

TRANSPORT

MINISTRY OF TRANSPORT

The Victorian Ministry of Transport, in association with the statutory authorities under the Minister of Transport's jurisdiction, controls land transport in Victoria. The exception to this situation is traffic management which lies within the administration of the Minister for Police and Emergency Services. The Ministry was established under the terms of the *Transport Act 1951* for the purpose of securing the improvement, development, and better co-ordination of passenger and freight transportation in Victoria. As part of this responsibility, the Ministry carries out detailed investigations into all aspects of land transport and acts as the policy adviser to the Minister of Transport.

Victoria's transport authorities are responsible for the operation and maintenance of the transport system and the Ministry of Transport oversees their activities and formulates policy. Seven transport authorities report to the Minister of Transport.

The Victorian Railways is the largest Victorian transport authority, employing some 23,000 persons and operating a rail network of 6,184 kilometres. During the 1979-80 financial year, the Victorian Railways carried 89,000,000 passengers and transported about 13,000,000 tonnes of freight. Expenditure in 1979-80 amounted to \$393m. Late in 1972, legislation was enacted to change the governing body of the Victorian Railways from three commissioners to a Board of seven members, which has since been expanded to nine members. The Board comprises representatives from the business community and the Victorian Railways.

It became evident during the 1960s that the Flinders Street station area could no longer handle the demand for peak hour train travel and so the Victorian Government, after examining methods of reducing this bottleneck, decided that the best solution was to convert the central terminal into a five section complex by the construction of an underground rail loop around the central business district. When completed, the Melbourne underground rail loop will substantially enlarge the capacity of the whole Melbourne metropolitan area rail network.

The Melbourne Underground Rail Loop Authority was created when the Melbourne Underground Rail Loop Act was proclaimed on 1 January 1971. The Authority is a corporate body comprising nine members. It is responsible for supervising and co-ordinating the planning, financing, and construction of the underground rail loop, which will comprise four new rail tracks under Spring Street and La Trobe Street, linking tracks in the existing railways system from points east of Flinders Street and Princes Bridge to points north of Spencer Street. Three new stations will be built underground and two additional tracks have been constructed between Flinders Street and Spencer Street stations. To assist in financing the underground rail loop, the Victorian Railways collects a small levy on each suburban rail journey. The balance of the funds required to complete the underground rail loop are to be provided by the Victorian Government, the Melbourne and Metropolitan Board of Works, and the Melbourne City Council.

Many cities around the world have abandoned their tramway systems. Melbourne, however, has retained its trams, and they have become a significant asset in moving persons over comparatively short distances up to 13 kilometres from Melbourne. In fact, the Melbourne and Metropolitan Tramways Board carries more passengers than the

Victorian Railways—about 121,000,000 persons in 1980–81. The board comprises three members, employs 4,600 persons, and maintains 224 kilometres of tram services and 290 kilometres of bus services in the Melbourne metropolitan area.

A necessary part of Victoria's transport system is the operation of commercial road passenger and goods vehicles. The regulation of these functions is the responsibility of the Transport Regulation Board, which comprises three members. The regulatory pattern takes the form of a compulsory licensing system designed to meet public needs and to assist in the balanced use of transport resources.

In 1974, the Victorian Parliament passed the *Metropolitan Bridges, Highways, and Foreshores Act 1974*, thereby creating a single Victorian highway authority by transferring to the Country Roads Board the responsibility for metropolitan bridges and highways. The Country Roads Board maintains nearly 24,000 kilometres of roads and is responsible for planning and constructing new roads. The Board comprises three members and employs about 5,000 persons.

In 1964, a special Victorian Government committee recommended that a proposed crossing over the lower Yarra River should be built as a high level bridge with six traffic lanes. This recommendation was agreed to by the Victorian Government in 1965 and legislation was passed in December 1965 giving the West Gate Bridge Authority, or the Lower Yarra Crossing Authority as it was then known, the power to construct and operate a toll bridge over the lower Yarra River, which was opened in November 1978. Subsequent traffic estimates led the Authority to increase the number of traffic lanes from six to eight. The Authority was founded as a non-profit company limited by guarantee and is registered under the Victorian *Companies Act 1961* and administered by a chairman, deputy chairman, and seven directors. However, in 1980, legislation was passed which changed the Authority from a company limited by guarantee to a statutory authority.

Complementing the Victorian public transport system is an extensive privately owned bus and taxi network. With the exception of a small number of services into the central business district, Melbourne's private bus network operates on cross suburban routes linking residential areas and local shopping centres, schools, and railway stations. Private buses operate over routes covering 36,000,000 kilometres and carry about 51,000,000 passengers a year. The Victorian Government is subsidising private bus services to minimise increases in fares and is providing low interest loans to facilitate the purchase of new buses.

In co-operation with Victoria's various transport authorities, the Ministry of Transport has embarked on a major programme to re-equip and modernise the metropolitan transport system with the aim of providing rapid, frequent, and comfortable public transport.

LAND TRANSPORT

Railways

Administration

The Victorian Railways was established in 1856 and was administered first by the Board of Land and Works, and then by either one or three commissioners. A seven-member board, since increased to nine, replaced the commissioners in 1973. The Board, under a full-time chairman, is responsible to the Victorian Government through the Minister of Transport. Day to day matters are controlled by the general manager who is responsible to the chairman for managing the Victorian Railways within Board guidelines.

Total transport service

Victoria's rail system was developed during the second half of the nineteenth century with main lines radiating from Melbourne. Branch lines were built to serve areas which were virtually isolated. The development of road transport has meant drastic economic changes, and the twin expense of maintaining road and rail links to many centres is no longer acceptable.

The Victorian Railways regional freight centres, the first of which opened at Horsham in March 1976, use rail's advantage as a fast bulk carrier, linked with the flexibility of road transport for local services. Local deliveries in many country areas are now more frequent, compared with the former rail services on branch lines, yet the customer still

pays the equivalent of through-rail freight rates. Some towns previously without rail freight services, such as Edenhope and Apsley, are now linked to the regional freight centre system.

Urban transport improvements are continuing, as far as funds allow, to help the Melbourne suburban rail system meet its present commitments and provide for the future demands that are expected to be placed on it.

Urban transport

A feature of the 1969 Melbourne Transportation Committee's plan for 1985 was co-ordinated public transport. The report emphasised the need for developing projects such as station car parking facilities, and tram and bus facilities at modal interchange stations to help develop the public transport network. Since then, VicRail has increased free car parking spaces at suburban stations from 9,300 in 1970 to 19,336 in 1981.

Work under the supervision of the Railway Construction and Property Board, is well under way on the Box Hill Transport Centre. Box Hill station, one of the busiest stations in the suburban network will become a modern intermodal transport exchange.

Plans for a \$5m development of Frankston station have recently been announced by the Minister of Transport.

In October 1981, a new transport fare system was introduced. The suburban area was divided into three zones—inner suburban, suburban, and outer suburban. The major feature of the new system was the introduction of TravelCard which replaced MetroCards. TravelCard allows unlimited travel on government trains, trams, buses and, for the first time, on privately operated bus services. Weekly rail tickets are still available but instead of issuing quarterly, half-yearly, and yearly tickets a new system of tickets available for between 10 and 52 weeks was introduced.

Electrification of the 18.42 kilometre section of track between Altona Junction and Werribee has commenced while at Blackburn train stabling facilities, new station buildings, track, and overhead wiring re-arrangements have been carried out.

Since 1974, new buildings have been constructed at more than 40 suburban stations. Modern buildings have replaced lightweight timber structures which were costly to maintain and were inadequate for passengers and staff. During 1981 new station buildings were constructed at North Richmond, Aspendale, Edithvale, Bonbeach, Seddon, Tottenham, Balaclava, Blackburn, Victoria Park, and East Camberwell.

Situated in Batman Avenue, overlooking Flinders Street railway yard is the Metrol building. Metrol monitors and controls the operations of all trains in the suburban area. Operation Controllers supervise the inner suburban area and Line Controllers are responsible for the outer suburban area. These controllers maintain communications with stations, signal boxes, and other key operations personnel. Metrol is also responsible for the visual train information units at Flinders Street, Spencer Street, Museum, and Richmond stations.

A train describer system which is designed to give the precise location of each train in the suburban network is due to commence shortly. This will also be controlled by Metrol.

Also located in the Metrol building are staff who prepare suburban timetables and the rosters for over 1,000 VicRail enginemmen and guards.

Rolling stock

The extension order of nine, first series stainless steel suburban trains was completed during 1980 and in September 1981 the first new generation stainless steel train was officially handed over to VicRail.

In October 1981, the first of the new airconditioned country carriages entered service.

One hundred wagons were converted during 1980-81 for the carriage of 6.096 metre containers, while 198 grain wagons were converted to hopper discharge.

Freight

Helped by the second successive record grain harvest, freight carried by VicRail increased from 11,190,037 tonnes in 1978-79 to 13,453,431 tonnes in 1979-80.

Wheat hauled increased by nearly 2 million tonnes from 2,180,373 tonnes to 4,164,782 tonnes. During 1979-80, 191,256 wagon loads of grain was hauled compared to 128,660 wagon loads for 1978-79.

Total tonnes carried of barley, oats, and rice also increased on figures for 1979-80. Mining and quarry products increased from 745,046 tonnes to 866,847 tonnes.

Melbourne Underground Rail Loop Authority

The *Melbourne Underground Rail Loop Act 1970* provided for the establishment of a new authority—the Melbourne Underground Rail Loop Authority, to be responsible for the supervision and co-ordination of the planning, financing, and construction of the Melbourne underground rail loop. The Authority, comprising nine members appointed by the Governor in Council, was constituted in 1971.

The loop is not a new railway system superimposed on existing transport facilities but, as stated in the preamble to the Act, the loop and ancillary works are “for the purpose of increasing the capacity and efficiency of the existing Melbourne suburban rail network”.

Three underground stations constructed on the eastern and northern boundaries of the central business district, together with the two existing stations on the southern and western boundaries (Flinders Street station and Spencer Street station), form a five station core to handle the city's labour force during peak hours as well as shoppers and visitors to the city. Linking the three new stations, Parliament station under Spring Street, Museum station and Flagstaff station under La Trobe Street, by four underground tracks in four separate tunnels and connecting them to the existing surface tracks to form a loop, significantly increases the train operating capacity at the centre of the system. The tunnels are large enough to accommodate existing passenger rolling stock and possible future double-deck carriages.

Following the transfer of the first stage of the underground project, incorporating Museum station and the loops serving the Caulfield-Sandringham and the Burnley groups of lines, to the Victorian Railways Board for operation in November 1980, the Authority has continued with the remaining sections of the overall programme.

The transfer to VicRail of a third loop, incorporating lines which pass through Clifton Hill and Jolimont, and a connecting tunnel and ramp which complete the City Circle, was scheduled for the first quarter of 1982. The west booking hall of Museum station and the south booking hall of Parliament station were planned for operation in the second and third quarter of 1982, respectively.

Planning also involves transfer to VicRail of the north booking hall of Parliament station during the first quarter of 1983, and the remaining loop which includes lines through North Melbourne by the middle of 1983.

Finance

Compared with 1978-79, receipts increased by \$39.9m, or by 21 per cent. Freight revenue increased by \$31.9m.

Operational expenses

Expenditure increased by \$41.4m to \$390.1m in 1979-80. Increases in salaries and wages were estimated to have cost \$33.3m, an increase of 9.6 per cent. It is a paradox that railways, while being a most economical user of labour per passenger per kilometre or tonne per kilometre performed, are at the same time highly labour intensive in terms of wages as a proportion of total costs. This makes the railways vulnerable to the financial effects of wage increases.

