

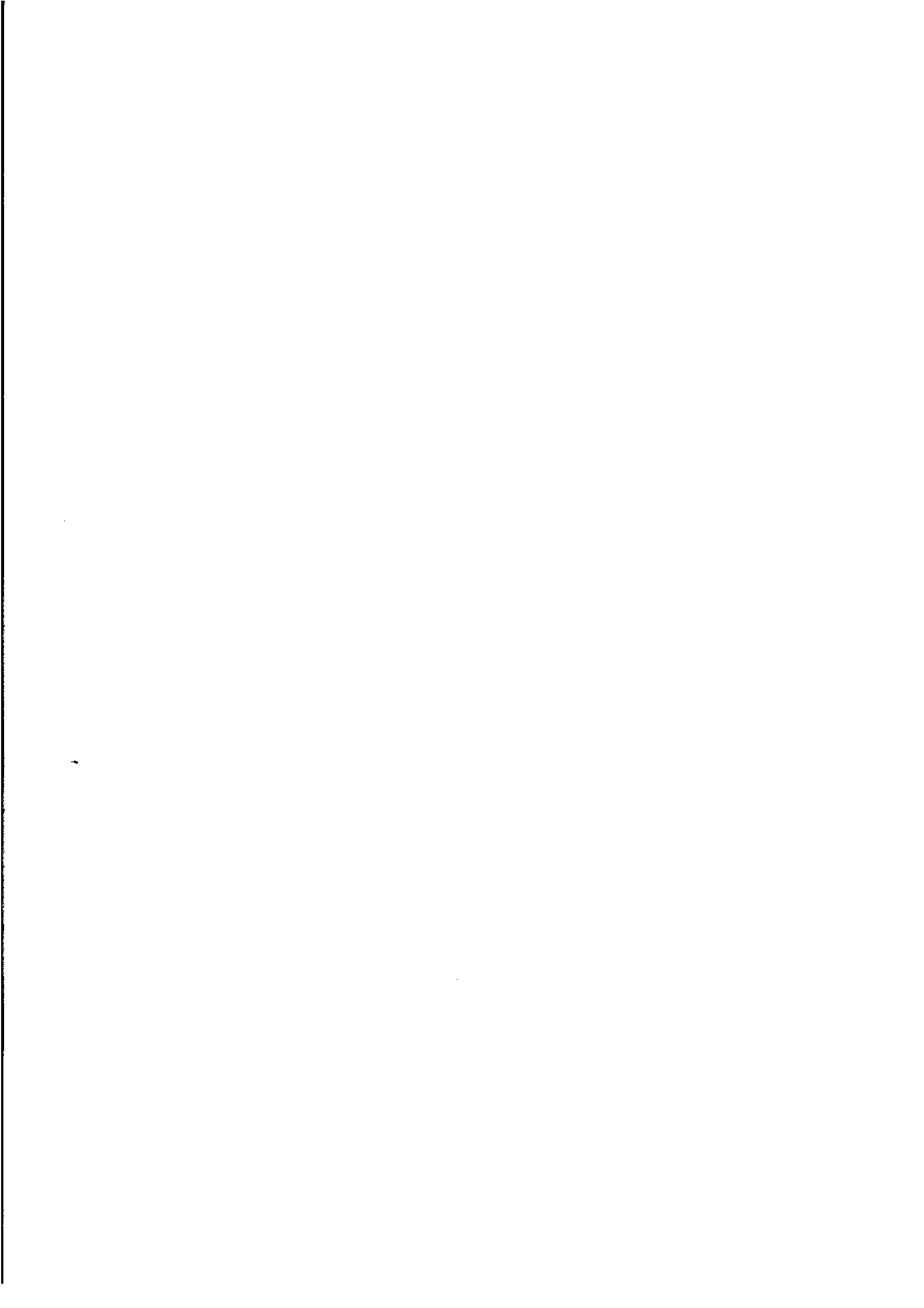


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# **Conservation of Energy, Water and the Environment**

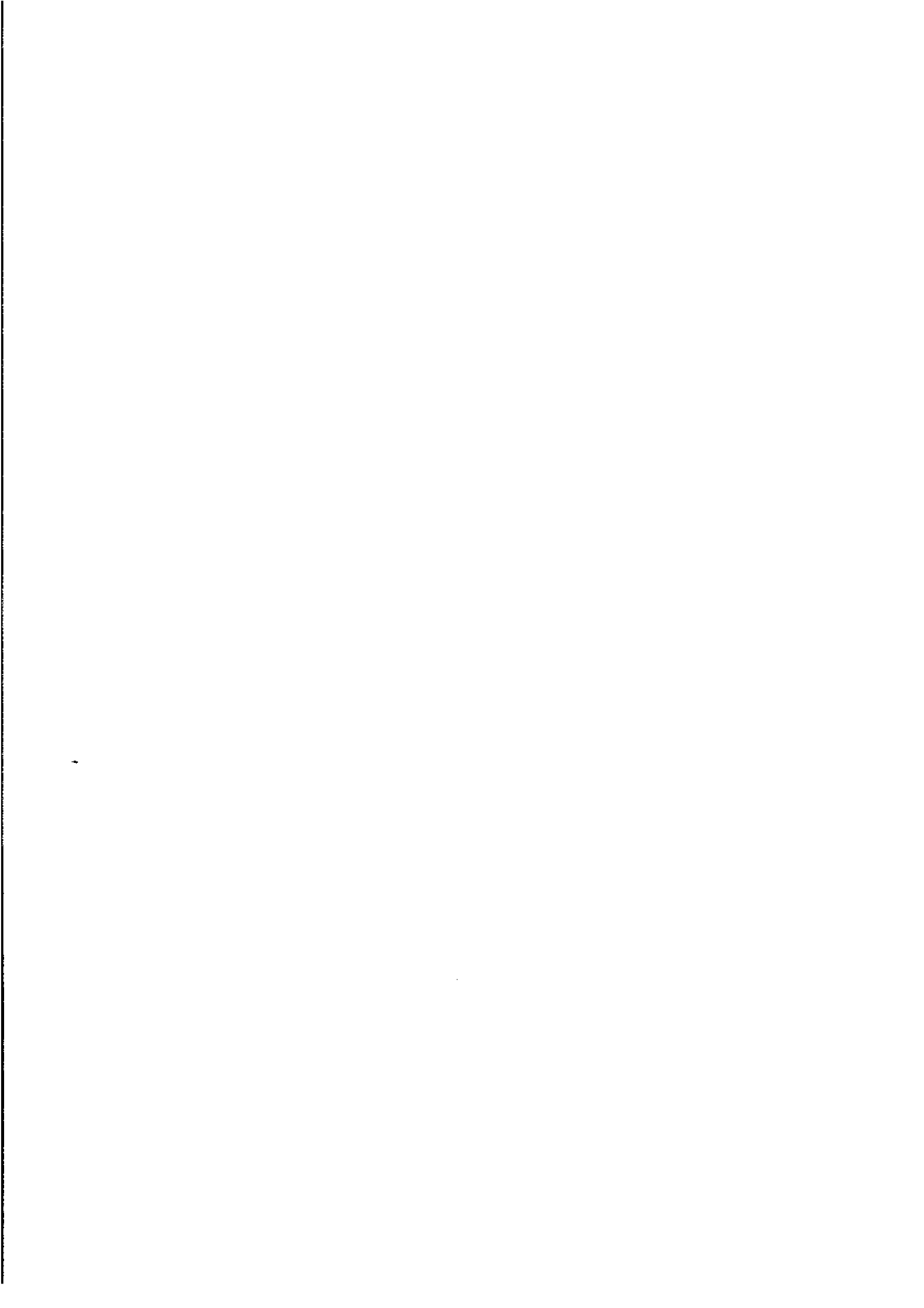
**Perth Statistical Division**

**November 1992**



**Conservation of Energy,  
Water and the Environment**  
**Perth Statistical Division**  
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**INQUIRIES** •Contact John Bissett on (09) 360 5235 for further information about statistics in this publication and the availability of related statistics.

•For information about other ABS statistics and services, please refer to the back page of this publication.

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## Comparison with previous surveys

The proportion of households using gas for either cooking, room heating or water heating increased between 1985-86 and November 1992. The proportion of households using gas hotplates increased from 36.7 per cent to 43.9 per cent; those using gas ovens increased from 29.1 per cent to 35.2 per cent; those using gas room heating increased from 21.2 per cent to 35.5 per cent and those using gas water heating increased from 30.6 per cent to 45.1 per cent.

Microwave ovens were in 69.6 per cent of households according to the November 1992 survey compared with 34.1 per cent in 1985-86.

Some 82.9 per cent of households reported having an automatic washing machine in the November 1992 survey compared to 63.6 per cent in June 1983. Over the same period the proportion of households with washing machines, other than automatic, decreased from 27.3 per cent to 11.1 per cent.

Households with clothes dryers increased from 30.6 per cent of households in June 1983 to 44.5 per cent in November 1992.

Wood/solid fuel as a source of main heating increased from 20.6 per cent of households in 1985-86 to 24.1 per cent by November 1992.

The proportion of households using solar hot water systems increased from 21.5 per cent to 25.0 per cent between June 1983 and 1985-86. There had been little change since, with 24.1 per cent of households indicating they used solar hot water in the November 1992 survey.

Roof or ceiling insulation was reported in 45.7 per cent of dwellings in 1985-86 and this increased to 55.3 per cent of dwellings by November 1992.

TABLE 1. HOUSEHOLDS: APPLIANCES/FACILITIES BY YEAR (a)

	<i>June 1983(b)</i>	<i>1985-86(c)</i>	<i>Nov. 1992</i>	<i>June 1983</i>	<i>1985-86</i>	<i>Nov. 1992</i>
	<i>Number of households ('000)</i>			<i>Proportion of households (per cent)</i>		
Refrigerator	317.8	346.4	448.2	99.9	99.7	99.8
Hotplates	n.a.	344.8	432.6	n.a.	99.3	96.3
Electric only	200.7	213.4	223.3	63.1	61.4	49.7
Gas only	115.1	127.5	197.2	36.2	36.7	43.9
Conventional Ovens						
Electric	211.3	213.4	280.6	66.4	60.5	62.5
Gas	101.0	127.5	157.9	31.7	29.1	35.2
Microwave oven	n.a.	118.5	312.7	n.a.	34.1	69.6
Dishwasher	n.a.	53.5	79.7	n.a.	15.4	17.8
Washing machine	289.3	319.3	422.2	90.9	91.9	94.0
Automatic	202.4	241.8	372.2	63.6	69.6	82.9
Other	86.9	77.5	50.0	27.3	22.3	11.1
Clothes dryer	97.5	123.3	199.9	30.6	35.5	44.5
Air conditioning	n.a.	131.6	177.8	n.a.	37.9	39.6
Main heating	n.a.	325.7	416.5	n.a.	93.8	92.8
Electric	n.a.	108.9	116.6	n.a.	31.3	26.0
Gas	n.a.	73.8	159.4	n.a.	21.2	35.5
Wood/solid fuel	n.a.	71.4	108.3	n.a.	20.6	24.1
Other	n.a.	71.7	32.3	n.a.	20.6	7.2
No heating	n.a.	21.7	32.5	n.a.	6.2	7.2
Water heating						
Electric	115.0	116.9	123.7	36.1	33.6	27.6
Gas	90.8	106.2	202.5	28.6	30.6	45.1
Solar	68.4	86.8	108.1	21.5	25.0	24.1
Other	29.1	20.5	14.3	9.1	5.9	3.2
Roof insulation	n.a.	158.9	248.1	n.a.	45.7	55.3
Swimming pool	n.a.	50.8	67.1	n.a.	14.6	14.9
Bore /well pump	n.a.	81.0	99.6	n.a.	23.3	22.2
Total households	318.2	347.4	449.0	100.0	100.0	100.0

See Explanatory Notes. (a) Numbers of households are not directly comparable for different years due to changes in collection methodology. Estimates of proportions of the population having a certain appliance, etc. are relatively independent of the methodology used. It is recommended that where comparisons are made across years that figures shown in 'Proportion of households (per cent)' be used. (b) Source National Energy Survey: Household Appliances, Facilities and Insulation Australia June 1983. (c) Source National Energy Survey Household Appliances, Facilities and Insulation, Australia 1985-86.

## Dwellings

It is estimated there were 449,000 occupied dwellings in the Perth Statistical Division at November 1992. Households reported 54.6 per cent of dwellings were less than 20 years old and 36.8 per cent of dwellings were 20 years or older; 8.5 per cent of households reported the age of dwellings as unknown.

## External walls

Dwellings with double brick external walls were reported by 86.4 per cent of households. Dwellings with double brick external walls accounted for 96.2 per cent of dwellings less than 20 years old. For dwellings 20 years or older, approximately 73.4 per cent had external double brick walls; 14.1 per cent had timber/fibro veneer walls and about 10.0 per cent had brick veneer walls.

