

Chapter 5

DEMOGRAPHY

POPULATION

Historical

In 1803, Lieutenant John Bowen's expedition of 49 persons made the first white settlement at Risdon Cove; at the 30th June, 1965, Tasmania's population was estimated as 366,024 persons. This section describes, in broad outline, the pattern of population growth from the days of the first settlement.

The "Statistical Tables, Tasmania, 1804 to 1823" show the first population record in 1816 when the white inhabitants numbered 1,461, analysed as 1,032 free, 409 convicts and 20 children of convicts. In 1819, a "Muster Roll" was taken by Commissary Hull, his count being 4,411 persons. From the year 1816, there exists a continuous annual record of Tasmania's population.

Source of Population Figures

There are two principal methods by which population figures can be obtained: (i) by census enumeration; (ii) by application of vital and migration statistics to census data. The second method involves taking account of natural increase (excess of births over deaths), and net migration (excess of arrivals over departures) and applying these net figures to information obtained from an earlier census, the result being termed an intercensal estimate.

In the early days of settlement, frequent "musters" of the population were carried out but the first census, in the modern sense, dates from 1841. Subsequent censuses were conducted by the State in 1847, 1851, 1857, 1861, 1870, 1881, 1891 and 1901; the Commonwealth Statistician became responsible for censuses with the establishment of the Commonwealth Bureau of Census and Statistics and conducted them in 1911, 1921, 1933, 1947, 1954 and 1961. There is some doubt as to the extent and reliability of the data used in making the earlier intercensal estimates; birth and death registrations appear as a continuous published series from 1828 while the immigration and emigration published series commences from 1847, although earlier official records are known to have been available to those concerned with preparing estimates.

Population from 1820

The table that follows is based on the traditional historical series and has been compiled to show the population at the end of each decade from 1820, and also to show the average annual growth in each decade on two bases, firstly gross and secondly, attributable to natural increase. There is a minor break in the comparability of the traditional historical series, the British military establishment being included up to 1842 but excluded in subsequent years. The effect of this break can be gauged when the strength of the establishment is taken as approximately 1,000 both in 1840 and 1850.

Historical Summary of Population in Decades

Year	Estimated Population (a)			Average Annual Increase For Decade (b)	
	Males	Females	Persons	Total Population	From Natural Increase (c)
1820	4,057	1,343	5,400	..	..
1830	18,108	6,171	24,279	1,888	..
1840	32,040	13,959	45,999	2,172	106
1850	44,229	24,641	68,870	2,287	656
1860	49,653	40,168	89,821	2,095	1,214
1870	53,517	47,369	100,886	1,107	1,622
1880	60,568	54,222	114,790	1,390	1,542
1890	76,453	68,334	144,787	2,998	2,496
1900	89,763	83,137	172,900	2,811	2,776
1910	97,026	92,781	189,807	1,691	3,322
1920	106,236	103,189	209,425	1,962	3,649
1930	111,148	108,835	219,983	1,056	3,127
1940	121,911	118,280	240,191	2,021	2,438
1950	140,339	135,563	275,902	3,571	3,768
1960	174,379	169,531	343,910	6,801	5,523
1965 (d) ..	185,344	180,680	366,024	4,423	5,500
1966 (e) ..	187,267	183,950	371,217	..	..

(a) Up to 1900, at 31st December; from 1910, at 30th June.

(b) Decade ending in year shown.

(c) Excess of births over deaths in calendar years.

(d) Incomplete decade; averages based on five-year period only.

(e) Preliminary Census figures.

Pattern of Net Migration

By comparing the last two columns in the previous table, it is possible to make an assumption as to whether net migration (excess of arrivals over departures) tended to be positive or negative in any decade. Thus, in the six decades ended 1860, growth of population was largely attributable to positive net migration with natural increase playing only a minor role; growth in this period was temporarily set back by something of an exodus to the Victorian goldfields in the 1850's.

In the next two decades ended 1880, natural increase was becoming a more significant factor but the growth of population was checked by negative net migration. Important mining discoveries (e.g. Mt. Bischoff, Zeehan and Mt. Lyell) brought prosperity to the State, and the two decades ended 1900 were characterised by positive net migration despite an Australia-wide depression in the early 1890's.

The main characteristic of the five decades ended 1950 was persistent loss of population due to negative net migration, the decade most affected ending in 1930; the decade 1921-1930 was one of general prosperity for Australia apart from the final two years and the implication of the population loss is that Tasmania was "depressed" even before the general depression. This trend in net migration loss persisted till the end of World War II (1945). The Commonwealth Government's post-war immigration policy and the increasing industrialisation of the State combined to reverse the adverse trend of the previous half-century, and the last decade, ending 1960, was characterised by positive net migration. In the present incomplete decade, loss of population by negative net migration is becoming apparent.

Census Populations from 1841

The following table records the population and masculinity at each Census since 1841 and compares the rate of inter-censal growth.

Population and Masculinity at each Census from 1841

Census Date	Population			Average Annual Percentage Rate of Increase (a)	Masculinity (b)
	Males	Females	Persons		
31st Dec., 1841 ..	34,493	17,006	51,499	..	202.83
31st Dec., 1847 ..	47,828	22,336	70,164	5.29	214.13
1st March, 1851 ..	44,648	25,482	70,130	— 0.01	175.21
31st March, 1857 ..	46,606	34,886	81,492	2.53	133.60
7th April, 1861 ..	49,593	40,384	89,977	2.51	122.80
7th Feb., 1870 ..	52,853	46,475	99,328	1.11	113.72
3rd April, 1881 ..	61,162	54,543	115,705	1.40	112.14
5th April, 1891 ..	77,560	69,107	146,667	2.40	112.23
31st March, 1901 ..	89,624	82,851	172,475	1.64	108.18
3rd April, 1911 ..	97,591	93,620	191,211	1.04	104.24
4th April, 1921 ..	107,743	106,037	213,780	1.12	101.61
30th June, 1933 ..	115,097	112,502	227,599	0.52	102.31
30th June, 1947 ..	129,244	127,834	257,078	0.87	101.10
30th June, 1954 ..	157,129	151,623	308,752	2.65	103.63
30th June, 1961 ..	177,628	172,712	350,340	1.82	102.85
30th June, 1966 (c) ..	187,267	183,950	371,217	1.16	101.80

(a) Intercensal increase in total population as compound rate of growth per cent.

(b) Number of males per 100 females.

(c) Preliminary figures.

It should be noted that the Census figures up to 1870 include the British military establishment; the last Imperial troops were withdrawn later in 1870. (The traditional annual series previously quoted excludes the establishment after 1842.)

Comparison with other States

The following table compares the Tasmanian population at successive Censuses from 1901 with that of other States and Territories:

Australia: Census Populations of States and Territories ('000 Persons)

State or Territory	1901	1911	1921	1933	1947	1954	1961
N.S.W.	1,355	1,647	2,100	2,601	2,985	3,424	3,917
Victoria	1,201	1,315	1,531	1,820	2,055	2,452	2,930
Queensland	498	606	756	947	1,106	1,318	1,519
S.A.	359	409	495	581	646	797	969
W.A.	184	282	333	439	502	640	737
Tasmania	172	191	214	228	257	309	350
N.T.	5	3	4	5	11	17	27
A.C.T. (a) .. ..	..	2	3	9	17	30	59
Australia	3,774	4,455	5,436	6,630	7,579	8,987	10,508

(a) Part of New South Wales prior to 1911.

The next table shows the average annual rate of increase of population in each State and Territory during successive intercensal periods from 1901-1911.

Australia: Average Annual Percentage Rate of Increase of Population During Intercensal Periods

State or Territory	1901-11	1911-21	1921-33	1933-47	1947-54	1954-61
N.S.W.	1.97	2.46	1.76	0.99	1.98	1.94
Victoria	0.91	1.53	1.42	0.87	2.56	2.58
Queensland	1.98	2.24	1.86	1.11	2.53	2.04
S.A.	1.32	1.94	1.31	0.76	3.05	2.83
W.A.	4.36	1.66	2.29	0.97	3.51	2.03
Tasmania	1.04	1.12	0.52	0.87	2.65	1.82
N.T.	3.67	1.57	1.87	5.93	6.12	7.40
A.C.T. (a) .. .. .	..	4.14	10.71	4.65	8.70	9.93
Australia	1.67	2.01	1.63	0.96	2.46	2.26

(a) Part of N.S.W. prior to 1911.

It will be observed that only in the period 1947-54 did the Tasmanian rate of growth exceed that for Australia as a whole and that 1921-33 was the period of minimum Tasmanian growth.

Intercensal Adjustment

Earlier, mention was made of the method for calculating intercensal estimates of population by taking account of recorded natural increase and recorded net migration. The following two tables show these factors in successive intercensal periods from 1911 to 1961 inclusive:

Analysis of Intercensal Increase in Population

(i) Recorded Natural Increase and Recorded Net Migration

Intercensal Period	Births	Deaths	Natural Increase	Arrivals	Departures	Net Migration
3.4.1911 to 4.4.1921 (a) ..	56,459	20,011	36,448	386,377	396,642	- 10,265
4.4.1921 to 30.6.1933 (b) ..	61,955	25,174	36,781	507,209	535,780	- 28,571
30.6.1933 to 30.6.1947 ..	73,130	34,767	38,363	482,577	493,305	- 10,728
30.6.1947 to 30.6.1954 ..	51,615	17,557	34,058	870,768	845,009	+ 25,759
30.6.1954 to 30.6.1961 ..	59,282	18,631	40,651	1,070,297	1,065,254	+ 5,043

(a) Numbers recorded between the March quarters of 1911 and 1921, i.e. the quarter nearest to the census date.

(b) Numbers recorded from the March quarter of 1921.

(ii) Census Population, Intercensal Records and Intercensal Adjustment

Census Date	Population	Numbers Recorded Since Previous Census		Intercensal Adjustment (a)
		Natural Increase	Net Migration	
4.4.1921 ..	213,780	36,448	- 10,265	- 3,614
30.6.1933 ..	227,599	36,781	- 28,571	+ 5,609
30.6.1947 ..	257,078	38,363	- 10,728	+ 1,844
30.6.1954 ..	308,752	34,058	+ 25,759	- 8,143
30.6.1961 ..	350,340	40,651	+ 5,043	- 4,106

(a) For definition, see following section.

In general, two population estimates are made for any specific date: (i) *Original* estimates for dates subsequent to a census made before another census is taken. These estimates represent the population ascertained at the census, plus natural increase and recorded net migration since the census. As complete records of interstate migration are not available, the estimated State population so derived is approximate and subject to revision when the actual population is ascertained at the next census. (ii) *Revised* estimates for each newly completed intercensal period to adjust for the difference between the new census result and the comparable estimate. This is to bring intercensal estimates into line with the two census populations and thus effect adjustment for unrecorded movement of population in the intercensal period.

Thus, all original estimates of population for the intercensal periods from 1911 to 1961 have been revised to reconcile with the results of successive censuses from 1921 to 1961 and can be regarded as final. Estimates of population for dates after 30th June, 1961, must be regarded as subject to revision, and will in fact be revised when the results of the 1966 census become available. In the preceding table, it will be seen that the intercensal adjustment for the latest period (1954 to 1961) was *minus* 4,106, equivalent to an average accumulating adjustment of approximately *minus* 587 per annum for revision of the original intercensal estimates.

Population Estimates from 1950

The following are estimates of State population since 1950:

Estimated Population, 30th June and 31st December

Year	At 30th June			At 31st December		
	Males	Females	Persons	Males	Females	Persons
1950	140,339	135,563	275,902	147,103	143,230	290,333
1951	145,279	140,914	286,193	153,721	148,066	301,787
1952	151,100	145,199	296,299	157,702	151,856	309,558
1953	155,161	148,919	304,080	161,305	155,160	316,465
1954 (a) ..	157,129	151,623	308,752	162,393	156,825	319,218
1955	159,861	154,231	314,092	165,356	159,563	324,919
1956	162,196	156,274	318,470	168,695	162,645	331,340
1957	165,940	160,190	326,130	172,186	166,621	338,807
1958	169,123	163,943	333,066	174,465	169,433	343,898
1959	172,097	167,279	339,376	178,109	173,240	351,349
1960	174,379	169,531	343,910	180,511	175,458	355,969
1961 (a) ..	177,628	172,712	350,340	185,661	178,473	364,134
1962	180,956	175,981	356,937	187,833	181,570	369,403
1963	182,743	178,577	361,320	189,515	184,125	373,640
1964	183,968	180,598	364,566	189,974	185,294	375,268
1965	185,344	180,680	366,024	191,808	187,299	379,107

(a) Figures at 30th June as recorded at Census.

"De Facto" and "De Jure"

In the preceding table, it will be observed that the State's estimated population in December invariably exceeds the figure for the following June. This originates in the fact that Australian censuses credit persons to the State where they happen to be at census date (*de facto* basis) and not to the State where they normally reside (*de jure* basis). It follows that the factors used in making intercensal estimates—natural increase and net migration—are necessarily compiled on the same basis, (e.g. a Victorian resident dying in

Tasmania is counted as a Tasmanian death for calculating natural increase; in calculating net migration, no distinction is made between a Tasmanian resident returning and a Victorian resident entering the State). Since intercensal estimates are produced on a *de facto* basis, the December estimates are inflated by positive net migration due to the seasonal tourist influx.

Mean Population

Mean populations are calculated for twelve-month periods to provide a satisfactory average basis for calculations requiring allowance for the continuous change in population figures during such periods, (e.g. a year's expenditure requires division by the mean population to produce per capita expenditure).

From 1901 onwards, the mean population for any year has been calculated by the formula:

$$\text{Mean Population} = \frac{a + 4b + 2c + 4d + e}{12}$$

where *a* is the population at the end of the quarter immediately preceding the year and *b*, *c*, *d* and *e* are the populations at the end of the quarters making up the year under consideration, (e.g. in the case of a mean population for the calendar year 1960, the populations in the formula represented by *a*, *b*, *c*, *d* and *e* are those at the following dates:—31.12.1959, 31.3.1960, 30.6.1960, 30.9.1960 and 31.12.1960).

The following table shows the State's mean population on two bases: (i) for financial years; (ii) for calendar years.