Loan liability and interest

The face value of stock and bonds allocated to the Railways Department, as reduced in accordance with the *Railways (Finances Adjustment) Act 1936*, amounted to \$675m at 30 June 1980. After deducting the value of securities purchased from the National Debt Sinking Fund and cancelled (\$122.4m), the net liability on current loans outstanding at that date was \$556.3m.

The total liability of the State for railways construction, etc., at 30 June 1980 (which includes the liability referred to in the previous paragraph) was \$735.5m. Deduction of securities purchased from the National Debt Sinking Fund and cancelled (\$163.1m), together with cash as credit in the Fund (\$1m), reduced the amount outstanding at the end of the year to a net liability of \$573.4m.

The *Railways (Funds) Act 1961* provided that interest and other charges on money borrowed for the purposes of the *Railways Act 1958* should not henceforth be included in

the accounts of the Victorian Railways, but would be charged against the revenues of the State. However, the *Railways (Funds) Act 1964* reimposed on the Railways, with effect from 1 July 1964, the obligation to pay interest and debt charges on money borrowed for the purposes of the *Railways Act 1958* on and after 1 July 1969. The total annual interest payable on the liability of \$573.4m at 30 June 1980 amounted to \$46m at an average rate of 7.683 per cent. Of this amount, the Victorian Railways are liable for \$30.3m. In addition, the State is required to pay a contribution of \$7.3m at a rate of 4.5 per cent on cancelled securities.

Additional funds, which amounted to \$145.6m at 30 June 1980, have been provided for railway construction, equipment, stores, etc., out of the Consolidated Fund, the Uniform Railway Gauge Trust Fund, the State Grants (Urban Public Transport) Trust Account, and other funds. No interest is charged against railway revenue on these amounts, with the exception that interest, at 5 per cent, is payable to the Commonwealth Government on the repayable principal amount outstanding in respect of expenditure on the uniform gauge. (See page 621 of the *Victorian Year Book 1966*.)

Railway Construction and Property Board

The *Railway Construction and Property Board Act 1979* was assented to on 20 December of that year and came into operation on 22 February 1980. The Act reconstituted the Railway Construction Board as the Railway Construction and Property Board and added additional functions to its responsibilities. The additional functions include provision for the development and management of railway land not used directly for railway purposes and makes provision to transfer to the new Board responsibility for the management and control of railway housing which is no longer required by the Railways.

The Railway Construction and Property Board is thus the successor to the Railway Construction Board, set up in 1965 to assume the powers and duties exercised since 1892 by the Railway Construction Branch of the Board of Land and Works. The Railway Construction Board and its predecessor was the constructing authority for all railway lines which the Victorian Parliament authorised to be constructed.

Railway statistics

The following tables relate to the State railways and road motor services under the control of the Victorian Railways Board. Certain border railways in New South Wales are, by agreement between the Victorian and New South Wales Governments, under the control of the Victorian Railways Board. Particulars of these have been included with those of the State railways being operated within Victoria. Details of the operations of the road motor services are shown on page 519.

Capital cost of railways and equipment

The capital cost of all lines constructed and in course of construction, and of all works, rolling stock, and equipment of the Railways Department at 30 June for each of the years 1976 to 1980 is shown in the following table:

VICTORIA—TOTAL CAPITAL COST OF RAILWAYS,
ETC.: EQUIPMENT AND ROLLING STOCK
(\$'000)

At 30 June—	Railways		Road motor services	Total capital cost (a)
	Lines open	Lines in process of construction		
1976	471,009	2,333	19	473,361
1977	484,954	3,979	19	488,952
1978	494,901	5,297	19	500,217
1979	529,449	6,515	19	535,983
1980	570,177	6,868	19	577,064

(a) Written down in accordance with *Railways (Finances Adjustment) Act 1936*, and allowing for depreciation since 1 July 1937. Particulars are exclusive of the cost of stores and materials on hand and in course of manufacture.

At 30 June 1980, the capital cost of rolling stock, after being written down in accordance with the *Railways (Finances Adjustment) Act 1936*, and allowing for depreciation, was \$214.4m.

Railways staff

The number of officers and employees in the railways (including casual labour and butty-gang workers) and the amount of salaries and wages (including travelling and incidental expenses) paid for each of the financial years 1975-76 to 1979-80 are shown in the following table:

VICTORIA—RAILWAYS STAFF: NUMBERS, SALARIES, ETC.

Period	Average number of employees			Salaries, wages, and travelling expenses \$'000
	Salaried staff	Wages staff	Total	
1975-76	5,363	19,735	25,098	218,609
1976-77	5,299	19,110	24,409	234,816
1977-78	5,382	18,454	23,836	251,055
1978-79	5,384	17,893	23,277	263,480
1979-80	5,388	17,361	22,749	282,811

Railways rolling stock

The following table provides a description of the various types of rolling stock in service (exclusive of road motor rolling stock) at 30 June for each of the years 1976 to 1980:

VICTORIA—RAILWAYS ROLLING STOCK IN SERVICE AT 30 JUNE (EXCLUDING ROAD MOTOR SERVICES)

Rolling stock in service	1976	1977	1978	1979	1980
Locomotives—					
Steam	19	17	11	11	10
Electric	35	35	35	35	35
Diesel electric	257	258	265	266	267
Other (a)	93	93	90	89	88
Total	404	403	401	401	400
Passenger coaches—					
Electric suburban	1,127	1,087	1,056	1,066	1,038
Other (b)	545	540	490	488	469
Total	1,672	1,627	1,546	1,554	1,507
Goods stock (c)	18,930	17,869	14,574	14,351	12,165
Service stock	1,481	1,428	1,230	1,181	1,154

(a) Other locomotives comprise diesel hydraulic locomotives, cranes, rail motor diesel power units, and non-passenger carrying tractors.

(b) Passenger coaches owned jointly with New South Wales and South Australia have been included.

(c) All parcels and brake vans including display cars and standard gauge stock have been included.

Railways route distance

The route distance of the railways (exclusive of road motor service route distance) at 30 June for each of the years 1976 to 1980 is shown in the following table. It should be noted that the Victorian Railways operate certain services in New South Wales.

VICTORIA—RAILWAYS ROUTE DISTANCE AT 30 JUNE (EXCLUDING ROAD MOTOR SERVICES) (kilometres)

Lines open for traffic	Gauge width	1976	1977	1978	1979	1980
Single track	—Broad gauge (a)	5,784	5,700	5,499	5,320	5,313
	—Narrow gauge	14	13	—	—	—
Double track	—Broad gauge (a)	719	725	725	725	731
	—Broad gauge (a)	136	140	140	140	140
Total route distance		6,653	6,578	6,364	6,185	6,184

(a) Broad gauge refers to 1,600 mm and 1,435 mm gauge track.

Railways traffic

The traffic of the railways (exclusive of road motor traffic) for each of the years 1975-76 to 1979-80 is shown in the following table:

VICTORIA—RAILWAYS TRAFFIC (EXCLUDING ROAD MOTOR SERVICES)

Traffic	Unit	1975-76	1976-77	1977-78	1978-79	1979-80
Traffic train kilometres—Country	'000	7,823	7,654	7,135	6,650	6,208
Suburban	'000	14,721	14,423	13,887	13,386	13,174
Goods	'000	11,274	11,412	10,990	10,820	11,413
Total	'000	33,818	33,489	32,013	30,856	30,795
Passenger journeys—Country	'000	4,921	4,402	4,108	4,065	3,664
Suburban	'000	104,748	98,252	93,546	89,258	85,247
Total	'000	109,669	102,654	97,654	93,323	88,911
Goods and livestock carried	'000 tonnes	10,803	10,971	11,120	11,190	13,453

The tonnes carried and tonne kilometres of various classes of goods and the total tonnes carried and tonne kilometres of livestock carried by the Victorian Railways for the years 1976-77 to 1979-80 are shown in the following table:

VICTORIA—RAILWAYS GOODS AND LIVESTOCK TRAFFIC
(EXCLUDING ROAD MOTOR GOODS SERVICES)
(^{'000 tonnes})

Class of goods	Tonnes carried				Tonne kilometres			
	1976-77	1977-78	1978-79	1979-80	1976-77	1977-78	1978-79	1979-80
Grain—								
Barley	452	362	471	548	133,249	95,833	124,599	147,387
Wheat	1,837	2,359	2,180	4,164	563,780	735,572	661,463	1,309,886
Other	166	206	233	349	34,415	42,336	43,735	70,321
Flour	116	82	77	59	25,900	18,505	17,196	14,850
Stockfood and fodder	57	50	41	35	14,893	11,475	8,407	9,194
Fruit—								
Fresh	92	74	78	76	35,568	27,538	28,469	26,491
Dried	53	48	53	45	28,637	25,794	29,160	24,650
Beverages	160	157	147	143	38,857	37,296	35,082	33,976
Solid fuels	837	740	783	783	138,847	125,546	139,606	139,537
Cement	903	803	774	718	113,546	108,438	115,338	118,245
Mining and quarry products	512	758	745	867	100,298	126,217	130,052	146,558
Dairy produce	18	15	14	13	4,260	3,726	3,620	2,872
Milk, condensed, powdered, etc.	99	75	60	47	18,137	13,699	10,778	9,010
Tinplate	45	19	21	26	14,492	7,069	7,339	10,654
Iron, steel, and metals, unfabricated	675	591	609	749	213,818	196,664	197,447	250,419
Manures	593	616	671	631	154,264	155,893	168,449	160,240
Motor cars and accessories	233	181	173	165	58,123	43,897	44,733	39,773
Petroleum products	427	402	388	341	126,608	121,179	120,892	109,976
Paper products	203	179	193	194	67,669	59,674	72,800	70,980
Pipes	56	66	57	54	15,612	17,617	15,323	14,361
Timber	247	189	180	187	79,467	62,590	59,918	65,522
Wool	126	104	100	92	31,610	26,806	25,766	24,157
All other goods	2,755	2,768	2,980	3,039	935,359	960,776	1,035,757	1,047,157
Total goods	10,662	10,844	11,028	13,325	2,947,410	3,024,141	3,095,929	3,846,216
Total livestock	310	277	162	128	94,776	84,537	49,376	41,578
Grand total of goods and livestock	10,971	11,120	11,190	13,453	3,042,186	3,108,678	3,145,305	3,887,794

Railways revenue and expenditure

Revenue for 1979-80 increased by \$39,525,613 compared with 1978-79. Total working expenses increased by \$44,808,760 over the same period.

VICTORIA—RAILWAYS REVENUE AND EXPENDITURE
(**\$'000**)

Particulars	1975-76	1976-77	1977-78	1978-79	1979-80
REVENUE					
Passenger, etc., business—					
Passenger fares	46,662	52,417	53,813	57,300	62,718
Parcels, mails, etc.	7,049	7,336	7,202	8,219	9,433
Other	111	104	106	156	145
Goods, etc., business—					
Goods	77,687	86,282	92,543	101,030	132,849
Livestock	2,262	2,260	2,191	1,789	1,521
Miscellaneous	471	614	561	621	673
Miscellaneous—					
Dining car and refreshments services	6,116	6,891	7,371	7,840	8,209
Rentals	3,188	3,689	4,804	5,032	5,332
Bookstalls	1,515	1,576	1,587	1,671	1,721
Advertising	299	326	335	352	343
Melbourne Underground Rail Loop Authority special levy	1,395	1,833	1,798	2,127	2,054
Other	697	351	4,334	4,971	5,635
Total revenue	147,450	163,677	176,644	191,108	230,633
EXPENDITURE					
Working expenses—					
General expenses	237,230	261,504	288,238	300,238	339,840
Pensions	12,642	16,263	19,591	22,582	25,437
Contributions to Railway Renewals and Replacement Fund	400	400	400	400	400
Contributions to Railway Accident and Fire Insurance Fund	3,294	3,677	3,639	4,020	5,094
Pay-roll tax	10,399	10,894	11,695	12,387	13,305
Long service leave	5,696	5,501	5,513	4,996	5,432
Appropriation to Melbourne Underground Rail Loop Authority construction	1,395	1,833	1,798	2,127	2,054
Other (a) (b)	1,341	1,682	1,989	1,451	1,448
Total working expenses	272,395	301,755	332,861	348,201	393,010
Net revenue	-124,945	-138,077	-156,217	-157,093	-162,377
Debt charges—					
Interest charges and expenses (b)	13,792	16,760	20,779	22,834	27,157
Exchange on interest payments and redemption	57	38	31	25	22
Contribution to National Debt Sinking Fund	527	572	630	682	740
Net result for year	-139,321	-155,448	-177,657	-180,634	-190,296
Proportion of working expenses to revenue	per cent	per cent	per cent	per cent	per cent
	184.7	184.4	188.4	182.2	170.4

(a) Including interest paid to the Commonwealth Government under the Railways Standardisation Agreement.

