



SURVEY OF MOTOR VEHICLE USE

AUSTRALIA

EMBARGO: 11.30AM (CANBERRA TIME) THURS 25 SEP 2003

C O N T E N T S

page

C O N T E N T S

Notes	2
Summary of findings	3
List of tables	7

A D D I T I O N A L I N F O R M A T I O N

Explanatory notes	42
Technical note 1: Data quality	44
Technical note 2: Methodological review	53
Glossary	55

I N Q U I R I E S

- For further information about these and related statistics, contact the National Information and Referral Service on 1300 135 070.

NOTES

ABOUT THIS PUBLICATION

This publication presents estimates from the 2002 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 2001 to 31 October 2002.

Beginning with the 2000 SMVU, the collection period changed from the 12 months ended 31 July to the 12 months ended 31 October.

Revised estimates from the 1998 and 1999 SMVU are also included in this publication. These relate to the period 1 August 1997 to 31 July 1998 and 1 August 1998 to 31 July 1999.

CHANGES IN THIS ISSUE

The 1998 and 1999 SMVU data in this publication have been revised since their initial release. Deficiencies in the survey population frame were identified and have now been rectified. Further information on the frame deficiencies and the action taken to remedy them is given in Technical Note 2: Methodological Review.

Release of revised data due to the frame deficiencies has now been completed. Tables 1 to 3 include a full series of revised SMVU data for 1998, 1999 and 2000 together with recently released data for 2001 and new data for 2002.

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 2002 survey results and the earlier iterations of the SMVU, the survey has not been designed to provide highly 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. There is also potential for increased volatility in the estimates due to the changes that have been implemented as a result of the methodological review.

Additional information about the reliability of the level and movement estimates is given in Technical Note 1: Data Quality.

Dennis Trewin
Australian Statistician

SUMMARY OF FINDINGS

NUMBER OF VEHICLES

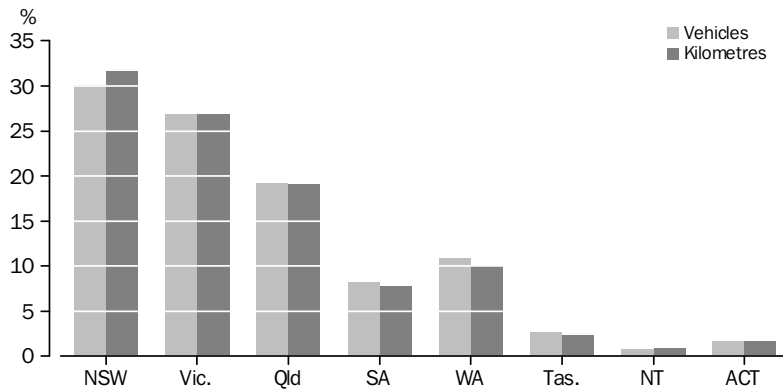
In the 12 months ended 31 October 2002 there were an estimated 12.8 million vehicles registered in Australia. This is an increase of 1.0 million vehicles (8.3%) since the 12 months ended 31 July 1998. New South Wales had the largest share of vehicles registered (30.0%), followed by Victoria (26.8%) and Queensland (19.1%). The majority of vehicles on the road were passenger vehicles (79.3%).

KILOMETRES TRAVELLED

Motor vehicles in Australia travelled an estimated 192,209 million kilometres in the 12 months ended 31 October 2002. This is an increase of 14.5% (24,317 million kilometres) since the 12 months ended 31 July 1998 and represents an average annual increase of 3.4%.

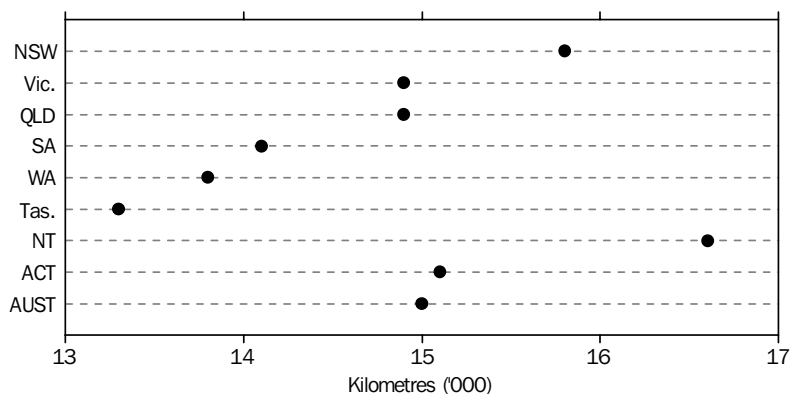
The state/territory proportion of total kilometres travelled closely relates to the number of registered vehicles in each state/territory. New South Wales had the largest share of total kilometres travelled (31.6%) and the largest number of registered vehicles.

NUMBER OF VEHICLES AND TOTAL KILOMETRES TRAVELLED,
Percent by state/territory—Year ended 31 October 2002



Australian registered motor vehicles each travelled an average of 15,000 kilometres in the 12 months ended 31 October 2002. The Northern Territory (16,600 kilometres), New South Wales (15,800 kilometres) and the Australian Capital Territory (15,100 kilometres) were above the national average.

AVERAGE KILOMETRES TRAVELLED, Motor vehicles by state/territory of registration—
Year ended 31 October 2002



SUMMARY OF FINDINGS *continued*

KILOMETRES TRAVELLED

continued

Passenger vehicles accounted for 75.3% of the total distance travelled. The highest proportion of total distance travelled for passenger vehicles was recorded in the Australian Capital Territory (84.8%) with the lowest in the Northern Territory (62.9%).

Over the five years since 1998, the total distance travelled by passenger vehicles has increased by an average of 3.2% per year.

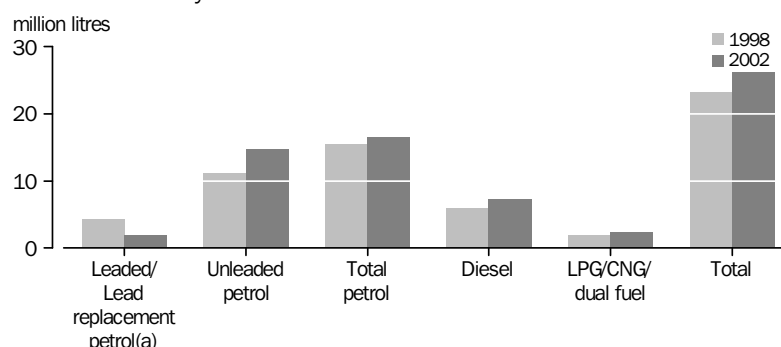
Personal and other use accounted for 51.7% of the total kilometres travelled by passenger vehicles in Australia during 2002. Travel to and from work (25.0%) and business use (23.3%) accounted for the remaining kilometres travelled by passenger vehicles. These proportions have remained stable since 1998.

Freight carrying vehicles accounted for 43,854 million kilometres travelled (22.8%) in the 12 months ended 31 October 2002. Light commercial vehicles accounted for 71.5% of the kilometres travelled, rigid trucks 16.1%, and articulated vehicles 12.4%.

FUEL CONSUMPTION

Motor vehicles in Australia consumed 26,164 million litres of fuel in the 12 months ended 31 October 2002. This is an increase of 12.5% (2,906 million litres) since the 12 months ended 31 July 1998. Over the same five year period, the estimated number of motor vehicles in Australia increased by 8.3% and kilometres travelled increased by 14.5%.

TOTAL FUEL CONSUMPTION, Type of fuel—
Years ended 31 July 1998 and 31 October 2002



(a) Lead replacement petrol was not available in 1998

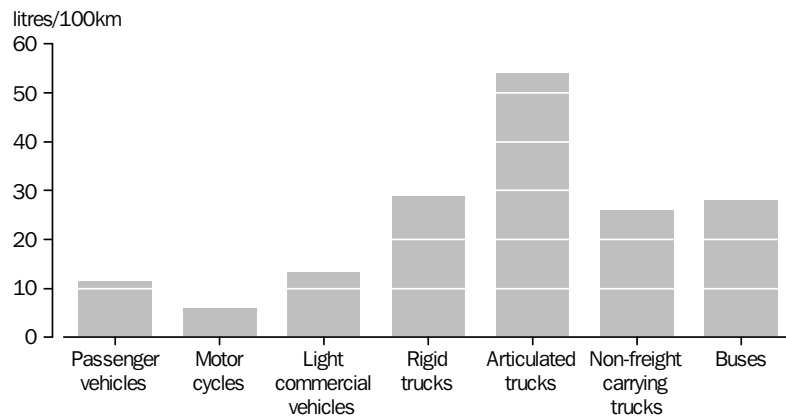
Of the total fuel consumed by motor vehicles in the 12 months ended 31 October 2002, 63.1% of fuel was petrol and 27.8% was diesel fuel.

The average rate of fuel consumption for motor vehicles in the 12 months ended 31 October 2002 was 13.6 litres per 100 kilometres, a decrease of 0.3 litres per 100 kilometres over the five years since 1998. Articulated trucks had the highest average fuel consumption with 53.9 litres per 100 kilometres.

SUMMARY OF FINDINGS *continued*

FUEL CONSUMPTION *continued*

AVERAGE FUEL CONSUMPTION, Type of vehicle—Year ended 31 October 2002



Passenger vehicles consumed 13,943 million litres of petrol in the 12 months ended 31 October 2002, of which 89.7% (12,513 million litres) was unleaded petrol. Leaded petrol consumption by passenger vehicles decreased from 3,575 million litres (27.0% of total passenger vehicle petrol consumption) in 1998 to 378 million litres (2.7%) in 2002. Consumption of lead replacement petrol, introduced during 2001, accounted for 1,052 million litres (7.5%) in 2002.

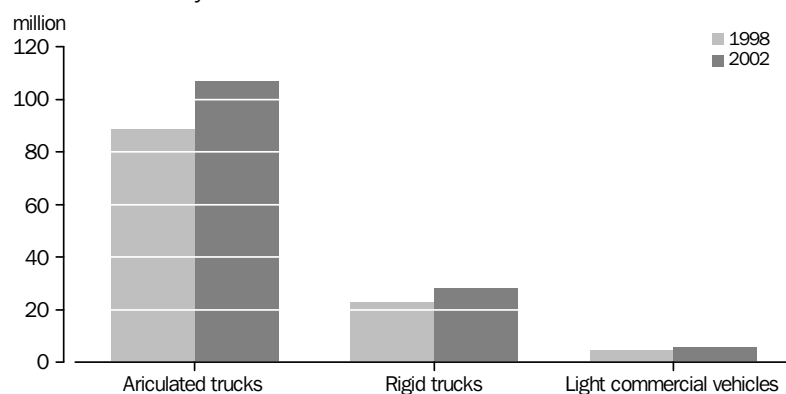
Fuel consumption by other vehicles surveyed in the 12 months ended 31 October 2002 showed high correlation between vehicle type and fuel consumption. The combined 4,890 million litres of diesel fuel consumed by articulated and rigid trucks, represents 99.7% and 96.9% respectively of fuel consumption for these vehicle types. The 90 million litres of unleaded fuel consumed by motor cycles, represents 90.0% of fuel consumption for motor cycles.

The total fuel consumption by other motor vehicles in the 12 months ended 31 October 2002 included 4,145 million litres of fuel by light commercial vehicles and 497 million litres of fuel by buses.

TONNE-KILOMETRES

Freight vehicles in Australia travelled an estimated 140,938 million tonne-kilometres in the 12 months ended 31 October 2002. This is an increase of 24,791 million tonne-kilometres travelled since the 12 months ended 31 July 1998, an average annual increase of 5.0%. An increase in tonne-kilometres was reported in all vehicle types.

TOTAL TONNE-KILOMETRES TRAVELLED, Type of vehicle—
Years ended 31 July 1998 and 31 October 2002



SUMMARY OF FINDINGS *continued*

TONNE-KILOMETRES *continued*

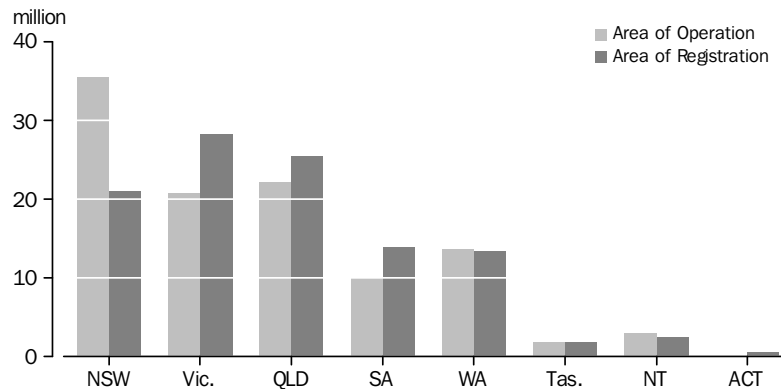
Articulated trucks accounted for 75.9% of the total tonne-kilometres travelled in the 12 months ended 31 October 2002, with rigid trucks accounting for 20.1% and light commercial vehicles 4.0%. Each articulated truck travelled an average estimated 1.9 million tonne-kilometres. Rigid trucks and light commercial vehicles averaged significantly fewer tonne-kilometres in the 12 months ended 31 October 2002 (95,100 and 5,600 tonne-kilometres respectively).

Articulated truck use has changed over the last five years. Trucks carrying a Gross Combination Mass (GCM) of up to and including 40 tonnes in the 12 months ended 31 October 2002 travelled 6,524 million tonne-kilometres. This represents a decrease of 24.3% (2,090 million tonne-kilometres) since the 12 months ended 31 July 1998. However trucks carrying over 40 tonnes GCM increased by 25.3% (20,307 million tonne-kilometres).

The shift to heavier loads was influenced by growth in B-Doubles and road trains. The tonne-kilometres travelled by B-Doubles carrying over 40 tonnes of freight has increased by 89.3% from 15,449 million tonne-kilometres travelled in 1998 to 29,239 million tonne-kilometres travelled in 2002. The tonne-kilometres travelled by road trains has increased by 39.6% over the same period.

The amount of tonne-kilometres travelled by articulated trucks in the 12 months ended 31 October 2002 varied when comparing the area of operation and the area of registration in each state and territory. New South Wales is significant as a state where a large number of articulated trucks which were not registered in the state were operating.