TABLE 2. HOUSEHOLDS: TYPE OF EXTERNAL WALLS BY AGE OF DWELLING  
NOVEMBER 1992

Type of external walls	Age of dwelling								Age of dwelling							
	Less than 20 years							Total	20 years or more							Total
	Less than 5 years	5 to 9 years	10 to 14 years	15 to 19 years	20 to 29 years	30 to 39 years	40 years or more		Less than 5 years	5 to 9 years	10 to 14 years	15 to 19 years	20 to 29 years	30 to 39 years	40 years or more	
	Number of households ('000)								Proportion of all households (per cent)							
Double brick	59.2	64.0	57.2	55.6	78.1	42.8	31.1	387.9	97.7	97.9	94.6	94.5	74.4	70.7	80.9	86.4
Brick veneer	**0.2	**0.3	1.6	2.7	16.1	**0.5	3.6	25.0	**0.4	**0.5	2.7	4.5	15.3	**0.9	9.3	5.6
Timber/fibro veneer	*0.9	*1.1	**0.6	**0.6	10.5	12.8	2.5	28.8	*1.4	*1.6	**0.9	1.0	10.0	21.1	6.4	6.4
Other	**0.3	**	*1.1	**	**0.3	4.4	*1.3	7.3	**0.4	**	*1.8	**	**0.3	7.3	*3.4	1.6
<b>TOTAL</b>	60.5	65.4	60.5	58.8	104.9	60.6	38.4	449.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

See Explanatory Notes.

## Internal walls

Of the total households, 85.2 per cent reported dwellings with internal brick walls and 13.1 per cent had plasterboard/gyprock internal walls. For dwellings less than 20 years old, 94.7 per cent had brick internal walls and just 4.7 per cent had plasterboard gyprock internal walls. For dwellings 20 years or older, 72.4 per cent had brick internal walls and 24.1 per cent had plasterboard/gyprock internal walls.

TABLE 3. HOUSEHOLDS: TYPE OF INTERNAL WALLS BY AGE OF DWELLING  
NOVEMBER 1992

Type of internal walls	Age of dwelling								Age of dwelling							
	Less than 20 years							Total	20 years or more							Total
	Less than 5 years	5 to 9 years	10 to 14 years	15 to 19 years	20 to 29 years	30 to 39 years	40 years or more		Less than 5 years	5 to 9 years	10 to 14 years	15 to 19 years	20 to 29 years	30 to 39 years	40 years or more	
	Number of households ('000)								Proportion of all households (per cent)							
Brick	56.9	63.7	56.7	54.9	77.3	42.6	30.6	382.6	93.9	97.4	93.7	93.4	73.7	70.3	79.7	85.2
Plasterboard/gyprock	2.8	*1.4	3.5	3.9	25.6	14.3	7.3	58.8	4.7	*2.2	5.9	6.6	24.4	23.7	18.9	13.1
Other	*0.8	**0.3	**0.3	**	2.0	3.6	**0.5	7.6	*1.4	**0.4	**0.5	**	1.9	6.0	1.3	1.7
<b>TOTAL</b>	60.5	65.4	60.5	58.8	104.9	60.6	38.4	449.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

See Explanatory Notes.



## Roofs

Overall, 84.5 per cent of dwellings had tile roofs and 13.0 per cent had metal/fibro (asbestos) roofs. Of the dwellings with metal/fibro (asbestos) roofs, 64.8 per cent were 20 years or older. Dwellings being built with tile roofs had declined over the last 10 years. There has been an increase in dwellings built with metal/fibro (asbestos) roofs over the same period.

For dwellings 10 to 14 years old, 95.5 per cent had tile roofs and 3.3 per cent had metal/fibro (asbestos) roofs.

For dwellings less than 10 years old 89.2 per cent had tile roofs and 10.3 per cent had metal/fibro (asbestos) roofs.

**TABLE 4. HOUSEHOLDS: TYPE OF ROOF BY AGE OF DWELLING  
NOVEMBER 1992**

Type of roof	Age of dwelling								Age of dwelling											
	Less than 5 years				10 to 14 years				15 to 19 years				20 to 39 years				40 years or more			
	5 to 9 years	10 to 14 years	15 to 19 years	20 to 29 years	30 to 39 years	40 years or more	Do not know	Total	5 to 9 years	10 to 14 years	15 to 19 years	20 to 29 years	30 to 39 years	40 years or more	Do not know	Total				
	Number of households ('000)								Proportion of all households (per cent)											
Tile	53.6	58.7	57.8	54.5	84.1	40.9	30.1	379.5	88.5	89.8	95.5	92.7	80.2	67.4	78.4	84.5				
Metal/Fibro (asbestos)	6.9	6.1	2.0	2.6	18.6	19.2	2.9	58.3	11.5	9.3	3.2	4.4	17.7	31.7	7.7	13.0				
Other	**	*0.6	*0.8	1.8	2.2	**0.5	5.4	11.2	**	*0.9	*1.3	3.0	2.1	**0.8	14.0	2.5				
<b>TOTAL</b>	<b>60.5</b>	<b>65.4</b>	<b>60.5</b>	<b>58.8</b>	<b>104.9</b>	<b>60.6</b>	<b>38.4</b>	<b>449.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>				

See Explanatory Notes.

## Roof and ceiling insulation

Of the households surveyed, 55.2 per cent reported having roof or ceiling insulation; 33.1 per cent said they had no insulation and 11.7 per cent said they didn't know if the dwelling was insulated.

Households with a combined income of up to \$40,000 constituted 62.2 per cent of households. Of these, 50.6 per cent reported having insulation; 36.3 per cent said they had no insulation and 13.1 per cent said they didn't know.

For households with a combined income of over \$60,000, 70.3 per cent said they had insulation; 22.8 per cent reported no insulation and 7.1 per cent said they didn't know.

**TABLE 5. HOUSEHOLDS: WHETHER ROOF OR CEILING INSULATED BY TOTAL HOUSEHOLD INCOME  
NOVEMBER 1992**

Whether roof or ceiling is insulated	Household income						Household income					
	\$20,001 to \$40,000			\$40,001 to \$60,000			\$20,001 to \$40,000			\$40,001 to \$60,000		
	\$20,000 or less	\$40,000	\$60,000	\$20,000 or less	\$40,000	\$60,000 and over	\$20,000 or less	\$40,000	\$60,000	\$20,000 or less	\$40,000	\$60,000 and over
	Number of households ('000)						Proportion of all households (per cent)					
Yes	70.3	71.0	53.1	41.6	12.1	248.1	47.9	53.6	59.1	70.2	59.0	55.2
No	53.3	48.1	28.6	13.5	5.0	148.5	36.3	36.3	31.8	22.7	24.6	33.1
Do not know	23.3	13.4	8.2	4.2	3.4	52.4	15.9	10.1	9.1	7.1	16.4	11.7
<b>TOTAL</b>	<b>146.9</b>	<b>132.5</b>	<b>89.9</b>	<b>59.2</b>	<b>20.5</b>	<b>449.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

See Explanatory Notes.

## Type of Insulation

Insulation was installed in the roof or ceiling of 61.2 per cent of dwellings aged less than 40 years, while only 44.0 per cent of dwellings aged 40 years or more were insulated.

Of the households which reported having insulation, 78.5 per cent said they had batts or blow-in insulation; 10.7 per cent said they had other insulation (including sisalation and reflective insulation) and 10.8 per cent said they didn't know which type of insulation they had.

Separate houses were reported as having insulation in 61.6 per cent of cases. Of these, 79.0 per cent said they had batts or blow-in insulation; 10.8 per cent said they had other insulation and 10.2 per cent said they had insulation but didn't know which type.

For dwellings reported as semi-detached, row or terrace house, townhouse etc, 36.2 per cent had some form of insulation installed in the roof or ceiling.

**TABLE 6. HOUSEHOLDS: TYPE OF ROOF OR CEILING INSULATION BY AGE OF DWELLING  
NOVEMBER 1992**

Type of insulation	Age of dwelling								Age of dwelling											
	Less than 5 years				10 to 19 years				20 to 39 years				40 years or more				Do not know			
	Less than 5 years	5 to 9 years	10 to 14 years	15 to 19 years	20 to 24 years	25 to 29 years	30 to 34 years	35 to 39 years	Less than 5 years	5 to 9 years	10 to 14 years	15 to 19 years	20 to 24 years	25 to 29 years	30 to 34 years	35 to 39 years	40 years or more	Do not know		
	Number of households ('000)								Proportion of all households (per cent)											
Batts or blow-in	24.9	33.5	32.4	33.7	46.8	21.1	2.2	194.7	41.1	51.3	53.6	57.3	44.6	34.8	5.7	43.3				
Other(a)	4.0	5.7	2.2	3.2	8.1	2.2	* 1.2	26.6	6.7	8.7	3.6	5.4	7.7	3.6	* 3.0	5.9				
Do not know	2.6	4.4	4.4	3.6	4.6	3.4	3.9	26.9	4.3	6.7	7.3	6.1	4.4	5.7	10.1	6.0				
No insulation(b)	29.0	21.7	21.5	18.4	45.4	33.9	31.1	201.0	47.9	33.3	35.5	31.2	43.3	55.9	81.1	44.8				
<b>TOTAL</b>	<b>60.5</b>	<b>65.4</b>	<b>60.5</b>	<b>58.8</b>	<b>104.9</b>	<b>60.6</b>	<b>38.4</b>	<b>449.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>				

See Explanatory Notes. (a) Other includes sisalation, reflective foil and other. (b) Includes households who did not know if their dwelling was insulated.

**TABLE 7. HOUSEHOLDS: TYPE OF ROOF OR CEILING INSULATION BY DWELLING TYPE  
NOVEMBER 1992**

Type of insulation	Dwelling type				Dwelling type			
	Separate house		Semi-detached, row or terrace house, townhouse etc.		Separate house		Semi-detached, row or terrace house, townhouse etc.	
	Separate house	Semi-detached, row or terrace house, townhouse etc.	Other(a)	Total	Separate house	Semi-detached, row or terrace house, townhouse etc.	Other(a)	Total
	Number of households ('000)				Proportion of all households (per cent)			
Batts or blow-in	176.9	16.5	* 1.3	194.7	48.7	28.3	* 4.7	43.3
Other(b)	24.1	* 1.3	* 1.1	26.6	6.6	* 2.2	* 4.2	5.9
Do not know	22.8	3.3	* 0.8	26.9	6.3	5.7	* 2.9	6.0
No insulation(c)	139.6	37.1	24.3	201.0	38.4	63.8	88.3	44.8
<b>TOTAL</b>	<b>363.4</b>	<b>58.2</b>	<b>27.5</b>	<b>449.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

See Explanatory Notes. (a) Other includes flat or apartment in 1 to 4 storey block and other. (b) Other includes sisalation, reflective foil and other. (c) Includes households who did not know if their dwelling was insulated.

## No insulation

Of the households which reported no insulation, 30.8 per cent said it was due to cost; 26.5 per cent said it was because they were not the owner or were not responsible and 16.8 per cent said they believed it wouldn't make much difference.

For separate houses which reported no insulation, 35.1 per cent said it was due to cost. A further 58.1 per cent said it was due to one of the following reasons: doesn't make much difference (19.5 per cent); not owner/not responsible (19.4 per cent) and other (19.2 per cent).

For dwellings classified as semi-detached, row or terrace houses, town house etc. who reported no insulation, 39.0 per cent gave the reason that they were not the owner or were not responsible.

Where a house was owned or being purchased by the householder and the householder reported no insulation, cost was the reason given by 43.0 per cent of respondents. A further 23.7 per cent said they believed insulation wouldn't make much difference.

Where the dwelling was rented, 84.3 per cent of respondents gave the reason not owner/not responsible.

**TABLE 8. HOUSEHOLDS: REASON NO ROOF OR CEILING INSULATION BY DWELLING TYPE  
NOVEMBER 1992**

Reason	Dwelling type				Dwelling type			
	Separate house	Semi detached, row or terrace house, townhouse etc.	Other(a)	Total	Separate house	Semi detached, row or terrace house, townhouse etc.	Other(a)	Total
	Number of households ('000)				Proportion of households (per cent)			
Cost	39.4	5.7	**0.6	45.7	35.1	22.9	**5.2	30.8
Not owner/not responsible	21.8	9.7	7.8	39.3	19.4	39.0	67.2	26.5
Does not make much difference	21.9	2.7	**0.3	24.9	19.5	10.8	**2.6	16.8
Other	21.5	5.1	1.7	28.3	19.2	20.5	14.7	19.1
Do not know	7.4	1.6	*1.3	10.4	6.6	6.4	*11.2	7.0
TOTAL	112.1	24.9	11.6	148.5	100.0	100.0	100.0	100.0

See Explanatory Notes. (a) Other includes flats or apartments in 1 to 4 storey blocks and other.

**TABLE 9. HOUSEHOLDS: REASON NO ROOF OR CEILING INSULATION BY TYPE OF OCCUPANCY  
NOVEMBER 1992**

Reason	Type of occupancy				Type of occupancy			
	Owner/being purchased	Rented	Other	Total	Owner/being purchased	Rented	Other	Total
	Number of households ('000)				Proportion of households (per cent)			
Cost	43.8	1.9	**	45.7	43.0	4.2	**	30.8
Not owner/not responsible	*0.9	38.2	**0.3	39.3	*0.9	84.3	**23.1	26.5
Does not make much difference	24.1	**0.3	**0.5	24.9	23.7	**0.7	**38.5	16.8
Other	25.8	2.0	**0.5	28.3	25.3	4.4	**38.5	19.1
Do not know	7.3	3.0	**	10.4	7.2	6.6	**	7.0
TOTAL	101.9	45.3	*1.3	148.5	100.0	100.0	100.0	100.0

See Explanatory Notes.

## Heating of main room

Natural gas was used in main room heating in 35.5 per cent of households, electricity was used by 26.0 per cent and firewood by 24.1 per cent. There were 32,500 households (7.2 per cent) which had no main room heating.

Separate houses constituted 80.9 per cent of dwellings. Natural gas main room heating was used in 36.3 per cent of separate houses, firewood in 28.8 per cent, electricity in 21.4 per cent and 5.5 per cent had no heating.