(b) Including loan conversion expenses.

The gross revenue and working expenses per average kilometre of railway worked for each of the years 1975-76 to 1979-80 are shown in the following table:

**VICTORIA—RAILWAYS REVENUE AND EXPENDITURE PER AVERAGE
KILOMETRE OPEN (EXCLUDING ROAD MOTOR SERVICES)**

Particulars	1975-76	1976-77	1977-78	1978-79	1979-80
Average number of kilometres open for traffic	6,654	6,610	6,449	6,304	6,304
Gross revenue per average kilometre open	\$ 22,145	24,748	27,391	30,315	36,585
Working expenses per average kilometre open	\$ 40,869	45,572	51,614	55,235	62,343

Road motor services

The following table shows, for each of the years 1975-76 to 1979-80, particulars of the operations of the road motor services under the control of the Victorian Railways Board:

VICTORIA—ROAD MOTOR SERVICES
(Under the control of the Victorian Railways Board)

Particulars	1975-76	1976-77	1977-78	1978-79	1979-80
Bus kilometres	392,901	367,834	293,164	315,211	n.a.
Passenger journeys	790,070	754,250	621,000	569,200	453,121
Gross revenue	\$ 94,781	91,673	82,497	87,779	84,182
Working expenses	\$ 455,522	522,470	352,640	398,595	423,519
Capital expenditure at end of year (less depreciation written off) (a)	\$ 19,092	19,092	19,092	19,092	19,092

(a) From 1 July 1976, rather than being applied to assets as in the past, depreciation is being charged as working expenses.

NOTE. The apparent discrepancy between the amount of working expenses and revenue was brought about by revenue not having received a proportion of combined rail and road services earnings, while working expenses have been charged with road motor operating costs in full.

Tramway and omnibus services*Melbourne and Metropolitan Tramways Board*

The Melbourne and Metropolitan Tramways Board was established by an Act of the Victorian Parliament in 1919, and on 1 November of that year took over the cable tramway system then operating in Melbourne. It progressively acquired the assets and obligations of the various municipal tramway trusts which had been operating as separate bodies and merged them into a single tramway system for the metropolitan area. The Board embarked upon a programme of electric tramway construction and the conversion to electric operation of the previous cable tramway system, resulting in the formation of the tramway network which exists today.

The Melbourne and Metropolitan Tramways Act provides for a Board consisting of a chairman, a deputy chairman, and a member appointed by the Governor in Council. Subject to the direction of the Minister, the Board controls, manages, operates, and maintains the tramways of the Melbourne metropolitan area, and a fleet of passenger buses operating on routes authorised by the Transport Regulation Board.

The Board is at present carrying out an extensive fleet modernisation. At 30 June 1981, the Board had replaced the majority of buses in its fleet of 270 route service vehicles. With the exception of 18 buses which were purchased in 1964, all of the other service buses were manufactured in the last 6 years. It is anticipated that the remaining 18 buses will be replaced during 1981-82. Tram replacement is continuing at the rate of 28 vehicles per year. There were 172 new trams in service at 30 June 1981 and the current contract for 100 trams will raise that number to 215 vehicles.

A new tramway extension along the Burwood Highway — from Warrigal Road to Middleborough Road — was opened in July 1978. New bus routes from North Altona via the Westgate Bridge and services running express along the Eastern Freeway from the Doncaster area have also come into operation.

The following two tables show an analysis of the Board's operations for each of the years 1976-77 to 1980-81:

VICTORIA—MELBOURNE AND METROPOLITAN TRAMWAYS BOARD:
TRAMWAYS: OPERATIONS

Period	Track open at end of year		Tram kilometres	Passenger journeys	Operating receipts	Operating expenses	At end of year	
	Double	Single					Rolling stock (a)	Persons employed (b)
	kilometres	kilometres	'000	'000	\$'000	\$'000	number	number
1976-77	217	4	24,166	102,886	26,684	47,981	747	4,624
1977-78	217	4	24,185	101,296	27,981	50,780	748	4,708
1978-79	220	4	24,191	101,070	29,836	57,331	750	4,749
1979-80	220	4	23,547	98,889	33,394	60,922	753	4,589
1980-81	220	4	24,062	100,474	39,840	72,242	741	4,571

(a) Includes rolling stock in reserve or idle.

(b) Includes omnibus employees. Tramways employees not available separately.

**VICTORIA—MELBOURNE AND METROPOLITAN TRAMWAYS BOARD:
MOTOR OMNIBUS SYSTEMS: OPERATIONS**

Period	Route kilometres	Bus kilometres	Passenger journeys	Operating receipts	Operating expenses	At end of year	
						Rolling stock (a)	Persons employed (b)
		'000	'000	\$'000	\$'000	number	number
1976-77	249	12,762	20,073	5,688	13,057	259	4,624
1977-78	258	12,874	19,339	5,760	14,472	305	4,708
1978-79	276	12,879	19,927	6,264	16,523	278	4,749
1979-80	290	12,739	19,872	7,150	18,077	311	4,589
1980-81	291	13,162	21,017	9,023	21,116	270	4,571

(a) Includes rolling stock in reserve or idle.

(b) Includes tramways employees. Omnibus employees not available separately.

The following three tables show an analysis of the Board's revenue and expenditure items for each of the years 1976-77 to 1980-81:

**VICTORIA—MELBOURNE AND METROPOLITAN TRAMWAYS BOARD:
REVENUE, EXPENDITURE, ETC.
(\$'000)**

Particulars	1976-77	1977-78	1978-79	1979-80	1980-81
REVENUE					
Traffic receipts	32,194	33,546	35,654	39,894	48,192
Miscellaneous operating receipts	179	195	445	651	671
Non-operating receipts	458	551	569	591	705
Payment from drivers' licence suspense account	116	1,927	1,900	1,900	2,000
Total revenue	32,947	36,219	38,569	43,036	51,568
EXPENDITURE					
Traffic operation costs	29,148	31,709	37,319	36,854	39,946
Maintenance—					
Permanent way	1,827	1,667	2,341	2,083	2,237
Tramcars	6,249	6,982	8,609	8,180	9,148
Buses	2,837	3,182	3,636	3,477	3,575
Electrical equipment of lines and sub-stations	1,498	1,511	1,882	1,835	2,052
Buildings and grounds	730	827	1,027	1,094	1,222
Electric traction energy	1,178	1,376	1,571	1,708	2,023
Fuel oil for buses	561	661	840	1,243	1,724
Bus licence and road tax fees	1	2	1	1	1
General administration and stores department costs	3,598	2,397	4,787	5,084	5,312
Pay-roll tax	2,191	2,281	2,427	2,494	2,994
Workers compensation payments	2,706	1,499	2,428	560	4,597
Depreciation	1,479	1,780	2,080	2,474	2,944
Non-operating expenses	186	241	268	285	279
Provisions—					
Long service leave	1,138	1,282	1,012	1,207	1,714
Retiring gratuities	1,785	2,122	1,759	1,976	2,355
Accrued sick leave	165	216	201	(a)	(a)
Public liability claims	853	1,317	1,423	2,020	2,161
Interest on loans	3,094	4,441	4,888	5,986	7,736
Leasing of rolling stock	—	—	479	724	1,617
Total expenditure	61,224	65,492	78,978	79,285	93,637
Net surplus (+) or deficit (-)	-28,277	-29,273	-40,410	-36,249	-42,069
Capital outlay	9,621	10,787	12,095	14,432	17,213
Loan indebtedness at 30 June	45,725	54,413	63,161	73,114	87,114

(a) This item is included in long service leave.

VICTORIA—MELBOURNE AND METROPOLITAN TRAMWAYS BOARD:
TRAMWAYS: OPERATING RECEIPTS, OPERATING EXPENSES, ETC.

Period	Operating receipts			Operating expenses		Ratio operating expenses to operating receipts
	Amount	Per vehicle kilometre	Per passenger	Amount	Per vehicle kilometre	
	\$'000	cents	cents	\$'000	cents	per cent
1976-77	26,684	110.42	25.94	47,981	198.55	179.81
1977-78	27,981	115.70	27.62	50,780	209.97	181.48
1978-79	29,836	123.34	29.52	57,331	236.99	192.15
1979-80	33,394	141.82	33.76	60,922	258.73	182.43
1980-81	39,840	165.57	39.65	72,242	300.24	181.33

VICTORIA—MELBOURNE AND METROPOLITAN TRAMWAYS BOARD:
MOTOR OMNIBUS SYSTEMS: OPERATING RECEIPTS,
OPERATING EXPENSES, ETC.

Period	Operating receipts			Operating expenses		Ratio operating expenses to operating receipts
	Amount	Per vehicle kilometre	Per passenger	Amount	Per vehicle kilometre	
	\$'000	cents	cents	\$'000	cents	per cent
1976-77	5,689	44.58	28.34	13,057	102.31	229.51
1977-78	5,760	44.74	29.78	14,472	112.41	251.25
1978-79	6,264	48.64	31.43	16,523	128.30	263.78
1979-80	7,150	56.13	35.98	18,077	141.91	252.82
1980-81	9,023	68.55	42.93	21,116	160.43	234.02

Private motor omnibus services

The following table shows particulars of Victorian private omnibus services, including details of route operations, charter, schools, and other special services. In the year 1977-78, route operations accounted for 48.63 per cent of total distance travelled, while charter, school, and other special services accounted for 19.94, 30.63, and 0.81 per cent, respectively.

VICTORIA—PRIVATE MOTOR OMNIBUS SERVICES

Particulars	1973-74	1974-75	1975-76	1976-77	1977-78
Number of vehicles	3,118	3,130	3,205	3,310	3,341
Distance travelled ('000 kilometres)	101,266	97,782	99,427	103,342	103,342
	\$'000	\$'000	\$'000	\$'000	\$'000
Revenue	35,916	45,389	52,548	61,045	67,049
Expenditure—					
Drivers' wages	13,753	17,667	20,273	22,908	25,547
Repairs and maintenance	4,250	5,597	6,702	7,934	8,777
Depreciation	2,557	2,678	3,144	3,677	4,215
Other	12,360	15,545	18,180	21,592	24,507
Total expenditure	32,920	41,487	48,299	56,111	63,046
Assets (a)—					
Motor vehicles	7,261	7,695	9,953	12,041	13,756
Other assets	13,559	14,665	16,399	18,290	20,306
Total assets	20,820	22,360	26,352	30,331	34,062
Liabilities (a)	10,834	11,734	14,841	17,332	20,119

(a) Incomplete. Assets and liabilities of operators engaged solely in school bus services are not available.

Tramways in provincial cities

Tramway services in Ballarat and Bendigo ceased on 19 September 1971 and 16 April 1972, respectively, to be replaced by privately operated bus services. Sections of the Ballarat and Bendigo systems were re-opened during 1972 as tourist attractions operating during weekends and holidays.

