.69	6.28	9.67	9.17	8.27	10.74	10.41	10.80
Pilotage	17.05	7.73	8.45	5.45	4.35	3.71	3.83	4.68	4.53	6.03	5.10	4.74	4.07	3.95	4.10
Towage	21.10	9.56	11.68	8.12	6.47	6.24	3.97	4.78	5.54	27.35	23.13	24.91	15.44	14.97	13.65
Mooring, unmooring	3.92	1.82	1.94	4.17	3.33	2.84	0.52	0.62	0.59	-	-	-	2.14	2.08	2.16
Berth hire ^a	-	-			-	-	3.46	4.36	3.76		-		-	-	-
Total ^b	52.55	23.85	27.46	33.29	26.54	23.34	17.13	21.12	20.70	48.72	41.39	42.38	32.40	31.40	30.71
Cargo-based charge (\$ / teu) Wharfage	s														
Imports	28.60	28.60	28.60	66.00	66.00	66.00	29.10	29.70	29.70	58.30	58.30	58.30	49.50	49.50	49.50
Exports	28.60	28.60	28.60	49.50	49.50	49.50	29.10	29.70	29.70	58.30	58.30	58.30	49.50	49.50	49.50
Harbour dues	9.90	9.90	9.90	-	-	-	-	-	-	-	-	-	-	-	
Berth charge	-	-	-	-	-	-	-	-	-	-	-	-	15.29	15.29	15.29
Total port and relate charges (\$/teu) ^b	≣d														
Loaded imports	127	99	102	99	93	89	46	51	50	107	100	101	97	96	96
Loaded exports	127	99	102	83	76	73	46	51	50	107	100	101	97	96	96
Charges per ship vis (\$/visit)	sit														
Total ship-based charges Empty teus ^c	25122 1687	25166 3702	26488 3436	34369	34369 -	35468 -	34299	35087	36618 -	30144 -	30284 -	33337 -	18278 1078	18279 1047	17222 0

- not applicable

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

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

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

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.



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On a per teu basis, and compared to the previous period, the overall changes in total ship-based charges in January–June 2002 for ships in the 15 000 to 20 000 GRT range were:

at Brisbane—a I per cent increase;

at Sydney—a 15 per cent increase;

at Melbourne—a 22 per cent increase; and

at Fremantle-a 2 per cent decrease.

On a per teu basis, and compared to the previous period, the overall changes in total ship-based charges in January–June 2002 for ships in the 35 000 to 40 000 GRT range were:

at Brisbane—a 15 per cent increase;

at Sydney—a 12 per cent decrease;

at Melbourne-a 2 per cent decrease;

at Adelaide-a 2 per cent increase; and

at Fremantle-a 2 per cent decrease.

While caution should always be used when making port comparisons on a per teu basis, Fremantle was the lowest-cost port for ship-based charges. From the point of view of ship operators using ships similar to both the representative ships in table 6, Fremantle was also the lowest cost port for ship-based charges on a per ship-visit basis.

Cargo-based charges

In January–June 2002, there was no change in cargo–based charges at any of the five ports compared with July–December 2001.

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 (November 2001). As the report does not include charges beyond the first half of 2001, the July–December 2001 and January–June 2002 stevedoring charges included in the port interface cost index are provisional figures and will be updated in *Waterline 34*.

Land-based charges per teu

Average customs brokers' fees and road transport rates for January–June 2001 through January–June 2002 port interface cost indices are included in tables 9 and 10. These charges are based on data provided by 33 customs brokers and 36 road transport operators. Customs brokers' fees for imports are higher than fees for exports, reflecting the more complex clearance procedures for import containers. During January–June 2002 the customs brokers' fee for imports decreased at Sydney and Melbourne by 1 per cent, increased at Adelaide by 5 per cent and increased at Fremantle by 9 per cent. For exports the fee increased at Adelaide by 4 per cent and increased at Fremantle by 29 per cent. The fee for imports did not change at Brisbane when compared with July–December 2001.

