APPENDIX C

The First Reminder

APPENDIX D

The Second Reminder

SOCIALDATA AUSTRALIA 55 Whaling Road, North Sydney, N.S.W. 2060
— 1985/86 Survey of Day-to-Day Travel in Australia —
for
COMMONWEALTH DEPARTMENT OF TRANSPORT, CANBERRA

Dear New South Wales Resident,

About two weeks ago your household was sent a questionnaire as part of our national survey. The aim of this survey is to obtain important information on the travel needs of the population of Australia. To achieve this, your support is most important.

We would therefore ask:

- **If you have already filled out the questionnaire but haven't sent it back as yet** — please mail it to us as soon as possible.

- **If you haven't filled it out as yet** — please now fill it in for_____ and return it to us as soon as possible after that day.

Please be assured that your help with this survey is important — the results of the study will be used for the benefit of everyone in Australia.

If you have any questions about the survey please telephone (02) 922 6517 or (008) 022 263 (for the cost of a local call).

Thank you for your help.

Elizabeth Ampt
Survey Director

P.S. If you have already replied — thank you and please ignore this reminder.

APPENDIX E

The Third Reminder

MINISTER FOR TRANSPORT
Parliament House,
CANBERRA A.C.T. 2600

Dear Sir/Madam,

Recently I wrote to you about a National Daily Travel Survey that the Department of Transport is conducting. As you may recall, I mentioned that this was one way in which you could help the Government in its attempt to reduce the horrifying number of deaths and casualties on Australian roads.

Your household has been randomly selected to take part in the survey and a questionnaire is enclosed. I would be grateful if you would fill out the forms and return them as soon as you can in the reply paid envelope provided.

To fill out the questionnaire you should follow the instructions on the pink Household form. A brochure explaining the survey has been enclosed for your information.

However, if you have any questions, or if there is anything about the questionnaire you don't understand, please don't hesitate to call your local survey office on the number shown on the back of the Household form.

Again, I assure you that all the information you provide will be kept strictly confidential and no names will appear on any permanent records.

The information you provide will be crucial in helping us develop further ways of reducing the road toll.

Thank you for your assistance in this matter.

Yours sincerely,

PETER MORRIS

Nếu Quý vị thấy mẫu đơn này khó hiểu. Xin hãy gọi ngay số điện thoại ghi ở mặt sau mẫu màu hồng.

Se hai difficoltà a capire questo modulo, telefona al numero indicato sul retro del foglio rosa

Ako imate poteškoća u razumjevanju ovog formulara nazovite telefonski broj koji se nalazi na poledjini ružičastog formulara.

Αν δυσκολεύεστε να καταλαβετε τη φόρμα αυτή, παρακαλείστε να τηλεφωνήσετε στον αριθμό τηλεφώνου που βρίσκετα: στο πίσω μέρος της ροζ φόρμας

اذا وجدت صعوبة بفهم هذه الطلب، فالرجاء الاتصال تلفونياً على الرقم المبين خلف الطلب الزهري اللون.

SOCIALDATA AUSTRALIA 55 Whaling Road, North Sydney, N.S.W. 2060

— 1985/86 Survey of Day-to-Day Travel in Australia —

for

COMMONWEALTH DEPARTMENT OF TRANSPORT, CANBERRA

Dear New South Wales Resident,

Several weeks ago your household was sent a questionnaire as part of our national travel survey. As we have received no reply from you as yet, we believe you may no longer have the questionnaires or that you may never have received them. For this reason, we have enclosed additional forms.

Please answer the questions with the help of the directions on the pink HOUSEHOLD FORM and return the survey to us in the enclosed stamped envelope.

To obtain a cross-section of the population of Australia, the Survey needs to cover **all groups of people. Your answers are** therefore **important** because, when combined with all other households in the survey, we will obtain a reliable picture of the travel patterns and needs of all people. For your information, we have once again printed the message from the Minister for Transport on the back of this letter.

If you have any questions, please do not hesitate to contact us on (02) 922 6517 or for the cost of a local call on (008) 022 263.

Thank you for your help.

Elizabeth Ampt
Survey Director

P.S. If you have already replied — thank you and please ignore this reminder.

APPENDIX F

The Fourth Reminder

APPENDIX G

Response and Non-Response Adjustments

APPENDIX G: RESPONSE AND NON-RESPONSE ADJUSTMENTS

1. Introduction

At the outset of this section, the purpose of making response and non-response adjustments to survey data should be reiterated. These adjustments are made because it is known that, for many reasons, there is error or bias in the survey data when compared to reality. The adjustments represent the very important phase of attempting to make the data more representative of reality. At best, however, it always remains an imperfect attempt -- often reality is not known (e.g. lack of secondary data), and sometimes it is impossible to measure the error or bias (e.g. in the case of non-sampling errors).

For this reason, the process of deciding whether or not to incorporate adjustment factors -- which is one of exploration -- is an important phase in itself, because it provides an understanding of the characteristics and the 'quality' of the data being studied. All stages of this decision making process are, therefore, outlined in some detail to assist the reader and user of the data in gaining a better understanding of the data set.

The procedure was undertaken based on advice provided by the Australian Bureau of Statistics (ABS) to the Federal Office of Road Safety. In particular, the ABS gave technical advice to the Federal Office of Road Safety on the methodology appropriate for use in the decision "to adjust or not to adjust" although the final choice of factors was made by the consultant. Since this remains a vexed question even with rigorous statistical methods, the approach taken here is to describe all phases of the process in some detail. For most purposes, information provided in this document is adequate to obtain an understanding of the factoring process. However, further detail has been provided to the Federal Office of Road Safety, and with this additional data, it would be possible to re-calculate factors for particular applications.

2. Potential Response and Non-Response Adjustment Factors

The first stage of the factoring procedure was to examine the incidence and distribution of various characteristics using simple frequencies (Section 4 of this Appendix). This gave the opportunity to examine potential adjustment factors. Based on previous experience (e.g. Wermuth, 1985), the following 6 groups of adjustment factors were considered.

HOUSEHOLD FACTORS

1. Season

First, the need for an adjustment factor to compensate for sampling error by season was examined. The examination of the need for this factor was done independently of day of week by comparing the proportion of households which responded in each season with the "ideal" proportion of 25% per season if sampling and response had been equal throughout the year. (Summer was defined as December-February, Autumn as March-May, Winter as June-August, and Spring as September-November).

2. Day of Week

Next, it was considered possible that adjustment factors would need to be used to compensate for biases which would occur if there were a disproportionate number of households reporting for certain days of the week. It was, therefore, necessary to consider the calculation of an adjustment factor for each of the "towns", e.g. Sydney, Charters Towers, etc. The aim would be to equalise the day of week for each town -- but not to weight towns. The need for this factor was checked by comparing the proportion of responding households for each day with the "ideal" proportion (1/7 or 14.29%) if sampling and response had been equal for all days of the week.

3. Household Size

The third household factor considered (on a state-by-state basis) would adjust for wrong distribution of household sizes in the survey if they were not representative of the population. ABS data on household size (by state) were used as the secondary data to compare with the size of households responding to the survey.

PERSON FACTORS

4. Age/Sex

It was also possible that the survey data may have had a disproportionate number of responses for certain age or sex categories. This would necessitate a person factor which would adjust age group and sex data in the survey to that known from secondary (ABS census) data. This test was done at the state level.

5. Person Non-Response

The aim of this factor would be to estimate the proportion of people who made trips (share of mobiles) among non-respondents and to adjust the respondents accordingly so that the data are representative of the total population surveyed. The method used to apply this factor would be to classify all persons who responded into two groups -- mobiles or non-mobiles -- and to tabulate these against the speed with which they responded.

From these results it would be possible to estimate a relationship for non-respondents and, in turn, an overall mobiles:non-mobiles ratio for the population as a whole.

TRIP FACTOR

6. Non-reported Trips - (Trip Non-Response)

The application of this factor would be based on the premise that, in general, trip rates decline as the number of reminders necessary to elicit response increase. The aim of this procedure would be to obtain a trip factor which estimates the trip rates of non-respondents and relates this to the trips of persons who responded. For evaluation, all trips in the survey were broken down into 9 "purposes" (mandatory, discretionary and leisure by non-motorised, motorised and public transport trips) to look at average trip rates for each purpose (by reminder).

3. Secondary Data

The secondary data used for the pre-factoring analysis were obtained from the latest estimates available at the Australian Bureau of Statistics (1981 Census). Tables 1-2 show these data.