Semi-detached, row or terrace houses, townhouses etc., constituted 13.0 per cent of dwellings. Electrical heating was used by 43.5 per cent and natural gas heating was used by 38.9 per cent. Firewood was used by 5.4 per cent and 8.5 per cent had no heating.

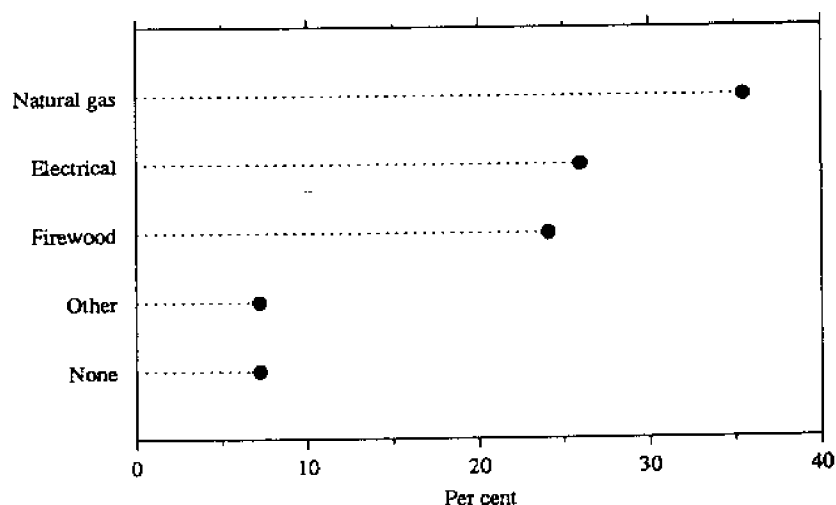
Other dwellings including flats or apartments in 1 to 4 storey blocks constituted 6.1 per cent of dwellings. Electrical heating was used by 49.1 per cent of other dwellings; natural gas heating was used by 17.1 per cent and 27.6 per cent had no heating.

**TABLE 10. HOUSEHOLDS: SOURCE OF HEATING OF MAIN ROOM BY DWELLING TYPE  
NOVEMBER 1992**

Source of heating	Dwelling type				Dwelling type			
	Separate house	Semi-detached, row or terrace house, townhouse etc.	Other(a)	Total	Separate house	Semi-detached, row or terrace house, townhouse etc.	Other(a)	Total
	Number of households ('000)				Proportion of all households (per cent)			
Natural gas (mains)	132.1	22.6	4.7	159.4	36.3	38.9	17.1	35.5
Electrical	77.8	25.3	13.5	116.6	21.4	43.5	49.1	26.0
Firewood	104.8	3.2	**0.3	108.3	28.8	5.4	**1.1	24.1
Other	28.8	2.1	* 1.4	32.3	7.9	3.6	* 5.0	7.2
None	20.0	4.9	7.6	32.5	5.5	8.5	27.6	7.2
<b>TOTAL</b>	<b>363.4</b>	<b>58.2</b>	<b>27.5</b>	<b>449.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

See Explanatory Notes. (a) Other includes flat or apartment in 1 to 4 storey block and other.

**PROPORTION OF ALL HOUSEHOLDS BY SOURCE OF HEATING, NOVEMBER 1992**



## Air conditioning

At the time of the survey, 39.6 per cent of dwellings had one or more air conditioners. For dwellings reported as separate houses, the proportion was 43.9 per cent and for semi-detached, row or terrace houses, town houses etc., it was 25.2 per cent.

For households in separate houses which reported air conditioning, 37.3 per cent had reverse cycle air conditioning; 36.0 per cent had refrigerated air conditioning and 25.0 per cent had evaporative air conditioning.

**TABLE 11. HOUSEHOLDS: NUMBER OF AIR CONDITIONERS BY DWELLING TYPE  
NOVEMBER 1992**

Number of air conditioners	Dwelling type				Dwelling type			
	Separate house	Semi-detached, row or terrace house, townhouse etc.	Other(a)	Total	Separate house	Semi-detached, row or terrace house, townhouse etc.	Other(a)	Total
	Number of households ('000)				Proportion of all households (per cent)			
One	131.5	13.4	2.8	147.7	36.2	23.1	10.0	32.9
Two or more	27.9	* 1.3	* 0.9	30.1	7.7	* 2.3	* 3.2	6.7
None	204.0	43.4	23.9	271.3	56.1	74.7	86.8	60.4
<b>TOTAL</b>	<b>363.4</b>	<b>58.2</b>	<b>27.5</b>	<b>449.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

See Explanatory Notes. (a) Other includes flat or apartment in 1 to 4 storey block and other.

**TABLE 12. HOUSEHOLDS: TYPE OF AIR CONDITIONER BY DWELLING TYPE  
NOVEMBER 1992**

Type of air conditioner	Dwelling type				Dwelling type			
	Separate house	Semi-detached, row or terrace house, townhouse etc.	Other(a)	Total	Separate house	Semi-detached, row or terrace house, townhouse etc.	Other(a)	Total
	Number of households ('000)				Proportion of all households (per cent)			
Reverse cycle	59.5	5.4	1.7	66.6	37.3	36.7	47.2	37.5
Refrigerated	57.4	3.4	*0.8	61.6	36.0	23.1	*22.2	34.6
Evaporative	39.8	5.4	*0.8	46.0	25.0	36.7	*22.2	25.9
Do not know	2.7	**0.6	**0.3	3.6	1.7	**4.1	**8.3	2.0
<b>TOTAL</b>	<b>159.4</b>	<b>14.7</b>	<b>3.6</b>	<b>177.8</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

See Explanatory Notes. (a) Other includes flats or apartments in 1 to 4 storey blocks and other.

## Hot water

During the summer of 1992, 45.1 per cent of households used natural gas as the main energy source for their hot water system. A further 27.5 per cent used electricity and 24.1 per cent used solar energy.

In separate houses, 67.5 per cent of households reported using natural gas or electricity as their main source and 28.7 per cent reported using solar energy.

In semi-detached, row or terrace houses, townhouses etc., 95.2 per cent of households said they used natural gas or electricity for their hot water and 4.8 per cent said they used solar energy.

In households classified as owner/being purchased, natural gas hot water systems were used by 43.5 per cent and solar hot water systems were used by 29.0 per cent.

Electricity was used to boost 93.3 per cent of solar hot water systems. A further 3.5 per cent used natural gas and 3.1 per cent used other energy sources.

TABLE 13. HOUSEHOLDS: MAIN ENERGY SOURCE FOR HOT WATER DURING THE SUMMER BY DWELLING TYPE  
NOVEMBER 1992

Main energy source for hot water	Dwelling type				Dwelling type			
	Separate house	Semi-detached, row or terrace house, townhouse etc.	Other(a)	Total	Separate house	Semi-detached, row or terrace house, townhouse etc.	Other(a)	Total
	Number of households ('000)				Proportion of all households (per cent)			
Natural gas (mains)	158.5	29.5	14.5	202.5	43.6	50.7	52.7	45.1
Electricity	86.9	25.9	10.8	123.7	23.9	44.5	39.4	27.5
Solar	104.2	2.8	* 1.1	108.1	28.7	4.8	* 4.0	24.1
Other	13.4	**	* 0.8	14.3	3.7	**	* 3.0	3.2
TOTAL	363.4	58.2	27.5	449.0	100.0	100.0	100.0	100.0

See Explanatory Notes. (a) Other includes flat or apartment in 1 to 4 storey block and other.

TABLE 14. HOUSEHOLDS: MAIN ENERGY SOURCE FOR HOT WATER SYSTEMS BY TYPE OF OCCUPANCY  
NOVEMBER 1992

Main energy source for hot water	Type of occupancy				Type of occupancy			
	Owner/being purchased	Rented	Other	Total	Owner/being purchased	Rented	Other	Total
	Number of households ('000)				Proportion of all households (per cent)			
Natural gas (mains)	145.4	54.2	2.9	202.5	43.5	50.2	42.6	45.1
Electricity	79.7	40.9	3.0	123.7	23.9	37.9	45.1	27.5
Solar	96.9	10.6	**0.6	108.1	29.0	9.8	**8.5	24.1
Other	11.6	2.4	**0.3	14.3	3.5	2.2	**3.8	3.2
TOTAL	334.3	108.1	6.7	449.0	100.0	100.0	100.0	100.0

See Explanatory Notes.

TABLE 15. HOUSEHOLDS: ENERGY SOURCE FOR BOOSTING SOLAR HOT WATER SYSTEM BY TYPE OF OCCUPANCY  
NOVEMBER 1992

Energy source of booster	Type of occupancy				Type of occupancy			
	Owner/being purchased	Rented	Other	Total	Owner/being purchased	Rented	Other	Total
	Number of households ('000)				Proportion of households (per cent)			
Electricity	91.1	9.2	**0.6	100.9	94.0	86.8	**100.0	93.3
Natural gas (mains)	2.9	*0.8	**	3.8	3.0	*7.5	**	3.5
Other	2.9	**0.6	**	3.4	3.0	**5.7	**	3.1
TOTAL	96.9	10.6	**0.6	108.1	100.0	100.0	100.0	100.0

See Explanatory Notes.

## Cooking

Of all the households surveyed, 62.5 per cent reported having an electric oven and 35.2 per cent said they had a natural gas oven.

Electric hotplates were in 49.7 per cent of all households and natural gas hotplates were in 43.9 per cent of households.

For dwellings less than 5 years old, 68.9 per cent reported having an electric oven and 30.2 per cent reported having a gas oven.

Electric hot plates were in 38.5 per cent of dwellings less than 5 years old and natural gas hotplates were in 56.1 per cent of dwellings less than 5 years old.

**TABLE 16. HOUSEHOLDS: TYPE OF COOKING FACILITIES(a) BY AGE OF DWELLING  
NOVEMBER 1992**

Type of cooking facilities	Age of dwelling								Age of dwelling							
	Less than 5 years							40 years or more	Less than 5 years							40 years or more
	5 to 9 years	10 to 14 years	15 to 19 years	20 to 29 years	30 to 39 years	40 years or more	Do not know	Total	5 to 9 years	10 to 14 years	15 to 19 years	20 to 29 years	30 to 39 years	40 years or more	Do not know	Total
Number of households ('000)								Proportion of all households (per cent)								
Electric oven	41.7	49.3	45.5	39.6	62.9	22.3	19.2	280.6	68.9	75.4	75.1	67.4	60.0	36.8	50.1	62.5
Natural gas oven	18.3	15.0	12.6	17.3	41.4	34.6	18.6	157.9	30.2	22.9	20.9	29.5	39.5	57.2	48.5	35.2
Other oven	2.0	2.2	4.3	3.8	2.9	7.3	*1.1	23.7	3.3	3.4	7.2	6.5	2.7	12.1	*2.8	5.3
Electric hotplates	23.3	37.9	36.8	32.3	57.4	18.5	17.1	223.3	38.5	57.9	60.8	55.0	54.8	30.5	44.6	49.7
Natural gas hotplates	33.9	23.7	21.1	21.3	42.4	36.0	18.8	197.2	56.1	36.3	34.8	36.2	40.4	59.4	48.9	43.9
Other hotplates	**0.3	1.6	1.6	2.7	1.5	3.8	**0.5	12.1	**0.4	2.5	2.6	4.6	1.5	6.2	1.4	2.7
<b>TOTAL</b>	<b>60.5</b>	<b>65.4</b>	<b>60.5</b>	<b>58.8</b>	<b>104.9</b>	<b>60.6</b>	<b>38.4</b>	<b>449.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

See Explanatory Notes. (a) Because an individual household could report more than one item, figures given for individual items may not add to the total.

## Clothes dryer

It is estimated that 44.5 per cent of households had a clothes dryer. For married couples living with a child or children, the estimate was 65.9 per cent and for lone parents living with a child or children, the estimate was 39.6 per cent. Almost 20.0 per cent of persons living alone reported having a clothes dryer.

**TABLE 17. HOUSEHOLDS: WHETHER HAS CLOTHES DRYER BY HOUSEHOLD TYPE  
NOVEMBER 1992**

Whether has clothes dryer	Household type						Household type					
	Married couple living with their child-(ren)		Person living alone	Lone parent living with his/her child-(ren)		Total	Married couple living with their child-(ren)		Person living alone	Lone parent living with his/her child-(ren)		Total
	Married couple only	Married couple only	Person living alone	Lone parent living with his/her child-(ren)	All other households	Total	Married couple only	Married couple only	Person living alone	Lone parent living with his/her child-(ren)	All other households	Total
Number of households ('000)						Proportion of all households (per cent)						
Yes	40.9	107.6	17.6	13.8	20.0	199.9	39.3	65.9	19.7	39.6	34.8	44.5
No	63.1	55.6	71.9	21.0	37.5	249.1	60.7	34.1	80.3	60.4	65.2	55.5
<b>TOTAL</b>	<b>104.1</b>	<b>163.1</b>	<b>89.5</b>	<b>34.8</b>	<b>57.5</b>	<b>449.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

See Explanatory Notes.

## Dishwashers

In November 1992, 17.8 per cent of households reported having a dishwasher. Dishwashers were in 6.4 per cent of households, which had a combined income of \$20,000 or less, and in 45.2 per cent of households with a combined income of over \$60,000.