Road transport charges increased at Brisbane by 2 per cent, increased at Sydney by 5 per cent, increased at Melbourne by 3 per cent, and increased at Fremantle by 12 per cent. Charges remained unchanged at Adelaide. One of the parameters used to estimate road transport charges is the time taken to move containers from/to the wharf to/from 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.







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Indices for individual ports

Table 9 indicates that, between July–December 2001 and January–June 2002 for ships in the 15 000 to 20 000 GRT range, import and export costs increased by 1 per cent for Brisbane. Import costs increased by 2 percent and exports increased by 3 per cent at Sydney and Melbourne.

Table 10 indicates that, for ships in the 35 000 to 40 000 GRT range, import costs increased by 1 per cent and export costs increased by 2 per cent at Brisbane, Sydney and Melbourne. Both import and export costs increased by 1 per cent at Adelaide.

TABLE 9PORT INTERFACE COSTS FOR SHIPS IN THE IS 000-20 000
GRT RANGE, 2001-2002

		Brisba	ne		Sydney		Me	Ibourne		1	Adelaide		F	remantl	e
	Jan-Jun.	Jul-Dec .	Jan-Jun	Jan-Jun.	Jul-Dec .	Jan-Jun	Jan-Jun.	Jul-Dec .	Jan-Jun	Jan-Jun .	Jul-Dec.	Jan-Jun	Jan-Jun.	Jul-Dec .	Jan-Jun
	2001	2001	2005	2001	2001	2005	2001	2001	2005	2001	2001	2005	2001	2001	2005
Import															
Ship-based charges	33	36	37	26	20	23	22	26	31	36	36	na	23	16	15
Cargo-based charges	75	75	75	66	66	66	29	30	30	58	58	na	65	65	65
Stevedoring	173	173	173	173	173	173	173	173	173	173	173	na	173	173	173
Customs brokers' fees	143	143	143	143	143	142	140	131	130	112	122	na	135	135	147
Road transport charges	212	213	218	311	321	335	274	275	283	186	190	na	202	173	194
Import total ^a	635	640	645	720	723	740	637	634	646	566	581	na	597	561	594
Export															
Ship-based charges	33	36	37	26	20	23	22	26	31	36	36	na	23	16	15
Cargo-based charges	75	75	75	50	50	50	29	30	30	58	58	na	65	65	65
Stevedoring	173	173	173	173	173	173	173	173	173	173	173	na	173	173	173
Customs brokers' fees	71	71	74	105	105	105	87	83	87	84	92	na	68	68	88
Road transport charges	212	213	218	311	321	335	274	275	283	186	190	na	202	173	194
Export totala	564	568	576	665	668	686	585	586	604	538	550	na	531	495	535

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

na No data available

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 overtime. 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.



		Brisba	ne		Sydney		Me	Ibourne			Adelaide		F	remanti	e
	Jan-Jun J	Jul-Dec .	Jan-Jun	Jan-Jun.	Jul-Dec .	Jan-Jun	Jan-Jun.	lul-Dec .	Jan-Jun	Jan-Jun .	Jul-Dec .	Jan-Jun	Jan-Jun J	ul-Dec .	lan-Jun
	2001	2001	2005	2001	2001	2005	2001	2001	2005	2001	2001	2005	2001	2001	2005
Import															
Ship-based charges	53	24	27	33	27	23	17	21	21	49	41	42	32	31	31
Cargo-based charges	75	75	75	66	66	66	29	30	30	58	58	58	65	65	65
Stevedoring	173	173	173	173	173	173	173	173	173	173	173	173	173	173	173
Customs brokers' fees	143	143	143	143	143	142	140	131	130	112	122	129	135	135	147
Road transport charges	212	213	218	311	321	335	274	275	283	186	190	190	202	173	194
Import total ^a	655	627	636	727	729	740	633	629	636	578	586	593	607	577	610
Export															
Ship-based charges	53	24	27	33	27	23	17	21	21	49	41	42	32	31	31
Cargo-based charges	75	75	75	50	50	50	29	30	30	58	58	58	65	65	65
Stevedoring	173	173	173	173	173	173	173	173	173	173	173	173	173	173	173
Customs brokers' fees	71	71	74	105	105	105	87	83	87	84	92	96	68	68	88
Road transport charges	212	213	218	311	321	335	274	275	283	186	190	190	202	173	194
Export total ^a	583	556	567	672	674	686	580	581	593	550	555	560	540	510	551

