12 MONTHS ENDED 31 OCTOBER 2004 9208.0

SURVEY OF MOTOR VEHICLE USE

AUSTRALIA

EMBARGO: 11.30AM (CANBERRA TIME) MON 19 SEP 2005

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INQUIRIES

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NOTES

ABOUT THIS PUBLICATION

This publication presents estimates from the 2004 Survey of Motor Vehicle Use (SMVU). It contains statistics on passenger vehicle, motor cycle, truck and bus use for characteristics such as distance travelled, fuel consumption and area of operation.

The data were collected in four quarterly sample surveys conducted by the Australian Bureau of Statistics (ABS) over the period 1 November 2003 to 31 October 2004.

COMPARISONS WITH PREVIOUS SURVEY RESULTS

This survey has been designed to provide a measure of total distance travelled and tonne-kilometres for each state/territory of registration by type of vehicle. While comparisons are made between 2004 survey results and earlier iterations of the SMVU, the survey has not been designed to provide accurate estimates of change.

Care should be taken in drawing inferences from changes in data over time as movements may be subject to high relative standard errors. Therefore the resulting estimates of movements may not be considered statistically significant. See Explanatory Notes paragraph 14.

Additional information about the reliability of the level and movement estimates is given in Technical Note.

CHANGES IN THIS PUBLICATION

Following compilation of the 2004 estimates, the results for 2003 are being reviewed. In particular, the impact of compiling the 2003 estimates using post-stratification techniques is being assessed. Revised estimates for 2003 may be released once that assessment is complete. For this publication, 2003 estimates have been listed as 'na' - not available.

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Australian Statistician

ABBREVIATIONS

'000	thousand
ABS	Australian Bureau of Statistics
ACT	Australian Capital Territory
ASGC	Australian Standard Geographical Classification
ATFCC	Australian Transport Freight Commodity Classification
Aust.	Australia
CNG	compressed natural gas
GCM	gross combination mass
GVM	gross vehicle mass
km	kilometre
LPG	liquefied petroleum gas
no.	number
NSW	New South Wales
NT	Northern Territory
Qld	Queensland
RSE	relative standard error
SA	South Australia
SE	standard error
Tas.	Tasmania
Vic.	Victoria
WA	Western Australia

SUMMARY OF FINDINGS

NUMBER OF VEHICLES

In the 12 months ended 31 October 2004 there were an estimated 13.5 million vehicles registered in Australia.

Passenger vehicles (79.0%) made up the largest group of registered vehicles in 2004, followed by freight vehicles (17.5%). The remaining 3.5% comprised buses, motor cycles and non-freight carrying trucks. Of the freight vehicles, 82.0% were light commercial vehicles, 15.2% were rigid trucks and 2.8% were articulated trucks.

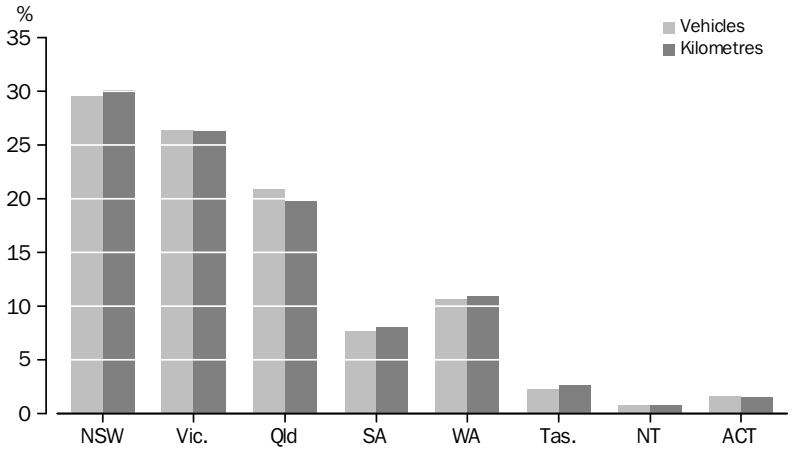
The 13.5 million vehicles represented an increase of 1.3 million vehicles (10.3%) compared with the 12 months ended 31 October 2000.

KILOMETRES TRAVELLED

Motor vehicles in Australia travelled an estimated 199,055 million kilometres in the 12 months ended 31 October 2004. While the number of vehicles increased by 10.3% compared with the 12 months ended 31 October 2000, the distance travelled by these vehicles has only increased by 7.8% over this time.

The state/territory proportion of total kilometres travelled closely relates to the number of registered vehicles in each state/territory. New South Wales had the largest share of total kilometres travelled (29.6%) and the largest number of registered vehicles.

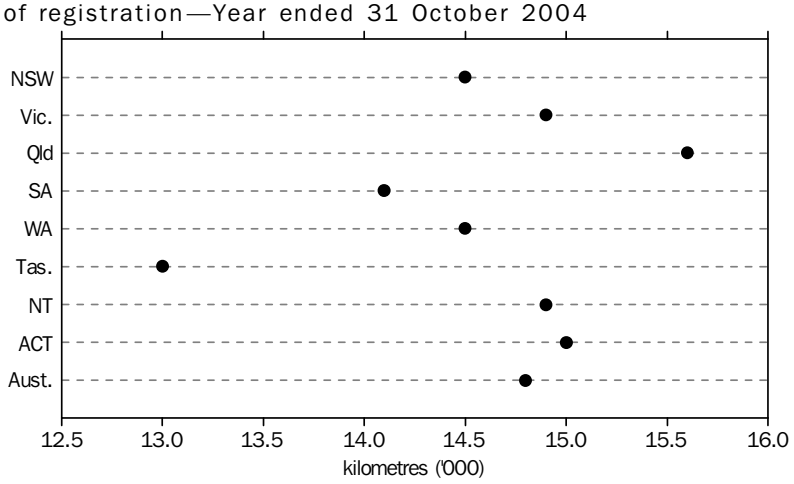
NUMBER OF VEHICLES AND TOTAL KILOMETRES TRAVELLED, Percent by state/territory—Year ended 31 October 2004



Australian registered motor vehicles each travelled an average of 14,800 kilometres in the 12 months ended 31 October 2004. Queensland (15,600 kilometres), Australian Capital Territory (15,000 kilometres), Northern Territory (14,900 kilometres) and Victoria (14,900 kilometres) were above the national average, while vehicles registered in Tasmania travelled the least number of kilometres (13,000).

KILOMETRES TRAVELLED *continued*

AVERAGE KILOMETRES TRAVELLED, Motor vehicles by state/territory of registration—Year ended 31 October 2004



Passenger vehicles accounted for 74.2% of the total distance travelled in the 12 months ended 31 October 2004. This represents a decrease compared with the proportion travelled by passenger vehicles in the 12 months ended 31 October 2000 (76.7%).

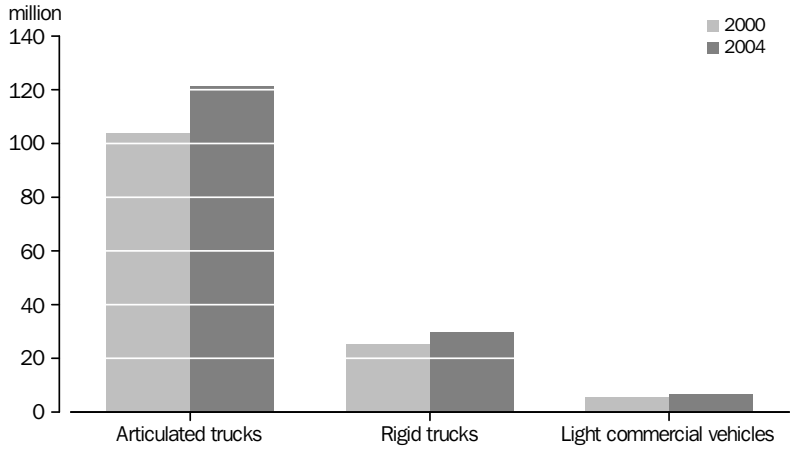
Personal and other use accounted for 53.1% of the total kilometres travelled by passenger vehicles in Australia during 2004. Travel to and from work (25.5%) and business use (21.4%) accounted for the remaining kilometres travelled by passenger vehicles.

Freight carrying vehicles accounted for 47,659 million kilometres travelled (23.9%) in the 12 months ended 31 October 2004. Of this, light commercial vehicles accounted for 71.4% of the kilometres travelled, rigid trucks for 16.0%, and articulated trucks for 12.6%.

TONNE-KILOMETRES

Freight vehicles in Australia travelled an estimated 157,668 million tonne-kilometres in the 12 months ended 31 October 2004. This is an increase of 23,290 million tonne-kilometres (17.3%) travelled since the 12 months ended 31 October 2000. An increase in tonne-kilometres was reported in all freight vehicle types.

TOTAL TONNE-KILOMETRES TRAVELLED, Type of vehicle—Years ended 31 October 2000 and 31 October 2004



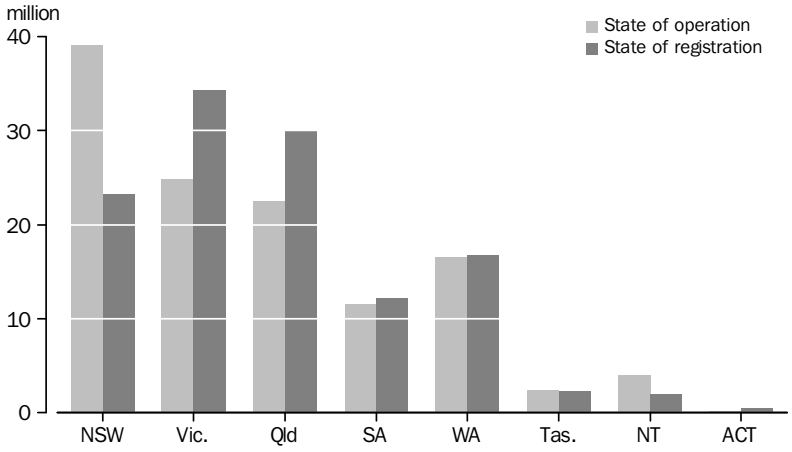
TONNE-KILOMETRES *continued*

Articulated trucks accounted for 76.9% of the total freight vehicle tonne-kilometres travelled in the 12 months ended 31 October 2004. Rigid trucks accounted for 18.9% and light commercial vehicles for 4.2%. Articulated trucks each travelled an average of 2.0 million tonne-kilometres. In comparison, rigid trucks and light commercial vehicles travelled an average of 93,700 and 6,000 tonne-kilometres respectively in the 12 months ended 31 October 2004.

In the 12 months ended 31 October 2004 articulated trucks of a Gross Combination Mass (GCM) of up to and including 40 tonnes travelled a total of 7,517 million tonne-kilometres, representing an average of 491,400 tonne-kilometres per vehicle. Articulated trucks over 40 tonnes GCM travelled a total of 113,765 million tonne-kilometres, an average of 2,480,900 tonne-kilometres per vehicle.

The amount of tonne-kilometres travelled by articulated trucks in the 12 months ended 31 October 2004 varied when comparing the state of operation and the state of registration, with the largest difference occuring in New South Wales.