**TOTAL TONNE-KILOMETRES TRAVELLED BY ARTICULATED TRUCKS,
Area of operation and registration—Year ended 31 October 2002**



LIST OF TABLES

page

SUMMARY TABLES

- | | | |
|----------|--|----|
| 1 | Total kilometres travelled, number of vehicles and average kilometres travelled, total fuel consumption and average rate of fuel consumption by type of vehicle, 12 months ended 31 July 1998 to 12 months ended 31 October 2002 | 9 |
| 2 | Total laden business kilometres travelled, average laden business kilometres travelled, total tonne-kilometres travelled, average tonne-kilometres travelled, total tonnes carried and average load carried per trip by type of freight vehicle, 12 months ended 31 July 1998 to 12 months ended 31 October 2002 | 10 |
| 3 | Total kilometres travelled, number of vehicles and average kilometres travelled by state/territory of registration, 12 months ended 31 July 1998 to 12 months ended 31 October 2002 | 11 |

MOTOR VEHICLE USE

- | | | |
|----------|--|----|
| 4 | Total kilometres travelled, number of vehicles and average kilometres travelled by state/territory of registration and type of vehicle | 12 |
|----------|--|----|

FUEL CONSUMPTION

- | | | |
|----------|--|----|
| 5 | Total and average rate of fuel consumption by type of fuel and type of vehicle | 15 |
|----------|--|----|

AREA OF OPERATION

- | | | |
|----------|---|----|
| 6 | Total and average kilometres travelled by type of vehicle and area of operation | 17 |
| 7 | Total and average kilometres travelled by state/territory of registration and area of operation | 19 |

BUSINESS AND PRIVATE USE OF VEHICLES

- | | | |
|-----------|--|----|
| 8 | Total and average kilometres travelled by type of vehicle and use of vehicle | 21 |
| 9 | Total and average kilometres travelled by state/territory of registration and use of vehicle | 23 |
| 10 | Total and average business kilometres travelled by state/territory of registration and type of vehicle | 25 |

FREIGHT VEHICLE USE

- | | | |
|-----------|--|----|
| 11 | Total and average laden business kilometres travelled by state/territory of registration and type of freight vehicle | 27 |
| 12 | Total and average tonne-kilometres travelled by state/territory of registration and type of freight vehicle | 29 |
| 13 | Total and average tonne-kilometres travelled by state/territory of operation and type of freight vehicle | 31 |
| 14 | Rigid trucks: total and average tonne-kilometres by number of axles and Gross Vehicle Mass/Gross Combination Mass | 33 |

LIST OF TABLES *continued*

	<i>page</i>
15 Articulated trucks: total and average tonne-kilometres travelled by trailer configuration and Gross Combination Mass	34
16 Total tonnes carried and average kilograms carried per trip by state/territory of registration and type of freight vehicle	36
17 Total tonnes carried by commodity and type of vehicle	38
18 Total and average kilometres travelled by type of bus and type of service	39
19 Total and average kilometres travelled by state/territory of registration and type of service	40

BUS USE

SUMMARY OF MOTOR VEHICLE USE, Type of vehicle

	1998	1999	2000	2001	2002
TOTAL KILOMETRES TRAVELLED (million)					
Passenger vehicles	127 586	132 706	141 519	143 925	144 676
Motor cycles	^ 1 396	981	1 135	1 448	1 681
Light commercial vehicles	25 851	25 374	27 829	30 728	31 349
Rigid trucks	6 131	6 486	6 536	6 627	7 080
Articulated trucks	4 979	5 347	5 578	5 321	5 425
Non-freight carrying trucks	188	^ 316	^ 220	^ 267	224
Buses	1 760	1 843	1 776	1 835	1 775
Total	167 892	173 053	184 593	190 152	192 209

	NUMBER OF VEHICLES ^(a) (no.)				
Passenger vehicles	9 502 181	9 555 244	9 711 320	9 861 807	10 194 637
Motor cycles	314 651	331 610	337 793	349 465	367 258
Light commercial vehicles	1 566 161	1 621 634	1 696 631	1 719 654	1 810 071
Rigid trucks	344 817	349 736	346 628	332 102	341 651
Articulated trucks	59 573	62 493	61 117	61 502	61 519
Non-freight carrying trucks	18 032	23 800	18 714	18 980	17 504
Buses	57 633	54 897	55 805	55 078	56 754
Total	11 863 048	11 999 414	12 228 008	12 398 588	12 849 393

	AVERAGE KILOMETRES TRAVELLED ^(b) ('000)				
Passenger vehicles	13.4	13.9	14.6	14.6	14.2
Motor cycles	^ 4.4	3.0	3.4	4.1	4.6
Light commercial vehicles	16.5	15.6	16.4	17.9	17.3
Rigid trucks	17.8	18.5	18.9	20.0	20.7
Articulated trucks	83.6	85.6	91.3	86.5	88.2
Non-freight carrying trucks	10.4	^ 13.3	^ 11.8	14.1	12.8
Buses	30.5	33.6	31.8	33.3	31.3
Total	14.2	14.4	15.1	15.3	15.0

	TOTAL FUEL CONSUMPTION (million litres)				
Passenger vehicles	14 957	15 434	16 838	16 436	16 401
Motor cycles	^ 83	^ 59	70	83	100
Light commercial vehicles	3 387	3 404	3 723	4 186	4 145
Rigid trucks	1 734	1 809	1 795	1 855	2 041
Articulated trucks	2 552	2 761	2 904	2 824	2 922
Non-freight carrying trucks	52	^ 75	^ 57	67	58
Buses	493	496	466	498	497
Total	23 258	24 038	25 853	25 948	26 164

	AVERAGE RATE OF FUEL CONSUMPTION ^(c) (litres per 100 kilometres)				
Passenger vehicles	11.7	11.6	11.9	11.4	11.3
Motor cycles	^ 5.9	^ 6.0	6.1	5.7	6.0
Light commercial vehicles	13.1	13.4	13.4	13.6	13.2
Rigid trucks	28.3	27.9	27.5	28.0	28.8
Articulated trucks	51.2	51.6	52.1	53.1	53.9
Non-freight carrying trucks	27.8	23.7	25.9	25.0	26.0
Buses	28.0	26.9	26.2	27.1	28.0
Total	13.9	13.9	14.0	13.6	13.6

^ estimate has a relative standard error of between 10% and 25% 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 average number of registered vehicles. Includes registered vehicles that did not travel during the reference period.
- (c) Calculated using the total fuel consumption divided by the total kilometres travelled.

SUMMARY OF FREIGHT VEHICLE USE

Type of vehicle	1998	1999	2000	2001	2002
-----------------	------	------	------	------	------

.....

TOTAL LADEN BUSINESS KILOMETRES TRAVELLED
(million)

Light commercial vehicles	11 623	12 037	13 120	13 889	14 054
Rigid trucks	4 212	4 366	4 537	4 690	4 830
Articulated trucks	3 563	3 946	4 071	3 933	4 012
Total	19 399	20 349	21 728	22 512	22 896

.....

AVERAGE LADEN BUSINESS KILOMETRES TRAVELLED (a)
(‘000)

Light commercial vehicles	13.2	12.9	14.7	15.3	14.0
Rigid trucks	14.7	15.0	16.1	16.3	16.2
Articulated trucks	66.9	70.7	72.8	69.6	70.4
Total	15.9	15.9	17.7	18.0	16.8

.....

TOTAL TONNE-KILOMETRES TRAVELLED (million)

Light commercial vehicles	4 577	5 111	5 695	5 649	5 624
Rigid trucks	22 811	23 740	25 168	24 881	28 337
Articulated trucks	88 759	101 024	103 515	101 892	106 977
Total	116 147	129 874	134 378	132 422	140 938

.....

AVERAGE TONNE-KILOMETRES TRAVELLED (b) (‘000)

Light commercial vehicles	5.2	5.5	6.4	6.2	5.6
Rigid trucks	79.4	81.8	89.1	86.5	95.1
Articulated trucks	1 667.5	1 810.6	1 852.0	1 804.4	1 876.3
Total	95.4	101.4	109.3	105.8	103.5

.....

TOTAL TONNES CARRIED (million)

Light commercial vehicles	87	111	103	103	115
Rigid trucks	621	676	711	683	802
Articulated trucks	598	677	655	697	747
Total	1 307	1 464	1 469	1 482	1 664

.....

AVERAGE LOAD CARRIED PER TRIP (c) (kilograms)

Light commercial vehicles	338	378	377	326	353
Rigid trucks	5 436	5 621	5 854	5 632	6 130
Articulated trucks	22 734	22 957	22 615	23 639	23 749
Total	3 285	3 294	3 471	3 180	3 404

-
- (a) Calculated using the total laden business kilometres travelled divided by the number of vehicles that travelled laden business kilometres.
- (b) Calculated using the total tonne-kilometres travelled divided by the number of vehicles that travelled tonne-kilometres.
- (c) Calculated using the total load carried divided by the total number of laden trips.

SUMMARY OF MOTOR VEHICLE USE, State/territory of registration

State/territory of registration	1998	1999	2000	2001	2002
TOTAL KILOMETRES TRAVELLED (million)					
New South Wales	52 607	55 572	51 088	58 553	60 792
Victoria	44 843	45 430	54 500	50 817	51 459
Queensland	29 822	32 895	36 746	38 538	36 690
South Australia	13 974	13 081	13 153	15 085	14 855
Western Australia	17 873	17 702	19 875	18 610	19 160
Tasmania	4 160	3 775	4 376	3 979	4 433
Northern Territory	1 485	1 636	1 627	1 522	1 712
Australian Capital Territory	3 129	2 961	3 228	3 048	3 108
Australia	167 892	173 053	184 593	190 152	192 209

NUMBER OF VEHICLES (a) (no.)					
New South Wales	3 606 870	3 733 652	3 663 210	3 745 732	3 859 620
Victoria	3 181 239	3 066 478	3 232 708	3 235 515	3 442 573
Queensland	2 155 038	2 223 955	2 340 267	2 365 530	2 459 307
South Australia	1 006 384	1 030 491	1 021 386	1 051 115	1 051 720
Western Australia	1 282 479	1 339 268	1 340 533	1 365 714	1 392 316
Tasmania	328 335	315 248	332 110	329 963	334 259
Northern Territory	100 392	100 466	102 846	101 159	103 155
Australian Capital Territory	202 311	189 856	194 948	203 859	206 444
Australia	11 863 048	11 999 414	12 228 008	12 398 588	12 849 393

AVERAGE KILOMETRES TRAVELLED (b) ('000)					
New South Wales	14.6	14.9	13.9	15.6	15.8
Victoria	14.1	14.8	16.9	15.7	14.9
Queensland	13.8	14.8	15.7	16.3	14.9
South Australia	13.9	12.7	12.9	14.4	14.1
Western Australia	13.9	13.2	14.8	13.6	13.8
Tasmania	12.7	12.0	13.2	12.1	13.3
Northern Territory	14.8	16.3	15.8	15.0	16.6
Australian Capital Territory	15.5	15.6	16.6	15.0	15.1
Australia	14.2	14.4	15.1	15.3	15.0

- (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.

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)								
1998								
New South Wales	40 406	^ 487	7 927	2 031	1 202	^ 60	493	52 607
Victoria	35 576	*382	5 573	1 467	1 525	^ 35	285	44 843
Queensland	20 757	*302	5 852	1 355	1 057	^ 55	445	29 822
South Australia	11 137	^ 66	1 835	340	459	^ 18	120	13 974
Western Australia	13 076	^ 100	3 226	685	511	^ 15	261	17 873
Tasmania	3 087	^ 27	748	135	116	^ 3	45	4 160
Northern Territory	856	^ 17	385	^ 66	^ 79	*2	^ 80	1 485
Australian Capital Territory	2 693	^ 15	305	52	^ 31	*1	32	3 129
Australia	127 586	^ 1 396	25 851	6 131	4 979	188	1 760	167 892
1999								
New South Wales	43 626	^ 281	7 455	2 282	1 320	^ 60	549	55 572
Victoria	36 223	^ 169	5 615	1 506	1 532	^ 65	320	45 430
Queensland	23 738	^ 254	5 898	1 309	1 167	*70	459	32 895
South Australia	10 205	^ 96	1 636	^ 428	553	*18	^ 145	13 081
Western Australia	12 817	^ 109	3 198	719	548	**97	^ 214	17 702
Tasmania	2 565	^ 27	903	129	107	*4	40	3 775
Northern Territory	^ 993	^ 18	393	58	^ 91	*2	^ 80	1 636
Australian Capital Territory	2 539	^ 27	273	54	^ 29	*1	37	2 961
Australia	132 706	981	25 374	6 486	5 347	^ 316	1 843	173 053
2002								
New South Wales	46 263	^ 601	9 638	2 406	1 268	^ 52	565	60 792
Victoria	40 273	^ 323	7 189	1 732	1 552	^ 61	329	51 459
Queensland	25 320	^ 479	7 762	1 478	1 230	^ 57	363	36 690
South Australia	11 802	^ 72	1 795	418	606	^ 18	144	14 855
Western Australia	14 183	^ 114	3 283	768	564	^ 23	^ 226	19 160
Tasmania	3 123	^ 32	947	163	114	^ 7	^ 46	4 433
Northern Territory	1 077	*20	430	52	^ 59	^ 2	^ 71	1 712
Australian Capital Territory	2 635	^ 39	306	63	31	*2	31	3 108
Australia	144 676	1 681	31 349	7 080	5 425	224	1 775	192 209

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

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

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

	Passenger vehicles	Motor cycles	Light commercial vehicles	Rigid trucks	Articulated trucks	Non- freight carrying trucks	Buses	Total
NUMBER OF VEHICLES (a) (no.)								
1998								
New South Wales	2 939 636	82 706	443 894	102 623	15 501	^ 3 071	19 440	3 606 870
Victoria	2 613 940	78 113	370 958	84 194	17 493	5 309	11 231	3 181 239
Queensland	1 643 059	66 847	349 168	69 066	11 986	^ 3 393	11 518	2 155 038
South Australia	829 130	28 803	111 360	26 433	5 212	^ 1 985	3 462	1 006 384
Western Australia	985 457	40 708	194 450	44 971	6 990	2 807	7 097	1 282 479
Tasmania	250 306	7 675	55 131	10 920	1 362	^ 1 143	1 797	328 335
Northern Territory	64 656	3 907	24 465	4 201	756	^ 210	2 198	100 392
Australian Capital Territory	175 998	^ 5 890	16 735	2 409	^ 272	^ 114	891	202 311
Australia	9 502 181	314 651	1 566 161	344 817	59 573	18 032	57 633	11 863 048
1999								
New South Wales	3 004 149	91 974	486 561	113 196	16 562	^ 5 322	^ 15 888	3 733 652
Victoria	2 524 595	82 168	342 128	82 430	16 719	6 324	12 114	3 066 478
Queensland	1 684 873	70 873	371 044	67 745	12 895	* 4 465	12 061	2 223 955
South Australia	843 833	27 009	121 218	27 225	5 929	^ 1 820	3 457	1 030 491
Western Australia	1 031 890	42 257	202 336	43 886	7 850	^ 4 492	6 557	1 339 268
Tasmania	233 758	7 979	59 975	9 302	1 459	1 015	1 759	315 248
Northern Territory	66 682	3 715	23 176	3 586	834	^ 238	2 236	100 466
Australian Capital Territory	165 465	5 634	15 197	2 366	245	^ 124	825	189 856
Australia	9 555 244	331 610	1 621 634	349 736	62 493	23 800	54 897	11 999 414
2002								
New South Wales	3 124 190	95 196	502 175	103 488	14 784	^ 3 363	16 424	3 859 620
Victoria	2 795 305	100 702	427 470	85 130	17 500	4 761	11 703	3 442 573
Queensland	1 854 506	79 586	426 418	69 340	12 981	3 391	13 084	2 459 307
South Australia	859 417	26 793	128 465	25 129	6 275	1 856	3 783	1 051 720
Western Australia	1 068 105	46 435	216 316	43 958	7 745	2 756	7 000	1 392 316
Tasmania	246 632	8 131	66 212	9 115	1 366	1 009	1 794	334 259
Northern Territory	69 044	3 511	24 286	3 245	608	^ 254	^ 2 206	103 155
Australian Capital Territory	177 436	6 902	18 728	2 245	259	^ 114	759	206 444
Australia	10 194 637	367 258	1 810 071	341 651	61 519	17 504	56 754	12 849 393

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

* estimate has a relative standard error of between 25% and 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.