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

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 Fremantle, import costs increased by 6 per cent, and export costs increased by 8 per cent for both GRT ranges when compared with the previous period.

However, this 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 10 provides the national port interface cost index from 1993 onwards. In overall terms, the national index increased between July–December 2001 and January–June 2002. In current prices, national import charges increased from \$650 to \$663 per teu, and export charges increased from \$595 to \$615 per teu for ships in the 15 000 to 20 000 GRT range.

In real terms (in 1999 prices, using ABS chain volume and current price statistics to calculate the deflator), the National Port Interface Cost Index charge per imported teu has declined by 17 per cent since 1993, and the charge per exported teu has declined by 16 per cent.

For ships in the 35 000 to 40 000 GRT range, national import charges increased from \$650 to \$661 per teu, and export charges increased from \$595 to \$610 per teu. Table 11 shows the index from January–June 2001



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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TABLE II THE NATIONAL PORT INTERFACE COST INDEX-35 000-40 000 GRT RANGE

	Jan-Jun 2001	Jul-Dec 2001	Jan-Jun 2002
IMPORTS in current prices	659	651	661
Imports in 1999 constant prices	612	599	598
EXPORTS in current prices	601	595	610
Exports in 1999 constant prices	558	548	552

Sources BTE 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.

NEW PORT INTERFACE COST INDEX

Why change the indicative GRT range?

When the PICI was first established in 1993, the composition of the fleet visiting Australian ports was analysed to select a ship that was representative of the majority of ship visits. The representative ship was used as the basis for selecting appropriate charging scales for port services such as towage and pilotage. The representative ship selected had a size of 17 215 GRT, 8 372 NRT and a length of 176 metres.

Over the past few years the average size of ships visiting Australian shores has increased, and this trend is expected to continue. This is reflected in the changes in the number of ship visits averaged across the five ports and the average number of teus exchanged in different GRT ranges over time. Table 12 shows these averages in selected GRT ranges between January–June 1996 and January–June 2002. On a national level the 15 000–20 000 GRT range is still the indicative range, with an average of 70 ship visits occurring during January–June 2002. During January–June 1996, there was an average of 89 ship visits in the indicative range.

The average number of teus exchanged per ship visit has also increased over time. The average teus exchanged is used to calculate the per teu cost of port services that are charged on a per ship basis. The increase in the number of teus exchanged decreases the cost of ship-based charges on a per teu basis.

The national decline in the numbers of ship visits in the 15 000–20 000 GRT range has been gradual. However, the numbers of ship visits in this range have been declining more rapidly at Adelaide. There were no visits from ships in the 15 000–20 000 GRT range during the January–June 2002 period. With no ship visits, it is impossible to calculate the average number of teus exchanged, and hence the per teu cost of ship based charges.

BTRE considered whether to select an average exchange figure based on historical data, or to select a new indicative ship and recalculate the costs based on a new average teus exchanged figure. Given the trend for the average size of ships to increase over time both overseas and in Australia, BTRE's view was that January–June 2002 result for Adelaide was not an aberration, and a new indicative range should be selected.