No. Pers. in HH	ACT	NSW	Vic	Qld	SA	WA	Tas	NT
1	10697	306357	224963	120794	78323	70504	23760	3903
2	17648	488202	352969	204670	134059	117953	39598	6431
3	12522	282734	205318	117819	74026	68206	23240	5049
4	15269	312295	240766	126125	84517	79417	26399	5980
5	8203	169614	134787	72966	41078	43411	14483	3604
6	2898	66562	52744	32501	13833	15751	5448	1713
7	904	22817	17322	13099	4085	4921	1748	868
8+	450	14177	10076	10258	2215	3437	922	1501

Table 1: Household Size (Source: ABS, 1981 Population Census)

	ACT		NSW		Vic		Qld	
Age Gp.	M	F	M	F	M	F	M	F
9-15	15695	14892	313649	258527	248478	238467	146658	140070
16-29	26776	28024	608549	588532	456371	451302	276450	266036
30-49	32689	32297	670407	646770	488591	483327	290656	275900
50-64	11752	11489	378228	385120	272403	274118	162177	163673
65+	3839	5686	215747	303848	153729	220527	103715	131412

	SA		WA		Tas		NT	
Age Gp.	M	F	M	F	M	F	M	F
9-15	80727	76687	85063	80388	27802	26664	8620	8214
16-29	153183	152657	158831	152671	50446	50290	17665	16601
30-49	160720	159853	171794	160736	51853	50290	19240	15182
50-64	96927	98030	81496	79572	29208	29138	5908	4522
65+	56272	78617	48462	62928	17470	23394	1887	1866

Table 2: Data on Age and Sex (Source: ABS, 1981 Population Census)

4. The Decision to Make Response and Non-Response Adjustments

As noted above, the first stage of the adjustment procedure was to examine the incidence and frequency distribution of various data categories. Using raw data, Tables 3-8 were produced. (Note that the number of households or persons in each table is the number of households/persons for which information about the variables in the table is known and is, therefore, less than the total number of responding households/persons.)

State	Spring	Summer	Autumn	Winter	TOTAL
ACT	120	122	108	132	482
NSW	996	1139	1050	1145	4330
Vic	1188	1243	1185	1289	4905
Qld	755	743	642	773	2913
SA	552	535	544	552	2183
WA	615	588	551	604	2358
Tas	154	155	128	146	583
NT	106	116	115	127	464
Total	4486	4641	4323	4768	18218

Table 3: Season of Actual Travel Day by State - Unfactored Data

State	Mon	Tue	Wed	Thu	Fri	Sat	Sun	TOTAL
ACT	64	70	75	68	63	69	73	482
NSW	617	649	623	629	612	605	595	4330
Vic	698	703	682	714	713	709	686	4905
Qld	409	412	421	419	418	413	421	2913
SA	302	313	310	337	314	305	302	2183
WA	331	327	366	345	325	339	325	2358
Tas	85	89	75	93	88	82	71	583
NT	66	64	67	76	63	55	73	464
Total	2572	2627	2619	2681	2596	2577	2546	18218

Table 4: Day of Actual Travel by State - Unfactored Data

State	No. of Persons in Household								
	1	2	3	4	5	6	7	8+	TOTAL
ACT	40	128	100	121	66	25	2	0	482
NSW	776	1426	714	811	416	145	26	13	4327
Vic	888	1570	777	976	480	161	28	15	4895
Qld	547	971	501	532	253	78	18	11	2911
SA	390	767	386	416	158	53	7	5	2182
WA	400	784	390	472	230	69	10	4	2359
Tas	124	199	97	98	50	14	0	1	583
NT	51	136	90	110	52	19	5	1	464
Total	3216	5981	3055	3536	1705	564	96	50	18203

Table 5: Household Size of Responding Households by State - Unfactored Data

State	Age Groups					
	9-15	16-29	30-49	50-64	65+	TOTAL
Male	115	154	229	106	28	632
Female	103	160	258	98	29	648
NSW						
Male	660	1157	1623	937	613	4990
Female	650	1189	1647	986	740	5212
Vic						
Male	716	1436	1831	1010	670	5663
Female	706	1458	1884	1058	771	5877
Qld						
Male	397	858	1030	562	396	3243
Female	428	837	1104	615	502	3486
SA						
Male	310	614	750	501	324	2499
Female	302	575	779	523	349	2528
WA						
Male	377	662	900	467	280	2686
Female	342	710	955	468	309	2784
Tas						
Male	77	168	185	122	91	643
Female	82	158	200	139	109	688
NT						
Male	103	144	269	60	12	588
Female	97	162	232	48	7	546
TOTAL						
Male	2755	5193	6817	3765	2414	20944
Female	2710	5249	7059	3935	2816	21769

Table 6: Age/Sex Distribution by State - Unfactored Data

State	No. of Persons Responding .. 1st qnr	1st rem	2nd rem	3rd rem	4th rem	TOTA
ACT						
Mobiles	873	117	56	107	19	1172
Non-mobiles	79	8	5	15	4	111
NSW						
Mobiles	6162	876	502	1000	273	8813
Non-mobiles	1000	173	88	220	60	1541
Vic						
Mobiles	6785	1129	435	1345	269	9963
Non-mobiles	1088	188	99	265	48	1688
C						
Mobiles	4059	655	244	696	134	5788
Non-mobiles	862	125	69	163	25	1244
SA						
Mobiles	3204	449	269	472	89	4483
Non-mobiles	433	86	54	94	10	677
WA						
Mobiles	3576	492	228	503	112	4911
Non-mobiles	487	92	44	92	21	736
Tas						
Mobiles	807	135	29	130	21	1122
Non-mobiles	133	32	4	29	9	207
NT						
Mobiles	722	105	41	123	26	1017
Non-mobiles	64	13	5	24	2	108
TOTAL						
Mobiles	26188	3958	1804	4376	943	37269
Non-mobiles	4146	717	368	902	179	6312

Table 7: Response to Reminders by State by Mobility of Respondents - Unfactored Data

Table 8 is presented for different modes and purposes where:

- o Mandatory trips are work and education trips,
- o Discretionary trips are shopping, social welfare and personal business trips,
- o Leisure trips are all other trips.
- o Non-motorised trips are bicycle and walk trips,
- o Public transport trips include taxi, and,
- o Private motorised trips are those in cars, trucks and motor bikes as a driver or passenger.

State	Trips per Person by Response to .. 1st qnr	1st rem	2nd rem	3rd rem	4th rem	TOTAL
ACT						
Purpose						
Mandatory	2.438	2.530	2.268	2.290	2.053	2.419
Discretionary	1.136	1.171	0.857	0.869	0.684	1.095
Leisure	0.742	0.658	0.411	0.626	1.105	0.713
Mode						
Non-Motorised	0.714	0.726	0.482	0.720	0.474	0.701
Public Trans.	0.263	0.162	0.357	0.346	0.105	0.263
Private Mot.	3.339	3.470	2.696	2.720	3.263	3.264
Total - All modes & purposes	4.316	4.359	3.536	3.785	3.842	4.227
NSW						
Purpose						
Mandatory	2.212	2.210	2.070	2.047	2.249	2.186
Discretionary	0.977	0.855	0.757	0.860	0.945	0.938
Leisure	0.618	0.604	0.572	0.520	0.495	0.599
Mode						
Non-Motorised	0.644	0.619	0.518	0.567	0.623	0.625
Public Trans.	0.388	0.398	0.504	0.433	0.425	0.402
Private Mot.	2.776	2.652	2.376	2.427	2.641	2.697
Total - All modes & purposes	3.808	3.669	3.398	3.427	3.689	3.724
VIC						
Purpose						
Mandatory	2.307	2.205	1.982	2.126	2.015	2.249
Discretionary	1.002	0.851	0.800	0.800	0.803	0.944
Leisure	0.679	0.553	0.614	0.539	0.595	0.641
Mode						
Non-motorised	0.691	0.613	0.487	0.658	0.714	0.669
Public Trans.	0.273	0.277	0.264	0.309	0.253	0.278
Private Mot.	3.025	2.718	2.644	2.498	2.446	2.887
Total - All modes & purposes	3.989	3.609	3.395	3.465	3.413	3.834