	Passenger vehicles	Motor cycles	Light commercial vehicles	Rigid trucks	Articulated trucks	Non- freight carrying trucks	Buses	Total
AVERAGE KILOMETRES TRAVELLED (b) ('000)								
1998								
New South Wales	13.7	^ 5.9	17.9	19.8	77.6	^ 19.5	25.4	14.6
Victoria	13.6	* 4.9	15.0	17.4	87.2	^ 6.5	25.4	14.1
Queensland	12.6	* 4.5	16.8	19.6	88.2	^ 16.1	38.6	13.8
South Australia	13.4	^ 2.3	16.5	12.9	88.2	^ 9.0	34.5	13.9
Western Australia	13.3	^ 2.5	16.6	15.2	73.0	^ 5.2	36.8	13.9
Tasmania	12.3	^ 3.5	13.6	12.3	85.0	^ 2.7	25.1	12.7
Northern Territory	13.2	^ 4.3	15.8	15.7	^ 103.8	* 8.0	^ 36.3	14.8
Australian Capital Territory	15.3	* 2.6	18.3	21.7	113.5	* 10.5	35.4	15.5
Australia	13.4	^ 4.4	16.5	17.8	83.6	10.4	30.5	14.2
1999								
New South Wales	14.5	^ 3.1	15.3	20.2	79.7	^ 11.3	^ 34.5	14.9
Victoria	14.3	^ 2.1	16.4	18.3	91.6	^ 10.3	26.4	14.8
Queensland	14.1	^ 3.6	15.9	19.3	90.5	^ 15.6	38.0	14.8
South Australia	12.1	^ 3.6	13.5	^ 15.7	93.3	* 9.8	^ 41.8	12.7
Western Australia	12.4	^ 2.6	15.8	16.4	69.8	* 21.5	^ 32.6	13.2
Tasmania	11.0	^ 3.4	15.1	13.9	73.2	* 4.1	22.6	12.0
Northern Territory	14.9	^ 4.9	17.0	16.0	109.6	* 8.7	^ 35.9	16.3
Australian Capital Territory	15.3	^ 4.8	18.0	23.0	^ 118.7	* 6.0	45.0	15.6
Australia	13.9	3.0	15.6	18.5	85.6	^ 13.3	33.6	14.4
2002								
New South Wales	14.8	^ 6.3	19.2	23.2	85.8	^ 15.5	34.4	15.8
Victoria	14.4	^ 3.2	16.8	20.3	88.7	^ 12.9	28.1	14.9
Queensland	13.7	^ 6.0	18.2	21.3	94.7	^ 16.9	27.8	14.9
South Australia	13.7	^ 2.7	14.0	16.6	96.6	^ 9.8	38.0	14.1
Western Australia	13.3	^ 2.5	15.2	17.5	72.8	^ 8.5	32.2	13.8
Tasmania	12.7	^ 4.0	14.3	17.9	83.3	^ 7.2	25.6	13.3
Northern Territory	15.6	* 5.7	17.7	16.0	^ 97.8	^ 9.6	^ 32.2	16.6
Australian Capital Territory	14.9	^ 5.7	16.3	28.2	121.3	^ 16.1	40.5	15.1
Australia	14.2	4.6	17.3	20.7	88.2	12.8	31.3	15.0

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

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

(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.

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)								
1998								
Petrol								
Leaded	3 575	^ 24	695	^ 55	*—	^ 5	^ 4	4 359
Lead replacement	—	—	—	—	—	—	—	—
Unleaded	9 684	^ 58	1 392	**11	**3	*12	^ 21	11 180
Total	13 259	^ 83	2 087	^ 66	**3	^ 17	^ 25	15 539
Diesel								
LPG/CNG/dual fuel	^ 374	—	810	1 641	2 549	^ 28	454	5 856
LPG/CNG/dual fuel	^ 1 323	—	^ 491	*27	**—	*8	^ 14	1 863
Total	14 957	^ 83	3 387	1 734	2 552	52	493	23 258
1999								
Petrol								
Leaded	3 211	^ 18	520	^ 45	*1	*5	^ 5	3 804
Lead replacement	—	—	—	—	—	—	—	—
Unleaded	10 130	^ 41	1 370	^ 9	—	*22	^ 23	11 594
Total	13 341	^ 59	1 890	53	*1	*26	^ 28	15 398
Diesel								
LPG/CNG/dual fuel	^ 494	—	969	1 730	2 760	^ 41	447	6 441
LPG/CNG/dual fuel	^ 1 599	—	^ 545	^ 25	**1	*8	^ 21	^ 2 199
Total	15 434	^ 59	3 404	1 809	2 761	^ 75	496	24 038
2002								
Petrol								
Leaded	^ 378	*3	*64	**9	—	*—	**1	^ 454
Lead replacement	^ 1 052	*7	^ 293	*20	—	*2	**2	1 377
Unleaded	12 513	^ 90	2 035	*15	**—	*5	^ 17	14 676
Total	13 943	100	2 392	^ 44	**—	^ 7	^ 20	16 507
Diesel								
LPG/CNG/dual fuel	^ 627	**—	1 263	1 977	2 913	^ 49	438	7 267
LPG/CNG/dual fuel	^ 1 830	**—	^ 490	*20	**9	*2	^ 39	^ 2 390
Total	16 401	100	4 145	2 041	2 922	58	497	26 164

^ estimate has a relative standard error of between 10% and 25% and should be used with caution
 — nil or rounded to zero (including null cells)

* estimate has a relative standard error of between 25% and 50% and should be used with caution
 ** estimate has a relative standard error greater than 50% and is considered too unreliable for general use

FUEL CONSUMPTION, Type of fuel, Type of vehicle *continued*

	Passenger vehicles	Motor cycles	Light commercial vehicles	Rigid trucks	Articulated trucks	Non- freight carrying trucks	Buses	Total
AVERAGE RATE OF FUEL CONSUMPTION(a) (litres per 100 kilometres)								
1998								
Petrol								
Leaded	11.9	6.5	13.5	27.2	^ 46.1	^ 25.4	^ 21.7	12.2
Lead replacement	—	—	—	—	—	—	—	—
Unleaded	11.2	^ 5.7	12.7	**16.1	51.0	^ 22.3	^ 16.5	11.3
Total	11.4	^ 5.9	13.0	^ 24.4	50.5	23.1	17.2	11.5
Diesel								
LPG/CNG/dual fuel	^ 12.2	—	12.0	28.4	51.3	29.6	28.7	26.3
LPG/CNG/dual fuel	16.8	—	16.4	^ 32.5	23.9	^ 36.5	^ 41.2	16.9
Total	11.7	^ 5.9	13.1	28.3	51.2	27.8	28.0	13.9
1999								
Petrol								
Leaded	11.6	5.7	13.5	24.6	40.1	31.3	^ 18.3	11.8
Lead replacement	—	—	—	—	—	—	—	—
Unleaded	11.1	^ 6.1	13.2	20.9	—	^ 18.7	14.5	11.3
Total	11.2	^ 6.0	13.3	23.9	40.1	^ 20.1	15.0	11.4
Diesel								
LPG/CNG/dual fuel	^ 12.3	—	12.4	28.0	51.6	24.7	28.1	25.7
LPG/CNG/dual fuel	17.1	—	^ 16.2	31.1	^ 60.1	^ 38.3	^ 32.5	17.1
Total	11.6	^ 6.0	13.4	27.9	51.6	23.7	26.9	13.9
2002								
Petrol								
Leaded	10.7	7.1	11.5	*33.7	—	*28.8	*10.3	11.0
Lead replacement	11.4	^ 6.2	15.4	^ 22.6	—	^ 27.9	**15.6	12.1
Unleaded	10.8	5.9	12.9	^ 25.0	**30.0	^ 17.0	14.9	11.0
Total	10.8	6.0	13.1	^ 25.1	**30.0	^ 19.7	14.6	11.1
Diesel								
LPG/CNG/dual fuel	12.0	**6.0	12.6	28.9	53.9	27.7	28.3	24.8
LPG/CNG/dual fuel	17.1	**8.0	16.1	^ 33.7	^ 50.3	^ 19.7	*43.6	17.1
Total	11.3	6.0	13.2	28.8	53.9	26.0	28.0	13.6

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

— nil or rounded to zero (including null cells)

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

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

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

AREA OF OPERATION, Type of vehicle

 WITHIN STATE/TERRITORY OF
 REGISTRATION

	<i>Capital city</i>	<i>Other urban areas</i>	<i>Other areas</i>	<i>Total intrastate</i>	<i>Interstate</i>	<i>Australia</i>
TOTAL KILOMETRES TRAVELLED (million)						
1998						
Passenger vehicles	77 037	14 600	32 132	123 769	3 818	127 586
Motor cycles	744	*257	278	1 279	*117	1 396
Light commercial vehicles	13 175	2 849	8 932	24 956	895	25 851
Rigid trucks	3 307	912	1 722	5 941	190	6 131
Articulated trucks	1 116	397	2 175	3 687	1 292	4 979
Non-freight carrying trucks	98	25	59	181	*6	188
Buses	854	209	561	1 624	136	1 760
Total	96 331	19 248	45 858	161 437	6 455	167 892
1999						
Passenger vehicles	74 907	19 393	32 519	126 819	5 888	132 706
Motor cycles	368	184	391	942	*38	981
Light commercial vehicles	11 399	4 130	8 934	24 463	911	25 374
Rigid trucks	3 237	933	2 124	6 294	191	6 486
Articulated trucks	1 059	390	2 449	3 898	1 449	5 347
Non-freight carrying trucks	103	*70	*140	314	**3	316
Buses	890	275	590	1 755	88	1 843
Total	91 963	25 375	47 146	164 484	8 568	173 053
2002						
Passenger vehicles	86 304	18 716	33 181	138 201	6 475	144 676
Motor cycles	846	285	424	1 554	126	1 681
Light commercial vehicles	13 601	4 518	11 702	29 822	1 528	31 349
Rigid trucks	3 767	980	2 089	6 835	244	7 080
Articulated trucks	1 007	396	2 524	3 927	1 497	5 425
Non-freight carrying trucks	118	44	54	216	8	224
Buses	832	314	544	1 689	86	1 775
Total	106 475	25 253	50 517	182 245	9 964	192 209

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

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

WITHIN STATE/TERRITORY OF
REGISTRATION

	Capital city	Other urban areas	Other areas	Total intrastate	Interstate	Australia
AVERAGE KILOMETRES TRAVELLED (a) ('000)						
1998						
Passenger vehicles	11.4	6.6	9.6	13.7	5.4	14.0
Motor cycles	5.8	*4.7	3.2	5.6	*5.6	5.9
Light commercial vehicles	16.3	9.2	13.3	17.1	8.0	17.5
Rigid trucks	21.1	14.5	12.4	19.4	13.4	19.8
Articulated trucks	35.6	25.4	58.0	70.5	83.9	91.7
Non-freight carrying trucks	14.9	8.4	7.4	11.3	9.9	11.5
Buses	28.2	15.2	22.5	29.3	29.7	31.4
Total	12.1	7.2	10.6	14.4	7.4	14.9
1999						
Passenger vehicles	11.4	7.7	9.5	14.1	7.4	14.7
Motor cycles	3.2	3.1	3.4	4.0	*2.9	4.1
Light commercial vehicles	15.2	9.8	12.1	16.1	8.9	16.5
Rigid trucks	21.2	14.2	14.7	20.3	12.8	20.8
Articulated trucks	31.8	21.0	60.1	69.6	81.2	93.9
Non-freight carrying trucks	12.9	*13.0	*13.1	14.7	*6.3	14.7
Buses	30.0	21.9	25.1	33.0	26.1	34.5
Total	12.0	8.2	10.5	14.7	9.0	15.4
2002						
Passenger vehicles	11.9	6.6	9.5	14.1	6.9	14.7
Motor cycles	6.0	4.3	3.7	5.8	4.7	6.0
Light commercial vehicles	15.7	9.7	13.9	17.3	14.6	18.0
Rigid trucks	23.4	14.3	14.2	21.8	15.3	22.4
Articulated trucks	32.0	19.6	61.0	69.8	83.2	93.6
Non-freight carrying trucks	17.8	11.7	6.9	13.7	7.6	14.1
Buses	26.6	21.0	23.5	30.7	16.4	32.0
Total	12.5	7.3	10.8	14.9	9.0	15.6

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

(a) Average distance travelled for registered vehicles which were used.