**TABLE 18. HOUSEHOLDS: WHETHER HAS DISHWASHER BY TOTAL HOUSEHOLD INCOME  
NOVEMBER 1992**

Whether has dishwasher	Household income					Total	Household income					Total
	\$20,000 or less	\$20,001 to \$40,000	\$40,001 to \$60,000	\$60,001 and over	Do not know		\$20,000 or less	\$20,001 to \$40,000	\$40,001 to \$60,000	\$60,001 and over	Do not know	
	Number of households ('000)						Proportion of all households (per cent)					
Yes	9.4	18.4	19.9	26.8	5.3	79.7	6.4	13.9	22.1	45.2	25.8	17.8
No	137.6	114.1	70.0	32.5	15.2	369.3	93.6	86.1	77.9	54.8	74.2	82.2
<b>TOTAL</b>	<b>146.9</b>	<b>132.5</b>	<b>89.9</b>	<b>59.2</b>	<b>20.5</b>	<b>449.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

See Explanatory Notes.

## Washing machines

It is estimated that 94.0 per cent of households had a washing machine. Of these, 88.1 per cent had automatic washing machines and 11.8 per cent had a twin tub or other type of washing machine.

For persons living alone 16.6 per cent did not have a washing machine and 4.4 per cent of lone parents living with a child or children did not have a washing machine. Overall, 6.0 per cent of households reported no washing machine.

**TABLE 19. HOUSEHOLDS: TYPE OF WASHING MACHINE BY HOUSEHOLD TYPE  
NOVEMBER 1992**

Washing machine	Household type					Total	Household type					Total
	Married couple living with their child- (ren)	Person living alone	Lone parent living with his/her child- (ren)	All other house- holds	Married couple living with their child- (ren)		Person living alone	Lone parent living with his/her child- (ren)	All other house- holds			
	Number of households ('000)						Proportion of all households (per cent)					
Automatic	90.8	150.9	58.1	27.6	44.9	372.2	87.2	92.5	64.9	79.2	78.1	82.9
Twin tub & other	11.2	11.4	16.5	5.7	5.2	50.0	10.7	7.0	18.5	16.3	9.0	11.1
No washing machine	2.1	* 0.8	14.9	1.5	7.4	26.8	2.0	* 0.5	16.6	4.4	12.9	6.0
<b>TOTAL</b>	<b>104.1</b>	<b>163.1</b>	<b>89.5</b>	<b>34.8</b>	<b>57.5</b>	<b>449.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

See Explanatory Notes.



## Automatic washing machines

Top loading machines constituted 91.5 per cent of automatic washing machines and front loading machines 8.6 per cent.

TABLE 20. HOUSEHOLDS: TYPE OF AUTOMATIC WASHING MACHINE BY HOUSEHOLD TYPE  
NOVEMBER 1992

Type of washing machine	Household type					Total	Household type					Total
	Married couple only	Married couple living with their child-(ren)	Person living alone	Lone parents living with his/her child-(ren)	All other households		Married couple only	Married couple living with their child-(ren)	Person living alone	Lone parent living with his/her child-(ren)	All other households	
	Number of households ('000)						Proportion of households (per cent)					
Top loading	82.0	140.8	53.2	25.4	39.1	340.4	90.3	93.3	91.6	92.0	87.1	91.5
Front loading	8.8	10.1	4.9	2.2	5.9	31.9	9.7	6.7	8.4	8.0	13.1	8.6
TOTAL	90.8	150.9	58.1	27.6	44.9	372.2	100.0	100.0	100.0	100.0	100.0	100.0

See Explanatory Notes.

## Size of washing machine

For households with a combined income of \$40,000 or less, 49.8 per cent had a medium size washing machine; 29.2 per cent had a large machine and 20.6 per cent had a small machine.

For households with a combined income of over \$40,000, 50.6 per cent had a large machine; 41.4 per cent had a medium size machine and 7.5 per cent had a small machine.

Overall, 46.4 per cent of households reported having a medium size machine; 37.1 per cent reported having a large machine; 16.1 per cent said they had a small machine while 0.4 per cent were not aware of the size of their machine.

TABLE 21. HOUSEHOLDS: LOAD CAPACITY OF MAIN WASHING MACHINE BY TOTAL HOUSEHOLD INCOME  
NOVEMBER 1992

Load capacity of machine	Household income					Total	Household income					Total
	\$20,000 or less	\$20,001 to \$40,000	\$40,001 to \$60,000	\$60,001 and over	Do not know		\$20,000 or less	\$20,001 to \$40,000	\$40,001 to \$60,000	\$60,001 and over	Do not know	
	Number of households ('000)						Proportion of households (per cent)					
Small	33.7	19.8	7.7	3.2	3.7	68.1	25.4	15.7	9.0	5.5	19.4	16.1
Medium	68.1	60.7	36.7	23.0	7.4	195.8	51.2	48.2	42.7	39.4	38.7	46.4
Large	30.6	45.1	41.3	31.7	8.0	156.7	23.0	35.8	48.1	54.3	41.9	37.1
Do not know	**0.5	**0.3	**0.3	**0.6	**	1.6	**0.4	**0.2	**0.3	**1.0	**	0.4
TOTAL	132.9	125.9	85.9	58.4	19.1	422.3	100.0	100.0	100.0	100.0	100.0	100.0

See Explanatory Notes.

## Refrigerators

Refrigerators were in 99.8 per cent of households. Of these, 70.0 per cent reported having one refrigerator and 29.8 per cent two or more refrigerators. Of the households which reported having two or more refrigerators, 75.4 per cent were either married couples only or married couple with a child or children households. However, only 15.5 per cent of lone parents living with his/her child or children reported having two or more refrigerators compared over 37.5 per cent for married couples and married couples with a child or children.

TABLE 22. HOUSEHOLDS: NUMBER OF REFRIGERATORS IN HOUSEHOLD BY HOUSEHOLD TYPE  
NOVEMBER 1992

Number of refrigerators in household	Household type					Total	Household type					Total
	Married couple living with their child-(ren)		Person living alone	Lone parent living with his/her child-(ren)			Married couple living with their child-(ren)		Person living alone	Lone parent living with his/her child-(ren)		
	Married couple only	their child-(ren)	alone	his/her child-(ren)	All other households		Married couple only	their child-(ren)	alone	his/her child-(ren)	All other households	
	Number of households ('000)						Proportion of all households (per cent)					
One	64.3	102.3	76.7	29.1	42.1	314.5	61.8	62.7	85.7	83.5	73.2	70.0
Two	35.8	56.6	11.7	4.9	14.6	123.7	34.4	34.7	13.1	14.2	25.4	27.6
Three or more	3.7	4.2	* 0.8	**0.5	* 0.8	10.0	3.5	2.6	* 0.9	**1.5	* 1.4	2.2
None	**0.3	**	**0.3	**0.3	**	* 0.8	**0.3	**	**0.3	**0.8	**	* 0.2
<b>TOTAL</b>	104.1	163.1	89.5	34.8	57.5	449.0	100.0	100.0	100.0	100.0	100.0	100.0

See Explanatory Notes.

## Size of refrigerator

It is estimated that 64.3 per cent of households had a two door refrigerator as their main refrigerator and 35.5 per cent had a one door refrigerator as their main refrigerator. Persons living alone were most likely to report having a single door refrigerator as their main refrigerator (43.7 per cent). Lone parents with a child or children were most likely to report having a two door refrigerator as their main refrigerator (69.9 per cent).

TABLE 23. HOUSEHOLDS: NUMBER OF DOORS ON MAIN REFRIGERATOR BY HOUSEHOLD TYPE  
NOVEMBER 1992

Number of doors on main refrigerator (a)	Household type					Total	Household type					Total
	Married couple living with their child-(ren)		Person living alone	Lone parent living with his/her child-(ren)			Married couple living with their child-(ren)		Person living alone	Lone parent living with his/her child-(ren)		
	Married couple only	their child-(ren)	alone	his/her child-(ren)	All other households		Married couple only	their child-(ren)	alone	his/her child-(ren)	All other households	
	Number of households ('000)						Proportion of all households (per cent)					
One	34.0	52.4	39.2	10.2	23.6	159.3	32.6	32.1	43.7	29.4	41.0	35.5
Two	69.8	110.7	50.1	24.3	33.9	288.9	67.1	67.9	56.0	69.9	59.0	64.3
<b>TOTAL</b>	103.8	163.1	89.2	34.5	57.5	448.2	99.7	100.0	99.7	99.2	100.0	99.8

See Explanatory Notes. (a) External doors only.

## Microwave ovens

Microwave ovens were reported in 54.4 per cent of households with a combined income of \$20,000 or less and in 86.8 percent of households with a combined income of over \$60,000. Overall, 69.6 per cent of households reported having a microwave oven.

**TABLE 24. HOUSEHOLDS: WHETHER HAS MICROWAVE OVEN BY TOTAL HOUSEHOLD INCOME  
NOVEMBER 1992**

Whether has microwave oven	Household income					Total	Household income					Total
	\$20,000 or less	\$20,001 to \$40,000	\$40,001 to \$60,000	\$60,001 and over	Do not know		\$20,000 or less	\$20,001 to \$40,000	\$40,001 to \$60,000	\$60,001 and over	Do not know	
	Number of households ('000)						Proportion of all households (per cent)					
Yes	80.0	97.3	68.1	51.4	15.9	312.7	54.4	73.4	75.8	86.8	77.4	69.6
No	66.9	35.2	21.8	7.8	4.6	136.4	45.6	26.6	24.2	13.2	22.6	30.4
<b>TOTAL</b>	<b>146.9</b>	<b>132.5</b>	<b>89.9</b>	<b>59.2</b>	<b>20.5</b>	<b>449.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

See Explanatory Notes.

## Water saving appliances

Dual flush toilets were in 35.8 per cent of dwellings and 21.2 per cent of dwellings had reduced flow shower heads. Households with neither of these accounted for 53.2 per cent of dwellings.

Of households classified as married couples living with their child or children, 44.0 per cent reported having dual flush toilets and 25.9 per cent reported having reduced flow shower heads. This type of household constituted 36.3 per cent of all households.

In comparison, 26.9 per cent of persons living alone had dual flush toilets and only 15.5 per cent had reduced flow shower heads. Persons living alone constituted 19.9 per cent of all households.

**TABLE 25. HOUSEHOLDS: WATER SAVING APPLIANCES BY HOUSEHOLD TYPE  
NOVEMBER 1992**

Water saving appliances	Household type					Total	Household type					Total
	Married couple living with their child- (ren) only	Person living alone	Lone parent living with his/her child- (ren)	All other house- holds	Married couple living with their child- (ren) only		Person living alone	Lone parent living with his/her child- (ren)	All other house- holds			
	Number of households ('000)						Proportion of all households (per cent)					
Dual flush toilets	35.1	71.8	24.1	10.5	18.9	160.5	33.8	44.0	26.9	30.3	32.9	35.8
Reduced flow shower heads	22.8	42.2	13.9	6.6	9.9	95.4	21.9	25.9	15.5	19.0	17.2	21.2
Neither of the above	54.2	73.3	56.9	20.7	33.6	238.7	52.1	45.0	63.5	59.6	58.4	53.2
<b>TOTAL</b>	<b>104.1</b>	<b>163.1</b>	<b>89.5</b>	<b>34.8</b>	<b>57.5</b>	<b>449.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

See Explanatory Notes.

## Recycling

Throughout the Perth Statistical Division, the survey estimated that 289,000 households (64.4 per cent) recycled paper/newspapers 283,000 households (63.0 per cent) recycled glass and bottles; 236,500 households (52.7 per cent) recycled old clothing and rags and 171,700 households (38.2 per cent) recycled vegetable/garden waste. Some households participated in recycling all items.

Married couples living with their child or children had comparatively high recycling rates: 68.0 per cent recycled glass, bottles, papers/newspapers; 64.8 per cent recycled old clothing/rags and 58.1 per cent recycled cans/aluminium.

Persons living alone had lower recycling rates: 56.1 per cent of these households recycled paper/newspapers; 50.7 per cent recycled glass and bottles; 35.9 per cent recycled old clothing/rags and 30.0 per cent recycled cans/aluminium

**TABLE 26. HOUSEHOLDS: ITEMS RECYCLED(a) BY HOUSEHOLD TYPE  
NOVEMBER 1992**

Items recycled	Household type					Total	Household type					Total
	Married couple living with their child-(ren)		Lone parent living with his/her child-(ren)		All other households		Married couple living with their child-(ren)		Lone parent living with his/her child-(ren)		All other households	
	Married couple only	Person living alone	Person living alone	his/her child-(ren)			Married couple only	Person living alone	Person living alone	his/her child-(ren)		
	Number of households ('000)						Proportion of all households (per cent)					
Glass and bottles	68.3	114.1	45.4	19.5	35.7	283.0	65.6	70.0	50.7	56.1	62.0	63.0
Paper/newspapers	72.0	112.2	50.2	20.1	34.5	289.0	69.2	68.8	56.1	57.8	60.0	64.4
Cans/aluminium	54.2	94.7	26.9	14.1	27.9	217.8	52.1	58.1	30.0	40.4	48.6	48.5
Plastic	37.3	72.3	21.1	10.8	18.4	159.9	35.8	44.3	23.6	31.0	32.0	35.6
Old clothing/rags	56.3	105.8	32.2	14.6	27.7	236.5	54.1	64.8	35.9	42.1	48.1	52.7
Vegetable/garden waste	47.2	69.0	23.1	12.7	19.7	171.7	45.3	42.3	25.8	36.6	34.3	38.2
Other	* 0.8	2.4	**0.5	* 0.8	**0.5	5.1	* 0.8	1.5	**0.6	* 2.3	**0.9	1.1
<b>TOTAL</b>	104.1	163.1	89.5	34.8	57.5	449.0	100.0	100.0	100.0	100.0	100.0	100.0

See Explanatory Notes (a) Because an individual household could report more than one item, figures given for individual items may not add to the total.