Mean Population, Financial and Calendar Years

Year	Estimated Mean Population		Year	Estimated Mean Population	
	Year Ended 30th June	Year Ended 31st December		Year Ended 30th June	Year Ended 31st December
1950 ..	274,493	278,785	1958 ..	332,046	335,382
1951 ..	283,526	288,294	1959 ..	338,628	341,423
1952 ..	293,340	298,361	1960 ..	344,111	346,913
1953 ..	302,529	306,318	1961 ..	350,077	353,613
1954 ..	309,416	311,055	1962 ..	356,686	359,408
1955 ..	312,694	315,565	1963 ..	362,111	364,280
1956 ..	318,309	321,039	1964 ..	366,187	367,359
1957 ..	324,666	328,435	1965 ..	368,086	369,421

Arrivals and Departures

Earlier in this chapter, reference was made to net migration as one factor determining the growth of the State's population. Net migration, for any period, is the difference between arrivals and departures, such movements being reported by the shipping companies and airlines. "Arrivals" in the following table applies to all persons arriving in Tasmania from overseas or from other Australian States; it includes Tasmanians returning home. Similarly, "departures" applies to all persons leaving Tasmania for overseas or for other Australian States; it includes visitors returning home. The table below shows

annual arrivals and departures since 1953 and also quarterly arrivals and departures since 1962, but the intercensal adjustments referred to in an earlier section have not been applied to the figures:

Recorded Arrivals In and Departures From Tasmania, Interstate and Overseas

Period	Arrivals	Departures	Period	Arrivals	Departures
1953 ..	127,484	125,812	1962—March Qr. ..	53,769	61,049
1954 ..	126,976	128,424	June Qr. ..	42,623	45,684
1955 ..	137,834	137,144	September Qr. ..	34,552	35,140
1956 ..	143,104	141,686	December Qr. ..	54,324	44,150
1957 ..	143,601	141,310	1963—March Qr. ..	58,364	65,112
1958 ..	141,814	141,995	June Qr. ..	44,404	48,703
1959 ..	162,761	160,569	September Qr. ..	36,898	37,438
1960 ..	182,537	183,513	December Qr. ..	58,777	48,665
1961 ..	186,423	184,165	1964—March Qr. ..	67,122	74,092
1962 ..	185,268	186,023	June Qr. ..	47,372	52,018
1963 ..	198,443	199,918	September Qr. ..	42,015	43,161
1964 ..	219,930	223,380	December Qr. ..	63,421	54,109
1965 ..	248,964	249,617			

If annual arrivals and departures are added, the result may conveniently be termed "annual movements" and a comparison of "annual movements" over the years gives some indication of the degree to which travel and tourism have affected the State. Thus, in 1901, the year of Federation, annual arrivals and departures together totalled 51,000; in 1913, 91,800; in 1931, 58,500; in 1939, 120,200 and in 1965, 499,000. The marked increase in "annual movements" since World War II is largely attributable to the growing use of air travel. Another factor has been industrial legislation providing for paid holidays (two weeks' leave was increased to three weeks by the Federal Arbitration Commission in 1963); this has not only increased the tourist inflow but also has resulted in more Tasmanians taking holidays in the continental States.

The quarterly figures show a marked seasonal pattern with arrivals at their maximum in the spring and summer quarters (those ending December and March). Net migration figures also show a seasonal pattern with substantial increments, approximating 10,000 persons, in the December quarter and substantial losses in the March quarter.

The data on arrivals and departures in the previous table are compiled simply on the basis of individual journeys and yield no classifications such as "permanent movement", "long-term movement" or "short-term movement", (these classifications are employed to describe arrivals and departures for the Commonwealth of Australia as a whole). It follows, therefore, that the percentage of "movements" involving Tasmanians, as opposed to visiting tourists, is at present unknown.

CENSUS OF 30th JUNE, 1961

Age Distribution

In addition to giving the number of the State's population, the Census of 30th June, 1961, provided a variety of data on characteristics of that population.

The table below shows the age distribution at 30th June, 1961 and the change since 1954:

Age Distribution of the Population at 30th June, 1961

Age Last Birthday (Years)	Males	Females	Persons			
			Total	Per Cent of Total	Intercensal Increase (a)	
					Number	Per Cent
0-4	21,350	20,344	41,694	11.90	4,673	12.62
5-9	19,714	19,001	38,715	11.05	4,832	14.26
10-14	18,750	18,140	36,890	10.53	10,342	38.96
15-19	14,110	13,646	27,756	7.92	5,825	26.56
20-24	11,857	11,264	23,121	6.60	1,955	9.24
25-29	11,005	10,142	21,147	6.04	2,412	10.24
30-34	12,173	11,104	23,277	6.64	493	2.07
35-39	12,431	11,685	24,116	6.88	2,463	11.37
40-44	11,036	10,761	21,797	6.22	1,104	5.33
45-49	10,948	10,115	21,063	6.01	3,690	21.23
50-54	9,332	8,499	17,831	5.09	3,051	20.64
55-59	7,381	6,767	14,148	4.04	2,343	19.85
60-64	5,697	6,080	11,777	3.36	558	4.97
65-69	4,364	5,427	9,791	2.80	579	6.30
70-74	3,483	4,385	7,868	2.25	1,236	18.65
75-79	2,267	2,844	5,111	1.46	1,050	25.86
80-84	1,118	1,617	2,735	0.78	541	24.66
85-89	482	656	1,138	0.32	190	20.04
90-94	104	204	308	0.09	50	19.38
95-99	25	26	51	0.02	7	15.91
100 and Over	1	5	6	..	4	200.00
Total	177,628	172,712	350,340	100.00	41,588	13.47
Under 21	76,383	73,429	149,812	42.76	26,439	21.43
21-64	89,401	84,119	173,520	49.53	11,492	7.09
65 and Over	11,844	15,164	27,008	7.71	3,657	15.66

(a) Increase since Census of 30th June, 1954.

Conjugal Condition

The next table shows the conjugal condition of the population at the Census of 1961 and at the previous Census of 1954:

Conjugal Condition of the Population

Conjugal Condition	Census, 30th June, 1954		Census, 30th June, 1961			
	Persons		Males	Females	Persons	
	Total	Per Cent of Total			Total	Per Cent of Total
Never Married—						
Under 15 years of age	97,452	31.56	59,814	57,485	117,299	33.48
15 years and over ..	54,890	17.78	33,939	24,100	58,039	16.57
Total	152,342	49.34	93,753	81,585	175,338	50.05
Married	136,248	44.13	76,861	76,153	153,014	43.68
Married but permanently separated	3,553	1.15	2,016	2,080	4,096	1.17
Widowed	14,030	4.54	3,817	11,746	15,563	4.44
Divorced	2,002	0.65	1,181	1,148	2,329	0.66
Not Stated	577	0.19	(a)	(a)	(a)	(a)
Grand Total ..	308,752	100.00	177,628	172,712	350,340	100.00

(a) In processing the 1961 Census data, a conjugal condition was allocated prior to tabulation in all instances where this information was not stated.

Birthplaces of the Population

The table that follows is of particular interest in view of the Commonwealth's post-war policy of actively encouraging migration from Europe. It shows birthplaces of the population at the Census of 1961 and at the previous Census of 1954:

Birthplaces of the Population

Birthplace	Census, 30th June, 1954		Census, 30th June, 1961			
	Persons		Males	Females	Persons	
	Total	Per Cent of Total			Total	Per Cent of Total
Australia	282,491	91.49	159,081	158,397	317,478	90.62
New Zealand	1,112	0.36	559	569	1,128	0.32
United Kingdom & Eire	14,113	4.57	8,776	7,965	16,741	4.78
Germany	1,794	0.58	1,300	923	2,223	0.63
Greece	150	0.05	345	144	489	0.14
Italy	974	0.32	1,043	493	1,536	0.44
Netherlands	2,340	0.76	1,903	1,653	3,556	1.02
Poland	1,594	0.52	1,108	500	1,608	0.46
Other European Countries	2,791	0.90	2,466	1,226	3,692	1.05
Total Europe ..	23,756	7.70	16,941	12,904	29,845	8.52
Other Birthplaces ..	1,393	0.45	1,047	842	1,889	0.54
Grand Total ..	308,752	100.00	177,628	172,712	350,340	100.00

The analysis of the birthplaces of the population at 30th June, 1961, can be viewed broadly as a measure of the degree to which migration from overseas has contributed to population growth over a long period.

The following table contrasts the position throughout the Commonwealth at 30th June, 1961.

Australia: Birthplaces of the Population, Census of 30th June, 1961 Proportion of Population of State or Territory According to Birthplace (Per Cent)

Birthplace	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Australia ..	84.00	80.55	88.30	80.80	77.67	90.62	79.42	73.32	83.07
New Zealand ..	0.62	0.39	0.38	0.19	0.26	0.32	0.91	0.76	0.45
U.K. and Eire	6.87	7.05	6.15	8.13	11.32	4.78	7.65	9.62	7.19
Other European Countries ..	7.02	10.69	4.27	10.01	9.01	3.74	9.31	14.15	8.00
Other Birthplaces	1.49	1.32	0.90	0.87	1.74	0.54	2.71	2.15	1.29
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

It will be observed that the Tasmanian pattern appears to vary quite significantly from that of other States and Territories, the most similar being that of Queensland. The following table shows particulars of the period of residence in Australia of persons born outside Australia, both for Tasmania and for the Commonwealth:

**Period of Residence in Australia of Persons Born Outside Australia
Census, 30th June, 1961**

Period of Residence (Years)	Tasmania		Australia	
	Persons		Persons	
	Total	Per Cent of Total	Total	Per Cent of Total
Born Outside Australia—				
Under 1	1,976	0.57	123,516	1.17
1 and under 2	1,768	0.50	86,981	0.83
2 and under 3	1,695	0.48	90,067	0.86
3 and under 4	1,656	0.48	78,993	0.74
4 and under 5	1,605	0.46	83,879	0.80
5 and under 6	1,755	0.50	96,167	0.92
6 and under 7	1,376	0.39	92,042	0.88
Under 7	11,831	3.38	651,645	6.20
7 and under 14	13,782	3.93	600,441	5.72
14 and under 21	1,075	0.31	40,290	0.38
21 and over	5,431	1.55	449,676	4.28
Not Stated	743	0.21	37,120	0.35
Total Born Outside Australia	32,862	9.38	1,779,172	16.93
Born in Australia	317,478	90.62	8,729,014	83.07
Grand Total	350,340	100.00	10,508,186	100.00

Of persons born outside Australia, those with residence of less than 14 years constitute a decisive majority, both in the Tasmanian and Australian populations, and this fact can be related to the Commonwealth's post-war migration policy since the 14 years in question cover the period 1947-1961.

The table shows that this policy has had considerably less effect on the Tasmanian population than on the population of Australia.

Nationality of Population

Comparable percentages of persons of British nationality at 30th June, 1961 were:—N.S.W., 95.48; Victoria, 92.97; Queensland, 97.73; S.A., 94.04; W.A., 95.40; Tasmania, 97.74; N.T., 92.97; A.C.T., 89.93; Australia, 95.01. It should be noted that the *Nationality and Citizenship Act* 1948 created, for the first time, the status of "Australian Citizen"; all Australian citizens, under the provisions of this Act, are declared to be British subjects. From the earlier table on birthplaces of the Tasmanian population, it is established that 95.72 per cent were born in Australia, N.Z., the United Kingdom or Eire. While birthplace does not necessarily determine nationality in all cases, comparison of the two tables suggests that the percentage of naturalised British subjects was probably less than 3 per cent of the State population at 30th June, 1961.

The following table shows the nationality of the Tasmanian population at 30th June, 1961 and also at 30th June, 1954:

Nationality (i.e. Allegiance) of the Population

Nationality	Census, 30th June, 1954		Census, 30th June, 1961			
	Persons		Males	Females	Persons	
	Total	Per Cent of Total			Total	Per Cent of Total
British (a)—						
Born in Australia ..	282,491	91.49	159,081	158,397	317,478	90.62
Born outside Australia	17,443	5.65	13,605	11,322	24,927	7.12
Total British ..	299,934	97.14	172,686	169,719	342,405	97.74
Foreign—						
Dutch	2,363	0.77	1,180	1,061	2,241	0.64
German	1,262	0.41	756	467	1,223	0.35
Greek	125	0.04	264	120	384	0.11
Italian	924	0.30	818	395	1,213	0.35
Polish	1,205	0.40	392	257	649	0.18
Yugoslavian	324	0.10	303	94	397	0.11
Other (incl. Stateless)	2,615	0.84	1,229	599	1,828	0.52
Total Foreign ..	8,818	2.86	4,942	2,993	7,935	2.26
Grand Total ..	308,752	100.00	177,628	172,712	350,340	100.00

(a) All persons of individual citizenship status who, by virtue of the *Nationality and Citizenship Act 1948*, are deemed to be British subjects. Includes naturalised British. For purposes of this table, Irish nationality is included with British.

Industry

The next table shows the main groups of industry for the population of Tasmania at 30th June, 1961, compared with 1954. For industry groups Finance and Property, Public Authority (n.e.i.) and Defence Services, and Community and Business Services (including Professional), the figures derived from the 1954 classification have been adjusted to the classification used in 1961.

Meaning of "Work Force"

Persons usually engaged in industry are regarded as being "in the work force", while the remainder of the population, which at the 1961 Census comprised 219,423 persons, is classified as not being in the work force. The term "in the work force" includes persons of all ages who are employees, employers, self-employed, unpaid helpers engaged in industry and those who usually work for a living but who have lost their jobs. Persons who do not earn their living by doing work for monetary reward, such as children, housewives, full-time students, retired persons, pensioners and inmates of institutions (excluding temporary inmates of hospitals and members of religious orders) are regarded as not being in the work force.

In the case of employees, the basis of classification is the industry of the employer; thus a carpenter employed by a mining company will appear under "Mining and Quarrying", not under "Building and Construction". Employees in the government sector (Commonwealth, State, Semi-Government and Local Government) are not recorded separately but are allocated to appropriate industry groupings, e.g. State railway workers to "Transport",

postal workers to "Communication", &c. Government employees not classified under any of the major industry groups in the following table appear under "Public Authority, n.e.i."

It should be emphasised that "work force" should not be confused with wage and salary earners since the term, by definition, includes not only employees but also employers, the self-employed and certain categories of the unemployed.