Table 8: Average Number of Trips by Reminder by State - Unfactored

State	Trips per Person by Response to .. 1st qnr	1st rem	2nd rem	3rd rem	4th rem	TOTAL
QLD						
Purpose						
Mandatory	2.188	2.139	1.902	2.040	2.209	2.153
Discretionary	1.014	0.875	0.848	0.749	1.000	0.959
Leisure	0.689	0.582	0.443	0.530	0.590	0.645
Mode						
Non-motorised	0.591	0.513	0.357	0.477	0.545	0.557
Public Trans.	0.279	0.389	0.291	0.261	0.284	0.290
Private Mot.	3.020	2.693	2.545	2.580	2.970	2.909
Total - All modes & purposes	3.890	3.595	3.193	3.319	3.799	3.757
SA						
Purpose						
Mandatory	2.198	2.214	2.141	1.968	2.169	2.172
Discretionary	1.027	0.940	0.929	0.867	0.843	0.992
Leisure	0.754	0.599	0.584	0.576	0.607	0.707
Mode						
Non-motorised	0.704	0.584	0.602	0.583	0.517	0.669
Public Tran.	0.240	0.285	0.312	0.271	0.292	0.253
Private Mot.	3.036	2.884	2.740	2.557	2.809	2.948
Total - All modes & purposes	3.980	3.753	3.654	3.411	3.618	3.870
WA						
Purpose						
Mandatory	2.401	2.317	2.289	2.175	2.313	2.362
Discretionary	1.104	0.986	0.873	0.803	1.089	1.050
Leisure	0.759	0.744	0.684	0.628	1.018	0.746
Mode						
Non-motorised	0.634	0.514	0.566	0.565	0.661	0.612
Public Tran.	0.178	0.191	0.228	0.201	0.259	0.186
Private Mot.	3.451	3.341	3.053	2.841	3.500	3.360
Total - All modes & purposes	4.263	4.047	3.846	3.606	4.420	4.159
[illegible]						
Purpose						
Mandatory	2.248	2.215	2.621	2.315	1.714	2.251
Discretionary	0.978	0.667	0.586	0.823	0.762	0.908
Leisure	0.708	0.822	0.586	0.377	0.381	0.674
Mode						
Non-motorised	0.699	0.496	0.483	0.492	0.190	0.635
Public Tran.	0.259	0.207	0.172	0.315	0.286	0.258
Private Mot.	2.975	3.000	3.138	2.708	2.381	2.940
Total - All modes & purposes	3.933	3.704	3.793	3.515	2.857	3.833

Table 8 (ctd):Average Number of Trips by Reminder by State - Unfactored

State	1st qnr	Trips per Person by Response to .. 1st rem	2nd rem	3rd rem	4th rem	TOTAL
ACT						
Purpose						
Mandatory	2.661	2.571	2.537	2.390	2.000	2.597
Discretionary	1.107	0.971	1.073	0.667	1.000	1.035
Leisure	0.677	0.590	0.293	0.626	0.538	0.643
Mode						
Non-motorised	0.774	0.667	0.585	0.642	0.346	0.729
Public Tran.	0.126	0.210	0.195	0.073	0.231	0.134
Private Mot.	3.544	3.257	3.122	2.967	2.962	3.413
Total - All modes & purposes	4.445	4.133	3.902	3.683	3.538	4.275
TOTAL - ALL STATES						
Purpose						
Mandatory	2.278	2.230	2.090	2.100	2.154	2.240
Discretionary	1.022	0.889	0.828	0.812	0.912	0.971
Leisure	0.689	0.611	0.569	0.547	0.620	0.657
Mode						
Non-Motorised	0.662	0.583	0.507	0.586	0.612	0.636
Public Tran.	0.279	0.305	0.337	0.308	0.309	0.289
Private Mot.	3.048	2.842	2.642	2.566	2.766	2.943
Total - All modes & purposes	3.989	3.730	3.487	3.459	3.686	3.867
Total trips per person	3.444	3.158	2.896	2.868	3.098	3.307

Table 8 (ctd):Average Number of Trips by Reminder by State - Unfactored

Statistical tests (primarily chi-square tests of significance) were then applied to these tables. **The following is a summary of the results:**

- Seasonal Variation A chi-square test was applied to data on seasonal responses where the "observed" data was the actual proportion of responses received in each season, and the "expected" data was 25% for each season -- based on the assumption that one quarter of the responses **are needed for each season if sampling and response** would have been evenly distributed. There was a significant difference between these two values in two states (NSW and Qld). Values of chi-square for these states were significant at the .05 level with 3 degrees of freedom.

- Day of Week In testing for variation by day of week, the "observed" data was again the actual proportion of responses received on each day of the week, **while the "expected" data was 14.29% for each** day. There was no significant difference (at the .05 level with 6 degrees of **freedom) between the seven days of the week either at the** metropolitan or at the rest-of-state levels.

- Household Size Again using a chi-squared test, households in the sample surveyed were found to have significantly different distributions to those in the 1981 Census data. Chi-square values were significant at the .05 level with 6 degrees of freedom for all states.

- Age/Sex There were significant differences between the percentages of people in the specified age/sex groups in the survey and the percentages of persons in these groups in the population as a whole. Chi-square values for all states were significant at the .05 level with 4 degrees of freedom.

- Person Non-Response A chi-square test was not used to examine the need to adjust for person non-response. The aim of this test was to estimate a mobility value for non-respondents by observing the mobility of respondents to each reminder. Trends were therefore sought by plotting the percentages of mobiles and non-mobiles for each state by reminder. After some iterations, it was determined that a consistent decrease in the percentage of mobiles was found in all states when responses were put into two groups: all those who had responded to the first questionnaire form (i.e. those responding to the 1st questionnaire as well as first and second reminders), and all those who had responded to the second questionnaire form (i.e. those who had responded to the third and fourth reminders).

- Trip Non-Response Similarly, the aim of the test for considering the application of a trip non-response factor was to estimate a trip rate for non-respondents by observing the trip rate of respondents as it varied by reminder (Table 8). As for person non-response, trends were sought by plotting trip rates to each reminder, and again the best fit occurred when the two categories used in testing for person non-response were used (respondents to the first and second questionnaire forms).

These results lead to the following decisions on the application of adjustment factors.

- A seasonal factor (household factor) was calculated for all households. Even though there were significant variations only in two states, it was considered that one of the prime uses of the data for exposure calculation would require fairly evenly distributed seasonal data.

- No day of week factor was calculated.

- In considering the application of a factor for household size, several external factors had to be addressed. First, the secondary data are for the whole of each state and does not reflect the exact status of household sizes in the sample selected. Secondly, the fairly outdated character of the secondary data makes the validity as a benchmark of less value. Consequently, it was decided that no adjustment factor would be calculated at this stage.

- There was no adjustment factor for age and sex (person factor) calculated for the same reasons as in the previous paragraph.

- A factor was applied to the data to ensure that they are representative of the total population, i.e. respondents and non-respondents. The person non-response (person factor) was calculated separately for each capital city and for all Australian non-capital "towns" in the survey, and in each case there is one factor for mobiles and one for non-mobiles.

- A factor was calculated to adjust for the "over-estimation" of the trip rate in the data. The trip non-response (trip factor) was calculated separately for each capital city and for all Australian non-capital towns in the survey as a group.

- It would also have been possible to calculate a trip factor to take into account the under-reporting evidenced in the validation interviews (Section 3.8). This was not done because of the small effect which would have occurred if only those trips which would not have been discovered in the editing/ phoning phase were examined.

5. Calculation of Adjustment Factors

5.1 The Household Factor

The application of the household factor for season was done using program HWEIGHT. **The program logic is as follows:**

- The seasons were defined by the calendar month of actual travel day (e.g. September-November = Spring).

- The data used were those in Table 1, i.e. the known number of households responding in each season in each state.

- If household response and allocation had been "ideal" the expected proportion of household responses per season would have been 25%. Twenty-five percent of the total households in each state therefore became the required number for each season.

- The household factor was obtained by dividing this required number by the actual number of responses in the state/season "cell".

This procedure can be described as follows:

$$f^H_{ij} = \frac{\frac{1}{4} \sum_k N_{ik}}{N_{ij}}$$

where f^H_{ij} = household factor for state i, season j
N_{ij} = number of responding households for state i, season j

The effect of the household factors is shown in Section 6.2 of this Appendix. The tables there show that, while the seasonal variation has been minimised, there is little effect on the other household variables of day of week and household size.

An Example of Calculation for A.C.T
(From Table 3, results shown in Section 6.2 below)

Spring Factor $f_{ij}^{H} = \frac{1/4 \times 482}{120} = 1.004$

Each household which responded in Spring (120 households) is multiplied by 1.004, meaning that the factored Spring households in A.C.T are 120.5 (120 x 1.004) as shown in Section 6.2). Note that inconsistencies in some states are mostly due to rounding errors.

5.2 The Person Factor

The aim of this step was to observe the proportion of mobiles (i.e. tripmakers) among respondents and use this to estimate the proportion for non-respondents. The calculation of the person non-response factor was as follows:

1) The household factors were transferred to the person file by means of the HPXFER program.

2) The remainder of the steps were done using program PWEIGHT.

3) Factors were applied separately to each capital city and to all other towns as a group.