## Recycling by dwelling type

Separate houses constituted 80.9 per cent of all dwellings in the Perth Statistical Division. They recycled a higher proportion of all items than other dwelling types. Paper/newspapers were recycled by 65.7 per cent of separate houses; 65.6 per cent recycled glass and bottles and 55.4 per cent recycled old clothing/rags.

Semi-detached, row or terrace houses, townhouses etc constituted 12.9 per cent of all dwellings. Paper/newspapers were recycled by 63.1 per cent of these households; 52.5 per cent recycled glass and bottles, and 42.8 per cent recycled old clothing/rags

**TABLE 27. HOUSEHOLDS: ITEMS RECYCLED(a) BY DWELLING TYPE  
NOVEMBER 1992**

Items recycled	Dwelling type				Total	Dwelling type				Total
	Separate house	Semi-detached, row or terrace house, townhouse etc.		Other(a)		Separate house	Semi-detached, row or terrace house, townhouse etc.		Other(a)	
		townhouse etc.	Other(a)				townhouse etc.	Other(a)		
	Number of households ('000)					Proportion of all households (per cent)				
Glass and bottles	238.3	30.5	14.2		283.0	65.6	52.5	51.5		63.0
Paper/newspapers	238.8	36.7	13.5		289.0	65.7	63.1	49.1		64.4
Cans/aluminium	189.2	20.3	8.2		217.8	52.1	35.0	30.0		48.5
Plastic	138.8	14.5	6.6		159.9	38.2	25.0	24.0		35.6
Old clothing/rags	201.0	24.9	10.6		236.5	55.3	42.8	38.5		52.7
Vegetable/garden waste	151.7	16.0	4.1		171.7	41.7	27.5	14.8		38.2
Other	4.8	**0.3	**		5.1	1.3	**0.5	**		1.1
<b>TOTAL</b>	363.4	58.2	27.5		449.0	100.0	100.0	100.0		100.0

See Explanatory Notes. (a) Because an individual household could report more than one item, figures given for individual items will not add to the total. (b) Other includes flat or apartment in 1 to 4 storey block and other.

## Recycling facilities

Recyclable waste collection from dwellings was used by 52.5 per cent of households. Taking waste to central collection points was used by 50.1 per cent and composting and/or mulching was used by 34.5 per cent.

A higher proportion of households classified as married couple living with their child or children used recycling facilities, such as central collection points (59.1 per cent) and collection from their dwelling (57.1 per cent), than did other types of households.

Almost 42.0 per cent of households classified as married couple only used the compost mulch facility, while 38.3 per cent of households classed as married couple living with their child or children and 33.0 per cent of households classified as lone parent living with his/her child or children used such a facility.

**TABLE 28. HOUSEHOLDS: RECYCLING FACILITIES<sup>(a)</sup> USED BY HOUSEHOLD TYPE  
NOVEMBER 1992**

Recycling facilities used	Household type					Total	Household type					Total
	Married couple living with their child-(ren)		Lone parent living with his/her child-(ren)		All other households		Married couple living with their child-(ren)		Lone parent living with his/her child-(ren)		All other households	
	Married couple only	Person living alone	Married couple only	Person living alone								
Number of households ('000)						Proportion of all households (per cent)						
Collection from your house	56.2	93.1	40.6	17.1	28.9	236.0	54.0	57.1	45.4	49.2	50.2	52.5
Special areas at the dump	6.3	14.8	3.3	* 0.8	3.0	28.3	6.1	9.1	3.7	* 2.2	5.2	6.3
Central collection points	53.6	96.3	32.1	15.9	27.2	225.1	51.5	59.1	35.9	45.8	47.2	50.1
Compost/mulch	43.4	62.5	20.2	11.5	17.3	154.9	41.7	38.3	22.5	33.0	30.1	34.5
Other	3.8	5.2	5.2	* 0.8	1.6	16.6	3.7	3.2	5.8	* 2.4	2.8	3.7
<b>TOTAL</b>	<b>104.1</b>	<b>163.1</b>	<b>89.5</b>	<b>34.8</b>	<b>57.5</b>	<b>449.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

See Explanatory Notes. (a) Because an individual household could report more than one item, figures given for individual items may not add to the total.

## Recycling by Statistical Subdivision

Throughout the Perth Statistical Division it was estimated in November 1992 that 348,100 households, (77.5 percent) participated in some form of recycling of domestic waste.

The 84.5 per cent participation rate for Central Metropolitan and East Metropolitan Statistical subdivisions (SSD) was the highest in the Perth Statistical Division. (Refer to attached map for outline of Statistical subdivisions).

**TABLE 29. HOUSEHOLDS: WHETHER OR NOT RECYCLES WASTE BY STATISTICAL SUBDIVISION  
NOVEMBER 1992**

Whether or not recycles waste	Statistical subdivision					Total	Statistical subdivision					Total
	Central Metropolitan	East Metropolitan	North Metropolitan	South West Metropolitan	South East Metropolitan		Central Metropolitan	East Metropolitan	North Metropolitan	South West Metropolitan	South East Metropolitan	
	Number of households ('000)						Proportion of all households (per cent)					
Yes	45.5	56.6	100.5	74.4	71.0	348.1	84.5	84.5	77.1	80.9	67.1	77.5
No	8.3	10.4	29.8	17.6	34.8	101.0	15.5	15.5	22.9	19.1	32.9	22.5
<b>TOTAL</b>	<b>53.9</b>	<b>67.0</b>	<b>130.4</b>	<b>92.0</b>	<b>105.8</b>	<b>449.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

See Explanatory Notes. Refer to map.

## Non recyclers

Overall, there were 101,000 households (22.5 per cent) which did not recycle waste. Of these, 31.8 per cent said they did not recycle because there was no collection service; 30.6 per cent said it took too long or required too much effort and 16.3 per cent said they had not got around to it.

South East Metropolitan Statistical Subdivision (SSD) had the highest proportion of households which did not recycle (34.8 per cent). Of these, 38.2 per cent said they did not recycle because it took too long/too much effort; 23.3 per cent said it was because there was no collection service and 19.0 per cent said they had not got around to it.

**TABLE 30. HOUSEHOLDS: REASON FOR NOT RECYCLING BY STATISTICAL SUBDIVISION  
NOVEMBER 1992**

	Statistical subdivision					Total	Statistical subdivision					Total
	Central Metropolitan	East Metropolitan	North Metropolitan	South West Metropolitan	South East Metropolitan		Central Metropolitan	East Metropolitan	North Metropolitan	South West Metropolitan	South East Metropolitan	
	<i>Number of households ('000)</i>						<i>Proportion of all households (per cent)</i>					
No collection service	3.2	6.0	11.8	3.0	8.1	32.1	38.6	57.7	39.6	17.0	23.3	31.8
Takes too long/too much effort	1.6	*1.4	8.3	6.4	13.3	30.9	19.3	*13.5	27.9	36.4	38.2	30.6
Have not got around to it	1.7	*0.8	4.8	2.7	6.6	16.5	20.5	*7.7	16.1	15.3	19.0	16.3
Other	*1.3	1.6	4.2	3.2	5.5	15.8	*15.7	15.4	14.1	18.2	15.8	15.6
Do not know	**0.5	**0.6	*0.8	2.4	*1.3	5.6	**6.0	**5.8	*2.7	13.6	*3.7	5.5
<b>TOTAL</b>	<b>8.3</b>	<b>10.4</b>	<b>29.8</b>	<b>17.6</b>	<b>34.8</b>	<b>101.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

See Explanatory Notes.

## Main source of garden water

Mains water was used by 71.2 per cent of households as their main source of garden of water, ranging from 65.1 per cent of households in East Metropolitan SSD to 77.8 per cent of households in North Metropolitan SSD.

Bore or well water was used by 22.2 per cent of households, ranging from 13.6 per cent of households in North Metropolitan SSD to 32.1 per cent in East Metropolitan SSD.

Over 6.2 per cent of households reported no garden/do not water, ranging from around 1.6 per cent in East Metropolitan SSD to 16.6 per cent in Central Metropolitan SSD.

**TABLE 31. HOUSEHOLDS: MAIN SOURCE OF GARDEN WATER SUPPLY IN SUMMER BY STATISTICAL SUBDIVISION  
NOVEMBER 1992**

	Statistical subdivision					Total	Statistical subdivision					Total
	Central Metropolitan	East Metropolitan	North Metropolitan	South West Metropolitan	South East Metropolitan		Central Metropolitan	East Metropolitan	North Metropolitan	South West Metropolitan	South East Metropolitan	
	<i>Number of households ('000)</i>						<i>Proportion of all households (per cent)</i>					
<i>Main source of garden water supply in summer</i>												
Mains	35.4	43.6	101.4	66.1	73.4	319.9	65.7	65.1	77.8	71.8	69.4	71.2
Bore or well	9.5	21.5	17.8	23.2	27.6	99.6	17.6	32.1	13.7	25.2	26.0	22.2
Other	**	*0.8	**0.5	**0.3	**	1.6	**	*1.2	**0.4	**0.3	**	0.4
No garden/do not water	9.0	*1.1	10.6	2.4	4.9	28.0	16.6	*1.6	8.2	2.6	4.6	6.2
<b>TOTAL</b>	<b>53.9</b>	<b>67.0</b>	<b>130.4</b>	<b>92.0</b>	<b>105.8</b>	<b>449.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

See Explanatory Notes. Refer to map

## Spas

There were 13,900 (3.1 per cent) households which had separate spa baths. Of these 4,400 or 31.6 per cent were in households with a combined income of over \$60,000.

**TABLE 32. HOUSEHOLDS: WHETHER DWELLING HAS A SEPARATE SPA BATH BY TOTAL HOUSEHOLD INCOME  
NOVEMBER 1992**

Whether dwelling has a separate spa bath	Household income					Total	Household income					Total
	\$20,000 or less	\$20,001 to \$40,000	\$40,001 to \$60,000	\$60,001 and over	Do not know		\$20,000 or less	\$20,001 to \$40,000	\$40,001 to \$60,000	\$60,001 and over	Do not know	
		Number of households ('000)						Proportion of all households (per cent)				
Yes	* 1.4	3.6	3.8	4.4	* 0.8	13.9	* 0.9	2.7	4.2	7.4	* 3.9	3.1
No	145.5	128.9	86.1	54.8	19.7	435.1	99.1	97.3	95.8	92.6	96.1	96.9
<b>TOTAL</b>	146.9	132.5	89.9	59.2	20.5	449.0	100.0	100.0	100.0	100.0	100.0	100.0

See Explanatory Notes.

## Swimming pools

In the Perth Statistical Division, 67,100 dwellings or 14.9 per cent of households reported having a swimming pool. Only 6.1 per cent of households with a combined income of \$20,000 or less reported having a swimming pool. For households with a combined income of over \$60,000, the rate was 33.4 per cent.

**TABLE 33. HOUSEHOLDS: WHETHER DWELLING HAS A SWIMMING POOL BY TOTAL HOUSEHOLD INCOME  
NOVEMBER 1992**

Whether dwelling has a swimming pool	Household income					Total	Household income					Total
	\$20,000 or less	\$20,001 to \$40,000	\$40,001 to \$60,000	\$60,001 and over	Do not know		\$20,000 or less	\$20,001 to \$40,000	\$40,001 to \$60,000	\$60,001 and over	Do not know	
		Number of households ('000)						Proportion of all households (per cent)				
Yes	8.9	13.6	19.7	19.8	5.1	67.1	6.0	10.3	21.9	33.4	24.8	14.9
No	138.1	118.9	70.2	39.5	15.4	382.0	94.0	89.7	78.1	66.6	75.2	85.1
<b>TOTAL</b>	146.9	132.5	89.9	59.2	20.5	449.0	100.0	100.0	100.0	100.0	100.0	100.0

See Explanatory Notes.

The Statistical Subdivision (SSD) with the largest number of swimming pools was North Metropolitan SSD, where 21,800 households had pools, followed by East Metropolitan SSD, where 13,600 households had pools. East Metropolitan SSD was the highest proportion of households with swimming pools at 20.3 per cent. In North Metropolitan SSD, the proportion was 16.7 per cent. Central Metropolitan SSD had the lowest proportion of households with swimming pools (10.7 per cent).

**TABLE 34. HOUSEHOLDS: WHETHER DWELLING HAS A SWIMMING POOL BY STATISTICAL SUBDIVISION  
NOVEMBER 1992**

Whether dwelling has a swimming pool	Statistical subdivision					Total	Statistical subdivision					Total
	Central Metropolitan	East Metropolitan	North Metropolitan	South West Metropolitan	South East Metropolitan		Central Metropolitan	East Metropolitan	North Metropolitan	South West Metropolitan	South East Metropolitan	
	Number of households ('000)						Proportion of all households (per cent)					
Yes	5.8	13.6	21.8	12.5	13.4	67.1	10.7	20.3	16.7	13.5	12.7	14.9
No	48.1	53.4	108.6	79.5	92.4	382.0	89.3	79.7	83.3	86.5	87.3	85.1
<b>TOTAL</b>	53.9	67.0	130.4	92.0	105.8	449.0	100.0	100.0	100.0	100.0	100.0	100.0

See Explanatory Notes. Refer to map.

## Motor vehicles

Care should be taken in interpreting data in the following three motor vehicle tables. The figures in each table are the number of households, not the number of vehicles or drivers. Where a household reported having more than one motor vehicle usually garaged or parked at the dwelling and all the vehicles are in the same classification, the household was counted once. Where a household had several vehicles which are in different classifications, usually garaged or parked at the dwelling that household could be counted several times.

Over 38.0 per cent of households reported having a medium size vehicle; 31.5 per cent had a small vehicle, 28.7 per cent had a large vehicle and 16.9 per cent reported having a vehicle which is classified as 'Other'.