Further reference: Melbourne tramways 1930-1961, *Victorian Year Book* 1963, pp. 771-2

Country Roads Board*Introduction*

The Country Roads Board, constituted under the *Country Roads Act* 1912, commenced operations in 1913.

There are about 160,000 kilometres of public roads in Victoria, of which some 23,700 kilometres comprise the State's principal system of Country Roads Board declared roads. Under the provisions of the *Country Roads Act* the Board may, subject to the confirmation of the Governor in Council, declare any road to be a State highway, a freeway, or a main road. The Board also has the power to recommend to the Governor in Council that any road be proclaimed as a tourists' road or a forest road.

The Board meets the full cost of works required to cater for the needs of through traffic on State highways, freeways, tourists' roads, and forest roads. State highways and freeways, while serving the immediate district through which they pass as arterial routes, also carry much long distance traffic. Tourists' roads and forest roads generally pass through areas where little or no rate revenue is available to the local municipality. Main roads, the construction and maintenance costs of which are partly borne by local municipal councils, form what may be described as a secondary system of important roads in Victoria. In addition, there is a vast network of unclassified roads, many of which carry considerable traffic and which, within the limits of available finance, are subsidised by the Board as needs and priorities warrant.

The Board's system of classified or declared roads at 30 June 1981 comprised 6,973 kilometres of State highways, 352 kilometres of freeways, 798 kilometres of tourists' roads, 1,031 kilometres of forest roads, and 14,564 kilometres of main roads.

State highways

Under legislation passed in 1924, a "State highway" in Victoria has a specific meaning. It is a road declared as such by the Board with the confirmation of the Governor in Council. State highways are the principal road arteries forming interstate connections and links between important provincial centres. The more important State highways also form part of the national route system of interstate highways. At 30 June 1981, there were 6,973 kilometres of State highways, 6,730 kilometres of which had a sealed surface.

National highways

A national highway is a road or proposed road that, in the opinion of the Commonwealth Minister for Transport, is or will be the principal road linking: (1) two or more State capital cities; (2) a State capital city and Canberra; (3) a State capital city and Darwin; (4) Brisbane and Cairns; or (5) Hobart and Burnie; or a road or proposed road that should, in the opinion of the Commonwealth Minister for Transport, be treated by reason of its national importance as a national highway.

The construction and management of national highways in Victoria is carried out by the Country Roads Board as the State's road authority. At present the Hume Highway and the Western Highway have been declared as national highways under the *National Roads Act*, excluding sections within the urban areas of Melbourne and Ballarat.

Long-term proposals for the Hume Highway include its development to a dual carriageway road from the outskirts of Melbourne to Wodonga. The construction of local by-passes and deviations around Violet Town and Avenel have been completed, and the Seymour by-pass is under construction. The completion of the freeway between Wallan and Broadford in mid-1976 extended the construction of dual carriageways from the outskirts of Melbourne to Seymour.

The Western Highway between Melbourne and Ballarat is being progressively developed to dual carriageway standard. Further work on the sections between Ballarat and Murray Bridge at the South Australian border is a long-term consideration. Work already commenced or completed includes the construction of a four-lane highway from the outskirts of Melbourne to west of Gordon. The completion of the by pass of Wallace and Bungaree will provide a continuous four-lane carriageway between Melbourne and Ballarat. The project is expected to be completed in 1983.

Developmental roads

A developmental road is a road or proposed road that, in the opinion of the Commonwealth Minister for Transport, is or will be of national importance due to its assistance to: (1) development of particular industries or energy resources (including those in remote areas of Australia); (2) interstate or overseas trade and commerce; or (3) significant tourist travel.

The construction and management of developmental roads in Victoria is carried out by the Country Roads Board. At the end of 1981, the only road in Victoria declared as a developmental road is the section of the Princes Highway between Dandenong and Traralgon.

Freeways

An amendment to the Country Roads Act in 1956 gave the Board power to construct by-pass roads (freeways), the first constructed being the Maltby Freeway at Werribee, opened in 1961. Since then the development of freeways by the Board has continued with the opening of the West Gate Freeway; the Calder Freeway to Keilor East; the Western Freeway from Deer Park to Melton and from Bacchus Marsh to Gordon; the Mulgrave Freeway from Warrigal Road, Chadstone, to north of Dandenong; the South Eastern Freeway; the South Gippsland Freeway; the Tullamarine Freeway; the Princes Freeway at Drouin, and between Moe and Morwell; the Princes Freeway between Melbourne and Geelong; the Mornington Peninsula Freeway between Dromana and Rosebud, and between Keysborough and Seaford; the Frankston Freeway; sections of the Hume Freeway between Melbourne and Wodonga; and the Eastern Freeway. The West Gate Freeway in South Melbourne and Port Melbourne, Princes Freeway bypasses of Berwick and Warragul, Western Freeway bypasses of Wallace and Bungaree, the Hume Freeway bypass of Seymour, the Calder Freeway bypass of Keilor, and extension of the Eastern Freeway as an arterial road to Doncaster are under construction.

Some sections of freeway were developed from existing single carriageway State highways, while others were completely new routes adding to Victoria's total road length.

Tourists' roads

The Country Roads (Tourists' Roads) Act was passed in 1936. Under its terms, the Governor in Council, on the recommendation of the Country Roads Board, may proclaim suitable roads to be tourists' roads.

The Board constructs and maintains tourists' roads in, and leading to, places of special tourist interest in various parts of Victoria. Victoria has about 800 kilometres of proclaimed tourists' roads. The Board bears the full cost of works required to cater for the needs of through traffic, and generally, carries out the works concerned.

The Great Ocean Road is the longest tourists' road in Victoria. For 207 kilometres, the road follows the rugged south-west coast from Torquay to Peterborough. The road was built by the Board for the Great Ocean Road Trust. The Trust's purpose was to open up the country to tourists and provide a road to connect the coastal towns. The road was built largely by returned soldiers and sailors of the First World War, and stands as a memorial to the servicemen in that war. The Great Ocean Road was completed in 1932 and proclaimed as a tourists' road in 1936.

Other tourists' roads that cater for holiday travellers include the Phillip Island Road (23 kilometres) and the Wilsons Promontory Road (31 kilometres).

In winter, the tourists' roads leading to Victoria's ski resorts carry many holiday travellers and ski enthusiasts. The major ski resorts are at Mt Hotham, Mt Buller, Falls Creek, and Mt Buffalo. The tourists' roads leading to these ski resorts are the Mt Buffalo

Road (39 kilometres), the Mt Buller Road (27 kilometres), the Bogong High Plains Road (66 kilometres) to Falls Creek, and the Alpine Road (83 kilometres) to Mt Hotham. Each winter the Board's snow-clearing teams keep these roads open to traffic. The Donna Buang Road (34 kilometres) and the Acheron Way (35 kilometres) lead to Mt Donna Buang.

The number of persons visiting the alpine resorts is increasing each year. The Board's task of maintaining the tourists' roads that lead to the State's resorts benefits both an important tourist industry and the people it serves. In winter and summer, travellers along many tourists' roads can enjoy scenic drives and take a break from driving by stopping at a roadside rest area or scenic lookout.

The Board, local councils, and other authorities have provided roadside stops with eating facilities, toilets, tables, and litter bins to give drivers and passengers an opportunity to stop in a pleasant roadside environment.

Forest roads

Forest roads proclaimed under the provisions of the Country Roads Act are situated within or adjacent to any State forest, or in areas considered by the Country Roads Board to be timbered, mountainous, or undeveloped.

The Board bears the full cost of works required to cater for the needs of through traffic, with about half the work being carried out by municipal councils on behalf of the Board.

The Board's proclaimed forest roads throughout Victoria have had an important effect on the growth of the State's timber extraction industry. Their most important use is in the transport of logs from the forest to the saw mills. About 520 kilometres of the State's 1,031 kilometres of forest roads are used for this purpose. A further 120 kilometres are used to transport sawn timber from the mills to markets. The other forest roads are used for carting local produce, posts, and firewood.

More than 90 per cent of Victoria's saw log and pulp wood production comes from State forests under licence from the Forests Commission, and the Board's forest roads carry 28 per cent of that production. Many of the roads used for timber extraction are in isolated and mountainous areas and often become a financial burden for local councils because they earn very little rate revenue.

The Board was first given the power to declare forest roads under the *Forest Roads and Stock Routes Act* 1943. When the Country Roads Board takes over responsibility for such roads, municipalities are relieved of all the construction and maintenance costs for them. In 1980-81, Board expenditure on proclaimed forest roads was \$2.0m, but grants could be made only for the most urgent works required. Grants for forest roads are allocated on the basis of need, and work priorities are determined by the Board.

The longest forest road in the State stretches 145.5 kilometres from Heyfield to Jamieson, winding through the Great Dividing Range. It is also Victoria's busiest forest road and carries the most timber. However, the road has only been open as a continuous link between Heyfield and Jamieson since 1969 when the Board completed construction of a 16 kilometre section near Mt Skene in the Great Dividing Range. The Heyfield-Jamieson Road provides an additional link between Gippsland and northern Victoria for tourist and commercial traffic as well as for logging trucks.

Main roads

The Board is empowered under the Country Roads Act to declare as a main road any road which in its opinion is of sufficient importance. Main roads are generally roads linking centres of industry, commerce, or settlement. At 30 June 1981, there were 14,564 kilometres of main roads in Victoria.

Rural roads

Victoria is the most densely populated State of Australia, with some 3,932,100 (preliminary estimate) persons at 30 June 1981 inhabiting 227,600 square kilometres. The pattern of Victoria's rural life has come to depend significantly on the rural road system. Since the development of the motor vehicle the demand placed on the road system has increased and rural commerce relies heavily on trucks using roads to carry produce to the railway yards, or directly to the ports.

On 1 January 1913, the Country Roads Act was proclaimed and after fifty years of unco-ordinated control, since the abolition of the Department of Roads and Bridges, the Act once more established a central road authority. The Victorian Government had previously allocated money for roads but, with no State-wide body to co-ordinate road development, regional areas, particularly Gippsland, suffered from inequalities in the distribution of funds. When it was established in 1913, one of the first tasks of the new Country Roads Board was to evaluate the condition of roads in the Gippsland region of Victoria.

There are now about 140,000 kilometres of rural public roads in Victoria (excluding public roads in the Melbourne Statistical Division, the Geelong Statistical District, and the urban areas of Bendigo and Ballarat) of which some 21,800 kilometres comprise the principal rural system of Country Roads Board declared roads. In addition to its declared roads the Board, within the limits of available finance, subsidises works carried out by municipal councils on thousands of kilometres of unclassified roads.

In 1980-81, the Board spent \$127.3m on the construction (\$83.3m) and maintenance (\$44.0m) of rural roads in Victoria.

Victoria's rural roads can be divided into three systems. The rural State highways are the principal arteries forming interstate connections and link the larger centres of population in the State. State highways such as the Hume, the Western, and the Princes connect Victoria's road system to the highways of the neighbouring States of New South Wales and South Australia. The Hume Highway between Melbourne and Wodonga, and the Western Highway between Melbourne and Ballarat, are being progressively upgraded to freeway standard. These highways form part of an Australia-wide national highway network. During 1980-81, the Board spent \$30.7m on these two highways.

The second system consists of the main roads linking centres of population with other centres or with areas of industry, commerce, or settlement. These roads provide a means for primary producers and manufacturers to move their products to the nearest railway line or highway system, and also cater for recreational traffic. The third system comprises feeder roads, providing local access to farming or residential areas. Each system is co-ordinated with the other systems to enable vehicles, either private or commercial, to move freely between all points in the State.