TOTAL TONNE-KILOMETRES TRAVELLED BY ARTICULATED TRUCKS, State of operation and registration—Year ended 31 October 2004



FUEL CONSUMPTION

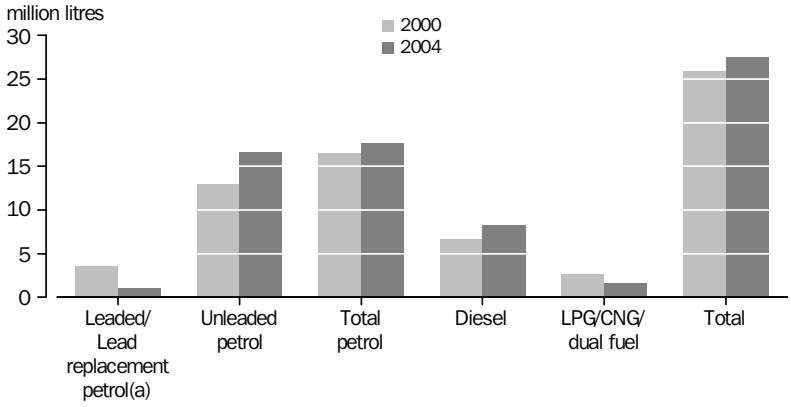
Registered motor vehicles in Australia consumed 27,505 million litres of fuel in the 12 months ended 31 October 2004. This is an increase of 6.4% (1,652 million litres) since the 12 months ended 31 October 2000. Over the same period, the estimated number of motor vehicles in Australia increased by 10.3% and kilometres travelled increased by 7.8%.

Of the total fuel consumed by motor vehicles in the 12 months ended 31 October 2004, 64.1% of fuel was petrol and 30.0% was diesel fuel.

FUEL CONSUMPTION

continued

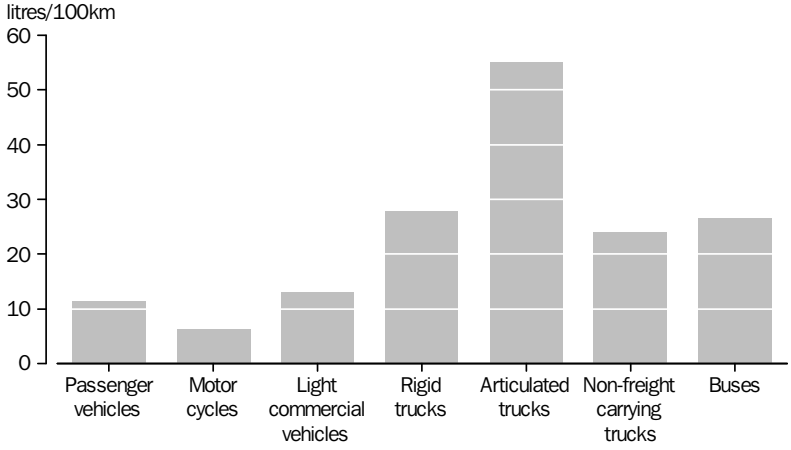
TOTAL FUEL CONSUMPTION, Type of fuel—Years ended 31 October 2000 and 31 October 2004



(a) 2000 data is leaded petrol and 2004 data is lead replacement petrol

The average rate of fuel consumption for all motor vehicles in the 12 months ended 31 October 2004 was 13.8 litres per 100 kilometres, a decrease of 0.2 litres per 100 kilometres since 2000. Articulated trucks had the highest average fuel consumption with 55.0 litres per 100 kilometres.

AVERAGE FUEL CONSUMPTION, Type of vehicle—Year ended 31 October 2004



Passenger vehicles used 14,882 million litres of petrol in the 12 months ended 31 October 2004, of which 94.2% (14,021 million litres) was unleaded petrol.

A total of 5,384 million litres of diesel fuel was used by articulated and rigid trucks. This was 65.3% of all diesel fuel used and represents 100.0% and 97.9% respectively of fuel consumption for these vehicle types.

The total fuel consumption by other vehicles in the 12 months ended 31 October 2004 included 4,471 million litres of fuel by light commercial vehicles and 524 million litres of fuel by buses.

LIST OF TABLES

1 SUMMARY OF MOTOR VEHICLE USE, Type of vehicle

	2000	*2001*	*2002*	*2003*(a)	*2004*
TOTAL KILOMETRES TRAVELLED *(million)*					
Passenger vehicles	141 519	143 925	144 676	na	147 728
Motor cycles	1 135	1 448	1 681	na	1 478
Light commercial vehicles	27 829	30 728	31 349	na	34 007
Rigid trucks	6 536	6 627	7 080	na	7 639
Articulated trucks	5 578	5 321	5 425	na	6 013
Non-freight carrying trucks	^ 220	^ 267	224	na	221
Buses	1 776	1 835	1 775	na	1 968
Total	**184 593**	**190 152**	**192 209**	na	**199 055**
NUMBER OF VEHICLES(b) ***(no.)***					
Passenger vehicles	9 711 320	9 861 807	10 194 637	na	10 654 328
Motor cycles	337 793	349 465	367 258	na	392 648
Light commercial vehicles	1 696 631	1 719 654	1 810 071	na	1 940 180
Rigid trucks	346 628	332 102	341 651	na	358 704
Articulated trucks	61 117	61 502	61 519	na	66 197
Non-freight carrying trucks	18 714	18 980	17 504	na	17 616
Buses	55 805	55 078	56 754	na	61 728
Total	**12 228 008**	**12 398 588**	**12 849 393**	na	**13 491 401**
AVERAGE KILOMETRES TRAVELLED(c) ***('000)***					
Passenger vehicles	14.6	14.6	14.2	na	13.9
Motor cycles	3.4	4.1	4.6	na	3.8
Light commercial vehicles	16.4	17.9	17.3	na	17.5
Rigid trucks	18.9	20.0	20.7	na	21.3
Articulated trucks	91.3	86.5	88.2	na	90.8
Non-freight carrying trucks	^ 11.8	14.1	12.8	na	12.5
Buses	31.8	33.3	31.3	na	31.9
Total	**15.1**	**15.3**	**15.0**	na	**14.8**
TOTAL FUEL CONSUMPTION *(million litres)*					
Passenger vehicles	16 838	16 436	16 401	na	16 937
Motor cycles	70	83	100	na	^ 92
Light commercial vehicles	3 723	4 186	4 145	na	4 471
Rigid trucks	1 795	1 855	2 041	na	2 123
Articulated trucks	2 904	2 824	2 922	na	3 305
Non-freight carrying trucks	^ 57	67	58	na	53
Buses	466	498	497	na	524
Total	**25 853**	**25 948**	**26 164**	na	**27 505**
AVERAGE RATE OF FUEL CONSUMPTION(d) ***(litres per 100 kilometres)***					
Passenger vehicles	11.9	11.4	11.3	na	11.5
Motor cycles	6.1	5.7	6.0	na	6.3
Light commercial vehicles	13.4	13.6	13.2	na	13.1
Rigid trucks	27.5	28.0	28.8	na	27.8
Articulated trucks	52.1	53.1	53.9	na	55.0
Non-freight carrying trucks	25.9	25.0	26.0	na	24.0
Buses	26.2	27.1	28.0	na	26.6
Total	**14.0**	**13.6**	**13.6**	na	**13.8**

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

na not available

(a) Results for 2003 are being reviewed. Refer to Notes page 2.

(b) The average number of vehicles registered for the 12 months. Includes registered vehicles that did not travel during the reference period.

(c) Calculated using average number of registered vehicles. Includes registered vehicles that did not travel during the reference period.

(d) Calculated using the total fuel consumption divided by the total kilometres travelled.

SUMMARY OF FREIGHT VEHICLE USE, Type of vehicle

	2000	2001	2002	2003(a)	2004
TOTAL LADEN BUSINESS KILOMETRES TRAVELLED *(million)*					
Light commercial vehicles	13 120	13 889	14 054	na	15 844
Rigid trucks	4 537	4 690	4 830	na	5 322
Articulated trucks	4 071	3 933	4 012	na	4 367
Total freight vehicles	**21 728**	**22 512**	**22 896**	na	**25 533**
AVERAGE LADEN BUSINESS KILOMETRES TRAVELLED(b) *('000)*					
Light commercial vehicles	14.7	15.3	14.0	na	14.4
Rigid trucks	16.1	16.3	16.2	na	16.8
Articulated trucks	72.8	69.6	70.4	na	71.4
Total freight vehicles	**17.7**	**18.0**	**16.8**	na	**17.2**
TOTAL TONNE-KILOMETRES TRAVELLED *(million)*					
Light commercial vehicles	5 695	5 649	5 624	na	6 634
Rigid trucks	25 168	24 881	28 337	na	29 752
Articulated trucks	103 515	101 892	106 977	na	121 282
Total freight vehicles	**134 378**	**132 422**	**140 938**	na	**157 668**
AVERAGE TONNE-KILOMETRES TRAVELLED(c) *('000)*					
Light commercial vehicles	6.4	6.2	5.6	na	6.0
Rigid trucks	89.1	86.5	95.1	na	93.7
Articulated trucks	1 852.0	1 804.4	1 876.3	na	1 983.3
Total freight vehicles	**109.3**	**105.8**	**103.5**	na	**106.4**
TOTAL TONNES CARRIED *(million)*					
Light commercial vehicles	103	103	115	na	120
Rigid trucks	711	683	802	na	807
Articulated trucks	655	697	747	na	769
Total freight vehicles	**1 469**	**1 482**	**1 664**	na	**1 696**
AVERAGE LOAD CARRIED PER TRIP(d) *(kilograms)*					
Light commercial vehicles	377	326	353	na	362
Rigid trucks	5 854	5 632	6 130	na	6 068
Articulated trucks	22 615	23 639	23 749	na	23 921
Total freight vehicles	**3 471**	**3 180**	**3 404**	na	**3 421**

na not available

(a) Results for 2003 are being reviewed. Refer to Notes page 2.

(b) Calculated using the total laden business kilometres travelled divided by the number of vehicles that travelled laden business kilometres.

(c) Calculated using the total tonne-kilometres travelled divided by the number of vehicles that travelled tonne-killometres.

(d) Calculated using the total load carried divided by the total number of laden trips.