Selecting a new indicative range

The second most common range is the 20 000–25 000 GRT range. This range was not selected, as the number of ships of this size visiting Adelaide is low and continuing to decline. BTRE felt that using this range would invite similar problems to the continued usage of the 15 000–20 000 GRT range, and that if this range was used, the index would probably have to be re–based again in the near future.





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TABLE I2 FIVE PORT AVERAGE NUMBER OF TEUS EXCHANGED AND SHIP VISITS PER 6 MONTH PERIOD FOR SELECTED GRT RANGES, WEIGHTED BY NUMBER OF SHIPS

GRT Range (tonnes)	Jun-96	Dec-96	Jun-97	Dec-97	Jun-98	Dec-98	Jun-99	Dec-99	Jun-00	Dec-00	Jun-Ol	Dec-OI	Jun-02
10,000-15,000													
Average teus exchanged	576	503	513	569	473	530	546	660	683	702	702	706	712
Number of ship visits	24	25	31	47	39	35	36	44	37	29	26	27	21
15,000-20,000													
Average teus exchanged	534	547	547	605	539	678	656	768	776	813	825	885	763
Number of ship visits	89	96	80	78	82	69	77	85	60	65	76	74	70
20,000-25,000													
Average teus exchanged	503	515	425	518	506	598	629	790	754	833	838	830	762
Number of ship visits	60	64	56	59	50	70	70	63	67	76	66	60	56
25,000-30,000													
Average teus exchanged	583	566	513	559	608	545	591	740	682	636	869	777	888
Number of ship visits	25	26	25	26	23	30	23	31	35	31	28	33	44
30,000-35,000													
Average teus exchanged	814	782	808	951	754	695	696	821	912	1041	991	1061	1014
Number of ship visits	11	31	46	44	44	57	58	39	45	46	39	41	45
35,000-40,000													
Average teus exchanged	811	739	746	799	793	807	831	945	1071	1149	1111	1223	1262
Number of ship visits	32	37	43	48	54	53	53	49	47	53	49	46	45
40,000-45,000													
Average teus exchanged	681	813	716	869	759	894	878	1013	1073	1133	1102	1246	1228
Number of ship visits	13	16	19	17	22	31	29	31	31	29	35	39	42
45,000-50,000													
Average teus exchanged	0	0	0	0	35	174	188	233	0	0	0	0	808
Number of ship visits	0	0	0	0	0	0	1	0	0	0	0	0	1
50,000-55,000													
Average teus exchanged	213	295	254	678	734	810	737	932	1007	1274	1143	1062	1134
Number of ship visits	0	2	2	6	5	13	13	14	12	13	11	11	12
Source BTRF estimates	based on s	shin call da	ta supplied	l by releva	nt port auth	orities/corn	orations						19 ^{81 4} 8 6.
													btre

BTRE selected the 35 000–40 000 GRT range as the new indicative range. The representative ship had a size of 37 394 GRT, 20 334 NRT and a length of 243 metres. This range is presently the third most common on a national level. While this range is not the most common at many ports, it is consistent across all ports, making it appropriate as an indicative range. BTRE's view is that there will be ships in this range for a number of years to come.

Correcting the index based on the 15 000-20 000 GRT indicative range

BTRE intends to publish the two indices in parallel for at least a year, to enable the movements of each to be compared. Without the Adelaide data, the index based on ships in the 15 000-20 000 GRT range is not comparable to the historical data already published. To facilitate comparability, a correction factor has been calculated based on the July–December 2001 data, and applied to the January–June 2002 data to produce the index shown.

Comparing the two indices

The difference between the corrected 15 000-20 000 GRT index and the 35 000-40 000 GRT index is small, ranging from no difference to less than one per cent. In January–June 2002, export charges for the 15 000–20 000 GRT range index were \$615 per teu, and the 35 000–40 000 GRT range index export charges were \$610 per teu. In July–December 2001 there was no difference between the two indices. While the ship costs per ship are higher for the 35 000–40 000 GRT range index, the number of teus exchanged is also higher. The increased teu exchange distributes the costs in the same proportion as the 15 000–20 000 GRT range. Figure 11 shows the number of ship visits and the average number of teus exchanged for the two ranges.