Industry of Population at 30th June, 1961

Industry Group	Census, 30th June, 1954		Census, 30th June, 1961			
	Persons		Males	Females	Persons	
	Total	Per Cent of Work Force			Total	Per Cent of Work Force
Primary Production ..	19,581	16.56	16,208	949	17,157	13.11
Mining and Quarrying..	3,671	3.11	3,538	93	3,631	2.77
Manufacturing	26,443	22.37	24,273	5,258	29,531	22.56
Electricity, Gas, Water and Sanitary Services (a)	2,766	2.34	2,982	183	3,165	2.42
Building and Construction	13,014	11.01	13,210	133	13,343	10.19
Transport and Storage..	8,334	7.05	8,626	388	9,014	6.89
Communication.. ..	2,860	2.42	2,763	882	3,645	2.78
Finance and Property ..	2,598	2.20	2,433	1,293	3,726	2.85
Commerce	16,400	13.87	13,562	6,985	20,547	15.69
Public Authority (n.e.i.) and Defence Services	4,487	3.80	3,856	1,154	5,010	3.83
Community and Business Services (including professional) (b) ..	9,779	8.28	5,337	7,686	13,023	9.95
Amusement, Hotels, Cafes, Personal Service, etc.	7,086	5.99	2,986	4,052	7,038	5.38
Other	1,189	1.00	1,515	572	2,087	1.58
Total in Work Force	118,208	100.00	101,289	29,628	130,917	100.00
Persons not in Work Force	190,544	..	76,339	143,084	219,423	..
Grand Total ..	308,752	..	177,628	172,712	350,340	..

(a) Production, supply and maintenance.

(b) Includes police, fire brigades, hospitals, medical and dental services, education, business services such as consultant engineering and surveying, accounting and auditing, industrial and trade associations, advertising, etc.

Occupational Status

The next table shows the occupational status of persons in the work force at the respective Census dates (30th June, 1954 and 1961):

Occupational Status at 30th June, 1961

Occupational Status	Census, 30th June, 1954		Census, 30th June, 1961			
	Persons		Males	Females	Persons	
	Total	Per Cent of Work Force			Total	Per Cent of Work Force
In Work Force—						
At Work—						
Employer ..	7,670	6.49	7,108	1,113	8,221	6.28
Self-Employed ..	13,933	11.79	11,619	1,572	13,191	10.08
Employee (a) ..	93,881	79.42	78,863	25,853	104,716	79.99
Helper (b) ..	1,018	0.86	505	194	699	0.53
Total at Work ..	116,502	98.56	98,095	28,732	126,827	96.88
Not at Work (c) ..	1,493	1.26	3,194	896	4,090	3.12
Not Stated ..	213	0.18	(d)	(d)	(d)	(d)
Total in Work Force	118,208	100.00	101,289	29,628	130,917	100.00
Not in Work Force ..	190,544	..	76,339	143,084	219,423	..
Grand Total ..	308,752	..	177,628	172,712	350,340	..

(a) On wage or salary.

(b) Not on wage or salary.

(c) Includes those who stated they were usually engaged in work, but were not actively seeking a job at the time of the Census by reason of sickness, accident, etc., or because they were on strike, changing jobs, or temporarily laid off, &c. It includes also persons able and willing to work but unable to secure employment, as well as casual and seasonal workers not actually in a job at the time of the Census. The numbers shown as "Not at work", therefore, do not represent the number of unemployed available for work and unable to obtain it.

(d) In processing the 1961 Census data, an occupational status was allocated prior to tabulation in all instances where this information was not stated.

The Census classification "Not at Work" is not, by definition, intended as a measure of unemployment. The Department of Social Services reported the following receiving unemployment benefit in Tasmania near the respective Census dates (i.e. on the last Saturday of the month): June 1954, 109 persons; June 1961, 1,336 persons. The Department of Labour and National Service reported the following registered for employment in Tasmania near the Census dates: at 25th June, 1954, 555 persons; at 30th June, 1961, 3,213 persons. A definition of these registrations is: "Persons who claimed, when registering with the Commonwealth Employment Service, that they were not employed and who were recorded as unplaced. Includes those referred to employers and those who may have obtained employment without notifying the Employment Service. Includes also persons receiving unemployment benefit". Registration is voluntary but those seeking the payment of unemployment benefit are required to register. (For further details, see the "Employment" and "Unemployment" sections of Chapter 10.)

The Census term "Not at work" does not apply to persons who are only temporarily absent from their jobs through illness, accident, annual holidays, long-service leave, etc. The distinction between employees and helpers is that the former receive wages or salary while the latter do not, (e.g. "helpers" on the farm or in the family shop, not working for wages or salary).

The following table compares the proportions of the population in the work force of Tasmania and Australia at the respective Census dates (30th June, 1954 and 1961):

**Tasmania and Australia: Proportions of Population in Work Force
(Per Cent)**

Particulars	Census, 30th June, 1954			Census, 30th June, 1961		
	Males	Females	Persons	Males	Females	Persons
Total in Work Force—						
Tasmania	59.81	15.98	38.29	57.02	17.15	37.37
Australia	62.84	19.04	41.20	59.59	20.38	40.21

Religion

Commencing with the Census of 1933, the collection forms carried a note reminding the public that there was no legal obligation to answer the question on religion; the same reminder was given in subsequent censuses. A proportion of the population (8.97 per cent in 1954, 10.28 per cent in 1961) left the question on religion unanswered and appear in associated tables as "No Reply".

The table below analyses the Tasmanian population according to religion, as reported at the Censuses of 30th June, 1954 and 30th June, 1961. Over the seven-year intercensal period, there appears to have been little change in the proportion of adherents to the various religions:

Religions of the Population

Religion	Census, 30th June, 1954		Census, 30th June, 1961			
	Persons		Males	Females	Persons	
	Total	Per Cent of Total			Total	Per Cent of Total
Christian:—						
Baptist	6,293	2.04	3,547	3,680	7,227	2.06
Brethren	2,347	0.76	973	1,035	2,008	0.57
Catholic (a)	53,042	17.18	32,804	31,189	63,993	18.27
Churches of Christ	2,267	0.73	1,226	1,281	2,507	0.72
Church of England	147,407	47.74	79,982	79,119	159,101	45.41
Congregational	4,425	1.43	1,993	2,200	4,193	1.20
Greek Orthodox	593	0.19	647	362	1,009	0.29
Lutheran	1,046	0.34	849	706	1,555	0.44
Methodist	38,236	12.38	20,770	21,466	42,236	12.06
Presbyterian	15,607	5.06	8,350	8,407	16,757	4.78
Protestant (Undefined)	2,157	0.70	1,037	938	1,975	0.56
Salvation Army	1,815	0.59	1,114	1,202	2,316	0.66
Seventh Day Adventist	1,280	0.42	704	863	1,567	0.45
Other (including Christian Undefined)	2,972	0.96	2,483	2,607	5,090	1.45
Total Christian	279,487	90.52	156,479	155,055	311,534	88.92
Non Christian:—						
Hebrew	158	0.05	80	70	150	0.04
Other	98	0.03	86	32	118	0.04
Total Non-Christian	256	0.08	166	102	268	0.08
Indefinite	796	0.26	915	851	1,766	0.50
No Religion	516	0.17	529	246	775	0.22
No Reply	27,697	8.97	19,539	16,458	35,997	10.28
Grand Total	308,752	100.00	177,628	172,712	350,340	100.00

(a) Includes Catholic and Roman Catholic. (The Census forms do not list religions and adherents of the one religion may describe it under different titles.)

The apparent decline in the total proportion of the population adhering to Christian faiths should be weighed against the increase in the two categories, "Indefinite" and "No Reply", (i.e. a decline of 1.60 per cent against an increase of 1.55 per cent).

Population in Local Government Areas

The next table shows the population in cities, municipalities and statistical divisions at the Censuses of 1954 and 1961, together with the estimated distribution at 30th June, 1963 and 1964:

Population in Local Government Areas and Statistical Divisions

Local Government Area and Statistical Division	Population at 30th June			
	Census, 1954	Census, 1961	Estimated, 1963	Estimated, 1964
Hobart (City)	54,887	54,021	53,746	53,719
Glenorchy (City)	25,810	35,682	37,471	37,972
Total S. Central Division ..	80,697	89,703	91,217	91,691
Launceston (City)	37,627	38,118	38,141	37,940
Total N. Central Division ..	37,627	38,118	38,141	37,940
Burnie	13,785	16,745	17,525	17,681
Circular Head	7,568	7,733	7,820	7,851
Deloraine	5,477	5,574	5,622	5,520
Devonport	11,827	14,276	14,979	15,462
Kentish	4,510	4,167	4,171	4,471
King Island	2,554	2,784	2,777	2,727
Latrobe	4,145	4,367	4,477	4,474
Penguin	3,889	4,673	4,769	4,819
Ulverstone	8,091	9,365	9,681	9,701
Wynyard	7,394	8,835	9,197	9,278
Total N.W. Division ..	69,240	78,519	81,018	81,984
Beaconsfield (a)	7,573	8,550	8,954	9,076
Fingal	4,418	4,475	4,448	4,385
Flinders	1,027	1,407	1,393	1,416
George Town	2,516	3,677	4,003	4,258
Lilydale (a)	4,583	6,744	7,331	7,620
Portland	1,412	1,274	1,221	1,254
Ringarooma	3,440	3,056	2,995	2,916
Scottsdale	3,189	3,417	3,501	3,450
Total N.E. Division ..	28,158	32,600	33,846	34,375
Evandale	1,676	1,608	1,672	1,586
Longford	4,345	6,762	7,132	6,932
St. Leonards (a)	7,095	11,032	12,044	12,618
Westbury (a)	3,974	4,581	4,748	4,813
Total N. Midland Division ..	17,090	23,983	25,596	25,949
Bothwell	1,260	1,288	1,270	1,210
Campbell Town	1,919	1,893	1,869	1,890
Hamilton	6,143	4,178	3,821	3,775
Oatlands	2,914	2,691	2,709	2,624
Ross	680	672	657	630
Total Midland Division ..	12,916	10,722	10,326	10,129

Population in Local Government Areas and Statistical Divisions—*continued*

Local Government Area and Statistical Division	Population at 30th June			
	Census, 1954	Census, 1961	Estimated, 1963	Estimated, 1964
Brighton	2,570	2,115	2,038	2,040
Clarence (b)	12,604	23,140	26,862	28,100
Glamorgan	1,099	1,128	1,130	1,149
Green Ponds	949	969	973	941
Richmond	1,679	1,673	1,720	1,737
Sorell	2,391	2,878	3,068	3,168
Spring Bay	1,048	1,155	1,187	1,244
Total S.E. Division ..	22,340	33,058	36,978	38,379
Bruny	591	504	473	480
Esperance	3,200	3,436	3,601	3,678
Huon	5,615	5,460	5,440	5,394
Kingborough (b)	8,335	10,025	10,382	10,520
New Norfolk	9,429	10,217	10,360	10,340
Port Cygnet	2,861	2,754	2,684	2,663
Tasman	1,079	1,108	1,104	1,114
Total S. Division	31,110	33,504	34,044	34,189
Gormanston	523	507	513	474
Queenstown	4,497	4,624	4,615	4,570
Strahan	574	565	563	542
Waratah	514	367	373	352
Zeehan	2,816	3,191	3,210	3,192
Total W. Division	8,924	9,254	9,274	9,130
Migratory	650	879	880	800
Total Tasmania	308,752	350,340	361,320	364,566

(a) Includes suburban areas adjacent to City of Launceston.

(b) Includes suburban areas adjacent to City of Hobart.

Hobart and Suburbs

The City of Hobart is ringed by other local government areas which continue the pattern of urban development. For statistical purposes, this whole urban area is referred to as "Hobart and Suburbs"; it should be noted that "Hobart and Suburbs" is a combination of local government areas and parts of local government areas designed to define an homogeneous group and is not an area specified for any administrative purpose of local government.

"Hobart and Suburbs" is composed as follows: (i) City of Hobart; (ii) City of Glenorchy; (iii) part of Clarence Municipality (Derwent suburbs from Mount Direction to Howrah); (iv) part of Kingborough Municipality (Derwent suburbs from Taroona to Blackmans Bay).

The details of the suburban localities follow:

Suburbs of Hobart

Glenorchy (City)	Clarence (Part)	Kingborough (Part)
All (Extends parallel to Derwent River from New Town Creek to Granton)	Bellerive, Geilston Bay, Howrah, Lindisfarne, Risdon Vale, Warrane	Blackmans Bay, Kingston, Kingston Beach, Taroona

The next table shows the growth of "Hobart and Suburbs" since the Census of 30th June, 1954:

Population of Hobart and Suburbs

Local Government Area	At 30th June			
	Census, 1954	Census, 1961	Estimated, 1963	Estimated, 1964
City of Hobart	54,887	54,021	53,746	53,719
Municipality of Clarence (Part) ..	10,686	20,734	24,206	25,323
City of Glenorchy	25,810	35,682	37,471	37,972
Municipality of Kingborough (Part)	3,823	5,495	5,852	5,935
Total Hobart and Suburbs ..	95,206	115,932	121,275	122,949

The area defined as "Hobart and Suburbs" for the Census of 30th June, 1961 was increased by taking in Risdon Vale and Mount Direction in the Municipality of Clarence; these areas had been treated as "country" in the 1954 Census. The extension of the boundary hardly affects the comparability of the above figures since, at the Census of 1954, the Risdon Vale and Mount Direction areas were very thinly populated.

Population figures for the "fringe" municipalities, showing suburban and "country" components, are as follows:

Municipalities of Clarence and Kingborough: Suburban and Country Populations

Municipality	At 30th June			
	Census, 1954	Census, 1961	Estimated, 1963	Estimated, 1964
Clarence — Suburban	10,686	20,734	24,206	25,323
Country	1,918	2,406	2,656	2,777
Total	12,604	23,140	26,862	28,100
Kingborough — Suburban	3,823	5,495	5,852	5,935
Country	4,512	4,530	4,530	4,585
Total	8,335	10,025	10,382	10,520

Launceston and Suburbs

The City of Launceston is ringed by other local government areas which continue the pattern of urban development. For statistical purposes, this whole urban area is referred to as "Launceston and Suburbs"; it should be noted that "Launceston and Suburbs" is a combination of local government areas and parts of local government areas designed to define an homogeneous group and is not an area specified for any administrative purpose of local government.

"Launceston and Suburbs" is composed as follows: (i) City of Launceston; (ii) part of Municipality of Beaconsfield (Tamar suburbs as far north as Cormiston; (iii) part of Municipality of Lilydale (Tamar suburbs, east bank); (iv) part of Municipality of St. Leonards (as far east as Waverley and St. Leonards township); (v) part of Municipality of Westbury (as far west as Prospect Vale).