3 SUMMARY OF MOTOR VEHICLE USE, State/territory of registration

	2000	2001	2002	2003(a)	2004
TOTAL KILOMETRES TRAVELLED *(million)*					
New South Wales	51 088	58 553	60 792	na	58 875
Victoria	54 500	50 817	51 459	na	52 583
Queensland	36 746	38 538	36 690	na	41 643
South Australia	13 153	15 085	14 855	na	15 241
Western Australia	19 875	18 610	19 160	na	21 324
Tasmania	4 376	3 979	4 433	na	4 561
Northern Territory	1 627	1 522	1 712	na	1 594
Australian Capital Territory	3 228	3 048	3 108	na	3 234
Australia	**184 593**	**190 152**	**192 209**	na	**199 055**
NUMBER OF VEHICLES(b) *(no.)*					
New South Wales	3 663 210	3 745 732	3 859 620	na	4 059 983
Victoria	3 232 708	3 235 515	3 442 573	na	3 538 822
Queensland	2 340 267	2 365 530	2 459 307	na	2 665 200
South Australia	1 021 386	1 051 115	1 051 720	na	1 082 691
Western Australia	1 340 533	1 365 714	1 392 316	na	1 471 497
Tasmania	332 110	329 963	334 259	na	350 976
Northern Territory	102 846	101 159	103 155	na	106 651
Australian Capital Territory	194 948	203 859	206 444	na	215 581
Australia	**12 228 008**	**12 398 588**	**12 849 393**	na	**13 491 401**
AVERAGE KILOMETRES TRAVELLED(c) *('000)*					
New South Wales	13.9	15.6	15.8	na	14.5
Victoria	16.9	15.7	14.9	na	14.9
Queensland	15.7	16.3	14.9	na	15.6
South Australia	12.9	14.4	14.1	na	14.1
Western Australia	14.8	13.6	13.8	na	14.5
Tasmania	13.2	12.1	13.3	na	13.0
Northern Territory	15.8	15.0	16.6	na	14.9
Australian Capital Territory	16.6	15.0	15.1	na	15.0
Australia	**15.1**	**15.3**	**15.0**	na	**14.8**

na not available

(a) Results for 2003 are being reviewed. Refer to Notes page 2.

(b) The average number of vehicles registered for the 12 months. Includes registered vehicles that did not travel during the reference period.

(c) Calculated using the total kilometres travelled divided by the average number of registered vehicles. Includes registered vehicles that did not travel during the reference period.

4 MOTOR VEHICLE USE, State/territory of registration—Type of vehicle

	Passenger vehicles	*Motor cycles*	*Light commercial vehicles*	*Rigid trucks*	*Articulated trucks*	*Non-freight carrying trucks*	*Buses*	*Total*
				TOTAL KILOMETRES TRAVELLED *(million)*				
New South Wales	44 473	^ 356	9 489	2 517	1 379	^ 58	603	58 875
Victoria	40 151	*319	8 187	1 749	1 772	^ 62	343	52 583
Queensland	29 065	^ 517	8 265	1 801	1 435	^ 49	^ 511	41 643
South Australia	11 379	^ 96	2 590	446	584	^ 14	133	15 241
Western Australia	15 664	^ 142	3 818	826	617	^ 26	231	21 324
Tasmania	3 233	^ 15	946	177	142	^ 6	42	4 561
Northern Territory	1 002	^ 9	^ 391	^ 59	58	^ 3	^ 73	1 594
Australian Capital Territory	2 762	^ 25	323	64	27	^ 2	32	3 234
Australia	**147 728**	**1 478**	**34 007**	**7 639**	**6 013**	**221**	**1 968**	**199 055**
				NUMBER OF VEHICLES(a) *(no.)*				
New South Wales	3 273 408	108 071	532 834	108 186	15 425	^ 3 038	19 022	4 059 983
Victoria	2 866 027	100 117	446 538	88 206	20 207	4 720	13 007	3 538 822
Queensland	1 995 114	86 197	477 232	75 297	14 059	^ 3 791	13 510	2 665 200
South Australia	874 533	29 388	141 812	25 548	6 093	1 666	3 650	1 082 691
Western Australia	1 127 232	49 817	229 661	46 045	7 990	3 159	7 593	1 471 497
Tasmania	260 921	9 045	67 473	9 431	1 486	868	1 752	350 976
Northern Territory	70 369	3 128	26 166	3 654	689	280	2 366	106 651
Australian Capital Territory	186 725	6 885	18 463	2 337	248	^ 95	828	215 581
Australia	**10 654 328**	**392 648**	**1 940 180**	**358 704**	**66 197**	**17 616**	**61 728**	**13 491 401**
				AVERAGE KILOMETRES TRAVELLED(b) *('000)*				
New South Wales	13.6	^ 3.3	17.8	23.3	89.4	^ 19.2	31.7	14.5
Victoria	14.0	*3.2	18.3	19.8	87.7	^ 13.1	26.4	14.9
Queensland	14.6	^ 6.0	17.3	23.9	102.0	^ 13.0	^ 37.8	15.6
South Australia	13.0	^ 3.3	18.3	17.5	95.8	^ 8.5	36.5	14.1
Western Australia	13.9	^ 2.9	16.6	17.9	77.3	^ 8.3	30.4	14.5
Tasmania	12.4	^ 1.7	14.0	18.8	95.3	^ 7.4	24.0	13.0
Northern Territory	14.2	^ 2.8	14.9	16.3	83.9	^ 9.6	^ 30.8	14.9
Australian Capital Territory	14.8	^ 3.6	17.5	27.3	107.5	^ 20.5	38.2	15.0
Australia	**13.9**	**3.8**	**17.5**	**21.3**	**90.8**	**12.5**	**31.9**	**14.8**

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

(a) The average number of vehicles registered for the 12 months. Includes registered vehicles that did not travel during the reference period.

(b) Calculated using the total kilometres travelled divided by the average number of registered vehicles. Includes registered vehicles that did not travel during the reference period.

5 FUEL CONSUMPTION, Type of fuel—Type of vehicle

	Passenger vehicles	*Motor cycles*	*Light commercial vehicles*	*Rigid trucks*	*Articulated trucks*	*Non-freight carrying trucks*	*Buses*	*Total*
TOTAL FUEL CONSUMPTION *(million litres)*								
Petrol								
Lead replacement	^ 861	*3	^ 114	*23	**—	*—	**—	^ 1 002
Unleaded	14 021	^ 89	2 463	*12	**—	^ 2	^ 29	16 617
Total	14 882	^ 92	2 577	^ 35	**—	^ 2	^ 30	17 619
Diesel	^ 882	—	1 468	2 079	3 305	^ 50	463	8 246
LPG/CNG/dual fuel	^ 1 172	—	^ 427	*9	**—	*1	^ 31	^ 1 640
Total	**16 937**	**^ 92**	**4 471**	**2 123**	**3 305**	**53**	**524**	**27 505**
AVERAGE RATE OF FUEL CONSUMPTION(a) *(litres per 100 kilometres)*								
Petrol								
Lead replacement	12.1	*4.8	13.2	22.4	40.0	28.2	^ 21.9	12.3
Unleaded	11.1	6.3	13.0	^ 19.2	**28.3	16.8	14.5	11.3
Total	11.1	6.3	13.0	21.2	*34.1	17.8	14.5	11.3
Diesel	12.2	—	12.9	27.9	55.0	24.5	27.4	24.3
LPG/CNG/dual fuel	17.0	—	15.7	27.5	**40.0	^ 17.8	^ 44.2	16.9
Total	**11.5**	**6.3**	**13.1**	**27.8**	**55.0**	**24.0**	**26.6**	**13.8**

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

(a) Calculated using the total fuel consumption divided by the total kilometres travelled.

WITHIN STATE/TERRITORY OF REGISTRATION

	Capital city	*Other urban areas*	*Other areas*	*Total intrastate*	*Interstate*	*Australia*
TOTAL KILOMETRES TRAVELLED *(million)*						
Passenger vehicles	88 653	22 141	30 365	141 159	^ 6 569	147 728
Motor cycles	^ 618	^ 400	^ 337	1 355	*123	1 478
Light commercial vehicles	14 236	4 686	14 115	33 036	^ 971	34 007
Rigid trucks	3 679	1 155	2 499	7 332	^ 307	7 639
Articulated trucks	1 059	378	2 981	4 419	1 594	6 013
Non-freight carrying trucks	^ 110	^ 55	^ 51	217	**4	221
Buses	963	^ 397	512	1 871	^ 96	1 968
Total	**109 319**	**29 211**	**50 860**	**189 390**	**9 665**	**199 055**
AVERAGE KILOMETRES TRAVELLED (a) *('000)*						
Passenger vehicles	11.6	7.6	9.3	13.9	^ 6.5	14.4
Motor cycles	^ 3.9	^ 3.6	^ 3.2	4.5	*4.4	4.9
Light commercial vehicles	15.5	9.7	15.5	18.1	^ 7.4	18.4
Rigid trucks	22.5	15.6	16.3	22.2	^ 18.2	22.8
Articulated trucks	31.6	21.4	66.1	73.1	86.9	96.6
Non-freight carrying trucks	18.2	^ 16.4	^ 6.8	13.7	**12.1	13.7
Buses	29.4	^ 20.9	21.9	31.3	^ 24.7	32.6
Total	**12.2**	**8.1**	**11.2**	**14.8**	**8.0**	**15.5**

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

* estimate has a relative standard error of 25% to 50% and should be used with caution

** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

(a) Average distance travelled for registered vehicles which were used. Excludes registered vehicles that did not travel during the reference period.

AREA OF OPERATION, State/territory of registration

	WITHIN STATE/TERRITORY OF REGISTRATION					
	Capital city	*Other urban areas*	*Other areas*	*Total intrastate*	*Interstate*	*Australia*
TOTAL KILOMETRES TRAVELLED *(million)*						
New South Wales	31 095	^10 153	15 190	56 438	^2 437	58 875
Victoria	32 449	^5 210	12 346	50 005	^2 577	52 583
Queensland	18 331	11 587	9 114	39 032	^2 611	41 643
South Australia	8 951	—	5 403	14 354	^887	15 241
Western Australia	13 618	^792	6 768	21 178	*147	21 324
Tasmania	1 528	1 468	1 428	4 424	*137	4 561
Northern Territory	883	—	612	1 495	^99	1 594
Australian Capital Territory	2 464	—	—	2 464	770	3 234
Australia	**109 319**	**29 211**	**50 860**	**189 390**	**9 665**	**199 055**
AVERAGE KILOMETRES TRAVELLED(a) *('000)*						
New South Wales	12.1	8.4	11.6	14.5	^5.6	15.1
Victoria	12.6	6.1	10.4	15.1	^7.9	15.7
Queensland	12.5	9.9	10.9	15.4	^11.9	16.3
South Australia	10.6	—	10.9	13.8	^10.5	14.6
Western Australia	13.0	^4.0	13.2	15.5	**10.2	15.6
Tasmania	8.5	9.1	10.0	13.4	*14.6	13.6
Northern Territory	12.4	—	12.1	15.3	^16.7	15.9
Australian Capital Territory	11.9	—	—	11.9	7.3	15.4
Australia	**12.2**	**8.1**	**11.2**	**14.8**	**8.0**	**15.5**

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** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

(a) Average distance travelled for registered vehicles which were used. Excludes registered vehicles that did not travel during the reference period.