BTRE believes this means that while the two GRT range indices are not directly comparable, the strong similarity of the two indices means that when the 15 000–20 000 GRT range index is discontinued in the future, the historical aspect of the series will not be lost.





Sources BTRE estimates based on ship call data supplied by relevant port authorities/corporations and other port service providers.

Have your say

Do you have any views on the new port interface cost index? BTRE is interested in whether it will meet your needs or if there may be other issues that have not been considered. Please forward any comments on this issue to waterline@dotars.gov.au or to GPO Box 501, Canberra, ACT, 2601. Comments must be received by 2 December 2002 if they are to be considered in time for the next PICI release in *Waterline 34*, due to be released in late March 2003.





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TAINER TERMINAL PERFORMANCE INDICATORS, SELECTED AUSTRALIAN PORTS-	DUCTIVITY IN TEUS PER HOUR
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tive Donte	Jun-98	Sep-98	Dec-98	Mar-99	66-nuL	Sep-99	Dec-99	Mar-00	00-unr	Sep-00	Dec-00	Mar-OI		Sep-OI		Mar-OZ	ZO-UN
Ships handled	845	1020	942	942	958	616	933	875	808	840	814	787	813	825	846	824	868
Total teus	514 409	633 107	612 019	573 444	602 501	660 593	726 590	678 046	666 967	708 433	731936	634 003	661 326	762 202	787 093	724 311	788 090
Crane rate	23.6	24.4	24.2	25.5	25.9	25.4	24.8	26.6	30.4	33.2	34.2	35.4	35.2	34.2	34.8 ^r	35.4	35.9
Elapsed rate	na	na	na	na	na	30.1	30.8	33.3	40.0	38.0	37.6	38.6	37.8	39.2	39.6	39.6	41.1
Ship rate	31.3	31.3	34.7	36.2	37.3	37.7	37.8	41.7	49.5	50.8	53.2	54.3	53.3	55.0	55.4 ^r	55.4	56.3
Brisbane																	
Ships handled	168	192	180	176	193	224	232	219	178	187	179	167	188	175	198	202	211
Total teus	74 023	87 373	84 200	75 444	88 311	98 944	106 096	97 431	90 932	103 654	107 812	81 864	108 810	105 746	112 586	100 033	121 920
Crane rate	21.6	22.5	20.9	22.6	23.4	23.3	24.6	26.4	30.5	33.4	34.0	35.5	35.1	32.7	32.1	34.1	35.2
Elapsed rate	21.5	23.6	24.7	26.3	26.7	24.7	27.0	29.8	33.4	30.0	29.7	29.6	30.2	28.7	28.5	28.5	30.0
Ship rate	25.4	27.5	28.7	30.6	32.2	31.2	33.1	36.1	42.3	45.1	44.5	46.1	46.5	46.8	45.5	46.9	48.2
Sydney																	
Ships handled	219	267	230	221	243	259	244	221	218	223	211	201	202	208	206	196	203
Total teus	168 234	209 619	203 042	187 287	203 536	226 784	260 927	229 014	224 445	237 843	240720	203 217	205 126	242 823	252 521	228 723	235 664
Crane rate	21.8	21.6	20.4	23.2	24.0	23.7	22.1	24.8	30.9	33.1	33.2	34.7	34.0	34.4	35.2	36.8	37.4
Elapsed rate	26.1	25.4	24.8	29.6	29.3	30.6	30.1	34.0	44.1	40.5	39.0	39.7	38.2	42.5	42.7	43.9	46.7
Ship rate	33.9	32.0	32.3	38.8	38.0	38.9	36.8	43.0	55.4	53.9	55.8	56.6	54.1	60.1	60.2	60.7	62.8
Melbourne Ships handled	234	309	274	271	282	278	266	247	217	227	218	214	215	243	249	234	251