Details of the suburban localities follow:

Suburbs of Launceston

Beaconsfield (Part)	Lilydale (Part)	St. Leonards (Part)	Westbury (Part)
Cormiston, Maraway- lee, Riverside, Trevallyn	Mayfield, Newnham, Rocherlea, Vermont	Elphin, Franklin Village, Norwood, Punchbowl, Ravens- wood, St. Leon- ards (town), Waver- ley, Young Town	Prospect, Prospect Vale

The next table shows the growth of "Launceston and Suburbs" since the Census of 30th June, 1954:

Population of Launceston and Suburbs

Local Government Area	At 30th June			
	Census, 1954	Census, 1961	Estimated, 1963	Estimated, 1964
City of Launceston.. ..	37,627	38,118	38,141	37,940
Municipality—Beaconsfield (Part)	2,629	3,162	3,339	3,361
Lilydale (Part) ..	2,392	4,462	4,936	5,225
St. Leonards (Part)	6,302	10,222	11,218	11,792
Westbury (Part) ..	353	757	807	872
Total Launceston and Suburbs	49,303	56,721	58,441	59,190

The area defined as "Launceston and Suburbs" remained the same for the Censuses of 1954 and 1961.

Population figures for the "fringe" municipalities, showing suburban and country components, are as follows:

Municipalities Containing Launceston Suburbs: Suburban and Country Populations

Municipality	At 30th June			
	Census, 1954	Census, 1961	Estimated, 1963	Estimated, 1964
Beaconsfield — Suburban ..	2,629	3,162	3,339	3,361
Country	4,944	5,388	5,615	5,715
Total	7,573	8,550	8,954	9,076
Lilydale — Suburban ..	2,392	4,462	4,936	5,225
Country	2,191	2,282	2,395	2,395
Total	4,583	6,744	7,331	7,620
St. Leonards — Suburban ..	6,302	10,222	11,218	11,792
Country	793	810	826	826
Total	7,095	11,032	12,044	12,618
Westbury — Suburban ..	353	757	807	872
Country	3,621	3,824	3,941	3,941
Total	3,974	4,581	4,748	4,813

Urban and Rural

The following table analyses the growth of population since the 1954 Census in broad areas:

Population in Urban and Rural Areas

Area	Census, 30.6.54		Census, 30.6.61		Estimated, 30.6.64	
	Persons	Per Cent of Total	Persons	Per Cent of Total	Persons	Per Cent of Total
Hobart and Suburbs ..	95,206	30.84	115,932	33.09	122,949	33.72
Other Urban—						
Launceston and Suburbs	49,303	15.97	56,721	16.19	59,190	16.24
Other (a)	58,825	19.05	73,882	21.09	(b)	(b)
Total	108,128	35.02	130,603	37.28	(b)	(b)
Rural	104,768	33.93	102,926	29.38	(b)	(b)
Migratory	650	0.21	879	0.25	800	0.22
Total Tasmania ..	308,752	100.00	350,340	100.00	364,566	100.00

(a) Non-municipal towns with population exceeding 750 persons.

(b) Not available separately.

The next table compares the average annual rate of growth per cent in the two main urban centres:

Average Annual Rate of Growth in Hobart and Suburbs, Launceston and Suburbs and Remainder of State

Area	Average Annual Rate of Growth Per Cent (a)		
	Seven Years 30.6.54 to 30.6.61	Ten Years 30.6.54 to 30.6.64	Three Years 30.6.61 to 30.6.64
Hobart and Suburbs ..	2.85	2.62	1.99
Launceston and Suburbs ..	2.02	1.87	1.44
Remainder of State ..	1.12	1.06	0.98
Total Tasmania ..	1.82	1.67	1.32

(a) Compound rate of increase.

Urban and Rural Distribution

Particulars of the distribution of the population between urban and rural areas are available only from a census.

Urban areas in Tasmania are defined as follows: (i) Hobart and Suburbs; (ii) Launceston and Suburbs; (iii) non-municipal towns with population exceeding 750 persons. Only three local government areas are classified, in total, as urban, specifically the Cities of Hobart, Glenorchy and Launceston. The remaining 46 local government areas are dealt with as follows: (i) in the case of a municipality not having any town exceeding the limit of 750 persons, the whole population is classified as "rural"; (ii) in the case of a municipality having towns with populations exceeding 750 persons, the town population is classified as urban and the balance as rural; (iii) in the case of a "fringe"

municipality bordering Hobart or Launceston, population within the respective suburban boundaries is classified as urban; the balance of the municipality is then allocated to rural or urban by the criterion just described.

The next table compares the proportions of urban and rural population of the Australian States at the Census of 30th June, 1961. (In the table, Hobart and Suburbs appears as 'Metropolitan' and Launceston and Suburbs is included with 'Other Urban'.)

**Proportion of Urban and Rural Population, Australian States and Territories
Census, 30th June, 1961**

(Per Cent)

Classification	Proportion of Total Population of State								
	N.S.W.	Vic.	Qld.	S.A.	W.A.	Tas.	N.T.	A.C.T.	Aust.
Urban—									
Metropolitan	55.74	65.25	40.92	60.66	57.03	33.09	..	95.96	56.12
Other (a) ..	29.41	19.59	35.35	18.30	17.07	37.28	62.65	..	25.82
Rural ..	14.58	15.00	23.60	20.64	25.49	29.38	36.38	4.04	17.82
Migratory ..	0.27	0.16	0.13	0.40	0.41	0.25	0.97	..	0.24
Total ..	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

(a) In all States except Tasmania, non-municipal towns included are those with populations of 1,000 persons or more; in Tasmania, those with populations of 750 or more.

Decentralisation of Population

It will be observed that Tasmania differs very significantly from the five continental States in three respects: (i) lowest proportion in the metropolitan area; (ii) highest proportion classified as "other urban"; (iii) highest proportion classified as "rural". The Tasmanian distribution is unique in one respect—none of the continental States has a non-metropolitan urban centre with a population approaching 50 per cent of that in the metropolitan area; this is the Tasmanian situation, however, such a centre being Launceston and Suburbs (included in "other urban" in the above table). This deviation from an Australian pattern is partly explained by the relative proximity of Launceston to the principal mainland markets, a factor also operating in favour of towns along the north west coast; the chief of these, Burnie and Devonport, together contain 8 per cent of the State's population. The Tasmanian distribution is of particular interest since, in the continental States, decentralisation is currently being urged as a policy necessary to check the excessive concentration of population in metropolitan areas. Growth of population in Tasmania since the 1954 Census has been concentrated, to a large degree, in the metropolitan area (nearly 50 per cent of the intercensal increase in State population from 1954 to 1961 was recorded in Hobart and Suburbs); if this trend continues, then Tasmania will lose advantages attributable to its present state of relative decentralisation.

"Urban" and "Rural" in Local Government Areas

The following table shows the distribution of the Tasmanian population in local government areas, statistical divisions and in urban and rural areas at the 1961 Census:

**Population in Local Government Areas Classified as Metropolitan,
Other Urban and Rural: Census, 30th June, 1961**

Local Government Area and Statistical Division	Total Population	Population Classified As:			Non-Municipal Towns with Populations Classed as "Other Urban"
		Metro-politan	Other Urban	Rural	
Hobart (City) ..	54,021	54,021	..	..
Glenorchy (City) ..	35,682	35,682	..	..
Total S. Central Div.	89,703	89,703	..	..
Launceston (City) ..	38,118	..	38,118	..	
Total N. Central Div.	38,118	..	38,118	..	
Burnie	16,745	..	14,201	2,544	Burnie (N.M.)
Circular Head ..	7,733	..	{ 2,671	4,244	Smithton (N.M.)
Deloraine	5,574	..	818	3,643	Stanley (N.M.)
Devonport	14,276	..	1,931	1,208	Deloraine (N.M.)
Kentish	4,167	..	13,068	3,266	Devonport (N.M.)
King Island	2,784	..	901	2,784	Railton (N.M.)
Latrobe	4,367	..	..	2,241	..
Penguin	4,673	..	2,126	2,588	Latrobe (N.M.)
Ulverstone	9,365	..	2,085	3,403	Penguin (N.M.)
Wynyard	8,835	..	5,962	3,931	Ulverstone (N.M.)
			{ 1,783		Somerset (N.M.)
			3,121		Wynyard (N.M.)
Total N.W. Div. ..	78,519	..	48,667	29,852	..
Beaconsfield	8,550	..	{ 997	4,391	Beaconsfield (N.M.)
Fingal	4,475	..	(a) 3,162	3,650	Rossarden (N.M.)
Flinders	1,407	..	825	1,407	
George Town	3,677	..	..	857	George Town (N.M.)
Lilydale	6,744	..	2,820	2,282	
Portland	1,274	..	(a) 4,462	1,274	
Ringarooma	3,056	..	..	3,056	
Scottsdale	3,417	..	1,628	1,789	Scottsdale (N.M.)
Total N.E. Div. ..	32,600	..	13,894	18,706	
Evandale	1,608	..	..	1,608	
Longford	6,762	..	1,767	4,995	Longford (N.M.)
St. Leonards	11,032	..	(a) 10,222	810	
Westbury	4,581	..	{ 1,068	2,756	Westbury (N.M.)
			(a) 757		
Total N. Midland Div.	23,983	..	13,814	10,169	
Bothwell	1,288	..	..	1,288	
Campbell Town ..	1,893	..	1,040	853	Campbell Town (N.M.)
Hamilton	4,178	..	..	4,178	
Oatlands	2,691	..	..	2,691	
Ross	672	..	..	672	
Total Midland Div.	10,722	..	1,040	9,682	
Brighton	2,115	..	..	2,115	
Clarence	23,140	(b) 20,734	..	2,406	
Glamorgan	1,128	..	..	1,128	
Green Ponds	969	..	..	969	
Richmond	1,673	..	..	1,673	
Sorell	2,878	..	..	2,878	
Spring Bay	1,155	..	..	1,155	
Total S.E. Div. ..	33,058	20,734	..	12,324	

**Population in Local Government Areas Classified as Metropolitan,
Other Urban and Rural: Census, 30th June, 1961—continued**

Local Government Area and Statistical Division	Total Population	Population Classified As:			Non-Municipal Towns with Populations Classed as "Other Urban"
		Metro- politan	Other Urban	Rural	
Bruny	504	..	..	504	Huonville-Ranelagh (N.M.) New Norfolk (N.M.) Cygnet (N.M.)
Esperance	3,436	..	..	3,436	
Huon	5,460	..	1,491	3,969	
Kingborough	10,025	(b) 5,495	..	4,530	
New Norfolk	10,217	..	5,445	4,772	
Port Cygnet	2,754	..	830	1,924	
Tasman	1,108	..	..	1,108	
Total S. Div. ..	33,504	5,495	7,766	20,243	
Gormanston	507	..	..	507	Queenstown (N.M.)
Queenstown	4,624	..	4,601	23	
Strahan	565	..	..	565	
Waratah	367	..	..	367	
Zeehan	3,191	..	{ 1,923 780	488	Rosebery (N.M.) Zeehan (N.M.)
Total W. Div. ..	9,254	..	7,304	1,950	
Migratory	879	..	..	..
Total Tasmania ..	350,340	115,932	130,603	102,926	

(a) Component of "Launceston and Suburbs".

(b) Component of "Hobart and Suburbs".

City of Glenorchy

In the preceding tables, Glenorchy has been shown as a city; it acquired city status on 24th October, 1964, and was a municipality at the Census of 30th June, 1961. As there were no boundary changes, it follows that statistical series for the previous Municipality of Glenorchy are continuous, without any break in comparability, with series for the City of Glenorchy.

Populations of Australian Capital Cities

The populations of Australian capital cities at each Census, 1901 to 1961, are shown in the following table:

Australia: Populations of Capital Cities at Census Dates

Metropolitan Area (a)	1901	1911	1921	1933	1947	1954	1961
Sydney ('000)	482	630	899	1,235	1,484	1,863	2,183
Melbourne .. (")	496	593	783	992	1,226	1,524	1,912
Brisbane .. (")	119	139	210	300	402	502	622
Adelaide .. (")	162	190	256	313	382	484	588
Perth (")	67	107	155	208	273	349	420
Hobart (")	35	40	52	60	77	95	116
Canberra .. ( " )	..	..	..	7	15	28	56
Total—Persons ('000)	1,361	1,699	2,355	3,115	3,859	4,845	5,897
Percentage (b)	36	38	43	47	51	54	56

(a) Some of the apparent increase in the percentage of total population living in capital cities is due to periodic revision and extension of metropolitan boundaries.

(b) Percentage of total Australian population.

The Tasmanian metropolitan population has grown over the sixty years 1901-1961 at an average annual rate of two per cent; the corresponding rate for the Australian metropolitan population approaches 2.5 per cent.

VITAL STATISTICS

Historical

In 1839, John Montagu, Colonial Secretary of Van Diemen's Land, submitted to the Governor, Sir John Franklin, a series of statistical returns; below is shown part of Return No. 17:

Vital Statistics of Van Diemen's Land

Year	Births	Deaths	Marriages
1824	177	132	75
1828	309	250	120
1829	301	260	166
1830	460	270	163

The complete table covers the period 1824-1838 but entries for 1825, 1826, 1827 and 1832 read "No Returns". In a commentary for the Governor's guidance, Montagu wrote: "I would also observe that the number of births and deaths are those only returned by ministers of the Church of England, and the former column refers to those only who have been christened; and although the number of deaths must be near the truth, yet the actual number of births has been very much under-stated". Thus, even though the Tasmanian record of births, deaths and marriages covers a period of 140 years, these early figures cannot be accepted as being very reliable.

Registration Provisions

Franklin's Legislative Council had passed in 1838 "*An Act for Registering Births, Deaths and Marriages in the Island of Van Diemen's Land and its Dependencies*." This provided for the establishment of a central register in Hobart Town; the division of the colony into registration districts; the appointment of a Registrar in Hobart and of Deputy Registrars in the districts; the recording of births and deaths by the Deputy Registrars, and finally the reporting of these events to the Registrar by the Deputies. The ministers celebrating marriages were required to make returns direct to the Registrar but Deputy Registrars could also officiate and had certain licensing functions. With the establishment of such machinery, the recording of births, deaths and marriages could be expected to improve but as late as 1867, the Government Statistician complained that Section 22 of the 1838 Act was an impediment to compiling accurate death rates. Section 22 reads: "And be it enacted that nothing contained in this Act shall extend or apply to the registration of the death of any prisoner of the Crown serving under an unexpired sentence of transportation in the island or its Dependencies whether the same shall have been partially remitted or not." E. C. Nowell, the Statistician, had this to say: "This is a very inconvenient provision, and I would submit that it should be repealed as being at variance with the practice in other countries, and opposed to the interests of Science." However, in 1868, he reported that the death rate could be accepted as correct since "only one transported offender died during the year." This would certainly suggest that deaths recorded by successive Registrars in the period 1839-1866 were not total deaths for the island.