Roadside development

Roads are among the most permanent structures on the landscape, and once built they cannot be considered apart from their surrounding environment. In recent years the Board has furthered the development of what is termed the complete highway to provide a balanced combination of safety, utility, economy, and beauty. Such factors as the preservation of flora, conservation of landscape features, rehabilitation of cleared areas, and erosion control are important aspects of the Board's road design practices. Some 80,000 trees and shrubs are planted each year on declared road reserves. The Board is also developing roadside stopping places for the convenience of travellers. These include rest areas with water and toilet facilities, wayside stops, scenic view points, and parking areas.

Sources of finance

The Board's two main sources of finance are Commonwealth and Victorian Government funds. Funds derived from Victorian Government sources are:

(1) *Motor registration fees.* Fees payable on the registration and re-registration of motor vehicles and trailers, less the costs of collecting the fees (excluding metropolitan omnibus registration fees and the specified proportion of registration fees paid to the Roads and Special Projects Fund).

(2) *Registration number plate fees.* Fees payable for the provision and/or replacement of number plates, less the costs of providing the plates and collecting the fees.

(3) *Examiners' licence fees.* Fees payable by persons licensed to conduct motor car roadworthiness examinations, less the cost of collection of the fees.

(4) *Authorised log book fees.* Fees payable for the purchase of log books, less the cost of providing the books and collecting the fees.

(5) *Learner drivers permit fees.* Seven-eighths of the permit fee and the permit extension fee payable by applicants for, and/or holders of, learner driver permits, less seven-eighths

of the cost of collection of the fees (one-eighth less one-eighth cost of collection is paid to the Drivers' Licence Suspense Accounts).

(6) *Drivers' licence testing fees.* Seven-eighths of \$4.00 of the fee payable for the test of proficiency of candidates for motor car drivers' licences less seven-eighths of the cost of conducting the test and collecting the fee (one-eighth of \$4.00 less one-eighth of the cost of collection, is paid to the Drivers' Licence Suspense Account) and the amount of each fee above \$4.00 is paid to the Consolidated Fund.

(7) *Motor car drivers' licence fees and tractor drivers' licence fees.* One-eighth of the fees payable for the issue of drivers' licences less one-eighth of the cost of collecting the fees. (One-half, less one-half cost of collection, is paid to the Consolidated Fund; one-quarter, less one-quarter cost of collection, is paid to the Municipalities Assistance Fund; and one-eighth, less one-eighth cost of collection, is paid to the Drivers' Licence Suspense Account.)

(8) *Motor driving instructors' appointment and testing fees.* Fees payable by candidates for motor driving instructors' licences, less the cost of collection of the fees.

(9) *Motor driving instructors' licence fees.* One-quarter of the fees payable for the issue of motor driving instructors' licences less one-quarter of the costs of collection of the fees. (One-half, less one-half cost of collection, is paid to the Consolidated Fund; and one-quarter, less one-quarter cost of collection, is paid to the Municipalities Assistance Fund.)

(10) *Unregistered vehicle permit fee.* A fee for the issue of a permit to use an unregistered motor car or trailer on a highway for a period of not more than seven days, less the costs of collection of the fee.

(11) *Proprietorship notification fee.* A fee payable with the notification by a proprietor of a motor car or trailer of repossession of the item under a hire purchase agreement, bill of sale or like instrument, less the costs of collection of the fee.

(12) Fines imposed under the provisions of the Country Roads Act.

(13) A proportion of the amount credited to the Roads and Special Projects Fund revenue raised from licence fees issued under the *Business Franchise (Petroleum Products) Act 1979*, and from a specified proportion of registration fees.

The Act adopted a franchise licensing system and provided for the raising of revenue for a licence fee payable by persons who carry on petroleum wholesaling or retailing in Victoria. From 1 September 1979, the Act required petroleum wholesalers to hold a licence, the monthly licence fee being \$50, together with the payment of an amount of 4.5 per cent of the value of motor spirit and 7.1 per cent of the value of diesel fuel sold by the licence holder in the course of intrastate trade during the month, two months prior to the month to which the licence relates. (From 1 November 1981, the percentages were increased to 5.4 and 8.6 per cent, respectively.) Petroleum retailers are also required to hold a licence for which an annual fee of \$50 is paid on a similar basis to the fee applicable to the petroleum wholesaler's licence, except that the *ad valorem* fee does not apply to fuel purchased by a petroleum retailer from a licensed petroleum wholesaler.

The Act also established a "Roads and Special Projects Fund" into which is to be paid an amount equal to the licence fees collected under the Act after deduction of costs of administration. The Act provides for money in the Roads and Special Projects Fund to be paid to the Country Roads Board Fund and to the Transport Fund as determined by the Minister of Transport with the proviso that the amount paid to the Country Roads Board Fund in each financial year shall not be less than 25 per cent of the amount credited under the Act during the financial year.

From 1 July 1980, motor vehicle registration fees previously directed to the Roads (Special Projects) Fund, which was established by section 7a of the *Motor Car Act 1958*, have been directed to the Consolidated Fund to be appropriated from that Fund to the Roads and Special Projects Fund. The Minister of Transport requires at least 75 per cent of the amount credited to the Roads and Special Projects Fund (from both motor vehicle registration fees and fuel franchise fees) during the financial year to be paid to the Country Roads Board Fund.

(14) Municipal payments on account of main road works.

(15) Any special money appropriated by the Victorian Parliament.

(16) Loan money.

Money is also provided from Commonwealth Government sources. Commonwealth Road Grants are provided to States for expenditure on national, arterial, and local roads, the categories being defined in the Commonwealth legislation. In 1980-81, receipts from the Commonwealth Government amounted to \$127.4m.

Total funds available to the Board in 1980-81, including unexpended balance of \$0.3m brought forward from 1979-80, amounted to \$285.4m.

Receipts and expenditure

Receipts and expenditure covering the operations of the Board for each of the years 1976-77 to 1980-81 are shown in the following table:

VICTORIA—COUNTRY ROADS BOARD: RECEIPTS AND EXPENDITURE
(\$'000)

Particulars	1976-77	1977-78	1978-79	1979-80	1980-81
RECEIPTS					
Fees—Motor Car Act (less cost of collection)	60,801	75,978	78,571	74,148	66,490
Municipalities contributions: permanent works and maintenance—main roads	2,518	2,891	2,956	3,112	3,395
Commonwealth Government grants	91,192	98,980	105,652	113,631	127,362
Allocation from Roads (Special Projects) Fund	28,963	33,456	36,320	36,750	—
Transfer from Roads and Special Projects Fund	—	—	—	24,800	79,500
Redeemed investments	—	—	—	1,000	—
Proceeds from Commercial Goods Vehicles Act	9,968	9,818	9,577	1,487	—
Loans from Victorian Government	325	325	1,325	1,500	1,500
Grants from Victorian Government	638	581	463	114	77
Other receipts	1,746	1,924	2,194	2,478	6,842
Total	196,151	223,953	237,058	259,020	285,166
EXPENDITURE					
Construction, maintenance, etc., of roads and bridges	169,281	182,131	189,174	213,226	229,445
Plant purchases	1,366	2,059	2,857	3,998	2,551
Buildings, workshops, etc.	726	1,063	899	1,556	1,290
Interest and Sinking Fund payments	2,934	2,993	3,059	3,136	3,299
Payment to Tourist Fund	1,017	1,216	1,520	1,571	1,483
Payment to Transport Regulation Board	608	598	589	575	89
Payment to Traffic Authority Fund	508	608	760	786	741
Payment to Melbourne and Metropolitan Tramways Board	195	356	535	500	500
Planning and research	2,843	2,817	3,722	4,839	4,966
Management and operating expenditure	24,042	29,102	29,903	33,412	40,767
Temporary investments	—	—	1,000	—	—
Total	203,520	222,943	234,019	263,599	285,131

Expenditure on roads and bridges

The following table summarises the total expenditure by the Country Roads Board on roads and bridges during each of the years 1976-77 to 1980-81:

VICTORIA—COUNTRY ROADS BOARD: EXPENDITURE
ON ROADS AND BRIDGES
(\$'000)

Particulars	1976-77	1977-78	1978-79	1979-80	1980-81
State highways—					
Construction	22,712	27,594	25,649	30,541	37,760
Maintenance	13,697	14,659	16,602	19,325	19,790
Freeways—					
Construction	53,617	51,551	56,055	61,561	63,884
Maintenance	2,130	2,912	3,231	3,789	3,752
Main roads—					
Construction	21,150	23,031	23,056	25,211	26,559
Maintenance	11,621	12,753	13,949	17,390	18,285

VICTORIA—COUNTRY ROADS BOARD: EXPENDITURE
ON ROADS AND BRIDGES—*continued*
(\$'000)

Particulars	1976-77	1977-78	1978-79	1979-80	1980-81
Unclassified roads—					
Construction	31,877	34,690	33,597	36,318	38,972
Maintenance	6,256	7,124	7,428	8,879	9,550
Tourists' roads—					
Construction	1,473	1,445	1,683	1,822	2,215
Maintenance	1,593	1,781	1,926	2,238	2,535
Forest roads—					
Construction	557	687	745	770	550
Maintenance	923	930	1,053	1,208	1,411
Metropolitan bridges	13	—	502	13	—
Rail/road bridges protection	—	456	563	439	728
State Intersection Control Programme	305	625	745	946	—
Murray River bridges and punts	145	287	566	636	738
Traffic line marking	1,212	1,606	1,824	2,140	2,716
Total construction	131,386	138,998	140,785	156,223	169,940
Total maintenance	36,220	40,159	44,189	52,829	55,323
Total other	1,675	2,974	4,200	4,174	4,182
Total expenditure	169,281	182,131	189,174	213,226	229,445

Loan liability to the State

The loan liability of the Board to the Victorian Government at 30 June 1981 was \$27.1m.

Motor vehicles

Registration, licences, etc.

Every motor car and motor cycle must be registered with the Chief Commissioner of Police if used on Victorian roads, as well as all trailers (except agricultural implements and certain small trailers for private use), fore-cars, and side-cars drawn by or attached to motor cars or motor cycles.

VICTORIA—REGISTRATION AND LICENCE RATES AT 1 JANUARY 1981

Type of registration or licence	Annual rate
REGISTRATION	
Motor cycle	\$6.30 plus \$2.00 surcharge (a)
Motor car (private use)	\$0.93 for each power-weight unit (b) plus \$2.00 surcharge (a) (Pension concession rate is half fee)
Motor car (private and business use)	\$1.15 for each power-weight unit (b) plus \$4.00 surcharge (a)
Trailer (attached to motor car)	From \$6.50 each, according to the unladen weight and use
Motor car (used for hire as special service omnibus and touring omnibus)	From \$1.15 to \$1.35 for each power-weight unit (b) according to the unladen weight plus \$4.00 surcharge (a)
Motor car (commercial passenger vehicles) operating on an omnibus service	\$2.20 plus \$4.00 surcharge (a)
Motor car (commercial passenger vehicles) operating on a temporary school service licence	\$22.70 plus \$4.00 surcharge (a)
Motor car (used for carrying passengers or goods for hire or in the course of trade)	From \$1.80 to \$3.35 for each power-weight unit (b) according to the unladen weight plus \$4.00 surcharge (a)
Motor car (constructed for the carriage of goods) owned by primary producer and used solely in connection with his business	\$50.00 plus \$2.00 surcharge (a) where tare is less than 3,000 kg \$100 plus \$2.00 surcharge (a) where tare is 3,000 kg or more

VICTORIA—REGISTRATION AND LICENCE RATES AT 1 JANUARY 1981—*continued*

Type of registration or licence	Annual rate
Mobile crane, self-propelled (used otherwise than for lifting and towing vehicles)	\$41.55 plus \$4.00 surcharge (a)
Recreation vehicle	\$3.00 for vehicle with not more than 3 wheels, in any other case \$10.00
LICENCE	
Driver's or rider's licence	\$30.00 issued for a three year period (an appointment fee of \$4.50 and testing fee of \$10.00 is payable by all applicants for new licences)
Learner's permit	\$5.00 for twelve months and \$5.00 for a three month extension, if required. Appointment and testing fees as above, are also payable
Instructor's licence	\$100.00 issued for a three year period

(a) Surcharges apply to registrations or re-registrations effected on and after 1 August 1972 and renewals due on and after that date.