	BUSINESS					
	Laden	*Unladen*	*All business use*(a)	*To and from work*	*Personal and other*	*Total*
TOTAL KILOMETRES TRAVELLED *(million)*						
Passenger vehicles	—	—	31 618	37 627	78 483	147 728
Motor cycles	—	—	*173	^371	^934	1 478
Light commercial vehicles	15 844	6 044	21 899	^5 467	6 641	34 007
Rigid trucks	5 322	2 045	7 369	^170	^100	7 639
Articulated trucks	4 367	1 632	6 000	*12	*1	6 013
Non-freight carrying trucks	—	—	219	*1	**1	221
Buses	—	—	1 835	^42	^91	1 968
Total	**25 533**	**9 722**	**69 113**	**43 690**	**86 252**	**199 055**
AVERAGE KILOMETRES TRAVELLED(b) ***('000)***						
Passenger vehicles	—	—	9.5	7.1	8.6	14.4
Motor cycles	—	—	^3.9	^3.3	^3.8	4.9
Light commercial vehicles	14.4	8.6	18.6	8.3	7.3	18.4
Rigid trucks	16.8	8.3	22.9	^5.9	^4.1	22.8
Articulated trucks	71.4	30.8	97.2	*7.5	*1.7	96.6
Non-freight carrying trucks	—	—	13.7	**2.4	**3.7	13.7
Buses	—	—	34.5	^7.1	^10.4	32.6
Total	**17.2**	**9.7**	**13.8**	**7.2**	**8.4**	**15.5**

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— nil or rounded to zero (including null cells)

(a) Including the business travel of non-freight carrying vehicles.

(b) Average distance travelled for registered vehicles which were used. Excludes registered vehicles that did not travel during the reference period.

BUSINESS AND PRIVATE USE OF VEHICLES, State/territory of registration

	BUSINESS					
	Laden	*Unladen*	*All business use*(a)	*To and from work*	*Personal and other*	*Total*
			TOTAL KILOMETRES TRAVELLED *(million)*			
New South Wales	7 565	^ 2 707	22 071	13 053	23 750	58 875
Victoria	6 660	^ 2 389	16 655	12 717	23 211	52 583
Queensland	5 633	^ 2 415	15 033	8 751	17 859	41 643
South Australia	1 907	^ 618	5 099	3 295	6 848	15 241
Western Australia	2 725	^ 1 192	7 223	^ 3 860	10 242	21 324
Tasmania	577	^ 232	1 686	842	2 033	4 561
Northern Territory	231	^ 109	667	344	584	1 594
Australian Capital Territory	235	^ 59	680	829	1 725	3 234
Australia	**25 533**	**9 722**	**69 113**	**43 690**	**86 252**	**199 055**
			AVERAGE KILOMETRES TRAVELLED(b) *('000)*			
New South Wales	17.2	8.8	13.2	6.9	7.7	15.1
Victoria	18.6	10.2	12.7	8.1	8.5	15.7
Queensland	16.1	^ 9.7	15.5	7.1	8.9	16.3
South Australia	17.5	^ 9.8	14.8	6.4	7.9	14.6
Western Australia	17.6	^ 12.3	15.6	6.7	9.2	15.6
Tasmania	14.4	^ 8.6	15.7	6.0	7.5	13.6
Northern Territory	14.8	8.9	13.8	6.7	8.3	15.9
Australian Capital Territory	15.7	^ 6.8	9.7	7.0	9.7	15.4
Australia	**17.2**	**9.7**	**13.8**	**7.2**	**8.4**	**15.5**

^ estimate has a relative standard error of 10% to less than 25% and should be used with caution

(a) Including the business travel of non-freight carrying vehicles.

(b) Average distance travelled for registered vehicles which were used. Excludes registered vehicles that did not travel during the reference period.

10 BUSINESS KILOMETRES, State/territory of registration—Type of vehicle

	Passenger vehicles	*Motor cycles*	*Light commercial vehicles*	*Rigid trucks*	*Articulated trucks*	*Non-freight carrying trucks*	*Buses*	*Total*
				TOTAL BUSINESS KILOMETRES TRAVELLED *(million)*				
New South Wales	^ 11 120	*49	^ 6 497	2 403	1 372	^ 57	573	22 071
Victoria	^ 7 237	**3	^ 5 570	1 708	1 771	^ 61	304	16 655
Queensland	^ 6 399	**60	^ 4 880	1 736	1 432	^ 49	^ 477	15 033
South Australia	^ 2 406	*30	^ 1 513	430	582	^ 14	124	5 099
Western Australia	^ 3 028	**23	^ 2 510	801	617	^ 26	^ 218	7 223
Tasmania	^ 824	**3	^ 499	170	141	^ 6	41	1 686
Northern Territory	^ 256	*1	^ 224	^ 59	58	^ 3	^ 67	667
Australian Capital Territory	^ 350	**3	^ 205	62	27	^ 2	31	680
Australia	**31 618**	***173**	**21 899**	**7 369**	**6 000**	**219**	**1 835**	**69 113**
				AVERAGE BUSINESS KILOMETRES TRAVELLED (a) *('000)*				
New South Wales	9.4	*3.2	19.2	24.0	92.9	^ 19.6	34.3	13.2
Victoria	^ 8.0	*0.7	19.4	22.1	96.5	^ 14.3	27.2	12.7
Queensland	^ 11.2	**4.9	^ 16.9	25.0	107.2	^ 14.2	^ 41.3	15.5
South Australia	^ 10.8	*6.3	17.7	20.0	101.6	^ 8.5	36.9	14.8
Western Australia	^ 10.5	**5.3	^ 21.8	20.3	85.6	^ 10.4	35.7	15.6
Tasmania	^ 13.5	**3.8	14.8	21.7	98.1	^ 8.2	25.8	15.7
Northern Territory	^ 9.4	*1.6	15.7	19.1	91.6	^ 11.0	^ 35.2	13.8
Australian Capital Territory	^ 6.6	**3.7	15.9	29.3	115.4	^ 22.2	39.8	9.7
Australia	**9.5**	**^ 3.9**	**18.6**	**22.9**	**97.2**	**13.7**	**34.5**	**13.8**

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(a) Average distance travelled for registered vehicles which were used. Excludes registered vehicles that did not travel during the reference period.

11 BUSINESS KILOMETRES TRAVELLED BY FREIGHT VEHICLES, State/territory of registration

	Light commercial vehicles	*Rigid trucks*	*Articulated trucks*	*Total*
TOTAL LADEN BUSINESS KILOMETRES TRAVELLED *(million)*				
New South Wales	^ 4 829	1 778	958	7 565
Victoria	^ 4 076	1 247	1 338	6 660
Queensland	^ 3 349	1 207	1 077	5 633
South Australia	^ 1 148	309	450	1 907
Western Australia	^ 1 761	568	396	2 725
Tasmania	^ 364	124	89	577
Northern Territory	^ 149	^ 44	^ 39	231
Australian Capital Territory	^ 168	45	22	235
Australia	**15 844**	**5 322**	**4 367**	**25 533**
AVERAGE LADEN BUSINESS KILOMETRES TRAVELLED (a) *('000)*				
New South Wales	^ 14.9	17.8	65.1	17.2
Victoria	^ 15.4	16.4	73.8	18.6
Queensland	^ 12.5	17.5	80.8	16.1
South Australia	^ 14.0	14.6	80.0	17.5
Western Australia	16.1	14.7	55.9	17.6
Tasmania	^ 11.8	16.0	62.1	14.4
Northern Territory	^ 12.4	14.5	^ 62.8	14.8
Australian Capital Territory	^ 13.3	21.9	94.1	15.7
Australia	**14.4**	**16.8**	**71.4**	**17.2**

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(a) Calculated using the total laden business kilometres travelled divided by the number of vehicles that travelled laden business kilometres.

12 TONNE-KILOMETRES TRAVELLED BY FREIGHT VEHICLES, State/territory of registration

	Light commercial vehicles	*Rigid trucks*	*Articulated trucks*	*Total*
TOTAL TONNE-KILOMETRES TRAVELLED *(million)*				
New South Wales	^ 1 938	9 120	23 225	34 284
Victoria	^ 2 007	^ 7 559	34 252	43 818
Queensland	^ 1 158	^ 7 105	^ 29 976	38 239
South Australia	^ 529	^ 1 637	12 142	14 309
Western Australia	^ 730	^ 3 135	^ 16 732	^ 20 597
Tasmania	^ 130	^ 748	^ 2 382	3 261
Northern Territory	^ 75	^ 166	^ 2 019	^ 2 260
Australian Capital Territory	^ 67	^ 281	552	900
Australia	**6 634**	**29 752**	**121 282**	**157 668**
AVERAGE TONNE-KILOMETRES TRAVELLED (a) *('000)*				
New South Wales	^ 6.0	91.3	1 579.8	78.0
Victoria	^ 7.6	^ 99.6	1 889.0	122.2
Queensland	^ 4.3	^ 103.2	^ 2 249.0	^ 109.4
South Australia	^ 6.5	^ 77.1	2 158.1	131.5
Western Australia	^ 6.7	^ 80.8	^ 2 363.3	^ 132.9
Tasmania	^ 4.2	^ 96.6	1 657.8	^ 81.3
Northern Territory	^ 6.2	^ 55.4	^ 3 269.8	^ 144.6
Australian Capital Territory	^ 5.3	^ 136.3	2 409.4	60.1
Australia	**6.0**	**93.7**	**1 983.3**	**106.4**

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(a) Calculated using the total tonne-kilometres travelled divided by the number of vehicles that travelled tonne-kilometres.

13 TONNE-KILOMETRES TRAVELLED BY FREIGHT VEHICLES, State/territory of operation

	Light commercial vehicles	*Rigid trucks*	*Articulated trucks*	*Total*
TOTAL TONNE-KILOMETRES TRAVELLED *(million)*				
New South Wales	^ 2 034	9 694	39 114	50 842
Victoria	^ 1 953	^ 7 006	24 861	33 820
Queensland	^ 1 146	^ 7 129	22 500	30 775
South Australia	^ 522	^ 1 674	11 541	13 737
Western Australia	^ 713	^ 3 134	^ 16 551	^ 20 398
Tasmania	^ 125	^ 748	^ 2 472	3 344
Northern Territory	^ 83	^ 164	*4 050	*4 297
Australian Capital Territory	^ 58	^ 202	^ 194	^ 455
Australia	**6 634**	**29 752**	**121 282**	**157 668**
AVERAGE TONNE-KILOMETRES TRAVELLED(a) *('000)*				
New South Wales	^ 5.5	89.6	1 474.8	100.4
Victoria	^ 7.2	^ 92.3	1 061.9	91.5
Queensland	^ 4.2	^ 101.2	1 257.9	85.4
South Australia	^ 6.1	^ 73.4	1 188.8	^ 116.0
Western Australia	^ 6.7	^ 80.4	^ 2 191.5	^ 133.5
Tasmania	^ 3.8	^ 93.9	1 541.4	^ 79.4
Northern Territory	^ 6.6	^ 53.0	*3 037.8	*252.9
Australian Capital Territory	**2.4	^ 57.0	^ 179.4	**15.7
Australia	**6.0**	**93.7**	**1 983.3**	**106.4**

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(a) Calculated using the total tonne-kilometres travelled divided by the number of vehicles that travelled tonne-kilometres.