Some difficulties in maintaining the central registration of marriages may account for an 1842 amendment specifying \$50 penalties for ministers of religion who failed to make returns as required by the Act.

The registration function has been merged at times with those of other offices. Thus, from 1857 to 1882, the Registrar of the Supreme Court was also Registrar of Births, Deaths and Marriages; from 1882 to 1919, the Government Statistician was the Registrar; as from 1919, the Registrar-General's Department operated as a separate entity.

The Registrar General

The principal Act under which the Registrar General operates is the *Registration of Births and Deaths Act* 1895 as amended which provides for district Registrars and the appointment of a Registrar General to be responsible for the maintenance of central registers; in essence, the regional approach of the 1838 Act is retained. The functions of the Registrar General in relation to the registration of marriages were last defined in the *Marriage Act* 1942. However, in 1961, the Commonwealth Parliament passed the *Marriage Act* 1961. A few minor provisions (relating mainly to certain extensions of the application of the prohibited degrees) came into operation on the date the Act received the Royal Assent (6th May, 1961) and the remainder of the Act came into operation on 1st September, 1963. On this date, the Act superseded the marriage laws of all the States but did not affect the essential function of the Registrar General in the central registration of marriages. (The Commonwealth's passage of a uniform marriage law for Australia was the sequel to negotiations with all States.)

At the office of the Registrar General, there is kept for reference a collection of all registrations made since 1839, as well as church records relating to earlier periods.

Summary of Principal Statistics

The principal numbers and rates relating to vital statistics in Tasmania for recent years are given in the following table:

Summary of Vital Statistics

Year	Number of—				Rate per 1,000 of Mean Population			Infant Mortality
	Marriages	Live Births	Deaths	Infant Deaths (a)	Marriages	Live Births	Deaths	Deaths Under One Year per 1,000 Live Births
1954	2,512	7,770	2,696	186	8.08	24.98	8.67	23.9
1955	2,600	8,089	2,489	189	8.24	25.63	7.89	23.4
1956	2,601	8,104	2,513	170	8.10	25.24	7.83	21.0
1957	2,507	8,435	2,670	170	7.63	25.68	8.13	20.2
1958	2,475	8,568	2,708	167	7.38	25.55	8.07	19.5
1959	2,567	8,625	2,780	202	7.52	25.26	8.14	23.4
1960	2,713	8,853	2,670	169	7.82	25.52	7.70	19.1
1961	2,677	8,982	2,789	151	7.57	25.40	7.89	16.8
1962	2,485	8,894	2,870	184	6.91	24.75	7.99	20.7
1963	2,579	8,530	2,818	153	7.08	23.42	7.74	17.9
1964	2,869	8,252	3,174	166	7.81	22.46	8.64	20.1
1965	2,888	7,535	3,043	125	7.82	20.40	8.24	16.6

(a) Deaths under one year; included also in total deaths.

"Crude Rate" Comparisons

The rates per 1,000 of mean population for births, deaths and marriages are referred to as *crude* rates. It will be seen, in regard to marriages, that not *all* the population is "at risk", children and those already married being obvious excluded examples. Similarly, births are clearly events related to certain fertile age groups of women and not to the total population; births also are directly related to the number of married persons and to the age structure of the married proportion of the community. Finally, deaths have a definite relationship with the numbers of each sex and the age structure of the community.

To illustrate, a community experiencing a new trend involving loss of population by migration in the age group 20-35 years, all things being equal, might be expected to show a decline in the crude marriage and birth rates and an increase in the crude death rate. These variations in crude rates would occur despite the fact that there had been no change in the propensity to marry at specific ages, no change in fertility in specific age groups and no change in life expectancy. It follows that comparisons over time in terms of crude rates may be meaningful in the short term but invalid for longer periods when the age structure and the proportion of married persons may have undergone significant changes.

Subject to these limitations, the following historical comparisons exist as from 1880:

1. Crude Marriage Rate: highest 10.51 (1946); lowest 5.50 (1895 and 1896).
2. Crude Birth Rate: highest 36.63 (1884); lowest 19.39 (1935).
3. Crude Death Rate: highest 17.41 (1883); lowest 7.70 (1960).

It is probably significant that 1946 was the year of rapid demobilisation after World War II and that a similar marriage trend was recorded for 1919 and 1920 after World War I; as to the minima for marriage and birth rates, the 1890's and 1930's were decades characterised by severe economic depression.

Review of Infant Mortality

Infant mortality relates to the number of deaths *under one year* and the rate is expressed as the number of such deaths per 1,000 live births. It follows that comparisons over long periods of time are valid and not affected by the limitations attached to crude rates. In the record of infant mortality, the drop in rates has been dramatic:

Infant Mortality Rate, Selected Years, from 1880

Year	Deaths under One Year Per 1,000 Live Births	Year	Deaths under One Year Per 1,000 Live Births	Year	Deaths under One Year Per 1,000 Live Births
1880 ..	112.3	1920 ..	65.5	1960 ..	19.1
1890 ..	105.6	1930 ..	50.6	1963 ..	17.9
1900 ..	80.0	1940 ..	35.2	1964 ..	20.1
1910 ..	101.7	1950 ..	23.8	1965 ..	16.6

The peak year since 1880 was 1883 with a rate of 124.0. In the period 1880-1910, the annual infant mortality rate exceeded 100 on 14 occasions. By way of contrast, the rate in 1965 reached a record minimum of 16.6.

At the turn of the century, 20 to 25 per cent of all deaths were those of infants under one year. It is apparent that the rapid fall in infant mortality rates will have markedly affected crude death rates, infant deaths being a

component of total deaths. Infant mortality rates are used by some authorities as an index of the degree of civilisation attained by a community; by such standards, Tasmania, in common with other Australian States, ranks extremely high, in comparison with other countries of the world.

Marriages

The following table summarises the number of marriages and the crude marriage rate since 1880:

Marriages and Crude Marriage Rates, Selected Years from 1880

Year	Marriages		Year	Marriages	
	Number	Crude Rates (a)		Number	Crude Rates (a)
1880 ..	840	7.39	1940 ..	2,476	10.27
1890 ..	954	6.66	1950 ..	2,422	9.18
1900 ..	1,332	7.72	1960 ..	2,713	7.82
1910 ..	1,493	7.82	1963 ..	2,579	7.08
1920 ..	1,999	9.50	1964 ..	2,869	7.81
1930 ..	1,450	6.56	1965 ..	2,888	7.82

(a) Number of marriages per 1,000 of mean population.

A feature of recent years has been the increase in the proportion of marriages which involve minors. This trend, dating from the end of World War II, still continues as shown in the following table:

Marriages of Minors

Year	Age in Years							Total	
	14	15	16	17	18	19	20	Number	Percentage of Total Marriages (a)

Bridegrooms

1959 ..	..	..	..	12	56	98	165	331	12.89
1960 ..	..	..	1	13	66	118	203	401	14.78
1961 ..	..	..	3	5	66	132	198	404	15.09
1962 ..	..	..	1	10	58	120	195	384	15.45
1963 ..	..	..	2	18	71	118	228	437	16.94
1964 ..	..	..	..	8	79	142	254	483	16.84

Brides

1959 ..	..	1	7	80	179	264	321	355	1,207	47.02
1960 ..	..	2	12	94	209	283	347	344	1,291	47.59
1961 ..	..	..	8	93	185	290	359	331	1,266	47.29
1962 ..	..	1	14	79	192	286	329	318	1,219	49.06
1963 ..	..	2	12	94	193	296	361	311	1,269	49.20
1964 ..	..	..	1	118	237	314	382	370	1,422	49.56

(a) i.e. percentage of all marriages, including those involving adults.

The next table analyses the ages of all bridegrooms and brides contracting marriages in 1964:

Age of Bridegrooms and Brides, 1964

Age (Years)	Bridegrooms		Brides	
	Number	Per Cent of Total	Number	Per Cent of Total
Under 20	229	7.99	1,052	36.67
20-24	1,492	52.00	1,237	43.12
25-29	592	20.63	244	8.50
30-34	192	6.69	75	2.61
35-39	103	3.59	57	1.99
40-44	71	2.48	56	1.95
45-49	47	1.64	40	1.39
50-54	34	1.19	36	1.25
55-59	48	1.67	26	0.91
60-64	21	0.73	18	0.63
65 and Over	40	1.39	28	0.98
Total	2,869	100.00	2,869	100.00

The prevailing trend towards earlier marriage still continues as shown in the table below, the indicator being the average age of bridegrooms and brides:

Average Age of Bridegrooms and Brides
(Years)

Particulars	1959	1960	1961	1962	1963	1964
Average Age of Bridegrooms—						
Bachelors	25.00	24.96	24.65	24.74	24.23	24.25
Widowers	54.76	56.06	54.58	55.12	56.63	57.44
Divorcees	39.81	40.25	40.06	40.07	41.43	42.02
All Bridegrooms	27.04	27.17	26.79	26.89	26.48	26.64
Average Age of Brides—						
Spinsters	21.53	21.22	21.48	21.22	21.16	21.09
Widows	47.46	49.33	45.64	49.86	49.25	51.39
Divorcees	35.08	35.99	35.52	37.47	36.97	38.14
All Brides	23.42	23.36	23.37	23.41	23.10	23.30

In the next table, the conjugal condition of persons marrying is shown for a six-year period:

Conjugal Condition of Persons Marrying

Year	Bridegrooms			Brides			Total Marriages
	Bachelors	Widowers	Divorced	Spinsters	Widows	Divorced	
1959 ..	2,308	95	164	2,304	104	159	2,567
1960 ..	2,444	111	158	2,428	120	165	2,713
1961 ..	2,403	100	174	2,406	119	152	2,677
1962 ..	2,225	91	169	2,221	93	171	2,485
1963 ..	2,334	100	145	2,332	89	158	2,579
1964 ..	2,581	112	176	2,592	122	155	2,869

Over the last ten years, the months in which marriages most frequently occur are April, followed by December and January in that order; July appears

to be the least popular. The numbers of marriages performed according to the rites of the principal religious denominations and of civil marriages contracted before Registrars are shown below for recent years:

Marriages, Religious and Civil

Particulars of Celebration	1959	1960	1961	1962	1963	1964
Religious Rites—						
Church of England	923	975	974	855	934	1,108
Catholic	522	564	567	522	518	605
Presbyterian	133	138	152	125	113	138
Methodist	388	439	406	367	398	377
Congregational	40	36	31	43	46	31
Baptist	66	61	76	64	85	75
Church of Christ	25	22	23	16	23	25
Salvation Army	26	27	25	19	20	21
Seventh Day Adventist	6	4	10	3	5	6
Other	42	52	51	60	74	71
Civil Ceremonies (a)	396	395	362	411	363	412
Total	2,567	2,713	2,677	2,485	2,579	2,869

(a) Marriages contracted before Registrars.

Divorce

Divorce in Tasmania was previously provided for under the *Matrimonial Causes Act* 1860 as amended in 1864, 1874 and 1959. However, as from 1st February, 1961, Australia came under uniform divorce law, the new *Matrimonial Causes Act* 1959 of the Commonwealth Parliament having come into effect on that date. (Like the uniform marriage law, the Commonwealth legislation relating to divorce was the sequel to negotiations with the States.)

In 1964, dissolutions of marriage exceeded eight per cent of the number of marriages contracted for that year (230 dissolutions against 2,869 marriages). The increase in the number of annual dissolutions is summarised in the historical table which follows.

Dissolutions of Marriage (a) Granted, Summary from 1881

Decade Ending—	Maximum in Decade		Minimum in Decade	
	Year	Number	Year	Number
1890	1886	6	1884	..
1900	1894	6	1896	3
1910	1909	13	1904	2
1920	1920	18	1916	2
1930	1928	55	1924	20
1940	1938	109	1937	30
1950	1949	266	1942	83
1960	1954	233	1958	176

(a) Includes nullities of marriage and judicial separations.

The following table gives the number of petitions filed by husbands and wives respectively, and the number of dissolutions of marriage during the last six years. Every decree of dissolution of marriage is, in the first instance, a decree nisi and is not made absolute till the expiration of not less than three months thereafter.

Petitions Filed and Dissolutions Granted

Particulars	1959	1960	1961	1962	1963	1964
Petitions for Dissolution (a) Filed						
By—						
Husband	123	136	154	127	126	149
Wife	160	138	168	153	147	175
Total Petitions	283	274	322	280	273	324
Dissolutions (a) Granted on Petition of—						
Husband	100	93	124	125	108	116
Wife	122	117	162	124	153	114
Total Dissolutions ..	222	210	286	249	261	230

(a) Includes nullities of marriage and judicial separations.

The next table deals with petitions filed in 1964:

Petitions Filed, 1964

Petition For—	Petitioner		Total
	Husband	Wife	
Dissolution	149	173	322
Nullity .. .. .	..	..	..
Judicial Separation .. ..	..	2	2
Total	149	175	324

The table that follows analyses the grounds on which dissolutions were granted during 1964:

Dissolutions Granted According to Grounds, 1964

Grounds	Petitioner		Total
	Husband	Wife	
DISSOLUTION OF MARRIAGE			
Single Ground—			
Desertion	48	47	95
Adultery	37	17	54
Separation (a)	20	25	45
Cruelty .. ..	..	9	9
Drunkenness .. ..	..	6	6
Dual Grounds—			
Desertion and Adultery	5	2	7
Desertion and Separation	4	4	8
Cruelty and Drunkenness	1	2	3
Three Grounds or More ..	..	2	2
Total	115	114	229

NULLITY

Pregnant at time of marriage	1	..	1
------------------------------	---	----	---

(a) Separation became a ground for dissolution under the Commonwealth Matrimonial Causes Act, 1959.

Below is given a summary of the more frequent grounds for the granting of dissolutions:

Dissolutions (a) Granted According to More Frequent Grounds

Grounds	1959	1960	1961	1962	1963	1964
On Petition of Husband—						
Adultery	52	49	47	42	32	37
Desertion	48	44	63	60	46	48
Separation (b) .. .. .	..	..	13	18	23	20
Other .. .. .	..	..	1	5	7	11
On Petition of Wife—						
Adultery	30	20	34	14	27	17
Desertion	87	91	102	54	66	47
Separation (b) .. .. .	..	..	18	41	40	25
Other	5	6	8	15	20	25
Total	222	210	286	249	261	230

(a) Includes nullities and judicial separations.