(b) The number of power-weight units is that number which is equal to the sum of the horsepower and the weight in 50-kilogram units of a motor car unladen and ready for use.

NOTE. The minimum annual fee for the registration of any motor vehicle other than a motor cycle is \$18.25.

VICTORIA—DRIVERS' AND RIDERS' LICENCES IN FORCE AT 30 JUNE

Type of licence	1977	1978	1979	1980	1981
Drivers'	1,961,382	1,945,501	1,999,646	2,046,331	2,099,421
Riders'	71,138	70,562	72,526	74,138	82,293
Total	2,032,520	2,016,063	2,072,172	2,120,469	2,181,714

The following table shows the number of motor vehicles on the register by type. Particulars of Australian Government-owned vehicles, with the exception of defence service vehicles, are included. Tractor-type vehicles, plant, and trailers are excluded.

VICTORIA—NUMBER OF MOTOR VEHICLES ON REGISTER BY TYPE OF VEHICLE

Type of vehicle	Census, 31 December 1962	Census, 30 September 1971 (a)	Census, 30 September 1976 (a)	Census, 30 September 1979 (a)	At 31 December 1980
Motor cars	610,974	929,477	1,222,733	1,314,015	1,358,117
Station wagons	69,528	201,884	233,480	240,386	247,796
Utilities	94,470	89,764	104,538	109,216	112,026
Panel vans	31,851	46,539	46,980	54,905	56,151
Trucks —					
Rigid	} 76,591	79,386	117,764	127,768	132,983
Articulated		9,417	9,766	10,377	10,808
Other truck type vehicles	2,890	3,520	4,867	9,833	10,302
Buses	3,409	5,129	7,294	8,995	9,425
Motor cycles	15,802	28,160	51,931	48,502	59,155
Total	905,515	1,393,276	1,799,353	1,923,997	1,996,763

(a) Revised classifications of motor vehicles were adopted for the censuses of motor vehicles at 30 September 1971, 1976 and 1979. Classifications used in 1979 are the same as those for 1976.

The principal differences between the new classification for 30 September 1971 and that at 31 December 1962 were:

- (i) Utilities and panel vans include "light commercial type vehicles" and trucks with a carrying capacity under 1.016 tonnes, and ambulances and hearses (which were previously included under motor cars).
- (ii) "Rigid trucks" include utilities and panel vans with a carrying capacity of 1.016 tonnes and over.
- (iii) "Other truck type vehicles" consist of those truck type vehicles which are designed for purposes other than freight carrying, e.g., street flushers or fire engines. Previously, this category incorporated vehicles such as tankers and concrete agitators which are now classified as "trucks".

The 1976 and 1979 Motor Vehicle Censuses have as their main features:

(i) Allocation of commercial vehicles to the categories "utilities", "panel vans", or "rigid trucks" solely on the basis of the body type as recorded by the registration authority.

(ii) The inclusion in "other truck types" of ambulances, hearses, and motorised caravans.

Direct comparisons, therefore, between the four censuses can only be made for the categories station wagons, buses, and motor cycles. However, for comparative purposes "light commercial type vehicles—open" registered at 30 September 1971 have been included in the classification utilities and "light commercial type vehicles—closed", registered at the same date, are included in the classification panel vans. Trucks and other truck types registered at 31 December 1962 have also been included under similar headings but attention is drawn to the changes in definition of those categories outlined above.

The following tables, showing new vehicle registrations by types and makes of vehicles, include details of Australian Government-owned vehicles (other than those of the defence services):

**VICTORIA—REGISTRATIONS OF NEW MOTOR CARS AND
STATION WAGONS ACCORDING TO MAKE**
(Includes Australian Government-owned vehicles other than those
of the defence services)

Make	Motor cars				Station wagons			
	1977-78	1978-79	1979-80	1980-81	1977-78	1978-79	1979-80	1980-81
Alfa Romeo	537	584	501	492	—	—	—	—
Audi	122	282	71	82	—	—	—	—
B.M.W.	503	374	476	653	—	—	—	—
Chrysler (a)	6,586	8,282	8,646	3,307	807	2,218	3,029	1,270
Daihatsu	—	—	177	660	—	—	2	1
Datsun	13,423	12,348	10,709	10,316	1,216	1,113	1,635	2,377
Fiat	352	422	212	177	62	52	35	20
Ford	22,745	22,575	20,248	19,182	5,588	5,402	4,842	4,539
Holden	22,659	29,070	25,963	23,126	4,391	4,845	5,251	5,181
Honda	2,453	1,864	2,373	1,861	172	31	131	245
Jaguar	337	272	205	244	—	—	—	—
Leyland	1,181	583	23	12	—	1	3	5
Mazda	5,303	6,971	8,788	9,732	1,026	1,058	839	873
Mercedes Benz	901	883	574	663	—	—	41	68
Mitsubishi (a)	—	—	—	6,437	—	—	—	2,337
Peugeot	488	782	478	593	78	66	55	51
Renault	610	540	387	233	258	258	142	108
Rover	68	317	259	209	198	211	139	223
Saab	82	138	153	114	—	—	—	—
Subaru	290	173	422	670	465	384	684	845
Toyota	13,974	13,245	12,668	12,596	3,427	4,251	2,908	2,884
Triumph	629	403	44	78	—	—	—	—
Volkswagen	811	572	338	123	52	17	19	24
Volvo	1,144	1,188	1,055	1,139	379	375	347	315
Other	r2,022	r689	r574	485	29	122	r121	149
Total	97,220	102,557	95,344	93,184	18,148	20,404	20,223	21,515

(a) As a result of the purchase in April 1980, of Chrysler Australia by Mitsubishi Motors Corporation, all vehicles produced, imported, and sold by the new company from October 1980 have borne the name "Mitsubishi".

**VICTORIA—REGISTRATIONS OF NEW MOTOR VEHICLES OTHER THAN
MOTOR CARS, STATION WAGONS, AND MOTOR CYCLES
ACCORDING TO MAKE**
(Includes Australian Government-owned vehicles other than those
of the defence services)

Make	1979-80				1980-81			
	Util-ities	Panel vans	Other	Total	Util-ities	Panel vans	Other	Total
Bedford	—	14	548	562	—	10	357	367
Chrysler (a)	157	9	67	233	28	4	27	59
Daihatsu	208	46	366	620	214	21	454	689
Datsun	585	124	344	1,053	1,252	168	1,053	2,473
Dodge (a)	22	3	259	284	2	—	34	36
Ford	1,400	1,423	1,821	4,644	1,311	1,473	1,483	4,267
Holden	1,515	1,238	779	3,532	1,548	1,107	719	3,374
International	12	5	981	998	10	—	861	871
Isuzu	182	1	517	700	237	3	802	1,042
Leyland	298	16	169	483	197	4	184	385
Mazda	209	132	718	1,059	217	245	1,011	1,473
Mitsubishi (a)	—	—	—	—	215	47	639	901
Nissan	113	17	331	461	69	11	194	274
Suzuki	197	233	373	803	230	508	670	1,408
Toyota	1,363	707	2,908	4,978	1,373	227	3,262	4,862

VICTORIA—REGISTRATIONS OF NEW MOTOR VEHICLES OTHER THAN
MOTOR CARS, STATION WAGONS, AND MOTOR CYCLES
ACCORDING TO MAKE—*continued*
(Includes Australian Commonwealth Government-owned vehicles other than those
of the defence services)

Make	1979-80				1980-81			
	Util- ities	Panel vans	Other	Total	Util- ities	Panel vans	Other	Total
Volkswagen	1	5	126	132	—	3	60	63
Volvo	—	25	129	154	—	6	66	72
Other	288	9	1,028	1,325	223	8	1,074	1,305
Total	6,550	4,007	11,464	22,021	7,126	3,845	12,950	23,921

(a) As a result of the purchase in April 1980, of Chrysler Australia by Mitsubishi Motors Corporation, all vehicles produced, imported, and sold by the new company from October 1980 have borne the name "Mitsubishi".

Transport Regulation Board

Introduction

The *Transport Regulation Act 1932* set up a Board of Inquiry to investigate Victoria's land transport problems. The recommendations of this Board led to the constitution of the Transport Regulation Board in 1934. The Board, consisting of a chairman, a primary producers' representative, and a representative of commercial interests outside a radius of 40 kilometres from the G.P.O., Melbourne, is a statutory authority originally constituted "for the purpose of securing improvement and co-ordination of means of and facilities for locomotion and transport" and for the purposes of carrying into effect the provisions of specific legislation in this field. Although by later amending legislation a Ministry of Transport was established with particular functions, the Board's functions as a licensing authority are still to channel the evolution of road transport in the interests of the most efficient use of community resources.

The *Motor Registration Act 1980* has broadened the scope of the Board by authorising the amalgamation of the Transport Regulation Board and the Motor Registration Branch and in so doing, conferred on the Board the responsibility for the licensing and registration of motor vehicles and licensing of drivers effective from 29 April 1981.

To give the Board additional expertise, the Act also provided for the expansion of its membership from three members to five, effective from 9 July 1980, the two additional members being the Chief Commissioner of Police and the Chairman of the Country Roads Board, or their respective nominees.

VICTORIA—TRANSPORT REGULATION BOARD: LICENCES ISSUED: SUMMARY OF FINANCIAL OPERATIONS

Particulars	1976-77	1977-78	1978-79	1979-80	1980-81
Licences issued "as of right"—					
40 kilometres of Melbourne	23,617	24,417	25,514	25,539	17,582
40 kilometres of Ballarat, Bendigo, or Geelong	2,636	2,699	2,765	2,750	1,888
40 kilometres of owner's place of business	10,896	11,254	11,777	12,092	8,322
Primary producers (vehicles over 2 tonnes load capacity)	16,919	16,955	17,515	18,167	13,879
Butter, milk, and cheese factories	511	513	499	492	118
80 kilometres of owner's place of business (vehicles up to 6 tonnes load capacity)	32,121	29,181	28,353	27,357	17,974
State-wide rights for carriage of own goods (vehicles not exceeding 500 kilograms)	18,188	19,034	19,364	19,186	12,929
Third Schedule (basically perishable commodities)	8,366	8,040	7,938	7,675	5,041
Approved decentralised secondary industries	1,861	2,061	2,293	2,415	1,694
80 kilometres of Melbourne	530	558	578	588	442
80 kilometres of Portland	47	55	50	53	54
Bulk tankers—petroleum products	497	504	553	563	320
"Discretionary" licences—					
Passenger—					
Omnibuses	3,741	3,827	3,897	3,966	4,039
Taxis and hire-cars	3,570	3,555	3,559	3,563	3,566
Omnibus temporary/special	182	192	190	201	219

VICTORIA—TRANSPORT REGULATION BOARD: LICENCES ISSUED:
SUMMARY OF FINANCIAL OPERATIONS—*continued*

Particulars	1975-76	1976-77	1977-78	1978-79	1979-80
Goods	11,320	10,094	10,175	8,551	5,714
Goods—passenger	16	14	11	10	9
Total licences issued	135,018	132,953	135,031	133,168	93,790
Financial transactions—	\$'000	\$'000	\$'000	\$'000	\$'000
Revenue	7,995	8,298	8,619	8,797	9,133
Expenditure	7,214	7,954	8,447	8,525	9,351
Levy to Transport Fund	580	681	703	736	—
Balance	+ 202	-337	-531	-464	-218
Collections—					
Road maintenance contributions collected and transferred direct to Country Roads Board	9,969	9,819	9,587	1,487	—
Motor boat registration fees collected and paid to Tourist Fund	975	1,036	1,026	1,099	1,116
Log book fees	15	15	19	21	22

Licences, permits, and drivers' certificates

During the year ended 30 June 1981, the Board issued 104,092 goods permits for the temporary variation of the operations of a vehicle. There were 9 new tow truck licences issued and at 30 June 1981 there were 757 licences on record. For the year ended 30 June 1981, there were 6,057 new drivers' certificates issued: 4,417 commercial passenger, 1,024 private omnibus, and 616 tow truck.