Motor vehicles manufactured in the period 1981 to 1985 were reported by 39.0 per cent of households; 28.8 per cent reported having vehicles made in the period 1976 to 1980 and 26.6 per cent had vehicles made from 1986 to 1989.

**TABLE 35. HOUSEHOLDS: MOTOR VEHICLE BY SIZE(a) BY YEAR OF MANUFACTURE  
NOVEMBER 1992**

Vehicle size	Year of manufacture							Year of manufacture												
	Pre 1970 to 1970		1976 to 1976		1981 to 1981		1986 to 1986		1990 to 1990		Pre 1970 to 1970		1976 to 1976		1981 to 1981		1986 to 1986		1990 to 1990	
	1970	1975	1980	1985	1989	1992	Total	1970	1975	1980	1985	1989	1992	Total						
	Number of households ('000)							Proportion of all households (per cent)												
Very small	**	**	**0.3	8.8	7.1	5.7	21.8	**	**	**0.2	5.0	5.9	6.6	4.8						
Small	4.5	23.4	35.8	42.6	26.1	22.5	141.5	16.9	30.3	27.7	24.3	21.9	26.4	31.5						
Medium	4.4	15.6	42.5	68.4	37.0	24.7	172.4	16.7	20.2	32.9	39.1	30.9	28.9	38.4						
Large	4.3	17.2	33.7	35.0	30.5	20.8	128.7	16.3	22.3	26.1	20.0	25.5	24.4	28.7						
Very large	1.7	3.9	4.2	3.5	3.1	*0.9	16.4	6.4	5.1	3.3	2.0	2.6	*1.0	3.6						
Panel van	**	*1.1	1.9	10.4	5.5	4.4	22.7	**	*1.5	1.4	5.9	4.6	5.2	5.1						
Utility	**0.6	3.3	6.1	10.7	6.7	3.5	29.9	**2.2	4.3	4.7	6.1	5.6	4.1	6.7						
Other	12.4	16.0	18.7	14.1	12.4	8.4	76.0	46.7	20.7	14.5	8.1	10.4	9.8	16.9						
Unknown	**0.5	2.0	*0.9	**0.5	*1.1	**0.3	5.0	**2.1	2.5	*0.7	**0.3	*0.9	**0.3	1.1						
Motor cycle	*0.8	1.7	3.3	6.9	2.7	1.6	16.5	*3.2	2.2	2.6	3.9	2.3	1.9	3.7						
<b>TOTAL</b>	<b>26.4</b>	<b>77.2</b>	<b>129.4</b>	<b>175.1</b>	<b>119.5</b>	<b>85.2</b>	<b>449.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>						

See Explanatory Notes. (a) Because an individual household could report more than one item, figures given for individual items may not add to the total.

**TABLE 36. HOUSEHOLDS: MOTOR VEHICLE YEAR OF MANUFACTURE(a) BY STATISTICAL SUBDIVISION  
NOVEMBER 1992**

Vehicle year of manufacture	Statistical subdivision						Statistical subdivision					
	Central	East	North	South	South	Total	Central	East	North	South	South	Total
	Metropo- litan	Metropo- litan	Metropo- litan	Metropo- litan	Metropo- litan		Metropo- litan	Metropo- litan	Metropo- litan	Metropo- litan	Metropo- litan	
	Number of households ('000)						Proportion of all households (per cent)					
Pre 1970	3.6	4.5	7.0	4.2	7.2	26.4	6.7	6.7	5.4	4.6	6.8	5.9
1970 to 1975	7.6	11.3	20.5	17.9	19.8	77.2	14.1	16.9	15.7	19.5	18.7	17.2
1976 to 1980	12.0	20.9	37.3	28.0	31.1	129.4	22.3	31.2	28.6	30.4	29.4	28.8
1981 to 1985	16.7	30.6	55.9	32.4	39.4	175.1	31.0	45.8	42.9	35.2	37.3	39.0
1986 to 1989	11.7	22.2	35.3	23.7	26.6	119.5	21.7	33.1	27.1	25.8	25.1	26.6
1990 to 1992	12.0	12.3	22.1	20.7	18.1	85.2	22.3	18.4	16.9	22.5	17.1	19.0
<b>TOTAL</b>	<b>53.9</b>	<b>67.0</b>	<b>130.4</b>	<b>92.0</b>	<b>105.8</b>	<b>449.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

See Explanatory Notes. Refer to map. (a) Because an individual household could report more than one item, figures given for individual items may not add to the total.

In North Metropolitan Statistical subdivision 130,400 households (42.9 per cent) reported having a vehicle made in the period 1981 to 1985; 28.6 per cent had vehicles from the period 1976 to 1980 and 27.1 per cent had vehicles made from 1986 to 1989.



It is estimated there were 49,500 households with a vehicle made in the period 1981 to 1985 which was driven by a person in the age group 25 to 34. Similarly there were 43,000 households with vehicles made in the same period and with drivers in the age group 35 to 44.

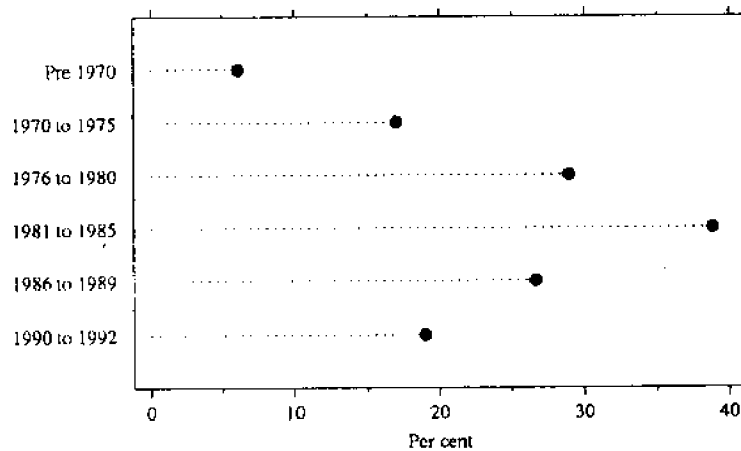
TABLE 37. HOUSEHOLDS: MOTOR VEHICLE YEAR OF MANUFACTURE(a) BY AGE OF DRIVER  
NOVEMBER 1992

Vehicle year of manufacture	Age of driver							Age of driver							Total
	24 or less	25 to 34	35 to 44	45 to 54	55 to 64	65 and over	24 or less	25 to 34	35 to 44	45 to 54	55 to 64	65 and over			
	Number of households ('000)							Proportion of all households (per cent)							
Pre 1970	6.9	7.5	4.5	3.5	2.8	3.1	26.4	8.6	6.0	3.6	4.0	5.2	5.8	5.9	
1970 to 1975	17.5	21.8	18.4	10.4	4.8	7.7	77.2	21.9	17.3	14.6	11.9	8.9	14.4	17.2	
1976 to 1980	29.5	33.2	35.2	18.4	11.2	12.1	129.4	37.0	26.4	28.0	21.1	20.8	22.8	28.8	
1981 to 1985	26.7	49.5	43.0	32.1	23.6	17.7	175.1	33.4	39.4	34.1	36.8	43.7	33.2	39.0	
1986 to 1989	13.3	31.3	34.5	22.9	14.5	11.6	119.5	16.6	24.9	27.4	26.3	26.8	21.8	26.6	
1990 to 1992	6.8	19.8	25.4	22.2	8.2	6.6	85.2	8.5	15.7	20.2	25.4	15.1	12.4	19.0	
<b>TOTAL</b>	<b>79.8</b>	<b>125.7</b>	<b>125.9</b>	<b>87.2</b>	<b>54.0</b>	<b>53.2</b>	<b>449.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	

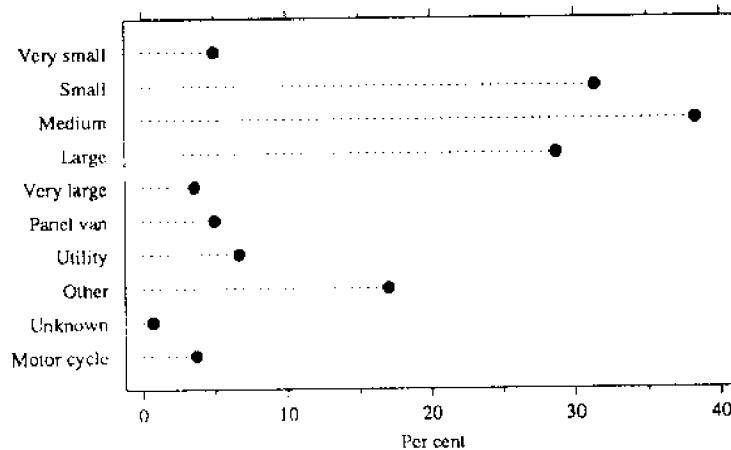
See Explanatory Notes. (a) Because an individual household could report more than one item, figures given for individual items may not add to the total.

There were 35,200 households with a driver in the age group 35 to 44 who drove a vehicle made in the period 1976 to 1980.

PROPORTION OF ALL HOUSEHOLDS BY MOTOR VEHICLE YEAR OF MANUFACTURE, NOVEMBER 1992



PROPORTION OF ALL HOUSEHOLDS BY MOTOR VEHICLE SIZE NOVEMBER 1992



## EXPLANATORY NOTES

### Supplementary Survey of Conservation of Energy, Water and the Environment

This publication contains results from a survey to ascertain the use of energy, water usage, recycling items and the usage of certain electrical goods in the community. The survey was run in association with the November Monthly Population Survey (MPS).

2. Information was collected from households about their usage of water, methods of watering and sources of water supply, types of air conditioning, heating, washing machines and other electrical goods, whether the property had a swimming pool or spa, types of dwellings, structure material and whether insulation was used and the usage of motor vehicles.

### Survey Methodology

3. The survey was conducted during the two weeks beginning 9 November 1992 using the Metropolitan Perth component of the Western Australian Monthly Population Survey (MPS).

### The Monthly Population Survey

4. The MPS is based on a multi-stage area sample of private dwellings (houses, flats, etc) and special dwellings (hotels, motels, caravan parks, holiday camps, prisons, hospitals, boarding schools, etc).

5. The sample covered approximately 1 household in every 270 households in the Perth Statistical Division.

6. The MPS consists of the Labour Survey (LFS) and, for most months of the year, a supplementary survey. The main emphasis of the MPS is on the regular collection of specific data on the demographic and labour force characteristics of the population. For this reason this component is usually referred to as the Labour Force Survey. Supplementary surveys are conducted on a variety of topics such as the Conservation of Energy, Water and the Environment Survey.

### Scope

7. The LFS includes all persons aged 15 years and over except:

- (a) members of the Australian permanent defence forces;
- (b) certain diplomatic personnel of foreign governments customarily excluded from the census and estimated population;
- (c) overseas residents holidaying in Australia;
- (d) members of non-Australian defence forces (and their dependants) stationed in Australia.

### Coverage

8. In the survey, coverage rules were applied which aim to ensure that each person is associated with only one dwelling and hence has only one chance of selection in the survey.

9. The supplementary survey was conducted using a sub-set of the same sample of dwellings included in the MPS for Western Australia contained within the Perth Statistical Division. This provided a sample of 1,657 where a full response was obtained.

Information relating to each household was obtained by personally interviewing any responsible adult, i.e., any available adult household member who was able to answer these questions on behalf of all household members.

### Comparability with data from other sources

10. Differences between estimates in this publication and in other publications that include Perth Statistical Division population estimates are due to differences in scope and response rates as mentioned above.

### Definitions

11. Appendix A provides survey details on questions asked. These should be read in conjunction with the following terms

*Household:* A group of one or more persons in a private dwelling who consider themselves to be separate from other persons (if any) in the dwelling, and who make regular provision to take

meals separately from other persons, i.e. at different times or in different rooms. Lodgers who receive accommodation but not meals are treated as separate households. Boarders who receive both accommodation and meals are not treated as separate households. A household may consist of any number of families and non-family members.

**Related publications**

The ABS produces a wide range of publications of social and demographic statistics. Other ABS publications which relate to this topic:

	<b>Catalogue No.</b>
Social Indicators, Australia 1992	4101.0
Australia's Environment, Issues and Facts 1992	4140.0
Attitudes to Environmental Issues, Australia 1992	4602.0
Cost of Environment Protection, Australia 1990-91	4603.0

## TECHNICAL NOTES

The figures contained in this publication are estimates based on a sample of 1,657 households in Perth Statistical Division in November 1992.

### Estimation procedure

Estimates derived from the survey were obtained by using a complex ratio estimation procedure which ensures that the survey estimates conform to an independently estimated distribution of the population by age and sex rather than to the age and sex distribution within the sample itself.

### Reliability of estimates

The estimates provided in this publication may be subject to two types of error:

### Non-sampling error

Inaccuracies may occur because of imperfections in reporting by respondents and errors made in coding and processing the data. These errors can occur whether the estimates are derived from a sample or a complete enumeration. Every effort is made to reduce non-sampling error to a minimum.

These reporting errors and inconsistencies may include, for example:

- (a) recall errors for questions relating to make and year of vehicles
- (b) misreporting when one household member answers on behalf of another household member
- (c) different interpretations of various terms used in the questions.

### Sampling error

Since the estimates in this publication are based on information obtained from occupants from a sample they are subject to sampling variability; that is, they may differ from figures that would have been produced if all dwellings and persons had been included in the survey. One measure of the likely difference is given by the *standard error*, which indicates the extent to which an estimate might have varied by chance because only a sample of dwellings was included. There are about two chances in three that the sample estimate will differ by less than one standard error from the figure that would have been obtained if all dwellings had been included, and about nineteen chances in twenty that the difference will be less than two standard errors.