4) Table 7 shows that there was a noticeably high proportion of mobiles in the responses to the first questionnaire (i.e. to the 1st questionnaire, the first and second reminders) than in responses to the second questionnaire (i.e. 3rd and 4th reminders).

5) It was assumed that this trend would continue for non-respondents.

6) This made it necessary to estimate the number of non-responding people who were "potential respondents" — which was done in the following way:
   -- From the 5th reminder interviews (Section 3.8) it was shown that non-respondents were made up of the following:
      33% sample loss
      29% refusals
      38% "potential respondents"
   -- Sample loss is clearly irrelevant in this case, and it is assumed that there is little difference in the travel behaviour of refusals and the responding population.
   -- In contrast, it is the potential respondents (38%) who are believed to be different, and for whom adjustments have to be made.
   -- For the purposes of this exercise it was assumed that non-responding households have the same household size as responding households, making it is possible to compute the number of non-responding persons.

-- Non-respondents (P_3) = potential respondent factor x no. of non-responding households x persons/ household

$$P_3 = 0.38 \times [(H - (H_1 + H_2)] \times \frac{P_1 + P_2}{H_1 + H_2}$$

where H = total households in survey (gross)
H_1 = households responding to 1st questionnaire
H_2 = households responding to 2nd questionnaire
P_1 = persons responding to 1st questionnaire
P_2 = persons responding to 2nd questionnaire

An Example of Calculation for A.C.T
(As used in Section 6.1.1 below)

$$P_3 = 0.38 \times (735 - 482) \times \frac{(1138 + 149)}{482} = 256.7$$

7) Next, the percentage of mobiles among these people was estimated using unfactored data (i.e. data to which the household factor had not been applied). It was observed that the percentage of mobiles responding to the second questionnaire was less than the percentage of mobiles responding to the 1st questionnaire. The ratio of these two percentages was then calculated for each geographic area. Our assumption then was that the percentage of mobiles among "potential respondents" would be less again by the same reduction factor, i.e.

$$M_3 = M_2 \times (M_2/M_1) = M_2^2/M_1$$

where M_1 = % mobiles among respondents to 1st questionnaire
M_2 = % mobiles among respondents to 2nd questionnaire
M_3 = estimated % mobile among potential respondents.

An Example of Calculation for A.C.T
(As used in Section 6.1.1 below)

$$M_3 = M_2^2/M_1$$

$$= (.86577)^2 / .91916$$

= .81548 or 81.5% of non-respondents in A.C.T. are assumed to be mobile

8) Computation of the overall percentage of mobiles in the population was then possible in the following way (details are shown in Section 6.1.1 of this Appendix):

$$M = 100 \times \frac{N}{K}$$

where M = % mobiles in population
N = number of mobiles in the survey (from respondents and potential respondents).
K = number of persons in the survey (from respondents and potential respondents).

$$N = \left(\frac{M_1}{100} \times P_1\right) + \left(\frac{M_2}{100} \times P_2\right) + \left(\frac{M_3}{100} \times P_3\right)$$

where M_1 = % mobile among 1st questionnaire respondents
M_2 = % mobile among 2nd questionnaire respondents
M_3 = estimated % mobile among potential respondents
P_1 = persons responding to the 1st questionnaire
P_2 = persons responding to the 2nd questionnaire
P_3 = estimated potential respondents (see Point 6)

n Example of Calculation for A.C.T
As used in Section 6.1.1 below)

$$M = 100 \times \frac{1385}{(1287 + 257)}$$

$$N = (.91916 \times 1138) + (.86577 \times 149) + (.81549 \times 257)$$

$$= 1385$$

Note that errors in the last decimal places are due t rounding.

9) The percentage of mobiles among the respondents was then calculated in another way, using respondent data only, factored by the household factor, i.e. using "correct" distribution of responding households.

$$M_R = \frac{\Sigma f^H}{\Sigma f^H}$$ (summed for all mobiles) / (summed for all responding persons)

where M_R = % of mobiles among respondents, using household adjustment factor
f^H = household factor

An Example of Calculation for A.C.T

This can be calculated/checked by referring to the data files and adding the household factor for the first mobile in the file, to that of the second mobile, etc.

10) The factor finally applied was the result of dividing the percentage of mobiles estimated in 8) by the percentage of mobiles calculated in 9) and it is then stored in the file as a product with the household factor, i.e.:

$$f_M^P = \frac{M}{M_R} \times f^H \quad \text{where } f_M^P = \text{person factor for mobiles}$$

$$f_N^P = \frac{100-M}{100-M_R} \times f^H \quad \text{where } f_N^P = \text{person factor for non-mobiles}$$

The effect of the person factors is shown in Section 6.2 of this Appendix. Again, these factors could be checked using the data files. The tables show that the adjustments resulted in higher factors for the older age groups and females.

5.3 The Trip Factor

In common with the person factor, the aim of this step was to observe the average number of trips among respondents and to estimate this proportion for non-respondents. Many characteristics of this factor, both in terms of philosophy and application, are similar to the person factor (Section 5.2 above).

1) The program used was TWEIGHT which also transfers the person factor to the trips.

2) Factors were applied separately for each capital city and for all other "towns" as a group.

3) Table 8 shows that respondents to the first questionnaire (including the 1st and 2nd reminders) made a noticeably higher number of trips per mobile than respondents to the second questionnaire (i.e. 3rd and 4th reminders).

4) It was assumed that this trend would carry on to the non-respondents.

5) The calculation of non-responding persons was done as described in Section 5.2 of this Appendix.

6) It was observed that the trip rate of persons responding to the 2nd questionnaire was less than the trip rate for persons responding to the 1st questionnaire. The ratio of these two rates was calculated and the assumption made that the trip rate for "potential

respondents" would be less again by the same reduction factor. This was calculated in the following way:

$$T_{M3} = T_{M_2} \times (T_{M_2} / T_{M_1}) = T_{M_2}^2 / T_{M_1}$$

where T_{M_1} = trips per mobile among 1st questionnaire respondents
T_{M_2} = trips per mobile among 2nd questionnaire respondents
T_{M3} = estimated trips/mobile among potential respondents

An Example of Calculation for A.C.T
(As used in Section 6.1.2)

$$T_{M_3} = (3.906)^2 / 4.287 = 3.379$$

7) It was then possible to calculate the overall trip rate for the population, using unfactored data.

$$T_M = \frac{T}{N}$$

where T_M = trips per mobile in the population
T = number of trips made by persons in survey (from respondents and potential respondents)
N = number of mobile persons in the survey (from respondents and potential respondents

$$T = (T_{M_1} \times Q_1) + (T_{M_2} \times Q_2) + (T_{M_3} \times Q_3)$$

where T_{M_1} = trips per mobile among 1st questionnaire respondents
T_{M_2} = trips per mobile among 2nd questionnaire respondents
T_{M3} = estimated trips/mobile among potential respondents
Q_1 = mobile persons responding to the 1st questionnaire
Q_2 = mobile persons responding to the 2nd questionnaire
Q_3 = estimated mobiles among potential respondents

$$Q_3 = (M_3 / 100) \times P_3$$

where M_3 = estimated % mobile among potential respondents (see Point 8, Person Factor calculation)
P_3 = estimated potential respondents (see Point 6, Person Factor)

An Example of Calculation for A.C.T
(As used in Section 6.1.2)

Q_3 = (.81548) x 257 = 209.58

i.e. 210 potential non-respondents are mobiles.

T = (4.287 x 1046) + (3.806 x 129) + (3.379 x 210)
= 5684.77

$$T = \frac{5684.77}{1385} = 4.10 \text{ overall trips/mobile}$$

Note: slight differences are due to rounding errors.

8) The trip rate among respondents was then calculated in another way using data factored by person factor, i.e. using the "correct" distribution of responding persons.

$$T_R = \frac{\Sigma f^P \times n}{\Sigma f^P}$$ (both summed for all mobile respondents)

where T_R = trips/mobile among respondents, using the person factor
f^P = person factor (including household factor)
n = number of trips made by respondent

This calculation could be checked by referring to the data file and summing the person factor for the first mobile in the file, multiplying it by the number of trips made by that mobile and dividing it the person factor for that mobile, etc.

9) The factor finally applied was the result of dividing the trip rate calculated in Point 7) by that calculated in Point 8):

$$f^T = \frac{T_M}{T_R} \times f^P$$ where f^T = trip factor.

This process resulted in one factor for each capital city and one for the "rest of Australia". The steps carried out by the TWEIGHT program are reported in Section 6.1.2 of this Appendix. Note that the presentation by mode and purpose is for information only and was not used in the factoring.

6. The Results

6.1 Application of Adjustment Factors

The following tables list the detailed stages of the person and trip factoring process by file. These tables should be read in conjunction with Section 5 of this Appendix. Note that the factors calculated are mfactor (factor for mobiles) and nfactor (factor for non-mobiles).