AREA OF OPERATION, State/territory of registration

 WITHIN STATE/TERRITORY OF
 REGISTRATION

	<i>Capital city</i>	<i>Other urban areas</i>	<i>Other areas</i>	<i>Total</i>	<i>Interstate</i>	<i>Australia</i>
TOTAL KILOMETRES TRAVELLED (million)						
1998						
New South Wales	29 190	6 963	15 201	51 354	1 253	52 607
Victoria	28 269	4 813	9 885	42 967	1 876	44 843
Queensland	14 025	6 188	8 443	28 656	1 166	29 822
South Australia	8 394	..	4 864	13 258	716	13 974
Western Australia	11 781	..	5 675	17 456	*417	17 873
Tasmania	1 525	1 284	1 231	4 040	*119	4 160
Northern Territory	786	..	559	1 345	140	1 485
Australian Capital Territory	2 361	..	..	2 361	769	3 129
Australia	96 331	19 248	45 858	161 437	6 455	167 892
1999						
New South Wales	28 607	11 354	13 530	53 490	2 082	55 572
Victoria	25 891	4 733	11 984	42 608	2 823	45 430
Queensland	14 649	8 065	8 795	31 509	1 385	32 895
South Australia	8 066	..	4 167	12 233	848	13 081
Western Australia	10 477	..	6 708	17 185	**517	17 702
Tasmania	1 365	1 224	1 075	3 664	*110	3 775
Northern Territory	638	..	888	1 525	111	1 636
Australian Capital Territory	2 269	..	..	2 269	691	2 961
Australia	91 963	25 375	47 146	164 484	8 568	173 053
2002						
New South Wales	34 586	9 489	14 491	58 566	2 226	60 792
Victoria	31 019	4 312	13 170	48 500	2 958	51 459
Queensland	14 267	10 037	9 684	33 988	2 702	36 690
South Australia	8 460	..	5 483	13 943	911	14 855
Western Australia	13 426	..	5 503	18 930	230	19 160
Tasmania	1 501	1 415	1 417	4 333	100	4 433
Northern Territory	849	..	768	1 618	95	1 712
Australian Capital Territory	2 366	..	..	2 366	741	3 108
Australia	106 475	25 253	50 517	182 245	9 964	192 209

.. not applicable

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

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

WITHIN STATE/TERRITORY OF
REGISTRATION

	Capital city	Other urban areas	Other areas	Total	Interstate	Australia
AVERAGE KILOMETRES TRAVELLED (a) ('000)						
1998						
New South Wales	12.6	7.6	10.5	14.7	4.1	15.0
Victoria	12.1	6.5	9.6	14.5	8.6	14.9
Queensland	11.8	7.2	10.3	14.2	8.8	14.6
South Australia	11.2	..	13.0	13.9	9.9	14.6
Western Australia	12.4	..	11.8	15.1	*12.4	15.2
Tasmania	9.7	9.1	10.3	13.1	*20.2	13.3
Northern Territory	13.0	..	14.4	15.5	21.4	16.4
Australian Capital Territory	12.4	..	..	12.4	7.9	16.2
Australia	12.1	7.2	10.6	14.4	7.4	14.9
1999						
New South Wales	12.4	9.4	10.3	15.0	6.6	15.6
Victoria	12.4	5.9	10.0	15.0	12.2	15.8
Queensland	12.4	8.7	10.4	15.2	7.0	15.7
South Australia	11.1	..	9.3	13.0	12.7	13.8
Western Australia	11.2	..	14.0	14.3	*23.8	14.6
Tasmania	8.9	8.2	8.0	12.3	*9.8	12.6
Northern Territory	11.2	..	16.0	16.7	16.1	17.7
Australian Capital Territory	12.8	..	..	12.8	7.2	16.4
Australia	12.0	8.2	10.5	14.7	9.0	15.4
2002						
New South Wales	14.1	7.7	11.4	15.7	5.9	16.2
Victoria	12.3	5.1	10.1	14.8	9.4	15.7
Queensland	10.9	8.3	10.9	14.7	11.4	15.7
South Australia	10.9	..	11.9	14.2	15.2	14.8
Western Australia	13.1	..	10.2	14.5	18.9	14.6
Tasmania	9.1	8.2	9.2	13.6	19.7	13.9
Northern Territory	12.9	..	14.6	17.0	18.2	17.7
Australian Capital Territory	12.0	..	..	12.0	7.8	15.4
Australia	12.5	7.3	10.8	14.9	9.0	15.6

.. not applicable

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

(a) Average distance travelled for registered vehicles which were used.

BUSINESS AND PRIVATE USE OF VEHICLES, Type of vehicle

BUSINESS

	Laden	Unladen	All business use(a)	To and from work	Personal and other	Total
TOTAL KILOMETRES TRAVELLED (million)						
1998						
Passenger vehicles	..	..	29 127	31 176	67 284	127 586
Motor cycles	..	..	*277	^ 507	^ 612	^ 1 396
Light commercial vehicles	11 623	4 878	16 501	4 523	4 828	25 851
Rigid trucks	4 212	1 717	5 930	^ 93	^ 108	6 131
Articulated trucks	3 563	1 410	4 973	^ 5	*1	4 979
Non-freight carrying trucks	..	..	185	*1	**1	188
Buses	..	..	1 650	*43	^ 67	1 760
Total	19 399	8 005	58 643	36 349	72 900	167 892
1999						
Passenger vehicles	..	..	32 983	32 903	66 821	132 706
Motor cycles	..	..	^ 199	^ 247	^ 535	981
Light commercial vehicles	12 037	5 339	17 377	3 165	4 832	25 374
Rigid trucks	4 366	1 880	6 246	101	^ 139	6 486
Articulated trucks	3 946	1 392	5 339	^ 6	*2	5 347
Non-freight carrying trucks	..	..	^ 313	*1	**2	^ 316
Buses	..	..	1 746	^ 23	^ 74	1 843
Total	20 349	8 612	64 202	36 446	72 404	173 053
2002						
Passenger vehicles	..	..	33 712	36 151	74 813	144 676
Motor cycles	..	..	*321	^ 540	^ 819	1 681
Light commercial vehicles	14 054	5 624	19 677	5 527	6 145	31 349
Rigid trucks	4 830	2 049	6 879	^ 156	^ 45	7 080
Articulated trucks	4 012	1 405	5 417	*5	*2	5 425
Non-freight carrying trucks	..	..	221	**2	**2	224
Buses	..	..	1 641	^ 28	^ 106	1 775
Total	22 896	9 077	67 868	42 410	81 932	192 209

.. not applicable

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

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

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

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

BUSINESS						
	Laden	Unladen	All business use(a)	To and from work	Personal and other	Total
AVERAGE KILOMETRES TRAVELLED (b) ('000)						
1998						
Passenger vehicles	..	..	9.8	6.6	8.2	14.0
Motor cycles	..	..	*5.5	^ 5.7	^ 3.5	^ 5.9
Light commercial vehicles	13.2	7.9	17.3	8.2	6.5	17.5
Rigid trucks	14.7	7.5	20.4	3.5	^ 3.5	19.8
Articulated trucks	66.9	30.0	92.3	^ 3.6	^ 0.9	91.7
Non-freight carrying trucks	..	..	11.5	*1.4	**2.5	11.5
Buses	..	..	32.8	^ 8.0	8.2	31.4
Total	15.9	9.0	13.4	6.8	8.0	14.9
1999						
Passenger vehicles	..	..	11.7	6.9	8.3	14.7
Motor cycles	..	..	^ 3.5	^ 3.3	^ 2.9	4.1
Light commercial vehicles	12.9	8.4	17.0	6.2	6.2	16.5
Rigid trucks	15.0	8.1	21.4	4.3	^ 4.1	20.8
Articulated trucks	70.7	28.5	94.4	^ 2.8	*2.2	93.9
Non-freight carrying trucks	..	..	^ 14.7	^ 2.2	**5.3	^ 14.7
Buses	..	..	36.9	^ 7.4	^ 8.3	34.5
Total	15.9	9.4	14.9	6.8	8.0	15.4
2002						
Passenger vehicles	..	..	11.6	7.1	8.5	14.7
Motor cycles	..	..	^ 6.5	^ 6.1	3.8	6.0
Light commercial vehicles	14.0	8.8	17.9	8.1	7.2	18.0
Rigid trucks	16.2	8.7	22.9	^ 5.4	^ 2.4	22.4
Articulated trucks	70.4	28.7	94.2	^ 4.8	*2.5	93.6
Non-freight carrying trucks	..	..	14.2	*3.3	**3.0	14.1
Buses	..	..	33.2	^ 7.1	^ 12.7	32.0
Total	16.8	9.9	15.2	7.2	8.3	15.6

.. not applicable

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

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

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

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

(b) Average distance travelled for registered vehicles which were used.

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)						
1998						
New South Wales	5 751	2 614	17 429	11 556	23 622	52 607
Victoria	4 606	^ 1 553	17 147	9 148	18 548	44 843
Queensland	4 507	1 619	10 575	6 048	13 199	29 822
South Australia	1 516	^ 714	^ 4 375	^ 2 847	^ 6 752	13 974
Western Australia	^ 2 144	^ 1 024	^ 6 379	^ 4 846	6 648	17 873
Tasmania	404	^ 272	^ 1 368	^ 766	2 026	4 160
Northern Territory	^ 271	^ 127	704	^ 291	^ 490	1 485
Australian Capital Territory	200	^ 81	^ 667	847	1 616	3 129
Australia	19 399	8 005	58 643	36 349	72 900	167 892
1999						
New South Wales	6 344	2 235	19 626	^ 12 395	23 551	55 572
Victoria	4 821	^ 2 289	16 868	9 531	19 031	45 430
Queensland	4 548	^ 1 782	14 979	5 619	12 297	32 895
South Australia	1 508	^ 554	^ 4 223	^ 3 096	5 762	13 081
Western Australia	2 191	^ 1 242	5 480	^ 4 151	8 071	17 702
Tasmania	453	^ 322	^ 1 376	^ 687	1 712	3 775
Northern Territory	268	126	787	^ 263	^ 586	1 636
Australian Capital Territory	217	^ 63	^ 863	705	1 393	2 961
Australia	20 349	8 612	64 202	36 446	72 404	173 053
2002						
New South Wales	7 266	2 759	19 058	12 273	29 461	60 792
Victoria	5 934	2 104	19 438	12 273	19 748	51 459
Queensland	5 213	1 918	14 873	7 538	14 279	36 690
South Australia	1 537	^ 673	^ 5 317	^ 3 326	6 212	14 855
Western Australia	2 006	1 192	6 272	^ 4 883	8 005	19 160
Tasmania	498	^ 235	^ 1 418	^ 901	2 115	4 433
Northern Territory	235	^ 129	775	388	550	1 712
Australian Capital Territory	208	^ 67	^ 717	827	1 564	3 108
Australia	22 896	9 077	67 868	42 410	81 932	192 209

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

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

BUSINESS

	Laden	Unladen	All business use(a)	To and from work	Personal and other	Total
AVERAGE KILOMETRES TRAVELLED (b) ('000)						
1998						
New South Wales	16.2	9.2	13.2	6.7	8.3	15.0
Victoria	15.6	7.7	13.5	6.8	7.6	14.9
Queensland	16.6	8.8	13.3	6.1	8.0	14.6
South Australia	14.9	^ 9.2	^ 11.8	^ 6.6	8.7	14.6
Western Australia	16.1	^ 10.5	^ 15.2	8.3	7.0	15.2
Tasmania	12.2	9.9	^ 13.3	5.5	7.7	13.3
Northern Territory	16.9	^ 10.9	17.1	^ 6.3	^ 7.8	16.4
Australian Capital Territory	16.5	^ 10.4	^ 9.8	7.5	9.5	16.2
Australia	15.9	9.0	13.4	6.8	8.0	14.9
1999						
New South Wales	15.6	8.4	15.2	^ 7.5	8.4	15.6
Victoria	16.6	^ 10.8	14.5	6.8	8.0	15.8
Queensland	16.8	9.1	15.5	5.6	7.6	15.7
South Australia	15.7	^ 8.0	^ 13.8	6.8	7.3	13.8
Western Australia	14.4	10.0	^ 14.1	7.1	7.9	14.6
Tasmania	12.4	^ 10.5	^ 13.5	^ 5.8	7.1	12.6
Northern Territory	16.8	10.4	^ 17.4	6.0	^ 8.9	17.7
Australian Capital Territory	16.5	8.3	^ 13.5	7.1	9.3	16.4
Australia	15.9	9.4	14.9	6.8	8.0	15.4
2002						
New South Wales	17.5	10.2	15.2	7.0	9.6	16.2
Victoria	16.8	9.9	14.2	7.5	7.6	15.7
Queensland	17.8	9.7	17.6	6.9	7.7	15.7
South Australia	16.1	10.3	15.5	7.5	7.5	14.8
Western Australia	14.5	9.4	14.6	^ 7.8	7.8	14.6
Tasmania	12.8	^ 8.6	12.3	6.3	8.3	13.9
Northern Territory	15.5	10.0	16.4	7.0	8.4	17.7
Australian Capital Territory	15.6	7.7	^ 11.0	6.8	8.6	15.4
Australia	16.8	9.9	15.2	7.2	8.3	15.6

^ estimate has a relative standard error of between 10% and 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.

	Passenger vehicles	Motor cycles	Light commercial vehicles	Rigid trucks	Articulated trucks	Non- freight carrying trucks	Buses	Total
TOTAL BUSINESS KILOMETRES TRAVELLED (million)								
1998								
New South Wales	^ 8 524	*43	5 189	1 975	1 200	^ 59	438	17 429
Victoria	^ 10 511	**175	^ 3 227	1 407	1 524	^ 34	268	17 147
Queensland	^ 3 959	**10	3 751	1 320	1 055	^ 54	424	10 575
South Australia	^ 2 002	*7	^ 1 436	335	459	^ 18	118	^ 4 375
Western Australia	^ 2 921	*24	^ 1 991	667	510	^ 14	252	^ 6 379
Tasmania	^ 640	*6	^ 451	110	116	^ 3	43	^ 1 368
Northern Territory	^ 218	**9	^ 256	^ 64	^ 79	*2	^ 77	704
Australian Capital Territory	^ 352	**2	^ 199	51	^ 31	*1	31	^ 667
Australia	29 127	*277	16 501	5 930	4 973	185	1 650	58 643
1999								
New South Wales	^ 10 379	*79	^ 5 098	2 164	1 317	^ 59	530	19 626
Victoria	^ 9 367	**21	^ 4 121	1 458	1 531	^ 65	305	16 868
Queensland	^ 8 115	**46	3 886	1 278	1 165	*70	419	14 979
South Australia	*1 988	*15	^ 1 089	^ 421	552	*18	^ 140	^ 4 223
Western Australia	*1 717	*32	2 189	697	546	**95	^ 204	5 480
Tasmania	*557	**3	^ 549	119	107	*4	38	^ 1 376
Northern Territory	^ 318	—	^ 246	56	^ 91	*2	^ 73	787
Australian Capital Territory	^ 541	*4	^ 199	53	^ 29	*1	36	^ 863
Australia	32 983	^ 199	17 377	6 246	5 339	^ 313	1 746	64 202
2002								
New South Wales	^ 8 329	**114	6 431	2 330	1 265	^ 52	537	19 058
Victoria	^ 10 971	*84	4 796	1 692	1 551	^ 59	285	19 438
Queensland	^ 7 275	**71	4 456	1 445	1 229	^ 57	340	14 873
South Australia	^ 2 928	*20	1 201	403	606	^ 18	141	^ 5 317
Western Australia	^ 2 827	**18	^ 1 897	738	563	^ 22	^ 207	6 272
Tasmania	^ 630	**6	^ 460	159	114	^ 7	^ 43	^ 1 418
Northern Territory	^ 344	**5	255	50	^ 59	^ 2	^ 60	775
Australian Capital Territory	^ 407	*4	182	61	31	*2	28	^ 717
Australia	33 712	*321	19 677	6 879	5 417	221	1 641	67 868