A standard error expressed as a percentage of the estimate is known as the *relative standard error*. For example, if an estimate of 4,000 households has a standard error of 1200, then the relative standard error of  $1200/4,000 \times 100 = 29.8$  per cent. The relative standard error is useful measure in that it provides an immediate indication of the percentage of errors likely to have occurred due to sampling.

### Standard error of population estimates

Table 38 on the following page, gives standard errors for general application to estimates of number of households. These figures will not give a precise measure of the standard error of a particular estimate, but they will provide an indication of its magnitude.

As can be seen from the standard errors table, the size of the standard error increases with the size of the estimate. However, *the smaller the estimates the higher the relative standard error*. Thus, large estimates will be relatively more reliable than small estimates. Very small estimates are subject to such high standard errors (relative to the size of the estimate) as to detract seriously from their value for most reasonable uses. Only estimates with relative standard errors of 50 per cent or less are considered sufficiently reliable for most purposes. Estimates with relative standard errors greater than 50 percent are included but are indicated with the symbol \*\*. Estimates with relative standard errors between 25 and 50 per cent are indicated with \*.

An example of the calculation and of standard errors is as follows:

*From Table 2 an estimate of 387.9 thousand households indicated that the dwelling material of the outer wall of their dwelling was "Double brick". Referring to table 38, an estimate of*

387,900 has a standard error of between 13,900 and 16,300 households. In this case the conservative choice would be 16,300 households.

There are therefore two chances in three (66.6%) that the number that would have been produced if all dwellings had been included in the survey lies between 371,600 and 404,200 [i.e., 387,900 +/- (1 x 16,300)].

There are about 19 chances in 20 (95%) that the number lies between 355,300 and 420,500 [i.e., 387,900 +/- (2 x 16,300)].

**TABLE 38. STANDARD ERROR OF ESTIMATES  
CONSERVATION OF ENERGY, WATER AND THE ENVIRONMENT  
PERTH STATISTICAL DIVISION, NOVEMBER 1992**

Size estimate	Standard error of estimate	Relative standard error (%)	There are about 2 chances in 3 that the actual population figure will fall in this range		There are about 19 chances in 20 that the actual population figure will fall in this range	
300	270	91.3	30 -	570	- -	840
400	320	80.6	80 -	720	- -	1040
500	370	73.2	130 -	870	- -	1240
600	410	67.7	190 -	1010	- -	1420
700	440	63.3	260 -	1140	- -	1580
800	480	59.8	320 -	1280	- -	1760
900	510	56.8	390 -	1410	- -	1920
1000	540	54.3	460 -	1540	- -	2080
1100	570	52.1	530 -	1670	- -	2240
1200	600	50.2	600 -	1800	0 -	2400
1300	630	48.5	670 -	1930	40 -	2560
1400	660	46.9	740 -	2060	80 -	2720
1500	680	45.6	820 -	2180	140 -	2860
1600	710	44.3	890 -	2310	180 -	3020
1700	730	43.2	970 -	2430	240 -	3160
1800	760	42.1	1040 -	2560	280 -	3320
1900	780	41.1	1120 -	2680	340 -	3460
2000	800	40.2	1200 -	2800	400 -	3600
2100	830	39.4	1270 -	2930	440 -	3760
2200	850	38.6	1350 -	3050	500 -	3900
2300	870	37.9	1430 -	3170	560 -	4040
2400	890	37.2	1510 -	3290	620 -	4180
2500	910	36.5	1590 -	3410	680 -	4320
3000	1000	33.8	2000 -	4000	1000 -	5000
3500	1100	31.6	2400 -	4600	1300 -	5700
4000	1200	29.8	2800 -	5200	1600 -	6400
4500	1300	28.3	3200 -	5800	1900 -	7100
5000	1350	27.1	3650 -	6350	2300 -	7700
6000	1500	25.0	4500 -	7500	3000 -	9000
8000	1750	22.1	6250 -	9750	4500 -	11500
10000	2000	20.1	8000 -	12000	6000 -	14000
20000	3000	14.9	17000 -	23000	14000 -	26000
30000	3750	12.5	26250 -	33750	22500 -	37500
40000	4400	11.0	35600 -	44400	31200 -	48800
50000	5000	10.0	45000 -	55000	40000 -	60000
100000	7400	7.4	92600 -	107400	85200 -	114800
200000	11000	5.5	189000 -	211000	178000 -	222000
300000	13900	4.6	286100 -	313900	272200 -	327800
400000	16300	4.1	383700 -	416300	367400 -	432600
500000	18500	3.7	481500 -	518500	463000 -	537000
1000000	27500	2.7	972500 -	1027500	945000 -	1055000

## APPENDIX A.

The following is an abridged version of the questionnaire for the State Supplementary Survey, Western Australia, November 1992.

### DWELLING

Are the external walls of this dwelling double brick, brick veneer or timber (fibro) veneer?

Are the walls between the rooms of this dwelling brick or plasterboard/gyprock?

Is the floor of this dwelling a concrete slab or timber?

Is the roof of this dwelling tile, metal or fibro?

What is the age of this dwelling?

- Less than 5 years
- 5 years to less than 10 years
- 10 years to less than 15 years
- 15 years to less than 20 years
- 20 years to less than 40 years
- 40 years or more
- Don't know

Is this dwelling owned, being purchased, or rented by any member of this household?

### ROOF INSULATION

Does this dwelling have insulation in the roof or ceiling?

What type of insulation is there in the roof or ceiling?

- Batts or blow-in
- Sisalation
- Reflective foil
- Other (Specify)
- Don't know

What is the main reason insulation is not installed in the roof or ceiling of this dwelling?

- Cost
- Not owner/not responsible
- Doesn't make much difference
- Other (Specify)
- Don't know

### ROOM HEATING

What is the energy source of main room heating used in this dwelling?

- Electrical
- Natural gas (mains)
- Firewood
- Other (Specify)
- None

Is this heating provided by a reverse cycle air conditioner or some other type of electrical heater?

### AIR CONDITIONING

How many air conditioners are there in this dwelling?

Is the (main) air conditioner refrigerated, reverse cycle or evaporative?

Is the (main) air conditioner ducted, in the wall or portable?

### CLOTHES DRYER

Is there a clothes drying machine in this dwelling?

### DISHWASHER

Is there a dishwashing machine in this dwelling?

### WASHING MACHINE

Is there a washing machine in this dwelling?

Is the (main) washing machine automatic?

Is the washing machine front or top loading?

What type of washing machine do you have?

Is the load capacity small, medium or large?

### HOT WATER SYSTEM

Is this households hot water system a storage or instantaneous model?

What is the main energy source for the hot water system during the summer?

- Electricity
- Natural gas (mains)
- Solar
- Other (Specify)

Is the solar hot water system boosted by electricity or natural gas?

### REFRIGERATOR

How many refrigerators are there in this dwelling?

- One
- Two
- Three or more
- None

How many doors are there on the main refrigerator?

**OVEN HOTPLATES**

Do you have a microwave oven in this dwelling?

What (other) cooking facilities do you have?

- Electric oven
- Natural gas oven
- Other oven (Specify)
- Electric hotplates
- Natural gas hotplates
- Other hotplates (Specify)

**FREEZER**

How many free standing freezers are there in this dwelling?

**POOL SPA BATH**

Is there a swimming pool on this property?

Is there a separate spa bath in this dwelling?

**WATER CONSERVATION**

When watering the garden during the summer what is the main source of water?

- Mains
- Bore or well
- Other (Specify)
- No garden/do not water

Which of the following does this household use when water the garden during the summer?

- Reticulation
- Operated by a time clock
- Manually operated
- Drip watering system
- Hose with sprinkler
- With timer attached
- Without timer
- Hand held hose
- Other (Specify)

Does this household have either of the following installed?

- Dual flush toilets
- Reduced flow shower heads
- Neither of the above

**RECYCLING**

Do you sort any of your household waste for recycling?

What is the main reason you don't sort any of your household waste for recycling?

- Haven't got around to it
- Takes too long/too much effort
- No collection services
- Other (Specify)
- Don't know

What items do you recycle?

- Glass and bottles
- Paper/newspapers
- Cans/aluminium
- Plastic
- Old clothing/rags
- Vegetable/garden waste
- Other (Specify)

What type of recycling facilities does this household use?

- Collection from your house
- Special areas at the dump
- Central collection points
- Compost/mulch
- Other (Specify)

**INCOME**

Gross household income?

- Income \$20,000 or less
- \$20,001 to \$40,000
- \$40,001 to \$60,000
- \$60,001 to \$80,000
- \$80,001 to \$100,000
- More than \$100,000
- Don't know

**TRANSPORT**

How many motor cycles or motor vehicles are usually garaged or parked at this dwelling?

- One to five
- Six to ten
- More than ten
- None

Is this vehicle a:

- Motor cycle
- Car (Sedan/wagon)
- Light commercial (Van/utility)
- Heavy commercial (Over 2 tonnes)

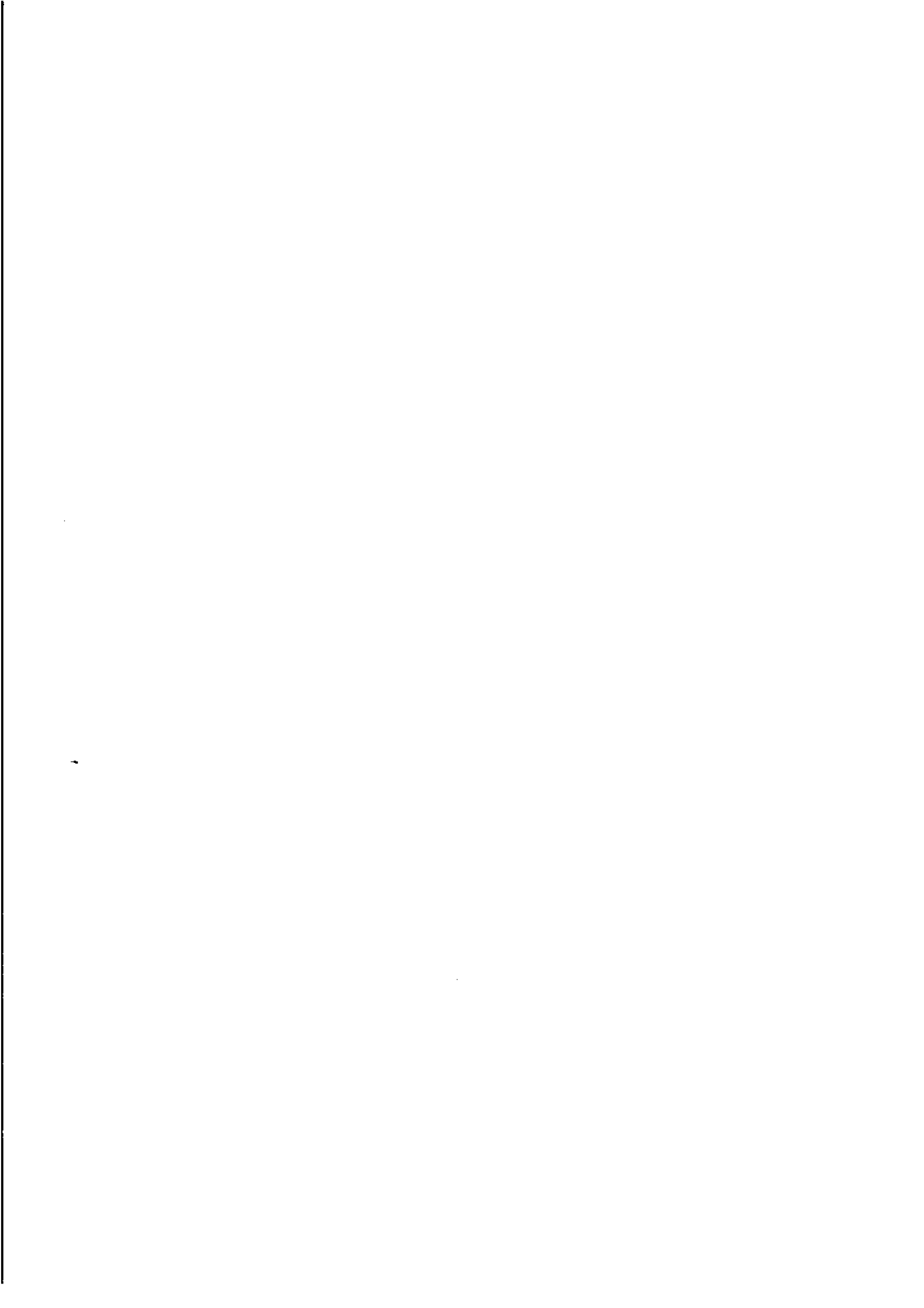
Who is the usual driver of the vehicle?

Who owns the vehicle?