(b) Separation became a ground for dissolution under the Commonwealth Matrimonial Causes Act, 1959.

In the following table, an analysis is made of the ages of the parties concerned in the dissolutions of marriage during 1964:

Dissolutions of Marriage, 1964—Ages of Parties at Time of Dissolution

Age of Husband (Years)	Age of Wife (Years)						Total Husbands
	Under 21	21-29	30-39	40-49	50-59	60 and over	
Under 21 .. .. .	..	..	..	..	..	..	..
21-29	4	39	1	..	..	..	44
30-39	7	40	34	3	..	..	84
40-49 .. .. .	..	4	24	31	1	..	60
50-59 .. .. .	..	..	1	15	12	..	28
60 and over .. .. .	..	..	..	1	8	5	14
Total Wives ..	11	83	60	50	21	5	230

In the next table, particulars are given of the duration of marriage and issue in respect of dissolutions of marriage during 1964:

Dissolutions of Marriage, 1964—Duration of Marriage and Issue

Duration of Marriage (Years)	Dissolutions of Marriages with—						Total Marriages Dissolved	Total Number of Children (a)
	No Children	1 Child	2 Children	3 Children	4 Children	5 or more Children		
0-4 ..	13	14	3	..	..	..	30	20
5-9 ..	21	13	19	3	1	1	58	69
10-14 ..	9	10	18	7	4	3	51	99
15-19 ..	5	6	4	6	5	3	29	70
20-24 ..	4	9	9	5	2	2	31	64
25-29 ..	7	..	4	1	..	..	12	11
30-34 ..	10	2	1	..	..	..	13	4
35-39 ..	1	..	1	..	..	..	2	2
40-44 ..	3	1	..	..	..	..	4	1
45 and over	..	..	..	..	..	..	..	..
Total Dissolutions	73	55	59	22	12	9	230	..
Total Children (a)	..	55	118	66	48	53	..	340

(a) Under 21 years of age.

Petitions and Dissolutions, 1965

In 1965, 331 petitions were filed for dissolution of marriage, (including 3 for declarations of nullity). In the same year, 279 dissolutions of marriage were granted, not including one judicial separation.

Births

The following table summarises births and crude birth rates from 1880:

Number of Births and Crude Birth Rates, Selected Years from 1880

Year	Births		Year	Births	
	Number	Per 1,000 of Mean Population		Number	Per 1,000 of Mean Population
1880 ..	3,739	32.90	1930 ..	4,785	21.66
1885 ..	4,637	36.29	1935 ..	4,456	19.39
1890 ..	4,813	33.60	1940 ..	4,994	20.71
1895 ..	4,790	31.16	1945 ..	5,785	23.27
1900 ..	4,864	28.18	1950 ..	7,242	25.96
1905 ..	5,257	28.50	1955 ..	8,089	25.63
1910 ..	5,586	29.25	1960 ..	8,853	25.52
1915 ..	5,845	29.78	1963 ..	8,530	23.42
1920 ..	5,740	27.29	1964 ..	8,252	22.46
1925 ..	5,218	24.21	1965 ..	7,535	20.40

The next table shows, for a six-year period, the number of births and the age-groups of the mothers:

Number of Births Classified According to Age of Mother, and Crude Birth Rates

Age Group of Mothers (Years)	1959	1960	1961	1962	1963	1964
10-14	3	6	3	8	5	2
15-19	829	894	957	988	1,001	1,073
20-24	2,801	2,925	2,949	2,997	2,869	2,834
25-29	2,329	2,378	2,383	2,371	2,302	2,190
30-34	1,484	1,540	1,536	1,471	1,368	1,196
35-39	922	856	879	772	717	704
40-44	242	234	254	264	255	231
45 and over ..	15	20	21	23	13	22
Total	8,625	8,853	8,982	8,894	8,530	8,252
Crude Birth Rate (a)	25.26	25.52	25.40	24.75	23.42	22.46

(a) Births per 1,000 of mean population.

One common observation is that births of males, in total, usually exceed those of females. The next table shows births by sex and indicates masculinity:

Births by Sex and Masculinity

Particulars	1959	1960	1961	1962	1963	1964
Births of—						
Males ..	4,423	4,483	4,635	4,629	4,428	4,218
Females ..	4,202	4,370	4,347	4,265	4,102	4,034
Total	8,625	8,853	8,982	8,894	8,530	8,252
Masculinity (a) ..	105.26	102.59	106.63	108.53	107.95	104.56

(a) Number of male births per 100 female births.

In the following table, births are analysed by sex and by the age of the mother and classified as nuptial or ex-nuptial:

Births by Sex, Age of Mother and Nuptial State, 1964

Age Group of Mothers (Years)	Nuptial				Ex-Nuptial		All Births		
	First Born (a)		Subsequent Birth		Male	Female	Male	Female	Total
	Male	Female	Male	Female					
10-14 ..	..	..	..	..	..	2	..	2	2
15-19 ..	336	293	101	111	125	107	562	511	1,073
20-24 ..	532	562	860	753	57	70	1,449	1,385	2,834
25-29 ..	198	182	897	853	32	28	1,127	1,063	2,190
30-34 ..	59	57	519	526	19	16	597	599	1,196
35-39 ..	28	35	320	291	10	20	358	346	704
40-44 ..	4	9	106	98	3	11	113	118	231
45 and over ..	..	1	11	8	1	1	12	10	22
Total ..	1,157	1,139	2,814	2,640	247	255	4,218	4,034	8,252

(a) In case of plural births with no previous issue, first child born alive is recorded as "First Born" and subsequent child or children as "Subsequent Birth".

The table that follows summarises, for a six-year period, births according to whether the child was first-born or the issue of a subsequent birth:

Births of First Born and Subsequent Births; Nuptial State of Mothers

Classification of Births	1959	1960	1961	1962	1963	1964
Nuptial—						
First Born ..	2,310	2,297	2,398	2,350	2,324	2,296
Subsequent Birth ..	5,927	6,123	6,180	6,072	5,742	5,454
Ex-Nuptial ..	388	433	404	472	464	502
Total ..	8,625	8,853	8,982	8,894	8,530	8,252
Ex-Nuptial Births as Percentage of Total Births ..	4.5	4.9	4.5	5.3	5.4	6.1

It should be noted that "first born" in the previous tables refers specifically to the union from which the child originates; thus a mother married for the second time could be credited with a "first-born" child despite issue from the previous union.

Birth Registrations

In 1964, the following were recorded by the Registrar General: nuptial births, 7,750; ex-nuptial births, 502; registrations under *Births Legitimation Act*, 58.

Infant Mortality

Infant mortality relates to children dying within one year of birth. The table that follows analyses such deaths at specified ages but a break in comparability occurs in 1962 when a more detailed analysis was employed and "one month" was replaced by "four weeks". The break in comparability is partly bridged by quoting 1962 figures both on the old and new basis of classification.

Infant Mortality—Number of Deaths and Mortality Rates at Specific Ages

Year	Infant Deaths		Mortality Rate (a) at Age Specified—		
	Number	Per 1,000 Live Births	Under 1 Week	1 Week and under 1 Mth.	1 Month and under 12 Mths
1954	186	23.9	15	2	7
1955	189	23.4	15	2	6
1956	170	21.0	13	2	6
1957	170	20.2	12	1	7
1958	167	19.5	10	2	7
1959	202	23.4	13	2	9
1960	169	19.1	10	1	8
1961	151	16.8	11	1	5
1962	184	20.7	12	2	7

Year	Infant Deaths		Mortality Rate (a) at Age Specified—			
	Number	Per 1,000 Live Births	Under 1 Day	1 Day and under 1 Week	1 Week and under 4 Wks.	4 Weeks and under 12 Mths
1962 ..	184	20.7	7	5	2	7
1963 ..	153	17.9	6	5	1	6
1964 ..	166	20.1	6	7	1	6

(a) Infant deaths per 1,000 live births; rates have been rounded to whole numbers.

Cause of Infant Deaths

The next table shows the causes of infant deaths during the last six years, with specification of groups of items and single items:

Infantile Mortality—Causes of Deaths Under One Year

Cause		1959	1960	1961	1962	1963	1964
057	Meningococcal Infections .. ..	..	1	..	..	..	..
001-056	Other General Diseases (a)	2	3	2	2	4	2
058-326		4	1	2	2	..	2
340	Meningitis .. ..	..	..	..	..	..	..
330-334	Other Diseases of the Nervous System	3	2	1	1	1	2
341-398		..	..	..	..	..	..
400-468	Diseases of the Circulatory System ..	1	..	..	..	1	..
470-475	Acute Upper Respiratory Infections	2	..	1	..	..	..
480-483	Influenza	1	..	..	..	..	1
490-493	Pneumonia	31	30	17	22	22	18
500-502	Bronchitis	2	1	2	1	1	1
510-527	Other Diseases, Respiratory System..	1	..	..	7	3	6
571	Gastro-Enteritis .. ..	..	1	..	2	3	3
530-570	Other Diseases of the Digestive System	6	5	..	3	3	4
572-587		..	..	..	..	..	..
590-594	Nephritis and Nephrosis .. ..	..	..	..	..	..	..
600-637	Other Diseases of the Genito-Urinary System .. ..	..	..	..	1	1	1
690-716		1	1	..	..	1	..
720-749	Diseases of the Bones and Organs of Movement ..	..	1	1	..	..	..
750-759	Congenital Malformations	40	41	32	50	35	28
760-769	Birth Injuries, Asphyxia and Infections of the New-Born	46	35	43	44	34	51
770-776	Other Diseases of Early Infancy ..	54	43	47	44	38	40
780-795	Ill-defined Conditions .. ..	..	..	..	..	..	..
800-999	External Causes	8	4	3	5	6	7
Total		202	169	151	184	153	166

(a) Principally infective and parasitic diseases.

All death statistics, including those relating to infant mortality, are compiled in accordance with the Seventh Revision (1955) of the International List of Causes of Death (World Health Organisation).

Deaths

The following table summarises the number of deaths and crude death rates since 1880:

Number of Deaths and Crude Death Rates, Selected Years from 1880

Year	Deaths		Year	Deaths	
	Number	Per 1,000 of Mean Population		Number	Per 1,000 of Mean Population
1880 ..	1,832	16.12	1930 ..	1,948	8.82
1885 ..	2,036	15.94	1935 ..	2,353	10.24
1890 ..	2,118	14.79	1940 ..	2,387	9.90
1895 ..	1,811	11.78	1945 ..	2,413	9.71
1900 ..	1,903	11.02	1950 ..	2,466	8.85
1905 ..	1,844	10.00	1955 ..	2,489	7.89
1910 ..	2,120	11.10	1960 ..	2,670	7.70
1915 ..	2,015	10.27	1963 ..	2,818	7.74
1920 ..	2,036	9.68	1964 ..	3,174	8.64
1925 ..	1,996	9.26	1965 ..	3,043	8.24

A marked difference exists between male and female crude death rates as shown in the next table:

Male and Female Deaths and Crude Rates

Year	Number of Deaths			Deaths Per 1,000 of Mean Population			Ratio of Male to Female Crude Death Rates
	Males	Females	Persons	Males	Females	Persons	
1954 ..	1,493	1,203	2,696	9.43	7.87	8.67	1.198
1955 ..	1,351	1,138	2,489	8.41	7.34	7.89	1.146
1956 ..	1,378	1,135	2,513	8.43	7.20	7.83	1.171
1957 ..	1,514	1,156	2,670	9.06	7.17	8.13	1.263
1958 ..	1,534	1,174	2,708	9.01	7.11	8.07	1.267
1959 ..	1,553	1,227	2,780	8.97	7.29	8.14	1.230
1960 ..	1,546	1,124	2,670	8.79	6.57	7.70	1.338
1961 ..	1,601	1,188	2,789	8.93	6.82	7.89	1.309
1962 ..	1,622	1,248	2,870	8.90	7.04	7.99	1.264
1963 ..	1,601	1,217	2,818	8.68	6.77	7.74	1.282
1964 ..	1,797	1,377	3,174	9.67	7.58	8.64	1.276

In the following table, crude death rates for Tasmania are compared with those of the continental States:

Australian States—Crude Death Rates (a)

State	1921 (b)	1933 (b)	1947 (b)	1954 (b)	1961 (b)	1963	1964
N.S.W. ..	9.50	8.58	9.53	9.46	8.95	9.19	9.58
Victoria ..	10.52	9.59	10.44	9.20	8.37	8.81	8.80
Queensland	9.37	8.83	9.15	8.64	8.42	8.50	9.16
S.A. ..	10.02	8.44	9.62	9.02	8.06	8.13	8.63
W.A. ..	10.42	8.64	9.39	8.38	7.77	7.73	8.14
Tasmania..	10.30	9.60	9.17	8.67	7.89	7.74	8.64
Australia (c)	9.91	8.92	9.69	9.10	8.47	8.69	9.03

(a) Deaths per 1,000 of mean population.

(b) Census year.

(c) Includes Australian Capital Territory and Northern Territory.

Death Rates for Specific Age Groups

Previously in this chapter, crude death rates were described as unsuitable for comparisons over long periods of time due to changes in the age structure of the community. In the following table, this difficulty is overcome by calculating death rates for specific age groups. The method employed is to obtain the average annual deaths for specific age groups over those three-year periods which are broken in equal parts by a census of population (e.g. 30th June, 1933, is the census date for a calculation of rates in the three years 1932-1934 inclusive). Rates can then be calculated by comparing the average number of deaths for each group with the number of persons in each group as revealed by the census. In theory, the calculation of such rates need not be restricted to periods for which a census date forms the midpoint but the advantage of accepting such restriction lies in the accuracy of the age distribution obtained from the census. In the table, three-year periods have been selected appropriate to the censuses of 1933 and 1961.