6.1.1 PERSON FACTOR

Files: 100 - ACT

Persons lost in stats:

No. of trips not known	0
Person factor not known	0
Person travel day not known	0
Hhold travel day not known	0
Not known whether travelled	42
Negative delay	0 (Actual travel day before assigned day)

	1st qnaire	2nd qnaire	Persons respg	Non-resps
lobile:	91.916	86.577	1175	81.549
on-mobile:	8.084	13.423	112	18.451
espondents	1138	149	1287	90.4

verall mobile factor (M/100) = 0.89757
djusted resp. mobile factor (M_R/100) = 0.91369

mfactor (M/M_R) = 0.98236 nfactor ($\frac{100-M}{100-M_R}$) = 1.18678

---

iles: 200 205 210 215 220 225 230 235 - Sydney

ersons lost in stats:

No. of trips not known	0
Person factor not known	0
Person travel day not known	0
Hhold travel day not known	0
Not known whether travelled	317
Negative delay	6

	1st qnaire	2nd qnaire	Persons respg	Non-resps
lobile:	85.962	82.184	7295	78.572
lon-mobile:	14.038	17.816	1248	21.428
espondents	7252	1291	8543	847.8

verall mobile factor (M/100) = 0.84072
djusted resp. mobile factor (M_R/100) = 0.85418

mfactor (M/M_R = 0.98425 nfactor ($\frac{100-M}{100-M_R}$) = 1.09225

iles: 300 305 310 315 320 325 330 335 - Melbourne

ersons lost in stats:

No. of trips not known	0
Person factor not known	0
Person travel day not known	0
Hhold travel day not known	0
Not known whether travelled	348
Negative delay	11

	1st qnaire	2nd qnaire	Persons respg	Non-resps
obile:	85.731	84.553	7207	83.392
on-mobile:	14.269	15.447	1220	16.608
espondents	6938	1489	8427	833.0

verall mobile factor (M/100) = 0.85115
ljusted resp. mobile factor (M_R/100) = 0.85556

mfactor (M/M_R) = 0.99484 nfactor $\left(\frac{100-M}{100-M_R}\right)$ = 1.03058

---

iles: 400 405 410 415 420 - Brisbane

ersons lost in stats:

No. of trips not known	0
Person factor not known	0
Person travel day not known	0
Hhold travel day not known	0
Not known whether travelled	38
Negative delay	2

	1st qnaire	2nd qnaire	Persons respg	Non-resps
obile:	83.347	81.491	4598	79.676
on-mobile:	16.653	18.509	936	20.324
espondents	4756	778	5534	371.6

verall mobile factor (M/100) = 0.82608
ljusted resp. mobile factor (M_R/100) = 0.83117

mfactor (M/M_R) = 0.99387 nfactor $\left(\frac{100-M}{100-M_R}\right)$ = 1.03016

.les: 500 505 510 515 - Adelaide

ersons lost in stats:

No. of trips not known	0
Person factor not known	0
Person travel day not known	0
Hhold travel day not known	0
Not known whether travelled	104
Negative delay	15

	1st qnaire	2nd qnaire	Persons respg	Non-resps
obile:	87.068	84.342	3928	81.700
on-mobile:	12.932	15.658	601	18.300
espondents	3967	562	4529	314.3

verall mobile factor (M/100) = 0.86023
djusted resp. mobile factor (M_R/100) = 0.86731

mfactor (M/M_R) = 0.99183 nfactor ($\frac{100-M}{100-M_R}$) = 1.05337

---

iles: 600 605 610 615 - Perth

ersons lost in stats:

No. of trips not known	0
Person factor not known	0
Person travel day not known	0
Hhold travel day not known	0
Not known whether travelled	129
Negative delay	0

	1st qnaire	2nd qnaire	Persons respg	Non-resps
obile:	87.320	84.844	4248	82.437
on-mobile:	12.680	15.156	635	17.563
espondents	4243	640	4883	333.3

verall mobile factor (M/100) = 0.86355
djusted resp. mobile factor (M_R/100) = .87057

mfactor (M/M_R = 0.99193 nfactor ($\frac{100-M}{100-M_R}$) = 1.05427

---

iles: 700 - Hobart

ersons lost in stats:

No. of trips not known	0
Person factor not known	0
Person travel day not known	0
Hhold travel day not known	0
Not known whether travelled	30
Negative delay	2

	1st qnaire	2nd qnaire	Persons respg	Non-resps
obile:	85.298	76.800	798	69.149
on-mobile:	14.702	23.200	150	30.851
espondents	823	125	948	60.4

verall mobile factor (M/100) = 0.82255
djusted resp. mobile factor (M_R/100) = 0.84220

mfactor (M/M_R) = 0.97667 nfactor ($\frac{100-M}{100-M_R}$) = 1.12449

iles: 800 - Darwin

ersons lost in stats:

No. of trips not known	0
Person factor not known	0
Person travel day not known	0
Hhold travel day not known	0
Not known whether travelled	44
Negative delay	5

	1st qnaire	2nd qnaire	Persons respg	Non-resps
obile:	91.320	84.416	877	78.033
on-mobile:	8.680	15.584	95	21.967
espondents	818	154	972	113.2

verall mobile factor (M/100) = 0.87546
djusted resp. mobile factor (M_R/100) = 0.90174

mfactor (M/M_R) = 0.97086 nfactor ($\frac{100-M}{100-M_R}$) = 1.26740

---

iles: 250 260 270 280 290 340 345 350 360 370 380
450 460 470 480 550 570 580 650 670 680 690 750 850
Rest of Australia

ersons lost in stats:

No. of trips not known	0
Person factor not known	0
Person travel day not known	0
Hhold travel day not known	0
Not known whether travelled	259
Negative delay	18

	1st qnaire	2nd qnaire	Persons respg	Non-resps
obile:	84.874	81.625	7225	78.500
on-mobile:	15.126	18.375	1338	21.500
espondents	7246	1317	8563	712.1

verall mobile factor (M/100) = 0.83414
ijusted resp. mobile factor (M_R/100) = .84391

mfactor (M/M_R) = 0.98842 nfactor ($\frac{100-M}{100-M_R}$) = 1.06260

6.1.2 TRIP FACTOR

Note here that tfactor is the trip factor applied to the data (all trips).

iles: 100 ACT

ersons lost in stats:

No. of trips not known	0
Person factor not known	0
Person travel day not known	0
Hhold travel day not known	0
Not known whether travelled	42
Negative delay	0

	1st qnaire	2nd qnaire	1st+2nd	Non-resps
ersons:	1138	149	1287	
obiles:	1046	129	1175	
rips:	4484	491	4975	
rips/mobile	4.287	3.806	4.234	3.379

verall trips/mobile (T_M) = 4.09903
ijusted trips/resp. mobile (T_R)= 4.24742

tfactor (T_M/T_R) = 0.96506

iles: 200 205 210 215 220 225 230 235 - Sydney

ersons lost in stats:

No. of trips not known	0
Person factor not known	0
Person travel day not known	0
Hhold travel day not known	0
Not known whether travelled	317
Negative delay	6

	1st qnaire	2nd qnaire	1st+2nd	Non-resps
ersons:	7252	1291	8543	
obiles:	6234	1061	7295	
rips:	23125	3761	26886	
rips/mobile	3.709	3.545	3.686	3.387

verall trips/mobile (T_M) = 3.62786
ijusted trips/resp. mobile (T_R) = 3.68738

tfactor (T_M/T_R) = 0.98386

Files: 300 305 310 315 320 325 330 335 - Melbourne

Persons lost in stats:

No. of trips not known	0
Person factor not known	0
Person travel day not known	0
Hhold travel day not known	0
Not known whether travelled	348
Negative delay	11

	1st qnaire	2nd qnaire	1st+2nd	Non-resp
Persons:	6938	1489	8427	
Mobiles:	5948	1259	7207	
Trips:	22917	4301	27218	
Trips/mobile	3.853	3.416	3.777	3.029

Overall trips/mobile (T_M) = 3.63339
Weighted trips/resp. mobile (T_R) = 3.77736

tfactor (T_M/T_R) = 0.96188

Files: 400 405 410 415 420 Brisbane

Persons lost in stats:

No. of trips not known	0
Person factor not known	0
Person travel day not known	0
Hhold travel day not known	0
Not known whether travelled	38
Negative delay	2

	1st qnaire	2nd qnaire	1st+2nd	Non-resp
Persons:	4756	778	5534	
Mobiles:	3964	634	4598	
Trips:	14927	2120	17047	
Trips/mobile	3.766	3.344	3.707	2.969