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

* estimate has a relative standard error of between 25% and 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)

	Passenger vehicles	Motor cycles	Light commercial vehicles	Rigid trucks	Articulated trucks	Non- freight carrying trucks	Buses	Total
AVERAGE BUSINESS KILOMETRES TRAVELLED (a) ('000)								
1998								
New South Wales	^ 9.6	*3.4	17.6	21.5	86.3	^ 20.3	27.3	13.2
Victoria	^ 11.3	**10.5	14.6	21.0	97.2	^ 7.6	27.3	13.5
Queensland	^ 8.0	**2.0	17.6	21.8	93.3	^ 17.4	41.2	13.3
South Australia	^ 7.9	*1.0	18.3	15.4	99.7	^ 9.1	35.4	^ 11.8
Western Australia	^ 11.0	*4.6	^ 19.9	18.3	81.8	^ 6.3	39.9	^ 15.2
Tasmania	^ 10.1	*4.1	17.3	14.8	94.3	^ 2.7	26.3	^ 13.3
Northern Territory	^ 10.8	**7.1	^ 19.5	17.0	^ 117.5	*9.3	^ 37.5	17.1
Australian Capital Territory	^ 6.5	*3.2	19.4	23.5	121.8	*12.7	37.9	^ 9.8
Australia	9.8	*5.5	17.3	20.4	92.3	11.5	32.8	13.4
1999								
New South Wales	^ 12.7	*2.9	16.3	22.9	88.0	^ 11.6	39.4	15.2
Victoria	^ 11.3	*2.1	^ 18.2	21.6	99.9	^ 12.3	27.8	14.5
Queensland	^ 12.5	**7.0	17.3	21.5	95.7	^ 16.9	42.0	15.5
South Australia	*10.3	*4.0	^ 14.5	^ 18.2	101.9	*10.6	^ 44.8	^ 13.8
Western Australia	^ 8.3	*4.2	17.7	19.8	85.8	*24.7	^ 35.9	^ 14.1
Tasmania	^ 9.7	**2.5	^ 17.0	16.1	83.3	*4.1	25.6	^ 13.5
Northern Territory	^ 12.8	—	17.5	17.2	116.3	*9.4	^ 39.4	^ 17.4
Australian Capital Territory	^ 11.1	*4.5	17.9	25.0	130.3	*8.1	50.4	^ 13.5
Australia	11.7	^ 3.5	17.0	21.4	94.4	^ 14.7	36.9	14.9
2002								
New South Wales	^ 10.7	*7.0	19.4	24.5	90.0	^ 16.4	36.9	15.2
Victoria	^ 11.2	*5.6	17.6	23.5	96.0	^ 15.1	29.0	14.2
Queensland	^ 14.4	**8.2	18.6	22.8	100.6	^ 18.4	29.5	17.6
South Australia	^ 12.7	*5.5	16.0	19.3	102.6	^ 9.9	40.0	15.5
Western Australia	^ 11.1	**4.6	15.7	20.7	79.3	^ 10.0	^ 33.8	14.6
Tasmania	^ 8.9	**7.9	^ 14.4	20.5	88.6	^ 7.4	27.5	12.3
Northern Territory	^ 12.9	**9.5	17.3	17.4	^ 111.7	^ 10.6	^ 34.6	16.4
Australian Capital Territory	^ 8.1	*5.9	16.0	29.4	128.0	^ 17.2	44.2	^ 11.0
Australia	11.6	^ 6.5	17.9	22.9	94.2	14.2	33.2	15.2

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

* estimate has a relative standard error of between 25% and 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) Average distance travelled for registered vehicles which were used.

	<i>Light commercial vehicles</i>	<i>Rigid trucks</i>	<i>Articulated trucks</i>	<i>Total</i>
.....				
TOTAL LADEN BUSINESS KILOMETRES TRAVELLED (million)				
1998				
New South Wales	3 530	1 371	850	5 751
Victoria	2 463	1 024	1 119	4 606
Queensland	2 796	938	773	4 507
South Australia	926	242	347	1 516
Western Australia	1 342	477	324	2 144
Tasmania	260	74	70	404
Northern Territory	169	48	54	271
Australian Capital Territory	136	38	26	200
Australia	11 623	4 212	3 563	19 399
1999				
New South Wales	3 894	1 509	940	6 344
Victoria	2 601	1 006	1 214	4 821
Queensland	2 800	889	858	4 548
South Australia	779	305	424	1 508
Western Australia	1 336	501	354	2 191
Tasmania	302	80	72	453
Northern Territory	170	38	59	268
Australian Capital Territory	155	37	25	217
Australia	12 037	4 366	3 946	20 349
2002				
New South Wales	4 741	1 623	902	7 266
Victoria	^ 3 566	1 186	1 182	5 934
Queensland	^ 3 271	1 017	924	5 213
South Australia	^ 760	287	490	1 537
Western Australia	^ 1 100	529	377	2 006
Tasmania	^ 318	108	72	498
Northern Territory	^ 161	36	^ 39	235
Australian Capital Territory	^ 136	45	^ 27	208
Australia	14 054	4 830	4 012	22 896

.....

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

	<i>Light commercial vehicles</i>	<i>Rigid trucks</i>	<i>Articulated trucks</i>	<i>Total</i>
.....				
AVERAGE LADEN BUSINESS KILOMETRES TRAVELLED (a) ('000)				
1998				
New South Wales	14.2	15.1	61.5	16.2
Victoria	11.5	15.4	72.2	15.6
Queensland	13.9	15.8	69.5	16.6
South Australia	12.2	11.3	75.7	14.9
Western Australia	14.8	13.3	53.2	16.1
Tasmania	10.6	10.1	58.1	12.2
Northern Territory	14.5	12.9	82.2	16.9
Australian Capital Territory	14.0	17.5	102.1	16.5
Australia	13.2	14.7	66.9	15.9
1999				
New South Wales	13.1	16.1	63.1	15.6
Victoria	12.5	15.1	81.0	16.6
Queensland	14.1	15.0	71.3	16.8
South Australia	11.5	13.3	80.3	15.7
Western Australia	12.1	14.3	55.9	14.4
Tasmania	10.8	11.0	56.5	12.4
Northern Territory	14.2	12.1	77.4	16.8
Australian Capital Territory	14.3	17.9	112.8	16.5
Australia	12.9	15.0	70.7	15.9
2002				
New South Wales	15.5	17.1	64.2	17.5
Victoria	13.5	16.6	74.3	16.8
Queensland	15.0	16.3	75.9	17.8
South Australia	11.0	13.8	85.0	16.1
Western Australia	^ 11.5	14.9	53.2	14.5
Tasmania	^ 10.7	13.9	56.5	12.8
Northern Territory	^ 13.6	12.6	^ 73.7	15.5
Australian Capital Territory	12.3	21.8	111.6	15.6
Australia	14.0	16.2	70.4	16.8

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

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

	<i>Light commercial vehicles</i>	<i>Rigid trucks</i>	<i>Articulated trucks</i>	<i>Total</i>
TOTAL TONNE-KILOMETRES TRAVELLED (million)				
1998				
New South Wales	^ 1 395	7 238	18 288	26 921
Victoria	^ 1 061	^ 6 781	25 743	33 585
Queensland	^ 1 014	4 482	17 638	23 134
South Australia	^ 445	^ 1 141	9 819	11 406
Western Australia	^ 462	^ 2 470	12 203	15 135
Tasmania	^ 88	^ 364	1 587	2 039
Northern Territory	^ 67	^ 169	^ 2 947	^ 3 182
Australian Capital Territory	^ 46	^ 165	^ 535	^ 746
Australia	4 577	22 811	88 759	116 147
1999				
New South Wales	^ 1 557	^ 8 602	21 999	32 158
Victoria	^ 1 386	^ 5 972	27 409	34 767
Queensland	^ 1 050	^ 4 495	21 589	27 133
South Australia	^ 319	^ 1 203	^ 11 683	13 204
Western Australia	^ 567	^ 2 630	^ 12 653	15 850
Tasmania	^ 107	^ 496	^ 1 614	2 217
Northern Territory	^ 60	^ 184	^ 3 463	^ 3 707
Australian Capital Territory	^ 64	^ 159	*615	^ 838
Australia	5 111	23 740	101 024	129 874
2002				
New South Wales	^ 1 986	8 890	20 996	31 873
Victoria	^ 1 422	7 874	28 298	37 594
Queensland	^ 1 282	^ 5 997	25 400	32 679
South Australia	^ 317	^ 1 708	13 960	15 985
Western Australia	^ 375	^ 2 761	13 411	16 547
Tasmania	^ 116	^ 735	1 861	2 712
Northern Territory	^ 75	^ 131	^ 2 399	^ 2 605
Australian Capital Territory	^ 51	^ 240	^ 652	944
Australia	5 624	28 337	106 977	140 938

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

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

	<i>Light commercial vehicles</i>	<i>Rigid trucks</i>	<i>Articulated trucks</i>	<i>Total</i>
.....				
AVERAGE TONNE-KILOMETRES TRAVELLED (a) ('000)				
1998				
New South Wales	^ 5.6	79.5	1 324.4	76.0
Victoria	^ 5.0	^ 102.2	1 661.7	113.5
Queensland	^ 5.0	75.5	1 584.6	85.0
South Australia	^ 6.0	^ 53.2	2 139.1	113.6
Western Australia	^ 5.1	^ 68.8	2 002.8	^ 113.8
Tasmania	^ 3.6	^ 49.7	1 314.9	61.6
Northern Territory	^ 5.7	^ 45.4	^ 4 492.3	^ 197.7
Australian Capital Territory	^ 4.8	^ 76.3	^ 2 132.2	^ 61.5
Australia	5.2	79.4	1 667.5	95.4
1999				
New South Wales	^ 5.2	^ 91.8	1 476.0	79.1
Victoria	^ 6.6	^ 89.4	1 829.6	119.8
Queensland	^ 5.3	^ 76.0	1 792.5	100.3
South Australia	^ 4.7	^ 52.4	2 212.0	^ 137.9
Western Australia	^ 5.1	^ 75.0	^ 1 998.3	^ 104.3
Tasmania	^ 3.8	^ 68.3	1 274.7	^ 60.6
Northern Territory	^ 5.0	^ 58.0	^ 4 521.5	^ 233.1
Australian Capital Territory	^ 5.9	^ 76.5	^ 2 795.2	^ 63.6
Australia	5.5	81.8	1 810.6	101.4
2002				
New South Wales	6.5	93.7	1 494.6	76.9
Victoria	5.4	110.0	1 778.7	106.7
Queensland	^ 5.9	^ 95.9	2 088.1	111.5
South Australia	^ 4.6	^ 82.2	2 422.7	167.3
Western Australia	^ 3.9	^ 77.9	1 891.9	119.5
Tasmania	^ 3.9	^ 94.8	1 462.2	70.0
Northern Territory	^ 6.3	^ 46.2	^ 4 578.7	^ 171.3
Australian Capital Territory	^ 4.7	^ 117.4	^ 2 666.4	^ 70.7
Australia	5.6	95.1	1 876.3	103.5

.....

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

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

	<i>Light commercial vehicles</i>	<i>Rigid trucks</i>	<i>Articulated trucks</i>	<i>Total</i>
TOTAL TONNE-KILOMETRES TRAVELLED (million)				
1998				
New South Wales	^ 1 380	7 421	28 632	37 434
Victoria	^ 1 068	^ 6 240	19 608	26 917
Queensland	^ 1 027	4 518	14 170	19 715
South Australia	^ 441	^ 1 489	7 856	9 786
Western Australia	^ 458	^ 2 483	13 937	16 877
Tasmania	^ 87	^ 368	2 032	2 487
Northern Territory	^ 65	^ 165	^ 2 400	^ 2 630
Australian Capital Territory	^ 51	^ 127	*124	^ 302
Australia	4 577	22 811	88 759	116 147
1999				
New South Wales	^ 1 560	^ 8 718	32 542	42 820
Victoria	^ 1 381	^ 5 838	20 292	27 510
Queensland	^ 1 054	^ 4 485	19 224	24 763
South Australia	^ 321	^ 1 253	9 374	10 948
Western Australia	^ 574	^ 2 610	^ 14 480	17 664
Tasmania	^ 102	^ 495	^ 1 519	2 116
Northern Territory	^ 64	^ 223	^ 3 432	^ 3 719
Australian Capital Territory	^ 55	^ 119	^ 160	^ 334
Australia	5 111	23 740	101 024	129 874
2002				
New South Wales	^ 2 001	9 269	35 444	46 715
Victoria	^ 1 288	7 841	20 688	29 817
Queensland	^ 1 344	^ 5 970	22 151	29 466
South Australia	^ 330	^ 1 518	10 007	11 855
Western Australia	^ 379	^ 2 720	13 701	16 800
Tasmania	^ 114	^ 732	1 881	2 727
Northern Territory	^ 71	^ 143	^ 2 993	^ 3 206
Australian Capital Territory	*98	^ 144	*111	^ 353
Australia	5 624	28 337	106 977	140 938

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

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

	<i>Light commercial vehicles</i>	<i>Rigid trucks</i>	<i>Articulated trucks</i>	<i>Total</i>
.....				
AVERAGE TONNE-KILOMETRES TRAVELLED (a) ('000)				
1998				
New South Wales	^ 5.0	75.8	1 248.0	94.0
Victoria	^ 4.8	^ 91.9	1 001.7	86.2
Queensland	^ 4.8	74.2	946.6	68.0
South Australia	^ 5.3	^ 66.0	1 067.0	86.8
Western Australia	^ 5.1	^ 68.4	1 877.6	127.1
Tasmania	^ 3.6	^ 48.6	1 343.2	74.5
Northern Territory	^ 5.6	^ 43.6	^ 2 124.3	^ 159.8
Australian Capital Territory	^ 2.4	^ 30.5	*71.5	^ 11.1
Australia	5.2	79.4	1 667.5	95.4
1999				
New South Wales	^ 4.8	^ 86.3	1 306.8	94.8
Victoria	^ 6.2	^ 86.1	1 008.6	88.7
Queensland	^ 5.1	73.9	1 088.2	87.2
South Australia	^ 4.2	^ 50.3	1 004.2	^ 98.2
Western Australia	^ 4.9	^ 74.1	^ 1 980.3	^ 109.9
Tasmania	^ 3.7	^ 67.8	^ 1 177.8	^ 58.5
Northern Territory	^ 5.2	^ 46.7	^ 2 190.9	^ 200.5
Australian Capital Territory	^ 3.4	^ 28.8	^ 156.4	^ 15.8
Australia	5.5	81.8	1 810.6	101.4
2002				
New South Wales	6.0	89.7	1 411.7	100.8
Victoria	4.8	106.0	960.2	82.3
Queensland	^ 5.9	^ 90.7	1 254.0	94.7
South Australia	^ 4.5	^ 70.2	1 063.3	113.8
Western Australia	^ 3.9	^ 77.2	1 813.6	120.3
Tasmania	^ 3.9	^ 94.5	1 461.9	71.5
Northern Territory	^ 6.3	^ 47.7	^ 2 384.2	^ 207.6
Australian Capital Territory	*3.6	*41.1	*106.7	^ 11.2
Australia	5.6	95.1	1 876.3	103.5