Total teus	185 803	242 456	219 549	206 727	215379	241775	257 147	243 277	236 306	253 568	255 022	226 612	228 400	285 947	294 753	274 108	295 284
Crane rate	24.3	26.1	27.7	27.5	28.1	27.4	26.5	27.9	30.3	33.5	34.7	35.3	35.7	33.9	35.0	35.1	35.6
Elapsed rate	26.8	28.4	31.7	30.2	33.1	32.4	33.4	33.8	40.5	40.9	41.1	41.9	41.0	40.7	41.9	42.0	42.4
Ship rate	30.7	31.9	39.7	36.9	39.7	39.9	40.4	43.0	49.4	53.8	57.6	57.5	57.3	56.2	57.1	57.9	58.5
Adelaide																	
Ships handled	99	63	74	73	99	62	62	56	56	62	63	57	57	57	57	54	59
Total teus	27 975	25 493	32 556	31 326	29 569	28 271	30 597	27 736	30 551	30 945	35 339	32 251	33 308	34 867	36 633	31815	41 829
Crane rate	27.7	27.6	28.7	30.0	27.9	27.2	27.2	29.4	27.8	29.1	32.2	33.5	33.4	32.1	32.8	33.0	30.7
Elapsed rate	36.5	34.5	36.2	36.8	36.3	34.7	35.9	36.8	36.7	37.0	37.2	42.6	44.9	38.6	40.8	42.2	43.9
Ship rate	37.8	36.0	37.6	39.7	37.6	37.2	38.8	39.7	41.1	41.0	41.5	46.5	49.5	42.7	44.7	46.5	47.4
^c remantle																	
Ships handled	158	189	184	201	174	156	129	132	139	141	143	148	151	142	136	138	144
Total teus	58 374	68 166	72 672	72 660	65 706	64 819	71823	80 588	84 733	82 423	93 043	90 0 59	85 682	92 819	90 600	89 632	93 393
Crane rate	26.7	27.9	25.7	26.6	27.3	26.1	27.2	27.4	30.5	33.5	36.5	37.7	37.9	37.4	37.5r	35.4	36.6
Elapsed rate	na	na	na	na	na	25.8	27.9	33.0	36.0	32.4	33.6	34.5	35.0	37.8	36.6	32.8	35.7
Ship rate	29.8	30.2	31.7	32.0	33.4	35.3	38.8	41.6	44.7	43.2	48.7	51.3	50.8	52.3	53.0r	46.6	47.4
ia not available	0																
lotes 1. Data froi	n CSX World	Terminals at	Brisbane are	incorported	from the De.	cember quar	ter 1999 unt	il June quar.	ter 2001.								
2. For data	back to the D	ecember qui	arter 1989, re	fer to Waterl	'ine 15.												. 911 8o.
Sources Patrick,	P&O Ports an	d CSX World	d Terminals.														btre

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	ABBREVIATIONS
AAPMA	Association of Australian Ports and Marine Authorities
ABS	Australian Bureau of Statistics
ACCC	Australian Competition and Consumer Commission
BTRE	Bureau of Transport and Regional Economics
EBIT	Earnings before interest and tax
GRT	Gross Registered Tonnage
MUA	Maritime Union of Australia
NRT	Net Registered Tonnage
teu	Twenty-foot equivalent unit
UCC	Container ship

DEFINITIONS

Elapsed time—the total time over which the ship is worked, measured from labour aboard to labour ashore.

Elapsed labour rate—the number of containers or teus moved per elapsed hour.

Net time—the elapsed time minus the time unable to work the ship due to award shift breaks, ship's fault, weather, awaiting cargo, industrial disputes, closed holidays, or shifts not worked at the ship operator's request.

Net ship rate—the number of containers or teus moved per net hour.

Crane rate—the number of containers or teus moved per net crane hour.

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