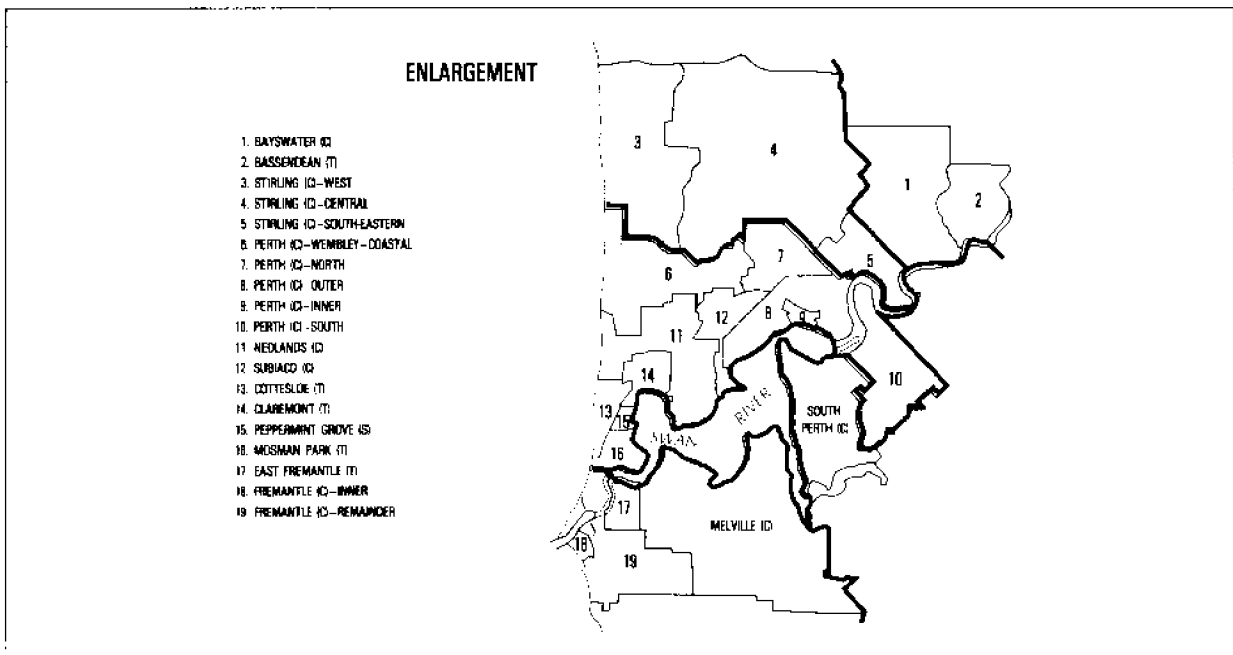
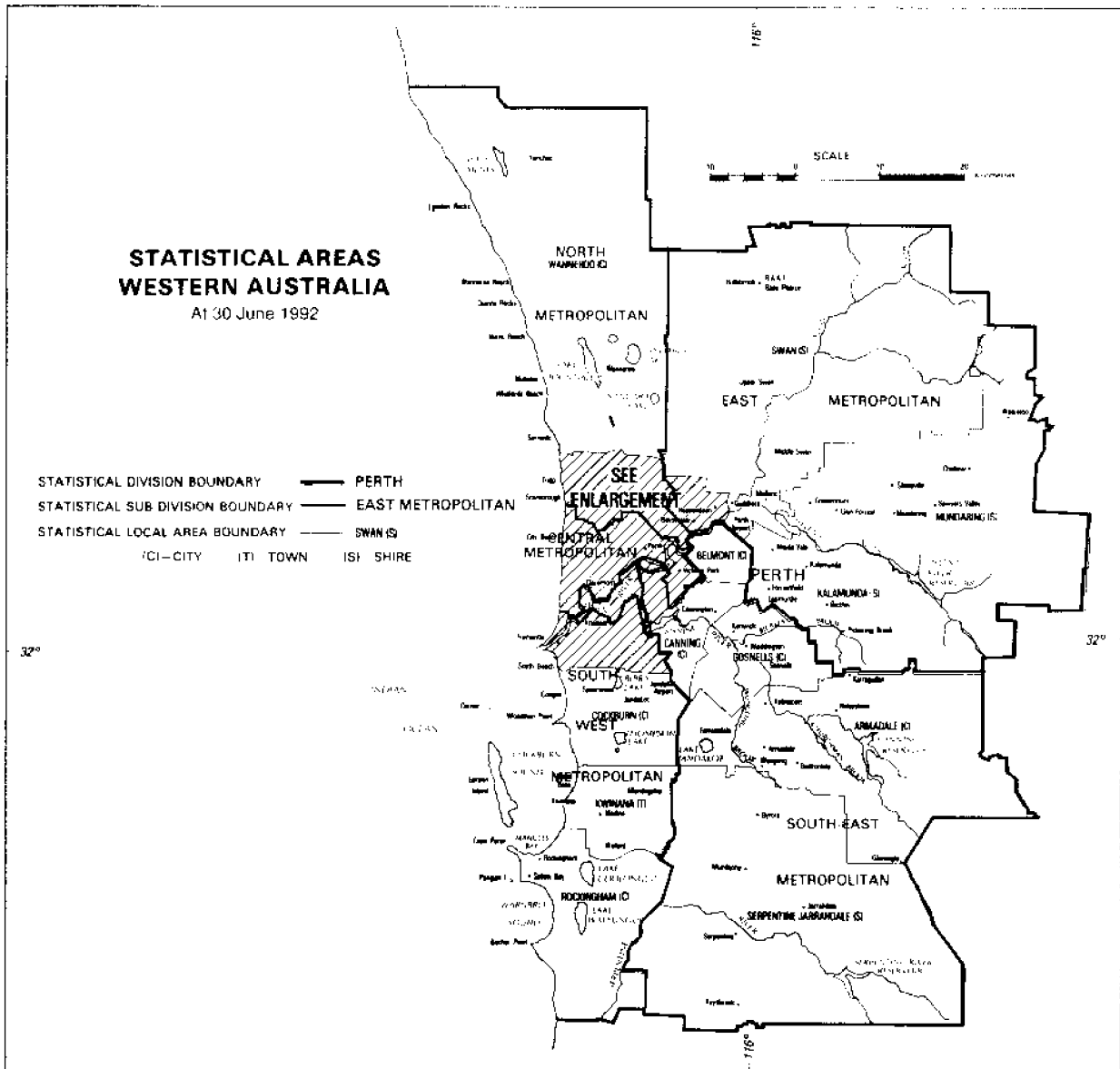
What is the make and model of this vehicle?

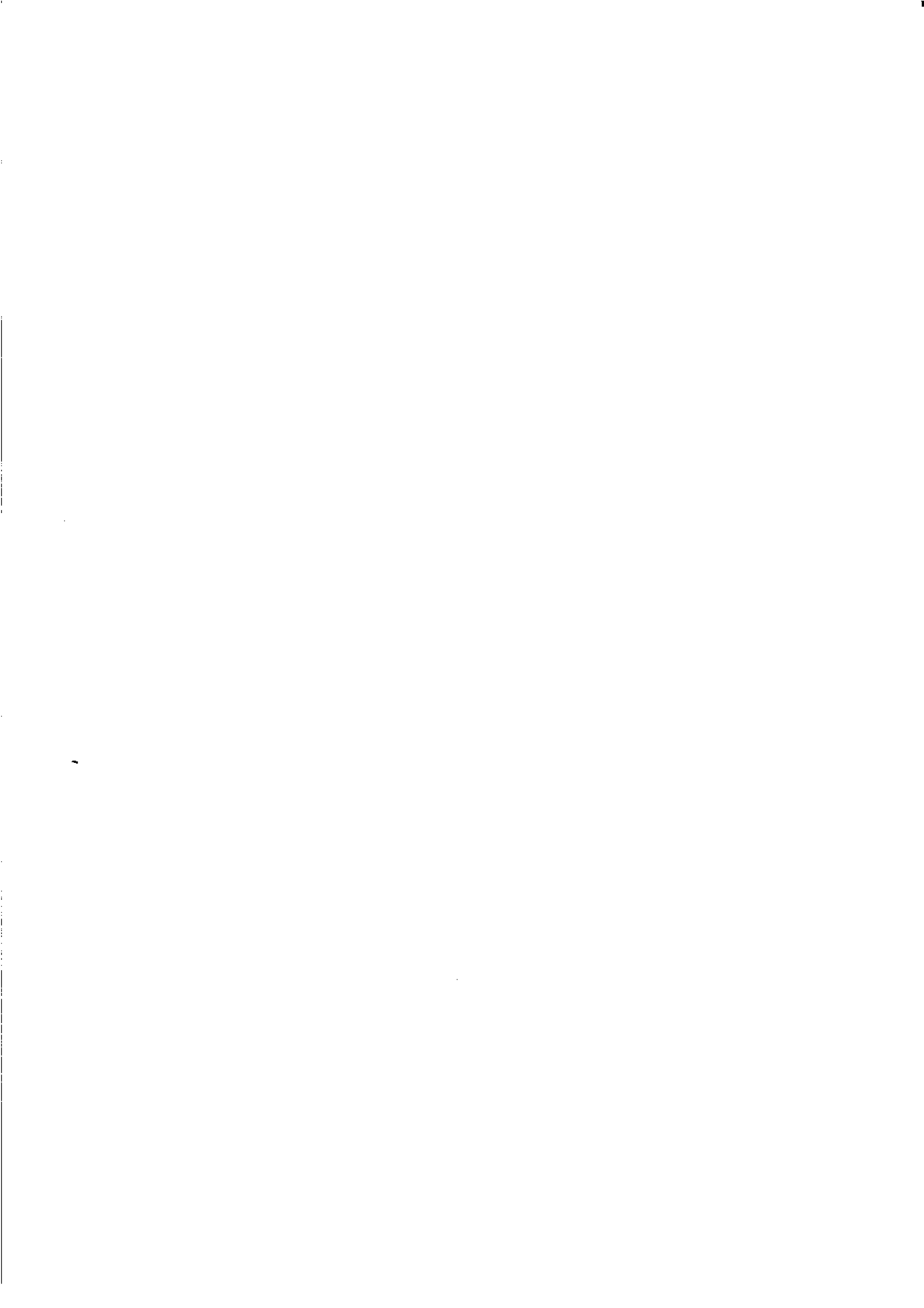
What is the year of manufacture of this vehicle?

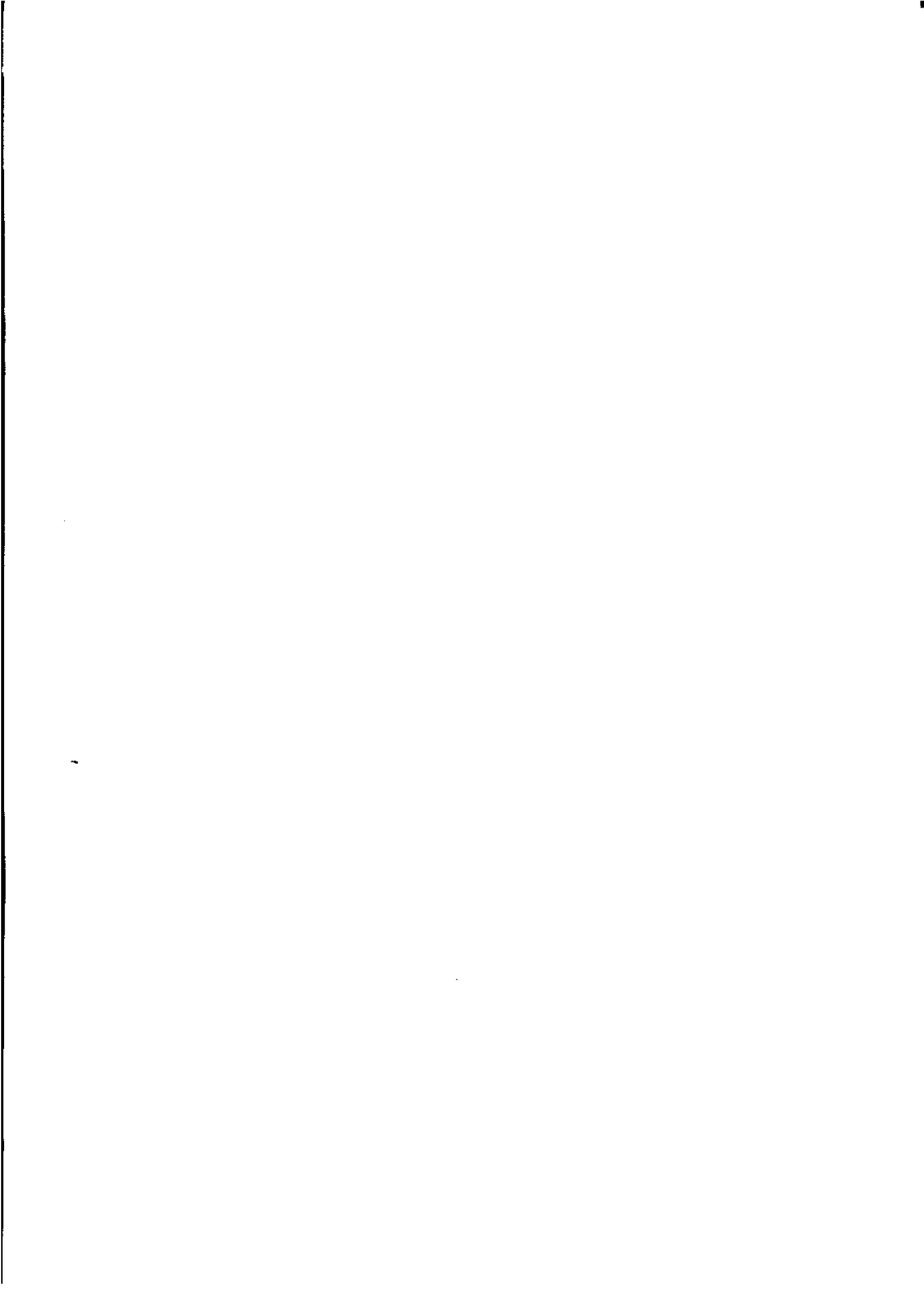
Is the vehicle air-conditioned?













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