Death Rates for Specific Age Groups (a)

Age Group (Years)	Males		Females		Persons	
	1932-34	1960-62	1932-34	1960-62	1932-34	1960-62
0-4	12.77	5.25	10.42	4.33	11.62	4.81
5-9	2.08	0.63	1.54	0.33	1.81	0.48
10-14	1.27	0.43	0.91	0.35	1.09	0.39
15-19	2.05	1.30	2.22	0.56	2.14	0.94
20-24	2.73	1.60	2.58	0.36	2.66	0.99
25-29	2.98	1.67	3.74	0.56	3.35	1.13
30-34	3.78	1.23	3.63	0.84	3.71	1.05
35-39	4.71	1.90	4.43	1.65	4.56	1.78
40-44	4.85	3.62	4.88	1.92	4.86	2.78
45-49	6.90	5.33	5.44	3.76	6.19	4.57
50-54	9.96	9.18	10.08	5.14	10.02	7.25
55-59	14.47	16.12	11.62	7.98	13.09	12.23
60-64	23.92	26.21	16.87	13.65	20.52	19.72
65-69	35.11	39.64	30.46	21.74	32.87	29.72
70-74	59.22	65.56	48.31	37.48	53.89	49.91
75-79	94.23	94.25	83.58	62.47	88.97	76.57
80-84	160.80	130.89	125.15	107.61	142.64	117.12
85-89	204.45	198.46	195.28	154.97	199.07	173.40
90 and over ..	401.97	407.69	363.63	276.59	376.36	323.29

(a) Rate per 1,000 of the population in the specified age group at census date.

While specific death rates for females in the age groups 55-74 years have decreased in the period covered by the table, corresponding rates for males in the same age groups have actually increased. Attention is also called to the differential rates applying to males and females in age groups 15-34 for the period 1960-62.

Causes of Death

The Sixth (1948) Revision of the International List of Causes of Death was adopted for use in classifying causes of death in 1950.

The Revision introduced international rules for a uniform method of selecting the underlying cause of death to be tabulated if more than one cause is stated on the death certificate. The adoption of the 1948 revision affected the comparability of statistics for years prior to 1950 with those for 1950 and subsequent years.

The Seventh (1955) Revision of the International List of Causes of Death was adopted for use in 1958 but has not materially affected comparability. The causes of deaths registered in Tasmania in 1964, classified according to the abbreviated list of the Seventh (1955) Revision, the rates per 100,000 of mean population and the proportion of deaths from each cause are shown in the following table:

Causes of Death: Numbers and Rates, 1964

Cause of Death	Detailed List Numbers	Number of Deaths	Rate per 100,000 of Mean Population	Percentage of Total Deaths
1. Tuberculosis of Respiratory System.. ..	001-008	7	2	0.22
2. Tuberculosis, Other Forms	010-019	4	1	0.13
3. Syphilis and its Sequelae	020-029	3	1	0.09
4-16 (a)	(a)	1	(b)	0.03
17. All Other Diseases Classified as Infective and Parasitic	(c)	6	2	0.19
18. Malignant Neoplasms				
Digestive Organs and Peritoneum	150-159	184	50	5.80
Lung	162, 163	63	17	1.98
Breast	170	31	8	0.98
Genital Organs	171-179	69	19	2.17
Urinary Organs	180, 181	15	4	0.47
Leukaemia and Alcaemia	204	20	5	0.63
Other Malignant and Lymphatic Neoplasms	(d)	69	19	2.17
19. Benign and Unspecified Neoplasms	210-239	4	1	0.13
20. Diabetes Mellitus	260	47	13	1.48
21. Anaemias	290-293	12	3	0.38
22. Vascular Lesions Affecting Central Nervous System	330-334	323	88	10.18
23. Non-Meningococcal Meningitis	340	3	1	0.09
24. Rheumatic Fever	400-402	2	1	0.06
25. Chronic Rheumatic Heart Disease	410-416	21	6	0.66
26. { Arteriosclerotic Heart Disease	420	779	212	24.54
Degenerative Heart Disease	421, 422	163	44	5.14
27. Other Diseases of the Heart	430-434	130	35	4.10
28. Hypertension with Heart Disease	440-443	36	10	1.13
29. Hypertension without mention of Heart ..	444-447	37	10	1.17
30. Influenza	480-483	27	7	0.85
31. Pneumonia	490-493	177	48	5.58
32. Bronchitis	500-502	85	23	2.68
33. Ulcer of Stomach and Duodenum	540, 541	32	9	1.01
34. Appendicitis	550-553	..	..	..
35. Intestinal Obstruction and Hernia	560, 561, 570	15	4	0.47
36. Gastritis, Duodenitis, Enteritis and Colitis except Diarrhoea of the Newborn	543, 571, 572	16	4	0.51
37. Cirrhosis of Liver	581	19	5	0.60
38. Nephritis and Nephrosis	590-594	25	7	0.79
39. Hyperplasia of Prostate	610	19	5	0.60
40. Complications of Pregnancy, Childbirth and the Puerperium	640-652, 660, 670-689	2	1	0.06
41. Congenital Malformations	750-759	43	12	1.36
42. Birth Injuries, Post-Natal Asphyxia and Atelectasis	760-762	39	11	1.23
43. Infections of the Newborn	763-768	7	2	0.22
44. Other Diseases Peculiar to Early Infancy and Immaturity Unqualified	769-776	45	12	1.42
45. Senility without mention of Psychosis, Ill-defined and Unknown Causes	780-795,	15	4	0.47

Causes of Death: Numbers and Rates, 1964—continued

Cause of Death		Detailed List Numbers	Number of Deaths	Rate per 100,000 of Mean Population	Percentage of Total Deaths
46.	General Arteriosclerosis	450	92	25	2.90
	Other Diseases of Circulatory System ..	451-468	40	11	1.26
	Other Diseases of Respiratory System ..	470-475, 510-527	38	10	1.20
	All Other Diseases	Residual	154	42	4.85
47.	Motor Vehicle Accidents	E810-E835	89	24	2.80
48.	All Other Accidents	E800-E802, E840-E962	121	33	3.81
49.	Suicide and Self-inflicted Injuries	E963, E970-E979	42	12	1.32
50.	Homicide and Operations of War	E964, E965, E980-E999	3	1	0.09
All Causes .. ..		..	3,174	864	100.00

(a) 040, 043, 045-048, 050, 051, 055-058, 080, 084, 085, 100-108, 110-117.

(b) Less than 0.5.

(c) 030-039, 041, 042, 044, 052-054, 059-074, 081-083, 086-096, 120-138.

(d) 140-148, 160, 161, 164, 165, 190-203, 205.

It will be noted that Items 4-16 inclusive in the previous table were not listed, few associated deaths having been recorded. The specification of causes reads: (4) Typhoid Fever; (5) Cholera; (6) Dysentery, All Forms; (7) Scarlet Fever and Streptococcal Sore Throat; (8) Diphtheria; (9) Whooping Cough; (10) Meningococcal Infections; (11) Plague; (12) Acute Poliomyelitis; (13) Smallpox; (14) Measles; (15) Typhus and Other Rickettsial Diseases; (16) Malaria. Uncertainty as to diagnosis in earlier periods makes comparison difficult but, at the turn of the century, whooping cough, diphtheria, typhoid fever and scarlet fever were diseases associated with numerous deaths.

Causes of Death in Age Groups

The previous table showing causes of death makes no reference to age, a complete dissection by age and cause being beyond the scope of a Year Book. Nevertheless, there is an extremely significant relationship between age and cause of death and the next table indicates, in summary form, their close inter-connection.

For each of the specified causes in the table, two percentages are shown:

- (i) Deaths in a particular age group as a proportion of total deaths from all causes in that age-group.
- (ii) Deaths in a particular age group as a proportion of total deaths from the same cause at all ages.

The causes chosen and specified are such that they account, in total, for approximately 75 per cent or more of deaths in any given age group.

Attention is called to "Accidental and Violent Deaths" (800-999) which account for over 50 per cent of deaths in the age groups five to 14, 15 to 19, 20 to 24, and 25 to 34 years. Also noteworthy is the present relative unimportance of "Infective and Parasitic Diseases" (001-138). The most important group, in a total sense, is "Diseases of the Heart" (401, 410-443) followed by "Malignant Neoplasms—All Forms" (140-205); then "Vascular Lesions Affecting Central Nervous System" (330-334) followed by "Pneumonia, Bronchitis and Influenza" (480-502, 763); nevertheless, the inter-connection between age and cause of death is so close that none of these causes needs to be specified for some age-groups in the table.

Main Causes of Death (in Age Groups), 1964

Detailed List Numbers	Age Group and Cause of Death	Deaths from Specified Cause			
		In Age Group		At All Ages	
		Number	Per Cent	Number	Per Cent (a)
	Under One Year:	166	100.0	..	..
762	Post-natal asphyxia and atelectasis	14	8.4	14	100.0
750-759	Congenital malformations ..	28	16.9	43	65.1
760, 761	Birth injuries	25	15.1	25	100.0
774-776	Immaturity	29	17.5	29	100.0
480-502, 763	Pneumonia, bronchitis and influenza	27	16.2	296	9.1
..	Other causes	43	25.9	..	..
	1-4 years:	37	100.0	..	..
800-999	Accidental and violent deaths ..	14	37.8	255	5.5
750-759	Congenital malformations ..	4	10.8	43	9.3
140-205	Cancer (all forms) (b) ..	1	2.7	451	0.2
480-502	Pneumonia, bronchitis and influenza	11	29.7	296	3.7
001-138	Infective and parasitic diseases ..	1	2.7	21	4.8
..	Other causes	6	16.3	..	..
	5-14 years:	35	100.0	..	..
800-999	Accidental and violent deaths ..	21	60.0	255	8.2
140-205	Cancer (all forms) (b)	2	5.7	451	0.4
480-502	Pneumonia, bronchitis and influenza	2	5.7	296	0.7
..	Other causes	10	28.6	..	..
	15-19 Years:	32	100.0	..	..
800-999	Accidental and violent deaths ..	20	62.5	255	7.8
140-205	Cancer (all forms) (b)	3	9.4	451	0.7
750-759	Congenital malformations ..	2	6.3	43	4.7
..	Other causes	7	21.8	..	..
	20-24 Years:	27	100.0	..	..
800-999	Accidental and violent deaths ..	18	66.7	255	7.1
140-205	Cancer (all forms) (b)	2	7.4	451	0.4
750-759	Congenital malformations ..	1	3.7	43	2.3
..	Other causes	6	22.2	..	..
	25-34 Years:	63	100.0	..	..
800-999	Accidental and violent deaths ..	33	52.4	255	12.9
140-205	Cancer (all forms) (b)	7	11.1	451	1.6
401, 410-443	Diseases of the heart	6	9.5	1,131	0.5
001-138	Infective and parasitic diseases ..	1	1.6	21	4.8
..	Other causes	16	25.4	..	..
	35-44 Years:	101	100.0	..	..
800-999	Accidental and violent deaths ..	30	29.7	255	11.8
140-205	Cancer (all forms) (b)	20	19.8	451	4.4
401, 410-443	Diseases of the heart	16	15.8	1,131	1.4
480-502	Pneumonia, bronchitis and influenza	6	5.9	296	2.0
001-138	Infective and parasitic diseases ..	4	4.0	21	19.0
..	Other causes	25	24.8	..	..
	45-54 Years:	241	100.0	..	..
401, 410-443	Diseases of the heart	93	38.6	1,131	8.2
140-205	Cancer (all forms) (b)	59	24.5	451	13.1
800-999	Accidental and violent deaths ..	26	10.8	255	10.2
330-334	Vascular lesions affecting central nervous system	8	3.3	323	2.5
480-502	Pneumonia, bronchitis and influenza	12	5.0	296	4.1
..	Other causes	43	17.8	..	..

Main Causes of Death (in Age Groups), 1964—continued

International List Number	Age Group and Cause of Death	Deaths from Specified Cause			
		In Age Group		At All Ages	
		Number	Per Cent	Number	Per Cent (a)
401, 410-443	55-64 Years:	467	100.0	..	..
140-205	Diseases of the heart	192	41.1	1,131	16.9
330-334	Cancer (all forms) (b)	106	22.7	451	23.5
800-999	Vascular lesions affecting central nervous system	44	9.4	323	13.6
480-502	Accidental and violent deaths ..	16	3.4	255	6.3
..	Pneumonia, bronchitis and influenza	33	7.1	296	11.1
..	Other causes	76	16.3	..	..
401, 410-443	65-74 Years:	714	100.0	..	..
140-205	Diseases of the heart	297	41.6	1,131	26.3
330-334	Cancer (all forms) (b)	120	16.8	451	26.6
480-502	Vascular lesions affecting central nervous system	73	10.2	323	22.6
800-999	Pneumonia, bronchitis and influenza	64	9.0	296	21.6
..	Accidental and violent deaths ..	23	3.2	255	9.0
..	Other causes	137	19.2	..	..
401, 410-443	75 Years and Over:	1,291	100.0	..	..
330-334	Diseases of the heart	524	40.6	1,131	46.3
140-205	Vascular lesions affecting central nervous system	187	14.5	323	57.9
450-456	Cancer (all forms) (b)	131	10.1	451	29.0
480-502	Diseases of arteries	83	6.4	119	69.7
..	Pneumonia, bronchitis and influenza	140	10.8	296	47.3
..	Other causes	226	17.6	..	..

(a) Deaths in the specified age group as a percentage of total deaths for a particular cause.

(b) Includes Hodgkin's disease and the leukaemias.

Heart Diseases

As the previous table indicates, heart diseases (list items 401, 410-443) are the greatest single cause of death. In the following record of deaths due to heart diseases, 1950 has been chosen as a start-point since earlier figures are not strictly comparable:

Deaths from Heart Diseases (All Causes) (a)

Year	Number of Deaths			Death Rate Per 100,000 of Mean Population	Deaths as a Percentage of Deaths from All Causes
	Males	Females	Persons		
1950 ..	413	304	717	257	29.1
1959 ..	553	347	900	264	32.4
1960 ..	535	356	891	257	33.4
1961 ..	580	370	950	269	34.1
1962 ..	622	405	1,027	286	35.8
1963 ..	599	426	1,025	281	36.4
1964 ..	677	454	1,131	308	35.6

(a) List items 401, 410-443.

Tuberculosis

A development of recent years has been the marked decline in deaths attributed to tuberculosis. In the following table, 1950 has been chosen as

the start-point, earlier figures being not strictly comparable due to changes in classification and in the method of determining a single cause of death where multiple causes are shown on the death certificate.

Deaths from Tuberculosis (All Forms) (a)

Year	Number of Deaths			Death Rate Per 100,000 of Mean Population	Deaths as a Percentage of Deaths from All Causes
	Males	Females	Persons		
1950 ..	27	44	71	25	2.9
1959 ..	13	6	19	6	0.7
1960 ..	14	8	22	6	0.8
1961 ..	10	5	15	4	0.5
1962 ..	11	1	12	3	0.4
1963 ..	10	4	14	4	0.5
1964 ..	10	1	11	3	0.3

(a) List items 001-019.