Buses

Commercial buses at 30 June 1981 totalled: metropolitan 1,565, urban 137 (Ballarat 40, Bendigo 31, and Geelong 66), country 2,209, touring omnibus 128, and temporary special licence 219.

Taxis and hire-cars

Taxis and hire-cars at 30 June 1981 totalled: metropolitan 2,931, urban 201 (Ballarat 50, Bendigo 37, and Geelong 114), and country 434.

Passenger fares

At 30 June 1981, adult bus fares were 35c, 45c, and 55c, respectively, for the first three sections travelled, rising to 65c for sections 4 and 5, 75c for sections 6 and 7, 85c for sections 8 to 10, and thereafter by various amounts.

Since 1 October 1975, there have been two tariffs operating for taxi fares. The second tariff represents a 20 per cent loading on the normal meter distance charge and applies between 9.00 p.m. and 6.00 a.m. Monday to Saturday, 1.00 p.m. Saturday to midnight Sunday, and on public holidays. Taxi fares at 30 June 1980 were 80c flagfall (including the first 145 metres on tariff 1 and the first 116 metres on tariff 2), plus 5c for each additional 145 or 116 metres for tariff 1 or tariff 2, respectively.

Goods and passenger applications

For the year ended 30 June 1981, the Board heard 7 goods and 59 passenger applications at public hearings. The majority of applications were determined and settled without the need for a public hearing, and numbered 2,148 goods and 3,707 passenger cases.

Motor boats

The Board is responsible for the registration of motor boats (under 20 metres in length) and for keeping records of ownership. Fees collected from motor boat registrations totalled \$1,116,384 during 1979-80. These fees, less the cost of collection and administration of the Motor Boating Act, are paid into the Tourist Fund administered by the Department of State Development, Decentralization and Tourism. At 30 June 1981 there were 94,629 motor boats registered by the Board.

Commercial freight transport

In 1976, the Victorian Government decided that transport regulation in its present form would be progressively phased out within five years; and that road and rail services would eventually operate in a competitive condition. Since that time the Board has been required to administer existing legislation so as to provide the Victorian Railways with the opportunity to adjust to the changes that would occur in a more competitive environment.

The *Transport (Deregulation) Act 1980* was passed in December 1980 repealing the *Commercial Goods Vehicle Act 1958* and incorporating the new licensing provisions into the *Transport Regulation Act 1958*. The Act provided for an as-of-right system of licensing (except for tow truck and VicRail road operations) giving State-wide operating rights automatically upon registration of a goods carrying vehicle, effective from 1 July 1981, protection of major bulk railway traffics—notably grain and bulk petroleum products—being retained. Subsequently, the Victorian Government decided to abolish all licence fees effective from 1 July 1981.

Passenger services

The Victorian Government's financial assistance scheme for private operators of route bus services continued to be administered by the Board during 1980-81. A revised subsidy scheme was introduced from 1 July 1979 for metropolitan and urban services based upon a payment for each timetabled bus hour operated. The new subsidy scheme forms the basis for contracts with operators.

For country areas, operators continued to receive a subsidy based on a percentage of route fare revenue. The cost of maintaining the fare subsidy schemes was \$15.8m in 1980-81, bringing total subsidies paid since the introduction of the financial assistance scheme in October 1974 to \$57.8m.

Taxi industry

The licensing and organisation of Melbourne taxis was the subject of an inquiry by the Board in October 1978. Following the inquiry, metropolitan and suburban taxis operated experimentally under identical rights for a period of 18 months.

After reviewing the effects of the experiment, the Board decided that the common operating rights should be made permanent, effective from 1 June 1980. Since that time, 315 of the 986 suburban taxi licences have been converted to metropolitan taxi licences.

Enforcement

Enforcement action relating to the provisions of the Transport Regulation Act, and the Transport Consolidated Regulations is the responsibility of the Board's field staff comprising inspectors located at Head Office and its twelve regional offices. In addition, the Board is considerably involved in other legislation which its officers are empowered to enforce, including the Motor Car Act and Regulations and the Road Traffic Act and Regulations as they relate to commercial road transport.

VICTORIA—TRANSPORT REGULATION BOARD:
PROSECUTIONS TAKEN TO COURTS UNDER ENFORCEMENT LEGISLATION

Acts or Regulations	1976-77	1977-78	1978-79	1979-80	1980-81
Transport Regulation Act (Passenger)	96	91	192	132	129
Commercial Goods Vehicles Act—Part 1	1,617	1,649	1,420	1,712	1,733
Transport Consolidated Regulations 1977	217	211	252	267	363
Motor Car Act	1,293	1,681	1,652	1,948	2,426
Motor Car Regulations	274	291	175	382	375
Road Traffic Regulations	202	232	163	242	371
Summary Offences Act	6	2	3	2	4
Magistrates' Court Act	—	—	20	7	—
Total	3,705	4,157	3,877	4,692	5,401

Tow trucks

In July 1979, the Board conducted an inquiry into the operation and control of tow trucks in Victoria. This inquiry was established after interested parties had endorsed proposals for an inquiry into the rationalisation of the accident towing industry which was

recommended by a representative committee comprising members of the Towing Industry, Panel Repair Industry, Insurance Companies, Police, Social Protection Groups, and Board officers.

Following the inquiry, a working party was established with representation from the Victorian Automobile Chamber of Commerce, Royal Automobile Club of Victoria, and the Transport Regulation Board which has been developing measures by which the attendance of tow trucks at accident scenes can be better controlled.

Special attention is being given to the development of a central communications system, using the facilities of the Royal Automobile Club of Victoria to allocate work. Operating rules are also being developed.

Road Safety and Traffic Authority

The Road Safety and Traffic Authority (RoSTA) has the responsibility of framing policies for the safe and orderly movement of traffic and pedestrians on Victorian roads and implementation of such policies as directed by the Victorian Government. The Authority's functions under the Road Traffic Act are to carry out research and investigation into road accident prevention; promote road accident prevention practices; request municipal councils to adopt specific practices; and advise the Minister for Police and Emergency Services on accident prevention policies, regulations, and any matter for the improvement of traffic conditions or control. These functions embody those of the former Traffic Commission which the Authority replaced in March 1971.

Since 1958, the Authority has received from the Victoria Police a comprehensive statistical record of reported road accidents involving casualties and certain types of property damage accidents. This information forms the basis of the State Traffic Accident Record.

A part of the State Traffic Accident Record, Accidents by Location, which shows reported accidents by location and road user movement has been produced on an annual basis since 1968. Interim accumulative statistics are provided on a quarterly basis and supplied to highway authorities approximately two months after the end of the quarter. The information contained in the State Traffic Accident Record is also used as a basis for research into road accidents, for advice to the Victorian Government and the Parliamentary Road Safety Committee, as well as to highlight areas where promotion of road safety practices and the development of accident countermeasures is required.

Further reference: *Victorian Year Book 1977*, pp. 670-1

Motor Accidents Board

The Motor Accidents Board of Victoria administers a "no fault" motor accident compensation scheme. This scheme excludes any attempts to introduce degrees of fault, allocation of negligence, and similar concepts. It was the first of its type in Australia and is proving of interest overseas.

The "no fault" concept is a fundamental departure from the law of tort. Such are the complexities and numbers of accidents in current society, many of which are not related to negligence or fault, that payment of some compensation is seen as a social liability paid for by the motor vehicle owners.

The beginning of the Victorian Government's move for a "no fault" system of motor accident compensation was in the recommendation of two committees, the first appointed to report on methods of reducing the time involved and the high costs of litigation procedures, and the second to draw up in draft detailed provisions for "no fault" benefits and administration. The Motor Accidents Act, which embraced most of the second committee's recommendations concerning a "no fault" system, received Royal Assent in April 1973. Its administrative provisions, including appointment of the Board, were enacted in September 1973, and benefits began to operate from 12 February 1974. The total amount of benefits paid by the Board to 30 June 1981 was \$188,719,101.

Road traffic accidents

The following tables include particulars of those road traffic accidents reported by the Victoria Police during the periods specified, which satisfied the following conditions:

(1) That the accident occurred on any road, street, lane, thoroughfare, footpath, or place open to or used by the public by right or custom, at the time of the accident;

(2) that it involved:

- (i) any road vehicle which, at the time of the accident, was in motion; or
- (ii) any animal which, at the time of the accident, was in motion and was being used for the purpose of transportation or travel; or
- (iii) any train passing over a level crossing for the time being open to the public; and

(3) that the accident resulted in:

- (i) death of any person within a period of thirty days after the accident; or
- (ii) bodily injury to any person to an extent requiring surgical or medical treatment.

While there is a requirement for accidents involving a casualty to be reported to the Victoria Police, in practice not all such accidents are so reported, particularly where injury of minor severity has occurred, and there is some evidence of understatement in recent years of the numbers of accidents and persons injured compared with earlier years.

The tables do not include figures of accidents on railway lines (except at level crossings), or on private property. For these and other reasons, the total number of deaths shown in these tables is not comparable with that shown on page 191.

**VICTORIA—ROAD TRAFFIC ACCIDENTS INVOLVING CASUALTIES:
NUMBER OF PERSONS KILLED OR INJURED**

Period	Number of accidents	Persons killed	Persons injured	Per 100,000 of mean population		
				Number of accidents	Persons killed	Persons injured
1975-76	12,591	898	17,596	337	24	471
1976-77	13,673	915	18,558	363	24	493
1977-78	14,964	926	20,243	394	24	533
1978-79	14,758	842	20,058	385	22	523
1979-80	14,644	785	19,504	375	20	499

The table which follows provides a description of types of road users killed or injured in road traffic accidents occurring during the years 1976-77 to 1979-80:

**VICTORIA—ROAD TRAFFIC ACCIDENTS INVOLVING CASUALTIES:
DESCRIPTION OF PERSONS KILLED OR INJURED**

Description	1976-77		1977-78		1978-79		1979-80	
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
Drivers of motor vehicles	333	7,448	343	8,437	307	8,502	292	8,132
Motor cyclists	86	1,677	76	1,620	78	1,555	63	1,633
Passengers (any type)	255	6,626	268	7,112	232	7,056	214	6,642
Pedestrians	207	1,969	207	2,120	200	1,990	165	1,969
Pedal cyclists	33	814	27	925	23	921	49	1,103
Other	1	24	5	29	2	32	2	25
Total	915	18,558	926	20,243	842	20,056	785	19,504

Particulars of victims of road traffic accidents during the years 1976-77 to 1979-80 are shown according to their ages in the following table:

**VICTORIA—ROAD TRAFFIC ACCIDENTS INVOLVING CASUALTIES:
AGES OF PERSONS KILLED OR INJURED**

Age group (years)	1976-77		1977-78		1978-79		1979-80	
	Killed	Injured	Killed	Injured	Killed	Injured	Killed	Injured
Under 5	22	533	25	539	28	499	22	460
5 and under 7	16	351	15	364	11	351	11	280
7 and under 17	80	2,044	66	2,196	67	2,277	73	2,137
17 and under 21	170	3,954	183	4,147	138	4,025	132	4,043
21 and under 30	207	4,442	214	4,948	180	4,854	189	4,816
30 and under 40	81	2,133	93	2,244	107	2,423	74	2,368
40 and under 50	74	1,484	77	1,593	78	1,551	58	1,479
50 and under 60	79	1,297	81	1,440	82	1,410	70	1,366
60 and over	172	1,367	162	1,598	148	1,613	155	1,481
Not stated	14	953	10	1,174	3	1,053	1	1,074
Total	915	18,558	926	20,243	842	20,056	785	19,504

Recent trends in road transport

Introduction

The most significant recent trend in road transport in Victoria has been in the reduced number of deaths due to road accidents. Many factors have contributed, including compulsory provision and wearing of seat belts, changed community attitudes (e.g., towards drinking and driving), publicity in the media, concentrated law enforcement, stricter vehicle requirements (e.g., through Australian Design Rules), changes in road design practice (e.g., introducing roundabouts and staggered T-intersections), and road improvements (e.g., carriageway duplication on major routes).