Overall trips/mobile (T_M) = 3.60398
Weighted trips/resp. mobile (T_R) = 3.70965

tfactor (T_M/T_R) = 0.97152

Files: 500 505 510 515 - Adelaide

Persons lost in stats:

No. of trips not known	0
Person factor not known	0
Person travel day not known	0
Hhold travel day not known	0
Not known whether travelled	104
Negative delay	15

	1st qnaire	2nd qnaire	1st+2nd	Non-resps
Persons:	3967	562	4529	
Mobiles:	3454	474	3928	
Trips:	13526	1625	15151	
Trips/mobile	3.916	3.428	3.857	3.001

Overall trips/mobile (T_M) = 3.73690
weighted trips/resp. mobile (T_R) = 3.85792

tfactor (T_M/T_R) = 0.96863

Files: 600 605 610 615 Perth

Persons lost in stats:

No. of trips not known	0
Person factor not known	0
Person travel day not known	0
Hhold travel day not known	0
Not known whether travelled	129
Negative delay	0

	1st qnaire	2nd qnaire	1st+2nd	Non-resps
Persons:	4243	640	4883	
Mobiles:	3705	543	4248	
Trips:	15576	2030	17606	
Trips/mobile	4.204	3.738	4.145	3.324

Overall trips/mobile (T_M) = 4.02929
weighted trips/resp. mobile (T_R) = 4.14781

tfactor (T_M/T_R) = 0.97142

Files: 700 - Hobart

Persons lost in stats:

No. of trips not known	0
Person factor not known	0
Person travel day not known	0
Hhold travel day not known	0
Not known whether travelled	30
Negative delay	2

	1st qnaire	2nd qnaire	1st+2nd	Non-resps
Persons:	823	125	948	
Mobiles:	702	96	798	
Trips:	2753	317	3070	
Trips/mobile	3.922	3.302	3.847	2.780

Overall trips/mobile (T_M) = 3.71069
weighted trips/resp. mobile (T_R) = 3.84326

tfactor (T_M/T_R) = 0.96551

Files: 800 - Darwin

Persons lost in stats:

No. of trips not known	0
Person factor not known	0
Person travel day not known	0
Hhold travel day not known	0
Not known whether travelled	44
Negative delay	5

	1st qnaire	2nd qnaire	1st+2nd	Non-resps
Persons:	818	154	972	
Mobiles:	747	130	877	
Trips:	3301	488	3789	
Trips/mobile	4.419	3.754	4.320	3.189

Overall trips/mobile (T_M) = 4.07171
weighted trips/resp. mobile (T_R) = 4.31993

tfactor (T_M/T_R) = 0.94254

Files: 250 260 270 280 290 340 345 350 360 370 380 450 460
470 480 550 570 580 650 670 680 690 750 850
Rest of Australia

Persons lost in stats:

No. of trips not known	0
Person factor not known	0
Person travel day not known	0
Hhold travel day not known	0
Not known whether travelled	259
Negative delay	18

	1st qnaire	2nd qnaire	1st+2nd	Non-resps
Persons:	7246	1317	8563	
Mobiles:	6150	1075	7225	
Trips:	25122	3835	28957	
Trips/mobile	4.085	3.567	4.008	3.116

Overall trips/mobile (T_A) = 3.86191
weighted trips/resp. mobile (T_R) = 4.01013

tfactor (T_A/T_R) = 0.96304

6.2 Effect of Adjustment Factors

This section reports all unfactored statistics examined during the adjustment process -- both raw data and percentages, and then reports the corresponding tables after adjustment for comparative purposes. Note that the number of households/persons in each table is thenumber of households/persons for which data about the variables in the table is known.

SEASONAL VARIATION - numbers, unfactored

	Spring	Summer	Autumn	Winter	TOTAL
ACT	120	122	108	132	482
NSW	996	1139	1050	1145	4330
VIC	1188	1243	1185	1289	4905
QLD	755	743	642	773	2913
SA	552	535	544	552	2183
WA	615	588	551	604	2358
TAS	154	155	128	146	583
NT	106	116	115	127	464
TOTAL	4486	4641	4323	4768	18218

SEASONAL VARIATION - numbers, factored

	Spring	Summer	Autumn	Winter	TOTAL
ACT	120.5	120.5	120.5	120.5	482.1
NSW	1082.7	1083.2	1082.5	1080.9	4329.3
VIC	1227.2	1226.8	1227.7	1223.3	4905.0
QLD	728.6	728.1	728.7	727.4	2912.8
SA	545.9	545.7	545.6	545.9	2183.2
WA	589.8	589.8	589.6	588.9	2358.0
TAS	145.7	145.7	145.8	145.7	582.9
NT	116.0	116.0	116.0	116.0	463.9
TOTAL	4556.3	4555.9	4556.4	4548.5	18217.1

DAY-OF-WEEK VARIATION - numbers, unfactored

	MON	TUE	WED	THU	FRI	SAT	SUN	TOTAL
ACT	64	70	75	68	63	69	73	482
NSW	617	649	623	629	612	605	595	4330
VIC	698	703	682	714	713	709	686	4905
QLD	409	412	421	419	418	413	421	2913
SA	302	313	310	337	314	305	302	2183
WA	331	327	366	345	325	339	325	2358
TAS	85	89	75	93	88	82	71	583
NT	66	64	67	76	63	55	73	464
TOTAL	2572	2627	2619	2681	2596	2577	2546	18218

DAY-OF-WEEK VARIATION - numbers, factored

	MON	TUE	WED	THU	FRI	SAT	SUN	TOTAL
ACT	63.5	69.8	75.0	68.6	62.9	69.3	73.0	482.1
NSW	615.6	647.6	623.4	625.6	610.5	608.3	598.3	4329.3
VIC	699.0	702.6	681.0	713.4	713.7	710.5	684.7	4905.0
QLD	409.7	413.2	420.5	417.6	417.3	415.1	419.3	2912.8
SA	302.0	313.0	310.1	336.9	314.2	304.9	302.1	2183.2
WA	331.6	326.7	366.4	344.8	325.0	338.8	324.6	2358.0
TAS	85.2	88.6	74.7	92.8	87.8	82.4	71.3	582.9
NT	66.7	64.4	66.9	75.3	62.7	54.8	73.1	463.9
TOTAL	2573.4	2625.9	2618.1	2675.1	2594.2	2584.1	2546.3	18217.1

HOUSEHOLD SIZE VARIATION - numbers, unfactored

	1	2	3	4	5	6	7	8+	TOTAL
ACT	40	128	100	121	66	25	2	0	482
NSW	776	1426	714	811	416	145	26	13	4327
VIC	888	1570	777	976	480	161	28	15	4895
QLD	547	971	501	532	253	78	18	11	2911
SA	390	767	386	416	158	53	7	5	2182
WA	400	784	390	472	230	69	10	4	2359
TAS	124	199	97	98	50	14	0	1	583
NT	51	136	90	110	52	19	5	1	464
TOTAL	3216	5981	3055	3536	1705	564	96	50	18203

HOUSEHOLD SIZE VARIATION - numbers, factored

	1	2	3	4	5	6	7	8+	TOTAL
ACT	39.9	128.3	100.4	120.4	66.2	24.7	2.1	0.0	482.1
NSW	776.7	1428.5	711.7	811.1	413.7	145.6	25.7	13.4	4326.5
VIC	889.0	1570.7	776.4	974.8	479.5	161.1	28.3	15.2	4895.0
QLD	549.3	971.2	501.2	528.6	251.8	79.8	17.8	11.1	2910.9
SA	389.8	767.5	386.0	415.8	158.1	52.9	7.0	5.0	2182.2
WA	400.9	783.7	389.3	472.5	229.9	68.7	10.0	3.9	2359.0
TAS	124.3	198.3	96.9	98.5	50.1	13.8	0.0	0.9	582.9
NT	50.8	135.4	90.4	110.5	52.2	18.6	5.2	0.9	463.9
TOTAL	3220.8	5983.5	3052.4	3532.2	1701.6	565.3	96.1	50.4	18202.4

AGE/SEX SUMMARY - numbers, unfactored

	9-15	16-29	30-49	50-64	65+	TOTAL
ACT						
Male	115	154	229	106	28	632
Female	103	160	258	98	29	648
NSW						
Male	660	1157	1623	937	613	4990
Female	650	1189	1647	986	740	5212
VIC						
Male	716	1436	1831	1010	670	5663
Female	706	1458	1884	1058	771	5877
QLD						
Male	397	858	1030	562	396	3243
Female	428	837	1104	615	502	3486
SA						
Male	310	614	750	501	324	2499
Female	302	575	779	523	349	2528
WA						
Male	377	662	900	467	280	2686
Female	342	710	955	468	309	2784
TAS						
Male	77	168	185	122	91	643
Female	82	158	200	139	109	688
NT						
Male	103	144	269	60	12	588
Female	97	162	232	48	7	546
TOTAL						
Male	2755	5193	6817	3765	2414	20944
Female	2710	5249	7059	3935	2816	21769