	8 tonnes and under	*Over 8 tonnes to 20 tonnes*	*Over 20 tonnes*	*Total*
TOTAL TONNE-KILOMETRES TRAVELLED *(million)*				
2 axles	2 439	7 749	*857	11 045
3 axles	**3	*192	15 324	15 518
4 or more axles	—	—	^3 189	^3 189
Total	**2 442**	**7 941**	**19 370**	**29 752**
AVERAGE TONNE-KILOMETRES TRAVELLED(b) *('000)*				
2 axles	19.6	61.2	*217.6	43.3
3 axles	**3.9	**55.1	298.9	279.7
4 or more axles	—	—	^459.1	^459.1
Total	**19.5**	**61.1**	**311.6**	**93.7**

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— nil or rounded to zero (including null cells)

(a) Gross Vehicle Mass/Gross Combination Mass

(b) Calculated using the total tonne-kilometres travelled divided by the number of vehicles that travelled tonne-kilometres.

15 ARTICULATED TRUCK USE, Trailer configuration—GCM(a)

	30 tonnes and under	*Over 30 tonnes to 40 tonnes*	*Over 40 tonnes*	*Total*
TOTAL TONNE-KILOMETRES TRAVELLED *(million)*				
Single axle trailer	*167	**1	—	*168
Tandem axle trailer	*430	^3 614	*156	^4 199
Triaxle trailer	**39	^3 236	45 827	49 102
B-Double	—	**1	38 243	38 244
Road train	—	—	^25 594	^25 594
Other	**8	**21	^3 945	^3 974
Total	***644**	**6 873**	**113 765**	**121 282**
AVERAGE TONNE-KILOMETRES TRAVELLED(b) *('000)*				
Single axle trailer	*104.1	**198.0	—	*104.4
Tandem axle trailer	*282.2	474.3	**579.8	446.2
Triaxle trailer	**373.1	^751.3	1 485.3	1 392.3
B-Double	—	**67.6	4 481.7	4 475.5
Road train	—	—	^5 433.2	^5 433.2
Other	**118.2	**407.7	^2 645.9	^2 467.0
Total	**^195.2**	**572.9**	**2 480.9**	**1 983.3**

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** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

(a) Gross Combination Mass.

(b) Calculated using the total tonne-kilometres travelled divided by the number of vehicles that travelled tonne-kilometres.

16 FREIGHT VEHICLE USE, State/territory of registration—Type of vehicle

	Light commercial vehicles	*Rigid trucks*	*Articulated trucks*	*Total*
TOTAL LOAD CARRIED *(million tonnes)*				
New South Wales	^ 30	202	150	382
Victoria	^ 32	^ 215	229	476
Queensland	^ 25	^ 194	148	367
South Australia	^ 11	^ 63	^ 63	136
Western Australia	^ 13	^ 100	146	259
Tasmania	^ 3	^ 19	23	46
Northern Territory	^ 2	^ 6	^ 7	15
Australian Capital Territory	^ 2	^ 8	^ 3	13
Australia	**120**	**807**	**769**	**1 696**
AVERAGE LOAD CARRIED PER TRIP(a) *(kilograms)*				
New South Wales	340	5 560	21 240	2 891
Victoria	^ 427	^ 6 501	21 973	4 007
Queensland	288	^ 6 242	23 045	^ 2 936
South Australia	^ 445	^ 6 484	23 917	^ 3 627
Western Australia	392	5 848	34 163	^ 4 718
Tasmania	^ 290	6 653	24 043	^ 3 083
Northern Territory	^ 535	^ 4 001	26 658	^ 2 535
Australian Capital Territory	^ 426	^ 5 927	25 058	^ 2 191
Australia	**362**	**6 068**	**23 921**	**3 421**

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(a) Calculated using the total load carried divided by the total number of laden trips.

17 FREIGHT VEHICLE USE, Commodity—Total tonnes carried (million)

	Light commercial vehicles	*Rigid trucks*	*Articulated trucks*	*Total*
Food and live animals	^ 9	^ 77	172	257
Beverages and tobacco	*1	*10	^ 15	^ 26
Crude materials, inedible, except fuels	*4	^ 354	211	569
Mineral fuels, lubricants and related materials	^ 1	*17	^ 56	^ 74
Animal and vegetable oils, fats and waxes	**—	**1	^ 4	^ 5
Chemicals and related products, not elsewhere specified	^ 5	^ 8	^ 28	41
Manufactured goods	^ 13	^ 134	^ 122	^ 269
Machinery, transport equipment	^ 7	^ 41	^ 54	101
Miscellaneous manufactured articles	*3	^ 9	^ 9	^ 21
Tools of trade	65	^ 38	*3	105
Other commodities, not elsewhere specified	^ 10	^ 110	86	206
Unspecified(a)	^ 3	^ 9	^ 9	^ 21
Total	**120**	**807**	**769**	**1 696**

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— nil or rounded to zero (including null cells)

(a) Represents loads carried where type of commodity could not be obtained.

18 BUS USE(a), Type of bus—Type of service

	Route service	*Dedicated school bus service*	*Charter service*	*Tour service*	*Other*	*Not specified*(b)	*Total*
TOTAL KILOMETRES TRAVELLED *(million)*							
Buses with fewer than 20 seats	*51	^58	*180	*88	^286	**13	^676
Buses with 20 or more seats	^586	^312	^160	^60	*63	**—	1 181
Total	**^637**	**370**	**^340**	**^149**	**^349**	****13**	**1 857**
AVERAGE KILOMETRES TRAVELLED(c) *('000)*							
Buses with fewer than 20 seats	*63.7	^16.7	*54.1	*44.4	^18.4	**36.9	^29.3
Buses with 20 or more seats	54.1	18.7	17.6	^38.9	^15.4	**1.4	39.2
Total	**54.7**	**18.4**	**^27.4**	**^42.0**	**17.8**	****34.3**	**34.9**

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** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

— nil or rounded to zero (including null cells)

(a) Excluding distance travelled by buses used exclusively for private purposes.

(b) Represents travel by buses where type of service could not be obtained.

(c) Average distance travelled for registered vehicles which were used. Excludes registered vehicles that did not travel during the reference period.

19 BUS USE(a), State/territory of registration—Type of service

	Route service	*Dedicated school bus service*	*Charter service*	*Other*(b)	*Not specified*(c)	*Total*
			TOTAL KILOMETRES TRAVELLED *(million)*			
New South Wales	^183	^173	^116	*103	—	575
Victoria	^108	^47	^42	^116	—	314
Queensland	*137	^66	**119	^155	**2	^479
South Australia	^60	^23	*28	*18	—	129
Western Australia	^103	*38	*16	*54	**10	^220
Tasmania	^13	^15	*3	*9	**1	42
Northern Territory	^14	*3	*14	^36	—	^67
Australian Capital Territory	20	^5	*2	*4	—	31
Australia	**^637**	**370**	**^340**	**^497**	****13**	**1 857**
			AVERAGE KILOMETRES TRAVELLED(d) *('000)*			
New South Wales	43.8	^19.3	^24.1	^20.0	—	34.5
Victoria	^47.4	17.3	^17.7	^19.4	—	28.0
Queensland	^88.6	17.6	**56.1	^28.3	**20.0	^41.4
South Australia	57.1	19.8	*26.1	*16.0	—	38.2
Western Australia	61.0	^17.4	*15.4	*20.9	**43.4	36.0
Tasmania	^43.6	^18.3	*5.8	^13.2	**21.5	25.9
Northern Territory	^60.6	*23.6	*38.4	^28.5	—	^35.4
Australian Capital Territory	51.2	^12.1	*11.9	^15.8	—	40.4
Australia	**54.7**	**18.4**	**^27.4**	**22.0**	****34.3**	**34.9**

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— nil or rounded to zero (including null cells)

(a) Excluding distance travelled by buses used exclusively for private purposes.

(b) Includes tour service operations.

(c) Represents travel by buses where type of service could not be obtained.

(d) Average distance travelled for registered vehicles which were used. Excludes registered vehicles that did not travel during the reference period.

EXPLANATORY NOTES

INTRODUCTION

1 This publication presents estimates from the 2004 Survey of Motor Vehicle Use (SMVU). The data were collected in four quarterly sample surveys conducted by the Australian Bureau of Statistics (ABS) over the period 1 November 2003 to 31 October 2004.

SCOPE

2 The scope of the survey comprises all vehicles that were registered with a motor vehicle authority for road use at some stage during the 12 months ended 31 October 2004. Not included are caravans, trailers, tractors, plant and equipment, vehicles belonging to the defence services and vehicles with diplomatic or consular plates. Where they were registered as such, vintage and veteran cars were also excluded from the survey. Unregistered vehicles are out of scope.

3 The population was identified on 31 March 2003 using information obtained from the state and territory motor vehicle registration authorities. There were 13.2 million vehicles on the population frame at this time.

METHODOLOGY

4 For the 2004 SMVU, a stratified sample of 15,980 vehicles was selected to report on vehicle use over a three-month period within the reference year 1 November 2003 to 31 October 2004. Of these, 27% were passenger vehicles and motor cycles, 59% were freight vehicles, 10% were buses and 4% were non-freight carrying vehicles. The sample size was chosen to give a suitable level of precision for estimates of total distance travelled and tonne-kilometres for each state/territory of registration by type of vehicle category.

5 The survey methodology is described as pre-advice, where owners of vehicles selected in the survey received early advice about their inclusion to encourage record keeping and minimise reliance on recall. These owners were asked to complete two mail questionnaires tailored to their vehicle type. The first, at the beginning of each quarterly survey period, asked for selected vehicle characteristics and the vehicle's odometer reading. Owners were also advised that they would receive a follow up questionnaire at the end of the quarter seeking details about the use of the vehicle over the quarter and a second odometer reading. Examples of the main items requested in the second questionnaire were included with the first questionnaire.

6 When questionnaires were returned to the ABS they were checked for completeness and accuracy and, where possible, follow-up contact was made with owners to resolve reporting problems. Where contact with providers could not be made, missing items on incomplete questionnaires were filled by imputing average data from like vehicles for which data were obtained.

7 Where the selected vehicle owner had not owned the vehicle for the whole quarterly survey period, the details provided for the period of ownership were adjusted to give a three-month equivalent. Where the vehicle was deregistered during the quarterly survey period, only the use up to the date of deregistration was included.

8 In addition, adjustments were made in the estimation process to account for the use of new motor vehicles registered after the survey population was identified, as well as the re-registration of other vehicles during this time. For the 2004 SMVU the population frame was created on 31 March 2003. More information about these adjustments is provided in the Technical Note.

9 Estimates from information reported in each quarterly collection period were produced and these were then aggregated into annual estimates relating to the use of vehicles during the period 1 November 2003 to 31 October 2004. The size of the sample is insufficient to produce reliable quarterly results.

RELIABILITY OF ESTIMATES

10 When interpreting the results of a survey it is important to take into account factors that may affect the reliability of estimates. Such factors can be classified as either sampling error or non-sampling error. Information on sampling and non-sampling error is provided in the Technical Note.

COMPARISON WITH MOTOR VEHICLE CENSUS DATA

11 Survey estimates of the numbers of vehicles, by vehicle type, are not fully comparable with ABS Motor Vehicle Census data (see *Motor Vehicle Census, Australia* (cat. no. 9309.0)). The main differences are:

- survey estimates of the numbers of vehicles relate to the average number of vehicles registered for road use during the period 1 November 2003 to 31 October 2004, not to the number of vehicles registered at a specific date, as is the case for the Motor Vehicle Census
- the characteristics of the type of vehicle identified from the survey information may differ from those recorded by the motor registries.