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

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

(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)				
1998				
2 axles	2 398	6 156	*272	8 826
3 axles	*63	^ 360	^ 11 646	^ 12 069
4 or more axles	—	**—	^ 1 916	^ 1 916
Total	2 461	6 516	^ 13 834	22 811
1999				
2 axles	2 155	7 213	**448	9 816
3 axles	**11	*196	^ 12 008	^ 12 214
4 or more axles	—	—	^ 1 710	^ 1 710
Total	2 166	7 408	^ 14 165	23 740
2002				
2 axles	2 086	7 331	*814	10 231
3 axles	**13	*319	14 787	15 120
4 or more axles	—	**63	^ 2 924	^ 2 987
Total	2 099	7 713	18 525	28 337

	AVERAGE TONNE-KILOMETRES TRAVELLED (b) (‘000)			
1998				
2 axles	20.2	52.0	^ 112.2	36.8
3 axles	*38.0	^ 57.5	^ 348.3	^ 291.8
4 or more axles	—	46.0	^ 305.8	^ 305.5
Total	20.4	52.3	^ 328.4	79.4
1999				
2 axles	19.0	56.1	**209.3	40.2
3 axles	**28.2	*44.8	^ 351.3	^ 313.7
4 or more axles	—	—	^ 246.7	^ 246.7
Total	19.0	55.7	^ 327.5	81.8
2002				
2 axles	17.4	62.2	*198.5	42.3
3 axles	*31.4	*67.8	351.6	320.4
4 or more axles	—	**59.7	^ 387.7	^ 347.6
Total	17.4	62.4	345.0	95.1

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

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

— nil or rounded to zero (including null cells)

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

(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.

	30 tonnes and under	Over 30 tonnes to 40 tonnes	Over 40 tonnes	Total
.....				
TOTAL TONNE-KILOMETRES TRAVELLED (millions)				
1998				
Single axle trailer	*183	**33	—	*216
Tandem axle trailer	*521	^ 3 629	**179	^ 4 329
Triaxle trailer	**116	^ 4 120	47 281	51 518
B-Double	—	—	^ 15 449	^ 15 449
Road train	—	—	^ 15 645	^ 15 645
Other	**1	**11	*1 591	*1 603
Total	^ 821	7 793	80 145	88 759
1999				
Single axle trailer	*262	—	—	*262
Tandem axle trailer	*584	^ 3 109	*729	^ 4 422
Triaxle trailer	**144	^ 2 937	49 383	52 463
B-Double	—	—	^ 19 889	^ 19 889
Road train	—	—	^ 21 584	^ 21 584
Other	—	—	*2 404	*2 404
Total	^ 990	^ 6 046	93 988	101 024
2002				
Single axle trailer	*117	**7	—	*124
Tandem axle trailer	^ 271	^ 3 578	*815	4 664
Triaxle trailer	**25	^ 2 495	45 332	47 852
B-Double	—	**22	29 239	29 260
Road train	—	—	21 843	21 843
Other	—	**11	^ 3 222	^ 3 233
Total	^ 412	6 112	100 452	106 977

* estimate has a relative standard error of between 25% and 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)

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

(a) Gross Combination Mass.

	30 tonnes and under	Over 30 tonnes to 40 tonnes	Over 40 tonnes	Total
.....				
AVERAGE TONNE-KILOMETRES TRAVELLED (b) ('000)				
1998				
Single axle trailer	*101.9	**447.0	—	*115.7
Tandem axle trailer	^197.7	^418.2	**791.3	375.1
Triaxle trailer	**388.5	^956.7	1 696.4	1 586.3
B-Double	—	—	^4 936.5	^4 936.5
Road train	—	—	4 903.3	4 903.3
Other	**28.0	**113.7	*1 786.3	*1 563.8
Total	^ 172.2	592.5	2 269.9	1 667.5
1999				
Single axle trailer	*131.5	—	—	*131.5
Tandem axle trailer	*225.2	^435.6	*603.9	^404.3
Triaxle trailer	**789.6	^857.5	1 715.5	1 619.6
B-Double	—	—	^4 818.5	^4 818.5
Road train	—	—	4 562.5	4 562.5
Other	—	—	*1 489.3	*1 489.3
Total	^ 207.7	^ 572.4	2 322.7	1 810.6
2002				
Single axle trailer	*92.0	**71.1	—	*90.6
Tandem axle trailer	^190.1	^487.2	*811.5	477.2
Triaxle trailer	**196.5	^665.9	1 500.7	1 404.1
B-Double	—	**1 565.8	4 701.4	4 694.4
Road train	—	—	4 913.6	4 913.6
Other	—	**172.1	^3 065.8	^2 895.7
Total	^ 146.2	542.5	2 340.0	1 876.3

* estimate has a relative standard error of between 25% and 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)

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

(a) Gross Combination Mass.

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

	<i>Light commercial vehicles</i>	<i>Rigid trucks</i>	<i>Articulated trucks</i>	<i>Total</i>
TOTAL LOAD CARRIED (million tonnes)				
1998				
New South Wales	25	206	^ 173	403
Victoria	^ 23	122	157	303
Queensland	^ 19	^ 161	^ 102	^ 282
South Australia	^ 7	^ 41	^ 44	92
Western Australia	^ 9	^ 67	^ 92	168
Tasmania	^ 2	^ 13	18	33
Northern Territory	^ 1	^ 7	^ 10	^ 18
Australian Capital Territory	^ 1	^ 4	^ 3	8
Australia	87	621	598	1 307
1999				
New South Wales	^ 30	221	184	435
Victoria	^ 34	^ 138	153	325
Queensland	^ 21	^ 159	^ 148	328
South Australia	^ 8	^ 43	^ 58	109
Western Australia	^ 15	^ 87	^ 105	^ 208
Tasmania	^ 3	^ 16	^ 17	35
Northern Territory	^ 1	^ 6	^ 8	15
Australian Capital Territory	^ 1	^ 4	^ 3	8
Australia	111	676	677	1 464
2002				
New South Wales	^ 38	246	180	464
Victoria	^ 25	211	190	426
Queensland	^ 26	176	141	343
South Australia	^ 7	^ 48	61	116
Western Australia	^ 13	^ 83	^ 137	233
Tasmania	^ 3	^ 25	25	54
Northern Territory	^ 1	^ 6	^ 9	^ 16
Australian Capital Territory	^ 2	*8	^ 3	^ 12
Australia	115	802	747	1 664

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

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

	<i>Light commercial vehicles</i>	<i>Rigid trucks</i>	<i>Articulated trucks</i>	<i>Total</i>
.....				
AVERAGE LOAD CARRIED PER TRIP (a) (kilograms)				
1998				
New South Wales	^ 336	5 517	22 026	3 403
Victoria	383	4 989	20 579	3 285
Queensland	^ 335	^ 5 865	22 665	^ 3 161
South Australia	^ 308	^ 5 444	21 847	^ 2 854
Western Australia	^ 291	^ 5 284	29 153	^ 3 595
Tasmania	^ 330	5 635	22 428	^ 3 377
Northern Territory	^ 336	^ 4 162	^ 38 122	^ 3 543
Australian Capital Territory	^ 297	^ 4 929	^ 22 689	^ 1 850
Australia	338	5 436	22 734	3 285
1999				
New South Wales	^ 346	5 607	22 545	3 262
Victoria	489	5 490	19 027	3 192
Queensland	^ 341	^ 5 844	24 342	^ 3 496
South Australia	^ 377	^ 5 004	23 205	^ 3 376
Western Australia	^ 348	^ 5 936	^ 30 078	^ 3 389
Tasmania	^ 310	^ 5 957	22 026	^ 3 036
Northern Territory	^ 213	^ 4 739	29 059	^ 2 808
Australian Capital Territory	^ 339	^ 4 407	^ 22 586	^ 1 758
Australia	378	5 621	22 957	3 294
2002				
New South Wales	^ 362	5 624	22 027	^ 2 937
Victoria	363	7 020	21 960	3 935
Queensland	334	6 554	25 022	3 104
South Australia	372	5 306	21 816	3 824
Western Australia	^ 351	^ 5 501	28 979	^ 4 181
Tasmania	^ 341	^ 6 748	24 068	^ 3 852
Northern Territory	^ 371	^ 4 744	^ 35 445	^ 3 040
Australian Capital Territory	^ 317	^ 6 479	22 479	*1 812
Australia	353	6 130	23 749	3 404

.....

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

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

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

FREIGHT VEHICLE USE, Total tonnes carried (million)

Commodity	Light commercial vehicles	Rigid trucks	Articulated trucks	Total freight vehicles
1998				
Food and live animals	^ 6	^ 74	155	235
Beverages and tobacco	**—	^ 4	^ 7	^ 11
Crude materials, inedible, except fuels	^ 5	^ 286	^ 168	459
Mineral fuels, lubricants and related materials	*2	^ 22	^ 76	^ 99
Animal and vegetable oils, fats and waxes	**—	*1	*1	^ 2
Chemicals and related products, not elsewhere specified	*3	^ 7	^ 11	^ 21
Manufactured goods	^ 9	90	^ 65	164
Machinery, transport equipment	^ 6	^ 24	^ 33	62
Miscellaneous manufactured articles	*4	^ 8	*6	^ 18
Tools of trade	38	26	*4	69
Other commodities, not elsewhere specified	^ 11	^ 73	^ 63	147
Unspecified(a)	^ 3	^ 7	^ 9	^ 19
Total	87	621	598	1 307
1999				
Food and live animals	^ 14	^ 77	171	262
Beverages and tobacco	**1	*5	*12	^ 18
Crude materials, inedible, except fuels	*4	^ 282	^ 177	462
Mineral fuels, lubricants and related materials	^ 2	*27	^ 67	^ 96
Animal and vegetable oils, fats and waxes	**—	*1	*5	*6
Chemicals and related products, not elsewhere specified	*2	^ 12	^ 14	^ 29
Manufactured goods	^ 16	^ 107	^ 95	218
Machinery, transport equipment	^ 6	^ 24	^ 40	70
Miscellaneous manufactured articles	*3	^ 6	^ 4	^ 14
Tools of trade	53	^ 31	*3	86
Other commodities, not elsewhere specified	^ 8	95	^ 74	177
Unspecified(a)	^ 3	*9	*15	^ 27
Total	111	676	677	1 464
2002				
Food and live animals	^ 6	^ 83	188	277
Beverages and tobacco	**1	^ 10	^ 9	^ 20
Crude materials, inedible, except fuels	*2	362	190	554
Mineral fuels, lubricants and related materials	*2	^ 35	^ 80	^ 116
Animal and vegetable oils, fats and waxes	**—	*1	*2	^ 3
Chemicals and related products, not elsewhere specified	*3	^ 15	^ 20	^ 38
Manufactured goods	^ 9	^ 108	107	224
Machinery, transport equipment	^ 8	^ 39	^ 47	94
Miscellaneous manufactured articles	*4	^ 10	^ 3	^ 17
Tools of trade	61	^ 29	*3	93
Other commodities, not elsewhere specified	*11	^ 97	91	199
Unspecified(a)	*9	*12	^ 7	^ 28
Total	115	802	747	1 664

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

— nil or rounded to zero (including null cells)

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

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

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

	Route service	Dedicated school bus service	Charter service	Tour service	Other	Not specified (b)	Total
TOTAL KILOMETRES TRAVELLED (million)							
1998							
Buses with fewer than 20 seats	*15	^ 59	^ 77	*30	^ 275	*23	479
Buses with 20 or more seats	608	272	^ 169	^ 67	^ 67	*12	1 195
Total	623	331	^ 246	^ 96	341	*35	1 673
1999							
Buses with fewer than 20 seats	*40	^ 50	*86	*43	^ 278	*18	515
Buses with 20 or more seats	623	295	^ 179	^ 97	*59	**2	1 254
Total	663	345	^ 265	^ 140	^ 337	*19	1 769
2002							
Buses with fewer than 20 seats	*29	^ 57	*78	*24	^ 251	*29	468
Buses with 20 or more seats	630	249	^ 173	^ 66	^ 71	**5	1 195
Total	659	306	^ 252	^ 90	322	*34	1 663

	Route service	Dedicated school bus service	Charter service	Tour service	Other	Not specified (b)	Total
AVERAGE KILOMETRES TRAVELLED (c) ('000)							
1998							
Buses with fewer than 20 seats	*23.1	^ 11.2	^ 35.1	*25.2	^ 17.4	*19.8	22.8
Buses with 20 or more seats	53.5	17.4	18.3	^ 44.8	^ 15.8	*18.8	40.8
Total	51.9	15.9	21.6	^ 36.1	17.0	^ 19.4	33.3
1999							
Buses with fewer than 20 seats	*41.9	^ 22.9	*48.5	^ 43.7	^ 22.8	^ 26.9	29.8
Buses with 20 or more seats	51.3	18.7	16.7	^ 50.9	*14.6	14.3	41.9
Total	50.6	19.2	^ 21.2	^ 48.5	20.7	^ 25.0	37.4
2002							
Buses with fewer than 20 seats	*22.8	^ 17.6	*34.2	*19.9	18.0	^ 22.1	23.5
Buses with 20 or more seats	50.1	19.8	^ 20.3	^ 34.2	^ 23.0	**14.5	40.4
Total	47.6	19.3	^ 23.3	^ 28.7	18.9	^ 20.5	33.6

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

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

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

(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.