Malignant Neoplasms

In the next table, deaths attributed to list items 140-205 are analysed, the causes being summarised as "Malignant Neoplasms including Hodgkin's Disease and the Leukaemias":

Deaths from Malignant Neoplasms (All Causes) (a)

Year	Number of Deaths			Death Rate Per 100,000 of Mean Population	Deaths as a Percentage of Deaths from All Causes
	Males	Females	Persons		
1950 ..	159	164	323	115	13.1
1959 ..	197	171	368	108	13.2
1960 ..	230	177	407	117	15.2
1961 ..	200	196	396	113	14.2
1962 ..	263	203	466	129	16.2
1963 ..	207	211	418	115	14.8
1964 ..	230	221	451	123	14.2

(a) List items 140-205.

Lung Cancer

There has been considerable interest recently in lung cancer because of its suspected connection with smoking habits. The following table shows deaths attributed to Malignant Neoplasm of Respiratory System (160-165) since 1950:

Deaths from Malignant Neoplasm of Respiratory System

Year	Deaths, List Items 160-165			Year	Deaths, List Items 160-165		
	Males	Females	Persons		Males	Females	Persons
1950 ..	20	4	24	1958 ..	29	10	39
1951 ..	19	5	24	1959 ..	43	11	54
1952 ..	16	6	22	1960 ..	40	3	43
1953 ..	19	1	20	1961 ..	47	3	50
1954 ..	23	5	28	1962 ..	70	8	78
1955 ..	33	7	40	1963 ..	44	9	53
1956 ..	35	9	44	1964 ..	51	16	67
1957 ..	43	7	50				

Expectation of Life and Life Tables

Previously reference was made to the limitations of crude death rates as a measure of mortality. However, a correct measurement of the mortality of the population can be obtained from life tables.

A life table is, in effect, a mathematical model, its starting point being a hypothetical population (say 100,000) of newly-born males or females. Using data for a given period (e.g. single year age distribution of an actual population, deaths at single ages, etc.), the compiler calculates the theoretical number of survivors at each age in the hypothetical population until there are no survivors remaining.

In the table that follows, l_x is the number of persons surviving at exact age x . From this survivors' table, other measures can then be computed, namely:—

L_x :— the average number living between any year x and $x + 1$

e^o_x :— the complete expectation of life (i.e. the average number of years lived after age x by each of a group of persons aged exactly x).

Not only does the l_x column give numbers of survivors at each age but, if accumulated, it gives an approximate measure of the total number of years lived by the life-table population. To obtain a more refined measure of the total number of years lived, it is necessary to accumulate L_x values. These can be obtained by averaging each consecutive pair of l_x values.

Taking the male life table as an example:

Total of all l_x values (0-105) = 6,763,970 years

Total of all l_{x+1} values (1-105) = 6,663,970 years

Therefore, total L_x values (0-105) = 6,713,970 years

According to the table, 100,000 males live a total of 6,713,970 years. It follows, then, that the complete expectation of life (e^o_x) can be taken as 67.14 years as from birth.

The above calculation shows the derivation of e^o_x where x is 0. The same logic applies to all other ages:

Again taking the male life table as an example:

Total of l_x values (10-105) = 5,791,978 years

Total of all l_{x+1} values (11-105) = 5,695,490 years

Therefore, total L_x values (10-105) = 5,743,734 years

According to the table, 96,488 males live a total of a further 5,743,734 years. It follows then that each male aged 10 has an average life expectancy of a further 59.53 years (i.e. $\frac{5,743,734}{96,488}$)

From these examples, it will be seen that e^o_x is simply an average or per capita figure, the two elements involved being the total number of years lived by a given population and the given population itself.

For the sake of brevity in the table, the following usual values have not been given:

dx ; the number of deaths in the year of age x to $x + 1$ among the l_x persons who enter on that year.

p_x ; the probability of a person aged x living a year.

q_x ; the probability of a person aged x dying within a year.

If required, these values can be computed from the tables as follows:

$$dx = l_x - l_{x+1}$$

$$p_x = \frac{l_{x+1}}{l_x}$$

$$\text{and } q_x = 1 - p_x$$

Australia: Life Tables, 1953-55
Survivors (l_x) and Complete Expectation of Life ($e^{\circ}x$)

Males

Age x	l_x	$e^{\circ}x$	Age x	l_x	$e^{\circ}x$	Age x	l_x	$e^{\circ}x$
0 ..	100,000	67.14	35 ..	92,955	36.25	70 ..	54,054	9.59
1 ..	97,479	67.86	36 ..	92,764	35.33	71 ..	51,181	9.11
2 ..	97,210	67.05	37 ..	92,562	34.40	72 ..	48,211	8.63
3 ..	97,036	66.17	38 ..	92,345	33.48	73 ..	45,162	8.17
4 ..	96,908	65.26	39 ..	92,112	32.56	74 ..	42,059	7.74
5 ..	96,811	64.32	40 ..	91,861	31.65	75 ..	38,927	7.33
6 ..	96,735	63.37	41 ..	91,588	30.75	76 ..	35,791	6.92
7 ..	96,666	62.42	42 ..	91,291	29.84	77 ..	32,676	6.54
8 ..	96,603	61.46	43 ..	90,967	28.95	78 ..	29,602	6.17
9 ..	96,544	60.49	44 ..	90,612	28.06	79 ..	26,589	5.81
10 ..	96,488	59.53	45 ..	90,221	27.18	80 ..	23,658	5.47
11 ..	96,434	58.56	46 ..	89,790	26.31	81 ..	20,829	5.14
12 ..	96,380	57.59	47 ..	89,313	25.44	82 ..	18,127	4.84
13 ..	96,320	56.63	48 ..	88,785	24.59	83 ..	15,579	4.55
14 ..	96,249	55.67	49 ..	88,200	23.75	84 ..	13,209	4.28
15 ..	96,162	54.72	50 ..	87,553	22.92	85 ..	11,039	4.01
16 ..	96,057	53.78	51 ..	86,836	22.11	86 ..	9,086	3.77
17 ..	95,933	52.85	52 ..	86,042	21.31	87 ..	7,358	3.54
18 ..	95,790	51.93	53 ..	85,164	20.52	88 ..	5,857	3.33
19 ..	95,631	51.01	54 ..	84,196	19.75	89 ..	4,577	3.12
20 ..	95,460	50.10	55 ..	83,132	19.00	90 ..	3,507	2.93
21 ..	95,282	49.20	56 ..	81,967	18.26	91 ..	2,630	2.74
22 ..	95,103	48.29	57 ..	80,697	17.54	92 ..	1,927	2.56
23 ..	94,926	47.38	58 ..	79,322	16.84	93 ..	1,376	2.40
24 ..	94,754	46.46	59 ..	77,842	16.15	94 ..	956	2.24
25 ..	94,588	45.54	60 ..	76,256	15.47	95 ..	645	2.10
26 ..	94,427	44.62	61 ..	74,562	14.81	96 ..	421	1.95
27 ..	94,269	43.69	62 ..	72,758	14.17	97 ..	266	1.82
28 ..	94,113	42.76	63 ..	70,840	13.54	98 ..	162	1.70
29 ..	93,958	41.83	64 ..	68,805	12.93	99 ..	95	1.57
30 ..	93,801	40.90	65 ..	66,651	12.33	100 ..	53	..
31 ..	93,642	39.97	66 ..	64,377	11.74	101 ..	28	..
32 ..	93,479	39.04	67 ..	61,980	11.18	102 ..	14	..
33 ..	93,311	38.11	68 ..	59,460	10.63	103 ..	7	..
34 ..	93,137	37.18	69 ..	56,816	10.10	104 ..	3	..

Australia: Life Tables, 1953-55
Survivors (l_x) and Complete Expectation of Life (e°_x)
Females

Age x	l_x	e°_x	Age x	l_x	e°_x	Age x	l_x	e°_x
0 ..	100,000	72.75	35 ..	95,519	40.67	70 ..	69,613	11.62
1 ..	98,011	73.22	36 ..	95,384	39.73	71 ..	67,351	11.00
2 ..	97,770	72.40	37 ..	95,237	38.79	72 ..	64,921	10.39
3 ..	97,642	71.49	38 ..	95,077	37.85	73 ..	62,320	9.80
4 ..	97,553	70.55	39 ..	94,904	36.92	74 ..	59,547	9.23
5 ..	97,471	69.61	40 ..	94,715	36.00	75 ..	56,601	8.69
6 ..	97,405	68.66	41 ..	94,509	35.07	76 ..	53,488	8.17
7 ..	97,350	67.70	42 ..	94,285	34.15	77 ..	50,216	7.66
8 ..	97,304	66.73	43 ..	94,041	33.24	78 ..	46,802	7.18
9 ..	97,264	65.76	44 ..	93,774	32.34	79 ..	43,265	6.72
10 ..	97,228	64.78	45 ..	93,481	31.44	80 ..	39,633	6.30
11 ..	97,194	63.80	46 ..	93,162	30.54	81 ..	35,942	5.89
12 ..	97,160	62.83	47 ..	92,814	29.65	82 ..	32,235	5.51
13 ..	97,124	61.85	48 ..	92,434	28.77	83 ..	28,563	5.16
14 ..	97,085	60.87	49 ..	92,021	27.90	84 ..	24,981	4.83
15 ..	97,042	59.90	50 ..	91,573	27.03	85 ..	21,545	4.52
16 ..	96,995	58.93	51 ..	91,088	26.18	86 ..	18,309	4.23
17 ..	96,945	57.96	52 ..	90,564	25.32	87 ..	15,318	3.95
18 ..	96,891	56.99	53 ..	89,999	24.48	88 ..	12,605	3.70
19 ..	96,834	56.03	54 ..	89,392	23.64	89 ..	10,192	3.46
20 ..	96,774	55.06	55 ..	88,739	22.81	90 ..	8,087	3.24
21 ..	96,712	54.10	56 ..	88,038	21.99	91 ..	6,287	3.03
22 ..	96,648	53.13	57 ..	87,285	21.18	92 ..	4,782	2.83
23 ..	96,582	52.17	58 ..	86,476	20.37	93 ..	3,551	2.64
24 ..	96,515	51.20	59 ..	85,605	19.57	94 ..	2,570	2.47
25 ..	96,446	50.24	60 ..	84,665	18.78	95 ..	1,810	2.31
26 ..	96,375	49.28	61 ..	83,646	18.01	96 ..	1,238	2.15
27 ..	96,301	48.31	62 ..	82,542	17.24	97 ..	820	2.00
28 ..	96,224	47.35	63 ..	81,343	16.49	98 ..	525	1.87
29 ..	96,142	46.39	64 ..	80,043	15.75	99 ..	324	1.75
30 ..	96,055	45.43	65 ..	78,633	15.02	100 ..	192	..
31 ..	95,963	44.48	66 ..	77,105	14.31	101 ..	109	..
32 ..	95,864	43.52	67 ..	75,449	13.61	102 ..	59	..
33 ..	95,758	42.57	68 ..	73,655	12.93	103 ..	31	..
34 ..	95,643	41.62	69 ..	71,712	12.27	104 ..	15	..

The tables are extracts from those produced by the Commonwealth Actuary, the source data being supplied by the Commonwealth Statistician and comprising: (i) the number of males and females living at each age last birthday, as shown by the 1954 Census; (ii) the number of male and female deaths at each age (last birthday) in the years 1953, 1954 and 1955.

There are no life tables prepared on the basis of Tasmanian experience and in most legal and actuarial situations, it is normal to use the Australian Life Tables. (Life Tables, 1960-62, have now been published.)

True Death Rates

The true death rate is the reciprocal of the complete expectation of life of a person at birth. In calculating e°_x where x is 0, the sum of the L_x values was taken as the total number of years lived by the original 100,000 over a period of a century or more. To arrive at the true death rate, the life-table can also be regarded as the experience of a single year so that the sum of the L_x values

no longer represents years lived but simply persons "at risk" in association with 100,000 deaths. By way of illustration, in the male life table the sum of all survivors (L_x values) is 6,713,970 males associated with 100,000 deaths:

$$\text{True Death Rate} = \frac{100,000}{6,713,970} = 14.89 \text{ per } 1,000$$

The true death rate for a given period is unaffected by the particular age distribution of that period, and is determined solely by the mortality experience of the period as manifested in the rate of survival from each year of age to the next. The table below sets out complete expectation of life at birth and true death rates for the periods covered by Australian life tables:

Australia—Complete Expectation of Life at Birth and True Death Rates

Period	Complete Expectation of Life At Birth (Years)		True Death Rate (a)	
	Males	Females	Males	Females
1881-1890	47.20	50.84	21.19	19.67
1891-1900	51.06	54.76	19.58	18.26
1901-1910	55.20	58.84	18.12	17.00
1920-1922	59.15	63.31	16.91	15.80
1932-1934	63.48	67.14	15.75	14.89
1946-1948	66.07	70.63	15.14	14.16
1953-1955	67.14	72.75	14.89	13.75

(a) Number of deaths per 1,000 in stationary (or life-table) population.

While the complete expectation of life at birth has shown a marked increase in successive tables, the increase at other ages has not been so pronounced. The following table compares the complete expectation of life at selected ages for the period 1891-1900 with that for 1953-1955:

Australia—Comparative Complete Expectation of Life

Age x	Expectation of Life (e^x) at each age according to experience of period.			
	Male Lives		Female Lives	
	1891-1900	1953-1955	1891-1900	1953-1955
0	51.06	67.14	54.76	72.75
5	55.61	64.32	58.64	69.61
10	51.43	59.53	54.46	64.78
15	46.98	54.72	49.97	59.90
20	42.81	50.10	45.72	55.06
25	38.90	45.54	41.69	50.24
30	35.11	40.90	37.86	45.43
35	31.34	36.25	34.14	40.67
40	27.65	31.65	30.49	36.90
45	23.99	27.18	26.69	31.44
50	20.45	22.92	22.93	27.03
55	17.08	19.00	19.29	22.81
60	13.99	15.47	15.86	18.78
65	11.25	12.33	12.75	15.02
70	8.90	9.59	9.89	11.62
75	6.70	7.33	7.37	8.69
80	5.00	5.47	5.49	6.30

It will be noted that e^x for age 5 years in the period 1891-1900 was actually higher than for age 0 years. This peculiarity was associated with the extremely high rate of infant mortality then prevailing.