CONCEPT OF AVERAGES

12 Most tables in this publication include statistics presented as averages. Tables 1, 3 and 4 are summary tables and present average kilometres travelled per vehicle for all registered vehicles in scope of the survey. This includes those vehicles that travelled zero kilometres during the reference period (also known as nil use vehicles). Other tables present more detailed information on actual vehicle use where the denominator used in calculating the average is limited to the estimated number of vehicles that contribute to the particular cell. In some cases a vehicle may contribute to more than one cell in a table (e.g. a bus used for route service and charter purposes) but will only be counted once in the denominator for the total.

13 As the denominators used to calculate each average are different it should be noted that the averages along a table row cannot be used to derive the total column entry for that row.

HISTORICAL COMPARISONS

14 This publication includes estimates of vehicle use for earlier years. However, it should be noted that the survey methodology was designed to produce reliable level estimates of key data items at the state by vehicle type level. The survey was not designed to produce reliable estimates of annual movements. Changes in data over time may be subject to high RSEs and hence the changes may not be statistically significant. While the analysis in this publication does make comparisons over time, the limitations as outlined above should be taken into account and care should be taken in drawing inferences from these comparisons. See paragraphs 11 and 12 of the Technical Note.

RELATED PUBLICATIONS AND PRODUCTS

15 Users may also wish to refer to the following publications and products which contain information relating to motor vehicles in Australia:

Motor Vehicle Census, Australia (cat. no. 9309.0) — issued annually
Sales of New Motor Vehicles, Australia (Electronic Publication) (cat. no. 9314.0 or 9314.0.55.001) — issued monthly
Directory of Transport Statistics, 1998 (cat. no. 1132.0) — released in January 1999
Transport Theme page on ABS web site <www.abs.gov.au>.

ABS DATA AVAILABLE ON REQUEST

16 As well as the statistics included in this publication, the ABS has other relevant data available on request. Inquiries should be made to the National Information and Referral Service on 1300 135 070.

DATA QUALITY

1 When interpreting the results of a survey it is important to take into account factors that may affect the reliability of estimates. Such factors can be classified as either sampling error or non-sampling error.

SAMPLING ERROR

2 Estimates in this publication are based on information collected for a sample of registered motor vehicles, rather than a full enumeration, and are therefore subject to sampling error. They may differ from the data that would have been produced if the information had been obtained for all registered motor vehicles. Examples of the sampling error for this publication are included in this Technical Note.

3 The sampling error associated with an estimate can be estimated from the sample results. One measure of sampling error is given by the standard error, which indicates the extent to which an estimate might have varied by chance because only a sample of vehicles was included. There are about two chances in three that a sample estimate will differ by less than one standard error from the data that would have been obtained if all vehicles had been included, and about 19 chances in 20 that the difference will be less than two standard errors.

4 Another measure of sampling variability is the relative standard error (RSE) which is obtained by expressing the standard error as a percentage of the estimate to which it refers. The RSE is a useful measure in that it provides an immediate indication of the percentage error likely to have occurred due to sampling. In this publication, estimates that have an estimated relative standard error between 10% and 25% are annotated with the symbol '^' . These estimates should be used with caution as they are subject to sampling variability too high for some purposes. Estimates with an RSE between 25% and 50% are annotated with the symbol '*', indicating that the estimate should be used with caution as it is subject to sampling variability too high for most practical purposes. Estimates with an RSE greater than 50% are annotated with the symbol '**' indicating that the sampling variability causes the estimates to be considered too unreliable for general use.

5 The RSEs relating to 2004 estimates contained in Table 4 of this publication are shown in the following table.

RSE OF MOTOR VEHICLE USE(a), State/territory of registration—Type of vehicle

	Passenger vehicles	*Motor cycles*	*Light commercial vehicles*	*Rigid trucks*	*Articulated trucks*	*Non-freight carrying trucks*	*Buses*	*Total*
	%	%	%	%	%	%	%	%
TOTAL KILOMETRES TRAVELLED								
New South Wales	5	20	8	5	5	21	8	4
Victoria	4	26	9	7	5	18	9	3
Queensland	5	17	8	6	6	11	17	4
South Australia	5	22	8	8	6	20	9	4
Western Australia	5	18	8	8	7	17	10	4
Tasmania	5	20	7	7	6	21	9	4
Northern Territory	5	17	10	13	10	18	13	4
Australian Capital Territory	4	21	7	6	6	22	6	3
Australia	**2**	**10**	**4**	**3**	**3**	**8**	**5**	**2**
NUMBER OF VEHICLES								
New South Wales	2	5	4	2	2	13	8	2
Victoria	1	5	2	3	2	8	6	1
Queensland	3	5	4	2	3	12	5	2
South Australia	2	4	5	2	4	7	6	2
Western Australia	2	3	5	2	2	7	7	1
Tasmania	2	4	2	2	3	6	5	1
Northern Territory	2	8	4	8	3	5	5	2
Australian Capital Territory	2	5	3	2	4	11	6	1
Australia	**1**	**2**	**2**	**1**	**1**	**4**	**3**	**1**
AVERAGE KILOMETRES TRAVELLED								
New South Wales	4	20	6	5	4	19	9	3
Victoria	4	26	8	6	4	18	8	3
Queensland	4	17	7	6	5	17	16	3
South Australia	5	22	8	8	5	18	9	4
Western Australia	5	18	9	8	6	15	9	4
Tasmania	5	19	7	7	4	21	8	4
Northern Territory	5	16	10	7	10	19	12	4
Australian Capital Territory	4	20	6	6	5	22	6	3
Australia	**2**	**10**	**3**	**3**	**2**	**8**	**5**	**2**

(a) These RSEs relate to the estimates in Table 4.

SAMPLING ERROR *continued*

6 As an example of the use of an RSE, the 2004 estimate for kilometres travelled by all passenger vehicles registered in Australia is 147,728 million kilometres (Table 4 of the publication). The RSE for this estimate is 2%, as shown above. Therefore, the standard error for the 2004 kilometres travelled by passenger vehicles estimate is 2,955 million kilometres. There are about two chances in three that the figure obtained if all vehicles had been included, would have been in the range 144,773 million kilometres to 150,683 million kilometres. There are about 19 chances in 20 that the figure would have been in the range 141,819 million kilometres to 153,637 million kilometres.

7 It is important to note that estimates at more detailed levels than the above are subject to higher RSEs and therefore are less reliable.

8 RSEs for other key variables are shown in the following tables. The RSEs of further detailed variables can be made available on request.

RSE OF FUEL CONSUMPTION(a), Type of fuel—Type of vehicle

	Passenger vehicles	*Motor cycles*	*Light commercial vehicles*	*Rigid trucks*	*Articulated trucks*	*Non-freight carrying trucks*	*Buses*	*Total*
	%	%	%	%	%	%	%	%
TOTAL FUEL CONSUMPTION								
Petrol								
Lead replacement	16	35	23	30	98	45	70	14
Unleaded	3	12	6	27	100	23	18	2
Total	*3*	*11*	*6*	*22*	*71*	*20*	*17*	*2*
Diesel	17	—	7	4	3	10	5	3
LPG/CNG/dual fuel	13	—	21	44	100	47	23	11
Total	**2**	**11**	**4**	**3**	**3**	**10**	**5**	**2**
AVERAGE RATE OF FUEL CONSUMPTION								
Petrol								
Lead replacement	8	32	7	7	—	5	15	7
Unleaded	1	4	2	15	98	6	5	1
Total	*1*	*4*	*2*	*6*	*46*	*6*	*5*	*1*
Diesel	7	—	2	2	1	5	4	3
LPG/CNG/dual fuel	4	—	4	9	98	16	14	3
Total	**1**	**4**	**1**	**2**	**1**	**5**	**3**	**1**

— nil or rounded to zero (including null cells)

(a) These RSEs relate to the estimates in Table 5.

RSE OF FREIGHT VEHICLES(a), State/territory of operation

	Light commercial vehicles	*Rigid trucks*	*Articulated trucks*	*Total*
	%	%	%	%
TOTAL TONNE-KILOMETRES				
New South Wales	15	9	5	4
Victoria	21	11	5	5
Queensland	15	12	8	6
South Australia	16	12	9	8
Western Australia	14	12	13	10
Tasmania	17	12	10	8
Northern Territory	19	14	35	33
Australian Capital Territory	16	19	21	13
Australia	**8**	**5**	**4**	**3**

(a) These RSEs relate to the estimates in Table 13.

9 Summary tables in this publication contain estimates for earlier years. Because of cost and provider load constraints, the SMVU cannot be designed to provide accurate measures of the movements between reference periods. Care should be taken in drawing inferences from changes in data over these years.

SAMPLING ERROR *continued*

10 The standard error for the movement can be calculated using:

$$SE(M_t) = \sqrt{(RSE(Y_{2t}) * Y_{2t}/100)^2 + (RSE(Y_{1t}) * Y_{1t}/100)^2}$$

where

Y_{1t} is an estimate of total of the variable of interest, obtained from the 1st time point

Y_{2t} is an estimate of total of the same variable of interest, obtained from the 2nd time point

M_t is an estimate of movement of the total of the variable of interest from the 1st time point to the 2nd time point, ie $M_t = Y_{2t} - Y_{1t}$

11 For total kilometres travelled by type of vehicle from the 2000 and 2004 SMVUs, the standard errors of the movements and the estimates from which they are derived are shown in the following table.

SE OF THE MOVEMENT OF TOTAL KILOMETRES TRAVELLED

	LEVEL ESTIMATES				MOVEMENT ESTIMATES	
	2000	*RSE (2000)*	*2004*	*RSE (2004)*	*Movement*	*SE (Movement)* (a)
Type of vehicle	mill.	%	mill.	%	mill.	mill.
Passenger vehicles	141 519	3	147 728	2	6 209	5 221
Motor cycles	1 135	8	1 478	10	343	175
Light commercial vehicles	27 829	3	34 007	4	6 178	1 456
Rigid trucks	6 536	4	7 639	3	1 104	346
Articulated trucks	5 578	3	6 013	3	435	217
Non-freight carrying trucks	220	17	221	8	1	41
Buses	1 776	6	1 968	5	191	147
Total	**184 593**	**2**	**199 055**	**2**	**14 462**	**5 430**

(a) Calculated on unrounded RSE estimates.

12 As indicated in the table above, the estimates of movement are subject to significant sampling error and caution should be used in analysing the movements in the estimates. For example, the estimate of movement for passenger vehicles is an increase of 6,209 million kilometres and the standard error is 5,221 million kilometres, which means there are 19 chances in 20 that the true movement estimate is between a decrease of 4,233 million kilometres and an increase of 16,651 million kilometres.

NON-SAMPLING ERROR

13 Non-sampling error covers the range of errors that are not caused by sampling and can occur in any statistical collection whether it is based on full enumeration or a sample. For example, non-sampling error can occur because of non-response to the statistical collection, errors in reporting by providers, definition or classification difficulties, errors in transcribing and processing data and under-coverage of the frame from which the sample was selected. If these errors are systematic (not random) then the survey results will be distorted in one direction and therefore will be unrepresentative of the target population. Systematic errors result in bias.