	AGE/SEX SUMMARY - numbers, factored					
	9-15	16-29	30-49	50-64	65+	TOTAL
ACT						
Male	114.4	153.7	226.6	105.9	29.1	629.7
Female	101.5	159.1	259.0	101.3	30.6	651.4
NSW						
Male	656.6	1147.2	1608.5	933.6	624.0	4969.9
Female	645.7	1184.9	1642.9	995.5	758.5	5227.6
VIC						
Male	715.0	1428.2	1823.5	1008.5	676.0	5651.2
Female	703.7	1455.0	1881.9	1063.3	781.6	5885.5
QLD						
Male	394.1	854.2	1023.7	562.3	402.5	3236.7
Female	426.1	833.9	1101.9	616.9	510.4	3489.3
SA						
Male	308.5	611.5	746.4	501.3	326.6	2494.2
Female	301.4	572.4	778.3	527.4	354.1	2533.6
WA						
Male	375.8	658.7	896.3	466.6	281.9	2679.3
Female	340.3	709.3	952.7	470.5	313.8	2786.6
TAS						
Male	76.7	165.0	184.7	120.6	93.5	640.5
Female	81.6	157.4	199.6	139.2	112.5	690.3
NT						
Male	101.8	143.0	266.3	60.1	12.5	583.7
Female	98.1	161.3	232.6	50.6	8.0	550.6
TOTAL						
Male	2742.9	5161.5	6776.0	3758.8	2446.1	20885.2
Female	2698.4	5233.2	7048.9	3964.7	2869.7	21814.9

% MOBILE SUMMARY - numbers, unfactored

	1st qnr	1st rem	2nd rem	3rd rem	4th rem	TOTAL
ACT						
Mobile	873	117	56	107	19	1172
Non-mobile	79	8	5	15	4	111
NSW						
Mobile	6162	876	502	1000	273	8813
Non-mobile	1000	173	88	220	60	1541
VIC						
Mobile	6785	1129	435	1345	269	9963
Non-mobile	1088	188	99	265	48	1688
QLD						
Mobile	4059	655	244	696	134	5788
Non-mobile	862	125	69	163	25	1244
SA						
Mobile	3204	449	269	472	89	4483
Non-mobile	433	86	54	94	10	677
WA						
Mobile	3576	492	228	503	112	4911
Non-mobile	487	92	44	92	21	736
TAS						
Mobile	807	135	29	130	21	1122
Non-mobile	133	32	4	29	9	207
NT						
Mobile	722	105	41	123	26	1017
Non-mobile	64	13	5	24	2	108
TOTAL						
Mobile	26188	3958	1804	4376	943	37269
Non-mobile	4146	717	368	902	179	6312

% MOBILE SUMMARY - numbers, factored						
	1st qnr	1st rem	2nd rem	3rd rem	4th rem	TOTAL
ACT						
Mobile	856.0	116.6	54.2	107.1	18.1	1152.0
Non-mobile	93.1	9.2	5.8	17.8	4.7	130.5
NSW						
Mobile	6064.8	868.0	493.0	984.0	267.9	8677.7
Non-mobile	1083.8	187.7	95.6	237.2	66.4	1670.7
VIC						
Mobile	6733.6	1123.0	431.5	1339.5	268.0	9895.6
Non-mobile	1129.3	195.3	102.6	275.7	50.1	1752.9
QLD						
Mobile	4027.4	649.0	242.8	689.8	133.8	5742.7
Non-mobile	893.8	126.9	71.3	169.9	25.8	1287.7
SA						
Mobile	3176.2	445.2	267.3	468.7	88.5	4445.9
Non-mobile	456.6	90.7	56.9	99.1	10.5	713.8
WA						
Mobile	3547.5	488.3	226.5	497.4	111.6	4871.3
Non-mobile	511.3	96.5	46.6	96.7	22.0	773.1
TAS						
Mobile	793.6	131.3	29.0	125.8	19.9	1099.6
Non-mobile	147.4	35.1	4.2	31.3	10.0	228.0
NT						
Mobile	701.0	102.9	40.2	120.9	24.9	990.0
Non-mobile	79.6	15.6	6.1	30.5	2.5	134.4
TOTAL						
Mobile	25900.2	3924.3	1784.5	4333.3	932.6	36874.9
Non-mobile	4394.8	757.0	389.2	958.1	192.1	6691.2

TRIPS/MOBILE SUMMARY - unfactored

	1st qnr	1st rem	2nd rem	3rd rem	4th rem	TOTAL
ACT	4.316	4.359	3.536	3.785	3.842	4.227
NSW	3.808	3.669	3.398	3.427	3.689	3.724
VIC	3.989	3.609	3.395	3.465	3.413	3.834
QLD	3.890	3.595	3.193	3.319	3.799	3.757
SA	3.980	3.753	3.654	3.411	3.618	3.870
WA	4.263	4.047	3.846	3.606	4.420	4.159
TAS	3.933	3.704	3.793	3.515	2.857	3.833
NT	4.445	4.133	3.902	3.683	3.538	4.275
OTAL	3.989	3.730	3.487	3.459	3.686	3.867
Total trips per person	3.444	3.158	2.896	2.868	3.098	3.307

TRIPS/MOBILE SUMMARY - factored

	1st qnr	1st rem	2nd rem	3rd rem	4th rem	TOTAL
ACT	4.179	4.216	3.463	3.654	3.741	4.093
NSW	3.733	3.601	3.344	3.366	3.608	3.652
VIC	3.838	3.475	3.269	3.334	3.285	3.689
QLD	3.779	3.481	3.088	3.205	3.687	3.645
SA	3.853	3.628	3.535	3.301	3.504	3.746
WA	4.140	3.932	3.732	3.508	4.292	4.039
TAS	3.794	3.588	3.643	3.384	2.754	3.700
NT	4.207	3.916	3.638	3.472	3.315	4.041
TOTAL	3.867	3.616	3.384	3.350	3.575	3.749
Total trips per person	3.306	3.031	2.778	2.744	2.965	3.173

APPENDIX H

Data Available from the Survey

1. DATA AVAILABLE FROM THE SURVEY

The data available from the survey is described in broad terms in Section 3.1 of the main report. Further details are given here.

1.1 Contents of Data Diskettes

Although the description which follows is on the 1st diskette described above, it is considered useful to repeat this information in this Appendix.

Data Files

Logically there are four files:

HOUSEHOLD FILE
PERSON FILE
TRIP FILE
TRIP MODES FILE.

The Household File has a record for each address to which a questionnaire was sent, regardless of the outcome. Of course, certain fields contain data only if a response was subsequently received. The key in each record of the Household File is the seven-digit sample/dwelling number.

The Person File has a record for each person reported in full or partial responses. Each record in the Person File corresponds to a record in the Household File; several consecutive records in the Person File may belong to the same household record. The key in each record of the Person File is nine digits long, and consists of the seven-digit sample/dwelling number followed by a two-digit person number (consecutively from 01 within each household).

The Trip File has a record for each trip reported by persons whose data is in the Person File. Each record in the Trip File corresponds to a record in the Person File; several consecutive records in the Trip File may belong to the same person record. The key in each record of the Trip File is eleven digits long, and consists of the nine-digit person key, followed by a two-digit trip number (consecutively from 01 for each person's trips).

The Trip Modes File has a record for each travel mode used in each trip reported in the Trip File. Each record in the Trip Modes File corresponds to a record in the Trip File; several consecutive records in the Trip Modes File may belong to the same trip record. The key in each record of the Trip Modes File is twelve digits long, and consists of the eleven-digit trip key, followed by a single-digit mode number (consecutively from 1 for each mode in a trip).

Record Layouts

HOUSEHOLD FILE:

Positions	Length	Contents
1-7	7	Household key - 7 digits, consisting of
1-4	4	Sample number - 4 digits, 1001-8520.
5-7	3	Dwelling number - 3 digits, 001-999.
8-9	2	Number of people in household.
10-11	2	Number in household younger than five.
12-13	2	Number in household aged five to eight.
14-15	2	Number in household aged nine or over.
16	1	Telephone - 1=yes, 0=no.
17-18	2	Number of bicycles.
19-20	2	Number of motor-cycles.
21-22	2	Number of cars.
23-24	2	Number of other vehicles.
25-27	3	Travel day originally assigned (Note 2).
28-30	3	Travel day actually reported (Note 2).
31-33	3	Questionnaire returned day number (Note 2).
34-36	3	Comment code.
37-38	2	Response status.
39-42	4	Postcode.
43-46	4	Household weighting factor (3 dec places).