	Route service	Dedicated school bus service	Charter service	Other(b)	Not specified(c)	Total
TOTAL KILOMETRES TRAVELLED (million)						
1998						
New South Wales	171	127	^ 53	^ 81	*11	443
Victoria	^ 99	^ 59	^ 47	^ 64	**3	273
Queensland	^ 159	^ 72	^ 73	^ 118	**8	431
South Australia	^ 63	^ 15	^ 21	^ 19	**1	119
Western Australia	^ 86	*39	*21	^ 102	**8	255
Tasmania	^ 19	^ 12	*3	^ 8	**—	43
Northern Territory	*7	*5	*25	^ 40	**2	^ 79
Australian Capital Territory	19	*2	*3	*4	*3	31
Australia	623	331	^ 246	438	*35	1 673
1999						
New South Wales	^ 195	^ 136	^ 74	^ 130	—	536
Victoria	^ 85	^ 71	^ 68	^ 79	**4	308
Queensland	^ 178	^ 60	*82	^ 108	**2	430
South Australia	^ 70	^ 21	*15	*33	**3	^ 141
Western Australia	^ 82	*36	*9	*70	**9	^ 206
Tasmania	^ 15	^ 13	^ 3	^ 7	**—	38
Northern Territory	**13	*7	**10	^ 44	**1	^ 75
Australian Capital Territory	25	*1	*4	*6	—	36
Australia	663	345	^ 265	477	*19	1 769
2002						
New South Wales	^ 205	^ 108	*113	^ 107	**5	538
Victoria	^ 139	*45	*26	^ 72	**7	289
Queensland	^ 101	^ 73	^ 52	^ 111	*12	348
South Australia	^ 99	^ 17	*10	*13	**2	142
Western Australia	^ 77	*42	*32	*52	**7	^ 209
Tasmania	^ 11	^ 15	*5	^ 12	**1	^ 44
Northern Territory	*10	*2	*8	^ 41	**1	^ 63
Australian Capital Territory	16	^ 4	*5	*4	—	29
Australia	659	306	^ 252	412	*34	1 663

- ^ estimate has a relative standard error of between 10% and 25% and should be used with caution
- * estimate has a relative standard error of between 25% and 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) 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.

	Route service	Dedicated school bus service	Charter service	Other(b)	Not specified(c)	Total
AVERAGE KILOMETRES TRAVELLED (d) ('000)						
1998						
New South Wales	39.5	^ 13.5	^ 13.3	^ 11.3	*12.2	27.6
Victoria	^ 47.0	^ 17.4	^ 20.4	^ 16.3	*26.3	27.8
Queensland	^ 78.2	^ 16.8	^ 28.0	^ 25.0	**34.7	41.9
South Australia	^ 62.0	14.8	^ 25.9	^ 16.4	**15.1	35.6
Western Australia	^ 54.9	^ 26.0	^ 24.6	^ 33.2	**27.1	40.4
Tasmania	^ 41.9	14.0	^ 8.1	^ 15.9	**8.8	26.5
Northern Territory	*57.8	*18.5	*68.7	^ 27.2	*18.2	^ 38.4
Australian Capital Territory	50.0	^ 24.5	*25.5	*18.4	*25.4	38.4
Australia	51.9	15.9	21.6	19.6	^ 19.4	33.3
1999						
New South Wales	33.6	18.6	^ 13.8	^ 31.3	—	39.9
Victoria	^ 52.4	20.0	^ 27.5	^ 16.4	**13.9	28.0
Queensland	^ 67.6	^ 16.6	*31.3	^ 26.9	*30.2	43.1
South Australia	^ 79.2	^ 24.2	^ 28.7	*27.1	69.0	^ 45.1
Western Australia	^ 64.9	^ 23.8	*15.4	*27.4	^ 34.7	^ 36.3
Tasmania	^ 47.0	15.4	^ 6.5	^ 12.2	^ 10.6	25.7
Northern Territory	*81.5	^ 32.4	**28.6	^ 31.6	**19.1	^ 40.5
Australian Capital Territory	60.6	^ 10.1	*47.5	*29.0	—	50.4
Australia	50.6	19.2	^ 21.2	25.3	^ 25.0	37.4
2002						
New South Wales	40.5	18.9	*29.5	^ 22.9	**13.0	37.0
Victoria	^ 48.2	^ 20.9	*14.4	^ 16.7	**26.7	29.4
Queensland	^ 52.5	19.5	^ 21.1	^ 19.8	**27.7	30.2
South Australia	64.4	^ 16.1	^ 14.6	*13.6	**13.9	40.2
Western Australia	^ 47.1	^ 21.5	*28.0	*24.7	*18.5	^ 34.2
Tasmania	^ 35.0	^ 22.1	*9.1	^ 19.1	**17.9	28.3
Northern Territory	*58.5	*11.4	*39.2	^ 33.0	**25.6	^ 36.7
Australian Capital Territory	53.6	12.2	*38.7	*20.5	—	44.9
Australia	47.6	19.3	^ 23.3	20.9	^ 20.5	33.6
^	estimate has a relative standard error of between 10% and 25% and should be used with caution		(a)	Excluding distance travelled by buses used exclusively for private purposes.		
*	estimate has a relative standard error of between 25% and 50% and should be used with caution		(b)	Includes tour service operations.		
**	estimate has a relative standard error greater than 50% and is considered too unreliable for general use		(c)	Represents travel by buses where type of service could not be obtained.		
—	nil or rounded to zero (including null cells)		(d)	Average distance travelled for registered vehicles which were used.		

EXPLANATORY NOTES

INTRODUCTION

1 This publication presents estimates from the 2002 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 2001 to 31 October 2002. Revised estimates from the 1998 and 1999 SMVU are also included in this publication. These relate to the period 1 August 1997 to 31 July 1998 and 1 August 1998 to 31 July 1999. Estimates in this publication have been produced by employing post-stratification to correct for population frame deficiencies. Detail on this process can be found in Technical Note 2: Methodological Review.

2 Release of revised data due to the frame deficiencies has now been completed. Tables 1 to 3 include a full series of revised SMVU data for 1998, 1999 and 2000 together with recently released data for 2001 and new data for 2002.

SCOPE

3 The scope of the survey is all vehicles that were registered with a motor vehicle authority for road use at some stage during the 12 months ended 31 October 2002. 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. The population was identified using information obtained from the state and territory motor vehicle registration authorities.

METHODOLOGY

4 For the 2002 SMVU, a sample of approximately 16,700 vehicles was selected to report on vehicle use over a three-month period within the reference year 1 November 2001 to 31 October 2002. Of these, 24% were passenger vehicles and motor cycles, 60% were freight vehicles, 11% were buses and 5% were other 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, except where the vehicle was deregistered, in which case 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. More information about these adjustments is provided in Technical Note 1: Data Quality.

EXPLANATORY NOTES *continued*

METHODOLOGY *continued*

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 2001 to 31 October 2002. 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 Technical Note 1: Data Quality.

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 2001 to 31 October 2002, 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 including those that travelled zero kilometres. The 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 1998, 1999, 2000, 2001 and 2002. Care should be taken in drawing inferences from changes in data over these years as movements may be subject to high RSEs and hence the changes may not be statistically significant.

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 from 1995

Sales of New Motor Vehicles, Australia, (Electronic Publication) cat. no. 9314.0.55.001 — issued monthly

Directory of Transport Statistics, 1998 cat. no. 1132.0 — released in January 1999

Transport Theme page on ABS Internet site <<http://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.

TECHNICAL NOTE 1 DATA QUALITY

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 below.

3 The sampling error associated with any estimate can be calculated 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 1998, 1999 and 2002 estimates contained in Table 4 of this publication are shown in the following tables.

TECHNICAL NOTE 1 DATA QUALITY *continued*

SAMPLING ERROR *continued*

RSE OF MOTOR VEHICLE USE 1998(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	6	16	5	4	5	20	6	4
Victoria	5	33	7	6	7	18	7	4
Queensland	6	30	5	6	7	19	8	4
South Australia	8	21	9	7	7	24	8	6
Western Australia	7	16	10	8	7	20	9	5
Tasmania	7	19	7	8	7	23	9	5
Northern Territory	9	24	10	13	11	31	12	6
Australian Capital Territory	6	22	10	7	11	37	7	5
Australia	3	12	3	3	3	9	3	2
NUMBER OF VEHICLES (%)								
New South Wales	3	5	3	1	3	11	9	2
Victoria	3	7	4	3	3	8	5	2
Queensland	3	4	2	4	3	11	4	2
South Australia	3	5	4	4	3	15	4	2
Western Australia	3	4	4	5	4	9	6	2
Tasmania	2	4	3	4	4	11	4	2
Northern Territory	4	6	6	8	6	13	6	3
Australian Capital Territory	3	22	6	8	10	19	7	2
Australia	1	3	1	1	1	4	3	1
AVERAGE KILOMETRES TRAVELLED (%)								
New South Wales	5	16	5	4	5	16	7	4
Victoria	5	32	6	6	5	17	6	4
Queensland	6	30	5	6	5	17	7	4
South Australia	7	21	8	7	6	22	8	6
Western Australia	7	16	8	7	7	18	7	5
Tasmania	7	18	7	7	7	23	8	5
Northern Territory	9	23	9	8	10	31	11	6
Australian Capital Territory	6	30	6	9	9	28	6	5
Australia	2	12	2	2	2	8	3	2

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

TECHNICAL NOTE 1 DATA QUALITY *continued*

SAMPLING ERROR *continued*

RSE OF MOTOR VEHICLE USE 1999(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	6	22	8	5	5	15	6	5
Victoria	5	21	10	5	5	18	7	5
Queensland	6	20	7	6	7	48	9	5
South Australia	8	19	9	10	7	37	11	6
Western Australia	7	17	7	6	8	58	13	5
Tasmania	8	20	9	7	9	30	8	6
Northern Territory	10	23	7	7	10	29	14	6
Australian Capital Territory	6	17	8	7	17	37	8	5
Australia	3	10	4	3	3	18	4	2
NUMBER OF VEHICLES (%)								
New South Wales	3	5	5	2	3	10	12	2
Victoria	3	4	3	2	3	8	4	2
Queensland	3	7	4	4	4	29	3	2
South Australia	3	6	4	4	3	10	5	2
Western Australia	2	4	5	2	5	21	7	2
Tasmania	4	5	4	3	4	9	4	3
Northern Territory	5	7	5	7	4	18	6	3
Australian Capital Territory	3	5	4	2	10	19	8	2
Australia	1	2	2	1	1	7	4	1
AVERAGE KILOMETRES TRAVELLED (%)								
New South Wales	5	22	7	5	5	12	12	4
Victoria	5	21	9	5	4	17	7	4
Queensland	6	19	6	5	6	20	8	4
South Australia	7	19	8	11	7	36	10	6
Western Australia	7	17	7	6	8	40	12	5
Tasmania	8	19	8	6	8	29	8	6
Northern Territory	9	23	7	6	9	30	13	6
Australian Capital Territory	6	17	7	7	10	38	9	5
Australia	3	9	3	3	2	13	4	2

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

TECHNICAL NOTE 1 DATA QUALITY *continued*

SAMPLING ERROR *continued*

RSE OF MOTOR VEHICLE USE 2002(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	17	5	4	4	25	7	4
Victoria	5	17	6	5	4	22	9	4
Queensland	6	20	6	6	4	17	7	4
South Australia	6	22	6	6	4	18	8	5
Western Australia	7	22	6	6	6	15	12	5
Tasmania	6	16	8	7	5	23	10	4
Northern Territory	7	27	8	7	11	24	12	5
Australian Capital Territory	5	19	5	7	9	30	7	5
Australia	2	9	3	2	2	10	4	2
NUMBER OF VEHICLES (%)								
New South Wales	1	4	4	3	2	13	4	1
Victoria	2	3	3	2	2	9	6	2
Queensland	2	3	4	2	2	8	3	1
South Australia	2	5	2	2	2	7	4	2
Western Australia	2	3	4	2	3	6	7	2
Tasmania	2	4	4	3	4	7	5	1
Northern Territory	2	6	4	2	3	13	10	2
Australian Capital Territory	2	6	5	4	5	20	8	2
Australia	1	2	2	1	1	4	2	1
AVERAGE KILOMETRES TRAVELLED (%)								
New South Wales	5	17	5	5	4	19	7	4
Victoria	5	17	6	5	4	20	8	4
Queensland	5	20	5	6	4	14	6	4
South Australia	5	22	6	6	4	16	8	4
Western Australia	7	22	6	6	6	13	10	5
Tasmania	5	15	8	7	6	22	9	4
Northern Territory	6	26	8	7	11	22	12	4
Australian Capital Territory	5	18	6	6	8	23	7	4
Australia	2	9	2	2	2	8	3	2

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

6 As an example of the use of an RSE, the 2002 estimate for kilometres travelled by all passenger vehicles registered in Australia is 144,676 million kilometres (Table 4 of the publication). The RSE for this estimate is 2%, as shown above. Therefore, the standard error for the 2002 kilometres travelled by passenger vehicles estimate is 2,894 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 141,782 million kilometres to 147,570 million kilometres. There are about 19 chances in 20 that the figure would have been in the range 138,888 million kilometres to 150,464 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.

TECHNICAL NOTE 1 DATA QUALITY *continued*

SAMPLING ERROR *continued*

RSE OF FUEL CONSUMPTION 1998(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								
Leaded	7	17	6	16	47	19	21	5
Unleaded	4	16	5	57	95	26	17	3
Total	3	12	4	16	88	18	14	3
Diesel	20	—	7	3	3	12	3	2
LPG/CNG/dual fuel	12	—	12	26	99	27	20	10
Total	3	12	3	3	3	9	3	2

AVERAGE RATE OF FUEL CONSUMPTION (%)

Petrol								
Leaded	2	10	2	8	12	14	12	2
Unleaded	3	15	4	60	3	13	11	3
Total	2	11	3	15	4	10	9	2
Diesel	14	—	5	2	2	9	3	3
LPG/CNG/dual fuel	8	—	9	15	1	17	13	6
Total	2	11	2	2	2	6	2	2

— nil or rounded to zero (including null cells)

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

RSE OF FUEL CONSUMPTION 1999(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								
Leaded	7	16	8	10	49	31	24	6
Unleaded	4	20	6	22	—	34	14	3
Total	3	14	4	9	49	29	13	3
Diesel	21	—	9	3	3	15	4	3
LPG/CNG/dual fuel	15	—	16	20	67	31	21	11
Total	3	14	4	3	3	13	3	2

AVERAGE RATE OF FUEL CONSUMPTION (%)

Petrol								
Leaded	2	4	2	8	7	6	14	2
Unleaded	3	17	4	10	—	14	9	3
Total	2	12	3	6	7	13	8	2
Diesel	13	—	7	3	2	9	3	3
LPG/CNG/dual fuel	9	—	13	8	12	17	20	7
Total	2	12	3	2	2	8	3	2

— nil or rounded to zero (including null cells)