14 Non-sampling error is reduced by the use of pre-advice methodology. This involves vehicle owners receiving early advice about their inclusion in the survey and encourages a higher degree of record keeping. In addition, the reporting of odometer readings taken at the start and end of the survey periods (approximately three months apart) provide reliable estimates of total distance travelled without a recall bias.

Response and non-response

15 An important factor that affects non-sampling error is the response rate achieved. The ABS makes all reasonable efforts to maximise response rates. Where appropriate, mail reminders and telephone follow-up are used to attempt to contact non-responding vehicle owners.

16 Responses were received from 82% of all of the selections for 2004. After removing those vehicles that had been found to be deregistered or out of scope, the live response rate for the 2004 SMVU was 81%.

RESPONSE AND NON-RESPONSE BY CATEGORY

	Percentage of selections 2004
Response received	
Registered vehicle	76
Unregistered vehicle(a)	6
Non-response	
Untraceable - mailing address unknown	5
Other(b)	13
Total selections	**100**

(a) Includes deregistration, out of scope and duplicates.
(b) Includes: responses that were unusable because of unresolved queries or where the vehicle was sold during the reference quarter and the reported data covered less than 14 days; non-response where no listing could be found to enable contact by telephone; and owner contacted by telephone but response still not secured.

17 Live response rates for each state and territory, and for each vehicle type, are shown in the following tables:

LIVE RESPONSE RATES, State/territory

State/territory	*Response rate* %
New South Wales	82
Victoria	82
Queensland	84
South Australia	85
Western Australia	83
Tasmania	82
Northern Territory	72
Australian Capital Territory	74
Australia	**81**

Response and non-response continued

LIVE RESPONSE RATES, Type of vehicle

Type of vehicle	Response rate %
Passenger vehicle	79
Motor cycles	79
Light commercial vehicles	82
Rigid trucks	81
Articulated trucks	85
Non-freight carrying trucks	85
Buses	77
Total	**81**

18 A large non-response increases the potential magnitude of non-response bias, which occurs if the usage patterns of the non-responding vehicles differ from those of the responding vehicles. For the SMVU, it is assumed that the characteristics of non-responding vehicles including the proportion of deregistered, out of scope and nil use vehicles are the same as for responding vehicles.

Imputation

19 As for previous surveys, the need for imputation of unanswered items on the returned questionnaires remained quite high. Imputation is the process whereby a value is generated for missing data items based on the responses for similar vehicles which were operating for the reference period. Of the questionnaires returned for 2004, 13% needed imputation of one or more items apart from the average rate of fuel consumption. The imputation for average rate of fuel consumption for 2004 was 26%.

Adjustments

20 The SMVU measures the use of all vehicles registered during the reference year. Because selections are taken from vehicles registered some time before the beginning of each collection period, adjustments are made to account for the change in size of the registered motor vehicle fleet since the population frame was created. For the 2004 SMVU the frame was created on 31 March 2003. These adjustments involved two categories:

- re-registrations - older vehicles that are returning to the registered vehicle fleet after a period of de-registration, and
- new motor vehicles - vehicles which have not been previously registered.

CONTRIBUTION OF ADJUSTMENTS FOR RE-REGISTRATIONS, Australia—SMVU 2004

Type of vehicle	Percentage of total kilometres travelled %
Passenger vehicles	1
Motor cycles	6
Light commercial vehicles	2
Rigid trucks	4
Articulated trucks	4
Non-freight carrying trucks	6
Buses	—
Total	**2**

— nil or rounded to zero (including null cells)

Adjustments continued

CONTRIBUTION OF NEW VEHICLES REGISTERED AFTER 31 MARCH 2003(a)

Type of vehicle	*Percentage of total kilometres travelled* %
Passenger vehicles	10
Motor cycles	15
Light commercial vehicles	14
Rigid trucks	10
Articulated trucks	17
Non-freight carrying trucks	13
Buses	14
Total	**11**

(a) Based on data from Sales of New Motor Vehicles, Australia (cat. no. 9314.0).

21 These activities occur continuously and the adjustments are made to account for the registrations that are estimated to have been added to or removed from the registered vehicle fleet between the population frame date and the end of the reference period. The adjustment process also accounts for de-registrations. This means it is possible for the re-registration factor to be negative.

STRATIFICATION CHANGES

22 An investigation into the stratification of the SMVU was conducted in 2003 to determine whether the quality of the SMVU estimates could be improved by using alternate or additional stratification variables or boundaries. The aim of the investigation was to reduce the RSEs of the key data items of total distance travelled and tonne-kilometres travelled, at the state by vehicle type level, while maintaining the existing quarterly sample size of 4,000 vehicles.

23 The investigations showed that by implementing changes to the stratification, a reduction in RSEs for these key data items would be realised. The main changes to the stratification variables were to increase the importance of, and number of, 'vehicle age' cohorts, and to remove 'area of registration'.

24 These changes were implemented for the 2004 SMVU and have resulted in the survey frame being stratified by state of registration, vehicle type, vehicle age and vehicle size.

DISTRIBUTIONS

25 The following tables provide values for total kilometres travelled and total tonne-kilometres travelled for selected percentiles. These percentiles have been calculated from all values reported in each quarter of the reference period. Percentiles provide some indication of the distribution of vehicle use across the survey population. For example, one-fifth of New South Wales passenger vehicles reported a distance travelled of 1,266 kilometres or less for the quarter they were selected in the survey. Note that the minimum value for every combination of state/territory by type of vehicle for both tables is zero.

SELECTED PERCENTILES(a), State/territory of registration—Type of vehicle

	20th Percentile	*40th Percentile*	*50th Percentile (Median)*	*60th Percentile*	*80th Percentile*	*95th Percentile*	*99th Percentile*
	TOTAL KILOMETRES TRAVELLED						
Passenger vehicles							
New South Wales	1 266	2 409	3 030	3 481	5 255	7 605	15 026
Victoria	1 312	2 353	2 887	3 474	5 156	8 762	13 118
Queensland	1 460	2 510	2 956	3 817	5 690	8 210	11 113
South Australia	1 229	2 073	2 549	3 094	5 142	7 215	13 449
Western Australia	1 101	2 219	2 798	3 534	5 289	8 905	13 881
Tasmania	811	1 988	2 597	2 992	4 589	7 648	13 453
Northern Territory	1 227	2 271	2 910	3 415	5 029	9 747	13 507
Australian Capital Territory	1 718	2 723	3 276	3 725	5 510	8 236	11 098
Australia	*1 274*	*2 326*	*2 887*	*3 477*	*5 330*	*8 217*	*13 118*
Motorcycles							
New South Wales	—	332	535	786	1 507	2 924	4 215
Victoria	—	4	85	324	1 569	3 250	8 026
Queensland	142	396	590	1 382	2 418	5 184	12 171
South Australia	—	82	238	356	1 544	3 112	5 873
Western Australia	—	174	233	474	1 046	2 805	4 077
Tasmania	—	45	214	358	593	1 626	2 784
Northern Territory	24	279	361	712	1 168	2 443	2 755
Australian Capital Territory	36	269	458	684	1 449	3 098	6 605
Australia	—	*183*	*356*	*593*	*1 595*	*3 623*	*6 732*
Light commercial vehicles							
New South Wales	1 449	2 757	3 194	4 633	6 697	12 513	18 140
Victoria	1 111	2 741	3 442	4 381	6 993	12 774	21 719
Queensland	1 337	2 767	3 725	4 660	6 426	11 445	15 669
South Australia	1 630	2 666	3 838	4 504	6 541	11 210	23 154
Western Australia	721	2 358	3 256	4 026	6 546	12 777	25 092
Tasmania	1 042	2 283	2 770	3 594	5 349	9 250	11 919
Northern Territory	857	2 200	2 715	3 342	5 888	10 394	22 140
Australia	*1 257*	*2 716*	*3 469*	*4 381*	*6 624*	*12 277*	*18 140*
Rigid trucks							
New South Wales	1 120	2 731	3 693	4 916	8 475	20 604	35 492
Victoria	207	1 353	2 730	4 293	8 355	17 673	28 689
Queensland	853	2 607	3 824	5 403	9 572	20 937	31 588
South Australia	166	1 422	2 196	3 514	7 758	14 977	27 924
Western Australia	201	1 504	2 539	3 610	7 043	14 957	30 123
Tasmania	391	1 691	3 078	4 144	7 559	15 894	25 456
Northern Territory	258	1 912	2 992	4 073	6 235	12 668	22 951
Australian Capital Territory	1 203	3 278	5 137	6 705	10 506	19 493	34 179
Australia	*456*	*2 082*	*3 208*	*4 567*	*8 412*	*18 782*	*31 188*
Articulated trucks							
New South Wales	3 715	12 666	17 449	22 859	39 473	57 011	94 833
Victoria	1 356	10 917	15 343	21 912	42 263	59 796	76 914
Queensland	3 219	12 083	16 538	24 708	47 837	74 285	86 125
South Australia	4 189	12 813	19 117	24 486	43 127	64 075	94 275
Western Australia	1 857	7 957	11 938	19 630	32 949	60 150	97 588
Tasmania	6 295	19 115	22 389	27 465	37 614	54 307	78 544
Northern Territory	1 533	5 307	8 244	15 309	38 102	81 510	114 334
Australian Capital Territory	5 195	15 556	27 224	32 192	44 116	62 930	66 853
Australia	*2 668*	*11 427*	*16 042*	*22 824*	*41 506*	*63 079*	*86 125*

— nil or rounded to zero (including null cells)

(a) Based on distance travelled in a quarter.

SELECTED PERCENTILES(a), State/territory of registration—Type of vehicle *continued*

	20th Percentile	*40th Percentile*	*50th Percentile (Median)*	*60th Percentile*	*80th Percentile*	*95th Percentile*	*99th Percentile*
	TOTAL KILOMETRES TRAVELLED						
Non-freight carrying trucks							
New South Wales	499	2 031	2 780	3 346	9 597	16 003	22 690
Victoria	213	692	914	1 516	5 370	16 357	29 309
Queensland	123	751	1 898	3 023	5 764	11 747	17 989
South Australia	319	463	529	887	3 722	7 856	14 596
Western Australia	1	262	661	1 670	4 288	7 083	12 718
Tasmania	113	113	113	635	2 261	9 370	10 290
Northern Territory	47	583	887	1 589	4 921	8 789	24 230
Australian Capital Territory	339	1 523	2 007	4 650	9 412	22 827	28 841
Australia	*157*	*596*	*1 110*	*2 122*	*5 388*	*12 118*	*19 077*
Buses							
New South Wales	2 245	4 207	5 908	8 189	12 488	21 637	27 310
Victoria	2 155	3 799	5 122	6 131	10 187	16 977	31 041
Queensland	2 509	4 125	4 959	5 763	13 076	35 118	46 180
South Australia	2 263	5 525	7 424	9 974	14 859	21 749	34 599
Western Australia	1 131	3 266	5 094	7 150	13 475	23 809	32 636
Tasmania	1 990	3 413	4 768	5 467	8 868	16 933	29 640
Northern Territory	1 878	3 629	4 584	5 705	12 945	26 771	47 764
Australian Capital Territory	3 046	5 201	6 454	7 580	16 141	24 373	42 936
Australia	*2 245*	*4 084*	*5 343*	*6 834*	*12 184*	*24 938*	*45 254*
Total							
New South Wales	1 256	2 367	3 030	3 507	5 443	8 256	16 182
Victoria	1 136	2 311	2 887	3 499	5 344	9 586	15 941
Queensland	1 327	2 468	2 977	3 886	5 884	9 185	15 417
South Australia	1 112	2 074	2 562	3 195	5 242	8 641	16 868
Western Australia	775	2 068	2 791	3 600	5 430	9 445	20 169
Tasmania	679	1 930	2 597	3 068	4 727	8 711	17 437
Northern Territory	1 055	2 167	2 755	3 368	5 156	10 423	20 747
Australian Capital Territory	1 592	2 658	3 263	3 753	5 533	8 372	12 734
Australia	**1 161**	**2 295**	**2 887**	**3 525**	**5 521**	**9 185**	**15 961**

(a) Based on distance travelled in a quarter.