PERSON FILE:

Positions	Length	Contents
1-7	7	Household key - as in Household File.
8-9	2	Person number - 2 digits.
10-11	2	Year of birth - 2 digits (00 if pre-1900).
12-13	2	Age at survey date (99 if 100+).
14	1	Sex (1=male, 2=female).
15	1	Country of birth.
16	1	Education.
17-24	8	Employment status - 0 or 1 (N/Y) for each.
25	1	Car licence (0=no, 1=yes).
26	1	Truck licence (0=no, 1=yes).
27	1	Motor-cycle licence (0=no, 1=yes).
28-29	2	Number of trips.
30	1	Trip origin (1=home, 2=elsewhere).
31	1	Reason for no travel.
32-34	3	Travel day for this person (see Note 2).
35-38	4	Person weighting factor (3 dec places).

TRIP FILE:

Positions	Length	Contents
1-7	7	Household key - as in Household File.
8-9	2	Person number - as in Person File.
10-11	2	Trip number - two digits.
12-15	4	Trip start time (see Note 3).
16-19	4	Trip duration (minutes).
20-21	2	Trip purpose (1-14).
22-35	14	Trip modes - 0 or 1 (N/Y) for each mode.
36-39	4	Trip distance (in 100 metres)
40-43	4	Trip weighting factor (3 dec places).

TRIP MODES FILE:

Positions	Length	Contents
1-7	7	Household key - as in Household File.
8-9	2	Person number - as in Person File.
10-11	2	Trip number - as in Trip File.
		Mode number - one digit.
13-14		Trip mode (01-14).
15-18	4	Duration (minutes).
19-22	4	Distance (in 100 metres).

Notes:

(1) Where not stated otherwise, numeric fields are right-adjusted and may have leading blanks.

(2) Day numbers are sequential ... day 1 is 1st Aug 1985. Negative numbers will not occur.

(3) Trip times are 0000 to 2400 for the travel day itself, and extend above 2400 for times on the following day.

2. ADDITIONAL CODING NOTES

THE SAMPLE NUMBER

Each household is identified by a unique sample or identification number which gives information on state and region within the state.

- The first digit represents the state (ACT=1, N.S.W=2, Vic=3, Qld=4, S.A.=5, W.A.=6, Tas=7, N.T.=8)
- Digits 2-4 represent the region within the state:
  - 001 - 400 = city (e.g. Sydney)
  - 401 - 499 = Rural in the case of Victoria only
  - 500 - 599 = provincial city (e.g. Newcastle)
  - 600 - 699 = "coastal" (e.g. Nowra)
  - 700 - 799 = rural town - urban (e.g. Dubbo - urban)
  - 800 - 899 = rural town - rural (e.g. Dubbo - rural)
  - 900 - 999 = sparse (e.g. Brewarrina)
- Digits 5-7 are unique dwelling numbers within the above regions.

HOUSEHOLD CODING

Comment Code Columns 34-36

Unopened letters, completely blank questionnaires and other non-phone call codes

001 = No such address, vacant lot/land (reason: bad blocklisting)
002 = Vacant dwelling/householder deceased

003 = Refusal note on envelope
004 = Completely blank forms returned
005 = Forms blank/no forms, with refusal note
006 = Forms blank with other explanation (e.g. too old, away during whole survey period, etc.)
008 = No household forms returned
009 = Information from whole household returned unusable.
010 = No such address for original travel day. Fixed address from block list, assigned new travel day
020 = Took part in pilot

Comment Codes for Phone Calls

101 = Request for more Person Forms
102 = Questionnaire lost by respondent and re-sent
103 = Questionnaire returned by household, but lost in post
104 = Filled out on phone

111 = No household at that address (e.g. neighbour called)
112 = Questions on how to fill in the Form
113 = Questions about the travel day (e.g. I won't be home, not a usual day)
114 = Questions about the sample selection
115 = General information
116 = Language problems which were solved
117 = Language problems which were not solved
118 = Respondents not there for the entire survey period.
120 = Took part in pilot

131 = Refusal to take part for age reasons
132 = Refusal to take part for reasons of language difficulty
133 = Outright refusal
134 = Refusal to take part for health reasons
135 = Refusal to take part due to death in family

If the phone call was on the 008 phone, the number is prefaced with an 8 instead of with a 1.

Comment Codes for General Letters Received

As for above but prefaced with a 2, e.g. 231 is a letter in which there was a refusal for age reasons.

Response Status Columns 37-38

01 Responding household

02 Non-responding household - no information

Known Refusals
10 Refusal note on envelope
11 Completely blank forms returned
12 Forms blank with refusal note on forms
13 Forms blank with other explanation
14 Unsolved language problems
15 Phone refusal for age reasons
16 Phone refusal for language reasons
17 Outright phone refusal
18 Phone refusal for health reasons
19 Phone refusal due to death in family
24 Letter with unsolved language problems
25 Letter refusing for age reasons
26 Letter refusing for language reasons
27 Letter refusing outright
28 Letter refusing for health reasons
29 Letter refusing due to death in family

Sample Loss
31 Returned in mail - no such address
32 Returned in mail - vacant dwelling
33 Returned in mail - took part in pilot
34 Phone message - no such address
35 Phone message - respondents not there for entire survey period
36 Phone message - took part in pilot
37 Letter - no such address
38 Letter - vacant dwelling
39 Letter - took part in pilot

PERSON FILE

Country of Birth Column 15

1 Australia
2 UK/Ireland
3 New Zealand
4 Greece
5 Italy
6 Yugoslavia
7 Vietnam
8 Other

Education - Highest Level of Schooling Attended Column 16

0 No schooling
1 Primary School
2 Secondary School
3 University, Technical or Business College

Employment Status Columns 17-24

Currently Not Employed
Column 17 - Home Duties
Column 18 - Looking for Work
Column 19 - Retired/Age Pensioner
Column 20 - Other not employed

Currently Studying
Column 21 - Full time
Column 22 - Part time

Currently Employed
Column 23 - Part time or Casual work
Column 24 - Full time Work

Reason for No Trips Column 31

0 No information on trips
1 Own illness
2 Other family member's illness
3 Weather (e.g. too wet, too hot)
4 Studying, doing other things at home
5 Had visitors
6 Not at home, but in one place all day
7 A transport problem (e.g. car broke down, strike)
8 Other, including out of the area, overseas
9 Preferred to stay home, no need to go out, nowhere to go

TRIP CODING

Trip Purpose Columns 20-21

Note: Exact definitions appear in the Procedures Manual

01 Work
02 Education
03 Shopping
04 Home
05 To pick-up/drop off someone
06 Business as part of work
Personal Business
07 Medical/Dental
08 Private Business (e.g. bank, accountant, lawyer)
09 "Social Welfare" (e.g. looking for work, pick up dole, marriage guidance.
10 Services (e.g. hairdresser, repairs)
Social/Recreational Purposes
11 Visits to friend/relatives
12 Sport - watching or playing - active or passive
13 Other social/recreational (pub, restaurant, movies, concert, club, hobbies (not sport)

14 Other

Trip Mode Columns 13-14

01 Walk
02 Bicycle
03 Bus
04 Train
05 Tram
06 Taxi
07 Ferry
08 Motor Bike
09 Car Driver
10 Car Passenger
11 Truck
12 Semi-trailer
13 Other (incl. plane)

ADDRESS FILES

The address files are of the following format:

Columns 2-8	Sample No.
Columns 9-11	Original travel day
Columns 12-26	Street No., Lot, or Name in some cases
Columns 27-56	Street Name
Columns 57-76	Suburb/Town
Columns 77-80	Postcode

MATSCAP FILE NUMBERS

100	A.C.T.
200 205 210 215 220 225 230 235	Sydney
250	Newcastle
260	Nowra
270	Dubbo - urban
280	Dubbo - rural
290	Brewarrina
300 305 310 315 320 325 330 335	Melbourne
340 345	Victoria - rural
350	Geelong
360	Warrnambool
370	Bendigo - urban
380	Bendigo - rural
400 405 410 415 420	Brisbane
450	Townsville
460	Gold Coast
470	Charters Towers - urban
480	Charters Towers - rural
500 505 510 515	Adelaide
550	Whyalla
570	Maitland - urban
580	Maitland - rural
600 605 610 615	Perth
650	Geraldton
670	Esperance - urban
680	Esperance - rural
690	Kalgoorlie
700	Hobart
750	Burnie/Wynyard
800	Darwin
850	Alice Springs