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

TECHNICAL NOTE 1 DATA QUALITY *continued*

SAMPLING ERROR *continued*

RSE OF FUEL CONSUMPTION 2002(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								
Leaded	20	32	27	53	—	43	53	17
Lead replacement	12	31	18	29	—	28	52	10
Unleaded	3	11	4	50	99	33	16	3
Total	3	9	4	25	99	23	15	2
Diesel	21	100	7	3	2	10	4	3
LPG/CNG/dual fuel	17	97	13	36	54	29	23	13
Total	3	9	3	3	2	9	4	2
AVERAGE RATE OF FUEL CONSUMPTION (%)								
Petrol								
Leaded	3	10	10	30	—	29	32	3
Lead replacement	3	11	3	18	—	14	52	3
Unleaded	1	2	1	25	97	15	6	1
Total	1	2	1	13	97	15	6	1
Diesel	4	87	2	1	1	5	2	3
LPG/CNG/dual fuel	5	86	5	25	22	17	31	4
Total	1	2	1	1	1	5	2	1

— nil or rounded to zero (including null cells)

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

TECHNICAL NOTE 1 DATA QUALITY *continued*

SAMPLING ERROR *continued*

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

	<i>Light commercial vehicles</i>	<i>Rigid trucks</i>	<i>Articulated trucks</i>	<i>Total</i>
TOTAL TONNE-KILOMETRES (%)				
1998				
New South Wales	11	9	5	4
Victoria	14	20	7	7
Queensland	11	8	7	5
South Australia	23	18	9	8
Western Australia	16	12	9	8
Tasmania	19	12	9	7
Northern Territory	19	18	12	11
Australian Capital Territory	23	11	33	16
Australia	6	7	4	3
1999				
New South Wales	17	14	5	5
Victoria	13	21	5	6
Queensland	12	10	7	6
South Australia	17	13	8	7
Western Australia	18	12	11	9
Tasmania	16	15	11	8
Northern Territory	22	16	16	15
Australian Capital Territory	18	13	24	13
Australia	7	8	4	3
2002				
New South Wales	12	9	4	3
Victoria	11	10	4	4
Queensland	15	11	5	4
South Australia	13	15	6	5
Western Australia	16	13	9	7
Tasmania	16	14	7	6
Northern Territory	18	12	15	14
Australian Capital Territory	31	13	29	13
Australia	6	5	3	2

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

9 Summary tables in this publication contain estimates from the 1998 to 2002 SMVUs. The SMVU is not designed to minimise the standard errors of the movements between reference periods. Care should be taken in drawing inferences from changes in data over these years. The RSE for the movement can be calculated using:

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

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 $M_t = Y_{2t} - Y_{1t}$

10 For total kilometres travelled by type of vehicle from the 1998 and 2002 SMVUs, the RSEs of the movements and the estimates from which they are derived are shown in the following table.

TECHNICAL NOTE 1 DATA QUALITY *continued*

SAMPLING ERROR *continued*

RSE OF THE MOVEMENT OF TOTAL KILOMETRES TRAVELLED

	LEVEL ESTIMATES				MOVEMENT ESTIMATES	
	1998	RSE (1998)	2002	RSE (2002)	Movement	RSE (Movement)(a)
	million	%	million	%	million	%
Passenger vehicles	127 586	3	144 676	2	17 090	29
Motor cycles	1 396	12	1 681	9	285	80
Light commercial vehicles	25 851	3	31 349	3	5 498	21
Rigids trucks	6 131	3	7 080	2	948	24
Articulated trucks	4 979	3	5 425	2	445	40
Non-freight trucks	188	9	224	10	36	76
Buses	1 760	3	1 775	4	15	564
Total	167 892	2	192 209	2	24 318	21

(a) Calculated on unrounded data.

11 From the previous table it can be seen that some of the movements have an RSE of greater than 25%. This indicates that the change in the estimate from one period to the next is subject to sampling variability too high or too unreliable for practical use. It cannot be said with 95% (19 chances in 20) confidence that the movements are significantly different from zero.

NON-SAMPLING ERROR

12 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 are called bias.

13 Two steps undertaken to help minimise non-sampling error are pre-advice and the reduction in the reporting of rounded data. The pre-advice methodology involves vehicle owners receiving early advice about their inclusion in the survey. This 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.

14 The second step is the reduction in the reporting of rounded data for total distance travelled. Such rounding could cause significant errors, especially with the prevalence of certain distances which could be seen as arbitrary guesses on the part of the provider. Where rounding is identified, providers are contacted and the estimate of their total distance travelled is queried. Distances considered to be rounded are every 1,000 km in the range 1,000km up to 10,000km and every 5,000km for distances over 10,000km.

Response and non-response

15 An important factor that affects non-sampling error is the response rate achieved. Responses were received from 81% of all of the selections for 2002. After removing those vehicles that had been found to be deregistered or out of scope, the remaining live response rate for the 2002 SMVU was 80%.

16 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.

TECHNICAL NOTE 1 DATA QUALITY *continued*

*Response and non-response
continued*

17 A large non-response increases the potential for non-response bias, which occurs if the usage patterns of the non-responding vehicles differ significantly 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.

RESPONSE AND NON-RESPONSE BY CATEGORY

	Percentage of selections 1998	Percentage of selections 1999	Percentage of selections 2002
Response received			
Registered vehicle	71	73	76
Unregistered vehicle(a)	6	6	5
Non-response			
Untraceable - mailing address unknown	11	10	7
Other(b)	12	11	12
Total selections	100	100	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; and non-response where no listing could be found to enable contact by telephone, owner contacted by telephone but response still not secured and refusals.

Imputation

18 The need for imputation of unfilled items on the returned questionnaires, as for previous surveys, remained quite high. Imputation is the process whereby a value is generated for missing data items by averaging the responses for similar vehicles which were operating for the reference period. Of the questionnaires returned for 1998, 1999 and 2002 there were 12%, 14% and 16% respectively of those reporting some vehicle use that needed imputation of one or more items apart from the average rate of fuel consumption. The imputations for average rate of fuel consumption for 1998, 1999 and 2002 were 24%, 26% and 26% respectively.

Adjustments

19 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 and additional selections from new motor vehicle registrations are made to account for the change in size of the registered motor vehicle fleet since the population frame was created. This involved two categories:

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

20 These activities occur continuously and the adjustments are made to account for the registrations that are estimated to have been added to the registered vehicle fleet between the population frame date and the reference period.

21 Refer to Technical Note 2: Methodological Review for details of changes made as a result of the review.

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

TECHNICAL NOTE 2 METHODOLOGICAL REVIEW

INTRODUCTION

1 A review of the methodology used for the Survey of Motor Vehicle Use (SMVU) was undertaken in 2002 to address data quality issues raised in relation to previously published data. This review identified deficiencies in the SMVU population frame which resulted in the selection of a sample that was not representative of the registered vehicle population. This deficiency has been rectified for the selection of the sample for SMVU 2003.

2 The review identified some minor errors in the adjustments used to account for re-registration. These errors have now been rectified. The review also investigated new vehicle provision calculations. While no errors were identified a number of options to improve these calculations were investigated and implemented.

This Technical Note specifically outlines the investigations that led to the identification of the frame deficiency and the post-stratification technique used to correct it.

FRAME PROBLEM

3 To ensure the SMVU sample was representative of the population, random selection was used within each stratum. For the SMVU, the random selection process allocated a random number to each unit on the frame. To select the sample, the frame was sorted by random number and a start point was randomly selected. A number of units were selected in order, depending on the number of selection units required for a particular stratum.

4 An investigation of the SMVU frame revealed a large number of units which had duplicate random numbers. Duplicate random numbers will not produce a bias in a sample as long as the duplicates contain a random assortment of units.

5 The SMVU frame investigation showed however, that the characteristics of certain variables differed between those units with unique random numbers and those with duplicated random numbers. This was particularly the case with Year of Manufacture. Therefore, the distribution of these variables within the resulting sample was dependant on whether the random start and the units selected incorporated duplicate random numbers. All estimates produced from samples selected under this scenario would contain bias, with the direction of this bias dependant on the inclusion of duplicates.

POST-STRATIFICATION

6 The collection of SMVU data from 1998 to 2002 had already been completed before the concerns with the frame were identified. To correct for the unrepresentative sample, a process of post-stratification was used.

7 Post-stratification is a method of stratifying a sample after the responses have been received. It is used to improve the quality of results through stratifying by variables that were not used at the time of sample design.

8 In the case of SMVU the frame investigation identified six variables to be used in the post-stratification. These variables were State, Vehicle Type, Year of Manufacture, Body Code, Fuel Class and Number of Cylinders. Once post-stratification was applied to the SMVU data, the weights of each unit were adjusted based on the particular post-stratum of that unit to realign sample totals to be representative of population totals. Each of the years from 1998 to 2002 were post-stratified independently and the post-strata will vary over time.

9 Caution needs to be taken in making comparisons between 1998, 1999, 2000, 2001 and 2002 SMVU data. Comparisons at the broad level are more reliable than those at the detailed level.

IMPACT

10 The impact of the review on the estimates for the main data items is summarised in the following table. The size of the change varies by data item. The table includes information on 1998, 1999, 2000 and 2001 data only, as 2002 data were produced after the review.

TECHNICAL NOTE 2 METHODOLOGICAL REVIEW *continued*

IMPACT *continued*

IMPACT OF METHODOLOGICAL REVIEW ON SMVU DATA, Australia

	<i>Before review</i>	<i>After review</i>	<i>% change</i>
1998			
Total kilometres travelled (million)	173 317	167 892	-3.13
Total Tonne-kilometres travelled (million)	112 832	116 147	2.94
Total fuel (million litres)	23 909	23 258	-2.72
1999			
Total kilometres travelled (million)	177 635	173 053	-2.58
Total Tonne-kilometres travelled (million)	127 311	129 874	2.01
Total fuel (million litres)	24 532	24 038	-2.01
2000			
Total kilometres travelled (million)	180 782	184 593	2.11
Total Tonne-kilometres travelled (million)	128 702	134 378	4.41
Total fuel (million litres)	24 926	25 853	3.72
2001			
Total kilometres travelled (million)	187 819	190 152	1.24
Total Tonne-kilometres travelled (million)	132 756	132 422	-0.25
Total fuel (million litres)	25 931	25 948	0.07

11 It is important to understand that the percentage change before and after the review can vary significantly between state and vehicle type. Therefore, the percentage change figures in the above table for all vehicles at the national level cannot be used at the state or vehicle type level to calculate the changes due to post-stratification.

12 For 1998, 1999, 2000, 2001 and 2002 SMVU data care should be taken in drawing inferences from changes in data over these five years as movements may be subject to high relative standard errors. Therefore the resulting estimates of movements may not be considered statistically significant. There is also potential for increased volatility in the estimates due to the changes that have been implemented as a result of the methodological review.

13 Users should contact the ABS if they have any queries on the methodological review.

GLOSSARY

Articulated trucks	Motor vehicles constructed primarily for load carrying, consisting of a prime mover linked to one or more semi-trailers.
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 semi-trailer. 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	<p>These areas are based on capital city Statistical Divisions as defined in the <i>Australian Standard Geographical Classification (ASGC) 1996</i>.</p> <p>Sydney — this includes the area bounded by Gosford and Wyong; Hawkesbury and Blue Mountains; Campbelltown, Wollondilly and the Sutherland Local Government Areas.</p> <p>Melbourne — this includes the area bounded by Werribee, Melton, Sunbury, Craigieburn, Whittlesea, Healesville, Warburton, Berwick, Pakenham and the whole of Mornington Peninsula.</p> <p>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.</p> <p>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.</p> <p>Perth — this includes the area bounded by Yanchep and Bullsbrook; Warnbro, Keysbrook and Wooroloo.</p> <p>Hobart — this includes the area bounded by New Norfolk; Sorell and Carlton Creek; Brighton and Snug.</p> <p>Darwin — this includes Darwin and suburbs, Palmerston and other areas north of the Howard Springs turn-off.</p> <p>Canberra — this includes all of the Australian Capital Territory.</p>
Commodity carried	The publication of commodities carried is based on the 10 sectional groupings of the <i>Australian Transport Freight Commodity Classification (ATFCC)</i> , with the addition of Tools of Trade.
Dolly	A device intended to link two semi-trailer 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 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).

GLOSSARY *continued*

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	<p>These are based on the <i>Australian Standard Geographical Classification (ASGC) 1996</i> 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 1996 Population Census.</p> <p>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), Coffs Harbour, Tamworth, Shellharbour, Cessnock, Nelson Bay.</p> <p>Victoria — within the areas of Geelong, Ballarat, Bendigo, Wodonga (excluding Albury), Shepparton, La Trobe Valley and Mildura.</p> <p>Queensland — within the areas of The Sunshine Coast, Bundaberg, Hervey Bay, Rockhampton, Mackay, Townsville, Cairns, Gold Coast (excluding Tweed Heads), and Toowoomba.</p> <p>Western Australia — within the areas of Mandurah, Bunbury and Rockingham.</p> <p>Tasmania — within the areas of Launceston, Burnie, Devonport, Wynyard and Latrobe.</p> <p>This category is not applicable in South Australia, the Northern Territory and the Australian Capital Territory.</p>
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 semi-trailer. 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.
RSE	Relative standard error. The standard error expressed as a percentage of the estimate to which it refers.
Semitrailer	An articulated goods vehicle consisting of a prime mover and a detachable trailer, supported at the front by the prime mover and at the back by its own wheels.
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.

GLOSSARY *continued*

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 transshipment 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.

FOR MORE INFORMATION . . .

- INTERNET* **www.abs.gov.au** the ABS web site is the best place to start for access to summary data from our latest publications, information about the ABS, advice about upcoming releases, our catalogue, and Australia Now—a statistical profile.
- LIBRARY* A range of ABS publications is available from public and tertiary libraries Australia-wide. Contact your nearest library to determine whether it has the ABS statistics you require, or visit our web site for a list of libraries.
- CPI INFOLINE* For current and historical Consumer Price Index data, call 1902 981 074 (call cost 77c per minute).
- DIAL-A-STATISTIC* For the latest figures for National Accounts, Balance of Payments, Labour Force, Average Weekly Earnings, Estimated Resident Population and the Consumer Price Index call 1900 986 400 (call cost 77c per minute).

INFORMATION SERVICE

Data already published that can be provided within five minutes will be free of charge. Our information consultants can also help you to access the full range of ABS information—ABS user pays services can be tailored to your needs, time frame and budget. Publications may be purchased. Specialists are on hand to help you with analytical or methodological advice.

- PHONE* 1300 135 070
- EMAIL* client.services@abs.gov.au
- FAX* 1300 135 211
- POST* Client Services, ABS, GPO Box 796, Sydney NSW 2001

WHY NOT SUBSCRIBE?

ABS subscription services provide regular, convenient and prompt deliveries of ABS publications and products as they are released. Email delivery of monthly and quarterly publications is available.

- PHONE* 1300 366 323
- EMAIL* subscriptions@abs.gov.au
- FAX* 03 9615 7848
- POST* Subscription Services, ABS, GPO Box 2796Y, Melbourne Vic 3001



2920800011014

ISSN 1444 5670

RRP \$25.00