SELECTED PERCENTILES(a), State/territory of registration—Type of freight vehicle

	20th Percentile	*40th Percentile*	*50th Percentile (Median)*	*60th Percentile*	*80th Percentile*	*95th Percentile*	*99th Percentile*
	TOTAL TONNE-KILOMETRES TRAVELLED						
Light commercial vehicles							
New South Wales	—	5	92	258	1 415	4 579	8 470
Victoria	—	—	131	350	1 535	4 907	11 956
Queensland	—	—	12	91	1 085	2 572	7 834
South Australia	—	—	131	336	1 340	4 066	9 075
Western Australia	—	—	—	125	1 309	4 653	6 273
Tasmania	—	—	—	81	678	2 541	5 435
Northern Territory	—	—	—	85	1 029	4 095	6 773
Australian Capital Territory	—	53	154	589	1 506	4 106	6 334
Australia	—	—	*50*	*259*	*1 276*	*4 356*	*8 470*
Rigid trucks							
New South Wales	725	2 843	4 778	6 830	19 583	86 872	358 106
Victoria	96	1 715	2 803	5 244	22 466	84 355	317 826
Queensland	518	2 685	4 637	7 648	24 691	105 129	341 632
South Australia	98	1 879	2 847	6 557	22 091	70 816	148 250
Western Australia	108	2 144	3 642	6 614	18 202	58 436	207 576
Tasmania	53	1 628	3 002	5 903	17 984	77 484	206 139
Northern Territory	89	2 029	3 417	5 872	14 093	48 802	90 404
Australian Capital Territory	710	3 080	4 935	8 540	27 391	127 417	368 250
Australia	*342*	*2 243*	*4 013*	*6 481*	*21 239*	*86 872*	*317 826*
Articulated trucks							
New South Wales	32 450	137 262	196 686	275 256	609 471	1 395 962	2 000 527
Victoria	10 648	105 069	190 971	294 845	819 639	1 633 144	2 085 380
Queensland	31 043	143 285	207 392	366 900	882 815	1 629 860	4 445 967
South Australia	37 645	138 119	238 464	376 476	852 093	2 142 308	3 169 246
Western Australia	10 520	101 775	179 763	254 191	744 069	2 521 360	4 301 740
Tasmania	71 176	225 660	287 670	363 510	570 230	1 381 423	2 199 431
Northern Territory	11 947	72 407	130 278	310 080	1 143 695	3 320 713	6 174 040
Australian Capital Territory	60 425	250 313	406 519	570 587	992 609	1 818 880	2 389 400
Australia	*21 754*	*127 375*	*199 458*	*309 655*	*777 939*	*1 634 144*	*3 155 307*

— nil or rounded to zero (including null cells)

(a) Based on distance travelled in a quarter.

DISTRIBUTIONS *continued*

26 Users should contact the ABS if they have any queries on the quality and reliability of estimates for particular purposes.

GLOSSARY

Articulated trucks Motor vehicles constructed primarily for load carrying, consisting of a prime mover which has no significant load carrying area, but with a turntable device which is linked to a semitrailer.

Average load carried Average load carried is calculated by dividing the total weight carried by the number of trips made while carrying a load.

B-Doubles A B-Double combination consists of a prime mover towing two semitrailers. The first trailer includes a turntable which links to the second trailer, rather than using a dolly to link the trailers as in road train configurations.

Buses Motor vehicles constructed for the carriage of passengers. Included are all motor vehicles with 10 or more seats, including the driver's seat.

Business kilometres Distance travelled for hire and reward, or charged to a business expense, or for which an allowance was received. All distances travelled for business purposes, irrespective of actual use, and irrespective of vehicle type, are included in total business kilometres. The laden-unladen dissection of distance travelled for business purposes relates only to freight vehicles, i.e. light commercial vehicles, rigid trucks and articulated trucks.

Capital city These areas are based on capital city Statistical Divisions as defined in the *Australian Standard Geographical Classification (ASGC) 2003*.

Sydney — this includes the area bounded by Gosford and Wyong; Hawkesbury and Blue Mountains; Campbelltown, Wollondilly and the Sutherland Local Government Areas.

Melbourne — this includes the area bounded by Werribee, Melton, Sunbury, Craigieburn, Whittlesea, Healesville, Warburton, Berwick, Pakenham and the whole of Mornington Peninsula.

Brisbane — this includes the area bounded by Caboolture, the eastern part of the Pine Rivers Shire, Redcliffe City, Redland Shire, Beenleigh, Logan City and the City of Ipswich.

Adelaide — this includes the area bounded by the Gulf of St. Vincent, the Gawler River and the Mount Lofty Ranges from Gawler to Bridgewater through Kangarilla and Willunga to Sellicks Beach.

Perth — this includes the area bounded by Yanchep and Bullsbrook; Warnbro, Keysbrook and Wooroloo.

Hobart — this includes the area bounded by New Norfolk; Sorell and Carlton Creek; Brighton and Snug.

Darwin — this includes Darwin and suburbs, Palmerston and other areas north of the Howard Springs turn-off.

Canberra — this includes all of the Australian Capital Territory.

Commodity carried The publication of commodities carried is based on the 10 sectional groupings of the *Australian Transport Freight Commodity Classification (ATFCC)*, with the addition of Tools of Trade.

Dolly A device intended to link two semitrailers or a rigid truck and a semitrailer.

Freight vehicles Consists of light commercial vehicles, rigid trucks and articulated trucks.

Fuel consumption Fuel consumption is calculated by aggregating the total kilometres travelled multiplied by reported average rate of fuel consumption for each vehicle.

Fuel consumption (average) The average rate of fuel consumption is calculated by dividing the total fuel consumption by total kilometres travelled for each type of vehicle.

Gross Combination Mass (GCM) Tare weight (i.e. unladen weight) of the motor vehicle and attached trailers, plus their maximum carrying capacity. In the survey, this was obtained for vehicles operated in combination (e.g. a prime mover/semitrailer combination, or a rigid truck/trailer combination).

Gross Vehicle Mass (GVM) Tare weight (i.e. unladen weight) of the motor vehicle, plus its maximum carrying capacity. In the survey, this was obtained for buses and rigid trucks not usually towing trailers.

Interstate This refers to any travel by vehicles outside their state or territory of registration.

Light commercial vehicles Motor vehicles constructed for the carriage of goods and which are less than or equal to 3.5 tonnes GVM. Included are utilities, panel vans, cab-chassis and goods carrying vans (whether four-wheel drive or not).

Non-freight carrying trucks Specialist motor vehicles or motor vehicles fitted with special purpose equipment, and having little or no goods carrying capacity, e.g. ambulances, cherry pickers, fire trucks and tow trucks.

Other Urban Areas These are based on the *Australian Standard Geographical Classification (ASGC) 2003* as being either Statistical Districts with a population greater than 40,000 or clusters of collection districts and other urban areas with a population greater than 40,000, based on the 2001 Population Census.

New South Wales — within the areas of Newcastle, Lake Macquarie, Port Stephens, Wollongong, Kiama, Bathurst-Orange, Maitland, Albury (excluding Wodonga), Hume, Wagga Wagga, Tweed Heads (excluding Gold Coast), Queanbeyan (excluding Canberra ACT), Lismore, Coffs Harbour, Greater Taree, Tamworth, Shellharbour, Cessnock, Nelson Bay, Port Macquarie and Nowra.

Victoria — within the areas of Geelong, Ballarat, Bendigo, Wodonga (excluding Albury), Shepparton, La Trobe Valley and Mildura.

Queensland — within the areas of The Sunshine Coast, Bundaberg, Hervey Bay, Rockhampton, Mackay, Townsville, Cairns, Gold Coast (excluding Tweed Heads), and Toowoomba.

Western Australia — within the areas of Mandurah and Bunbury.

Tasmania — within the areas of Launceston, Burnie, Devonport, Penguin, Ulverston, Wynyard and Latrobe.

This category is not applicable in South Australia, the Northern Territory and the Australian Capital Territory.

Passenger vehicles Motor vehicles constructed primarily for the carriage of persons and containing up to nine seats (including the driver's seat). Included are cars, station wagons, four-wheel drive passenger vehicles, passenger vans or mini buses with fewer than 10 seats and campervans.

Prime movers Motor vehicles constructed primarily for towing semitrailers. Prime movers have no significant load carrying area but are fitted with a turntable for linking to a semitrailer.

Rigid trucks Motor vehicles exceeding 3.5 tonnes GVM, constructed with a load carrying area. Included are normal rigid trucks with a tow bar, draw bar or other non-articulated coupling on the rear of the vehicle.

Road trains Motor vehicles comprising a prime mover hauling two or more trailers and employing a dolly or a rigid truck hauling two or more trailers.

Relative standard error (RSE) The standard error expressed as a percentage of the estimate to which it refers.

Semitrailer Trailers designed to impose a substantial load on the towing vehicle, usually via a turntable on a prime mover.

Standard error (SE) Indicates the extent to which an estimate might have varied by chance because only a sample of vehicles was included.

Stratification Stratification is the process where a population is divided into homogeneous groups called strata that are non-overlapping, and together comprise the whole population. This technique uses auxiliary information to increase the efficiency of a sample design and units are selected independently within each stratum.

Tonne-kilometres Total tonne-kilometres is the aggregation of the number of tonnes moved multiplied by the distance travelled in kilometres for each individual vehicle carrying freight. Note that it is not the aggregation of the total number of tonnes moved by total kilometres travelled by all vehicles carrying freight.

Tonnes carried Total tonnes carried is the total weight of goods and freight carried during the survey period. The estimate of total tonnes carried relates to goods and freight uplifted by vehicles and therefore will overstate the actual physical quantity of goods and freight moved during the survey period to the extent that transhipment occurs (i.e. the transfer of goods and freight from one vehicle to another).

Travel to and from work The travel between place of residence and place of work at the beginning and end of all working days, including travel to and from public transport stations.

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