Road deaths in 1980 (657) were the lowest for over 20 years (760 in 1960). Road injuries have also declined, but not so dramatically; there were 19,957 in 1980 and 16,669 in 1960.

Other recent trends are discussed below under three components of the road transport system—the user, the vehicle, the road.

The user

Road transport is usually not an end in itself; it is a derived demand, a means of achieving something else. Consequently, trends in road transport can simply reflect trends in other factors. For instance, the pattern of residential and industrial development of Melbourne, coupled with individual preferences and affluence, is strongly linked with growing dependence on road transport (and declining reliance upon public transport services).

Details of recent annual travel by all vehicles registered in Victoria follow:

VICTORIA—DISTANCE TRAVELLED BY REGISTERED VEHICLES

Item	1971	1976	1979
Total (thousand million kilometres per year)	22.8	28.4	30.0
Average per vehicle (thousand kilometres per year)	16.4	15.8	15.6
Number of vehicles (million)	1.4	1.8	1.9

The figures illustrate that rising fuel costs have had an insignificant effect upon amount of travel. Although there has been a slight drop in average annual travel, this has mainly been associated with an increase in multiple car ownership by households. Later travel data is not available, but the fact that sales of petrol fell by 2 per cent in 1980 in Victoria indicates that there has probably been a slight decline in travel since 1979.

Vehicles

A notable recent trend regarding the vehicle population has been towards larger, heavier trucks. Following an increase in allowable truck dimensions and weights, and encouraged by the savings in fuel and other costs (particularly labour) available from using fewer, larger vehicles to perform a freight task, traffic by large trucks on Victoria's roads has increased markedly. For instance, between 1976 and 1979 the number of articulated trucks with tare mass of 11 tonnes or more increased by 91 per cent, the average annual distance travelled per vehicle increased by 32 per cent for articulated trucks and 15 per cent for articulated trucks with tare mass of 11 tonnes or more, and the total annual goods haulage increased by 51 per cent for articulated trucks and 132 per cent for articulated trucks of 11 tonnes or more.

Another important trend in the vehicle fleet has been towards lighter new motor cars with smaller engines, mainly as a result of increasing fuel prices. However, most cars are not new, and it may be some years before replacement of the existing fleet has any significant reduction on the average fuel consumption of motor cars. This is illustrated by the fact that, for cars and station wagons registered in Victoria, average fuel consumption actually increased from 12.8 to 12.9 litres per 100 kilometres between 1976 and 1979.

Roads

The most significant trend affecting the road network has been the decline (of about 20 per cent) in real value of funds available to the Country Roads Board for road works over the past decade. This has been due to sharply increasing cost of roadworks, a declining contribution (in real terms) from the Commonwealth Government, and very slow growth

in the tax-base for State road funds (principally motor registration charges and fuel franchise fees).

This decline in real funds has meant a higher proportion is required for maintaining the existing network and correspondingly less is available for improvements. Thus there has been increased emphasis on cost minimisation, construction in stages, and low-cost solutions (for instance, traffic management). An important traffic management measure being implemented in 1981 in Melbourne was a regional traffic signal co-ordination system similar in its design characteristics to the system developed for Sydney. By improving the flow of traffic on major routes, this system can save fuel and time. Another measure has been the re-arrangement of traffic lanes on existing roads, to increase traffic flow through intersections and to provide for turning vehicles.

Regarding improvements in the road network, the length of State highways (and freeways) with duplicated carriageways has increased from about 300 kilometres to 600 kilometres since 1970. Duplication, particularly involving route re-alignment and town by-passes, has resulted in improved safety, traffic flow, and travel times.

Conclusion

In recent years, social and environmental factors have assumed a more important role in road planning investigations in Victoria. The planning process that has evolved includes social and environmental studies. It is designed to provide for the early identification and analysis of all the relevant factors, together with the engineering, economic, and planning considerations. Public participation is also part of the planning process, the nature and extent of the participation depending on the nature of the investigation, on the social and environmental factors involved, and on the degree of public interest.

Further references: Australian Road Safety Council, *Victorian Year Book* 1966, p. 761; Traffic Commission, 1971, pp. 741-2; Board of Inquiry into Land Transport in Victoria, 1975, p. 634; Transport in the Victorian environment, 1979, 1-26; West Gate Bridge Authority, 1981, pp. 549-50

SEA TRANSPORT

Shipping

Introduction

During the 1830s, settlers quickly found that, because of the lack of roads, sea transport was essential in and between the settlements of the Port Phillip District. Despite the rapid growth and spread of speedier land transport in the next one hundred years, the size of Port Phillip Bay encouraged the regular use of ships to a greater extent than other coastal areas of the State. Cargoes from the western region included dairy products, livestock, and timber, and from the eastern region, fish. Servicing of the goldfields at Walhalla and the Tambo Valley was also provided by way of Port Albert.

The Port of Melbourne was established in 1877 when the Melbourne Harbor Trust Commissioners was constituted as the port authority under the Melbourne Harbor Trust Act. The port expanded with the growth of Victoria's population and consequent trade also utilised facilities at Geelong and Portland.

The Pool of Melbourne opposite the Customs House and other Yarra River and Bay berths were crowded with the masts of sailing ships and Victoria became associated with the clipper classic, the annual grain race. By the early years of the twentieth century sail had been superseded by coal and oil fuels, with their accompanying dock, bunkering, and maintenance requirements.

In the years following the Second World War, Australian shipowners revised their trading practices as a result of vigorous competition from land-based transport operators. Consequently, the entire coastal trade by sea was transformed, and ships modified to make them more useful as a means of transportation around the coast.

One of the results of this trend was the expansion of the bulk cargo trade to include goods, such as sugar, as well as various oils and oil products. Later, unit loads and containers with improved handling facilities on both ship and shore were introduced. These new methods led to the specialised ship, exclusively designed and equipped to meet requirements of the particular trade. These were the roll on-roll off stern loading ships for cargo packed on road vehicles, and the container ship designed for containerised cargo and other unit loads.

New packaging and cargo handling methods, as well as new ships, are bringing changes to port facilities, where specially designed wharves, equipment, and port modifications are matching the new concepts in ship and cargo handling around the Australian coast and the demands of Australian overseas trade.

The types of cargo handled by the other major Victorian ports still reflect proximity to the rural sectors of the State, with wheat and wool exports being made from Geelong and Portland. Western Port has developed in the last decade as a major port for petroleum products and steel with the development of secondary industry in the region surrounding the port. The Port of Melbourne, with its expanded container handling facilities, caters for all types of cargo for both the coastal trade and overseas trade.

Searoad service between Victoria and Tasmania

The following table shows details of the searoad service operated by the Australian Shipping Commission between Victoria and Tasmania during the years 1977-78 to 1980-81:

VICTORIA—TASMANIA: SEAROAD SERVICE (a)

Vessel	Passengers				Accompanied vehicles			
	1977-78	1978-79	1979-80	1980-81	1977-78	1978-79	1979-80	1980-81
<i>Empress of Australia</i>	111,500	112,320	111,196	120,072	33,074	32,058	31,509	36,188

(a) Excludes commercial cargo which consists of unit loads, i.e., containers, trailers, timber packs, etc.

Statistics

Production of statistics of coastal shipping (interstate and intrastate) ceased from July 1978. Statistics appearing in tables below relate only to international voyages and overseas cargo.

Vessel arrivals and departures

The following table shows vessel movements to and from Victoria for the period 1975-76 to 1979-80. "Vessel calls" are so defined that a vessel is counted each time it arrives at or departs from a Victorian port. "Deadweight tonnage" refers to the total weight (in tonnes) of cargo, stores, fuel, passengers, and crew carried by a ship when loaded to its maximum summer waterline.

VICTORIA—OVERSEAS SHIPPING: VESSEL ARRIVALS AND DEPARTURES

Particulars	1975-76	1976-77	1977-78	1978-79	1979-80
Arrivals—					
Vessel calls	2,085	2,103	1,548	1,551	2,220
Deadweight tonnage ('000 tonnes)	n.a.	n.a.	n.a.	n.a.	46,710
Departures—					
Vessel calls	2,061	2,048	1,540	1,566	2,257
Deadweight tonnage ('000 tonnes)	n.a.	n.a.	n.a.	n.a.	47,740

Particulars of vessel movements at Victorian ports are shown in the following table for the years 1977-78 to 1979-80:

VICTORIA—OVERSEAS SHIPPING: VESSEL ARRIVALS AND DEPARTURES BY PORT

Particulars	Melbourne			Geelong			Western Port			Portland		
	1977-78	1978-79	1979-80	1977-78	1978-79	1979-80	1977-78	1978-79	1979-80	1977-78	1978-79	1979-80
Arrivals—												
Vessel calls	1,082	1,137	1,637	259	218	283	98	112	159	98	84	141
Deadweight tonnage ('000 tonnes)	n.a.	n.a.	30,922	n.a.	n.a.	7,600	n.a.	n.a.	3,942	n.a.	n.a.	4,246
Departures—												
Vessel calls	1,078	1,156	1,695	263	219	271	100	107	152	99	84	139
Deadweight tonnage ('000 tonnes)	n.a.	n.a.	32,508	n.a.	n.a.	7,313	n.a.	n.a.	3,703	n.a.	n.a.	4,215

Nationality of shipping

The country of registration of a vessel is the country in which a vessel is registered according to Lloyd's Register of Shipping. The countries of registration of vessels which arrived at or departed from Victorian ports during 1979-80 were as follows:

VICTORIA—OVERSEAS SHIPPING: VESSEL MOVEMENT BY COUNTRY OF REGISTRATION, 1979-80

Country of registration	Arrivals		Departures	
	Vessel calls	Deadweight tonnage	Vessel calls	Deadweight tonnage
		('000 tonnes)		('000 tonnes)
Antilles (Netherlands)	6	21	4	14
Australia	167	3,540	179	3,701
Belgium-Luxembourg	9	441	9	441
Bermuda	3	21	3	21
China (excluding Taiwan)	69	1,851	69	1,846
Denmark	31	456	27	409
France	19	495	22	627
Germany, F.D.R.	129	2,124	131	2,233
Greece	97	2,881	89	2,676
Hong Kong	172	2,955	171	2,914
India	37	844	37	844
Italy	9	234	13	364
Japan	360	6,372	370	6,753
Liberia	131	3,667	123	3,430
Netherlands	45	1,117	54	1,482
New Zealand	10	196	14	240
Norway	60	1,515	61	1,562
Panama	144	2,462	145	2,430
Singapore, Republic of	59	1,142	74	1,396
South Africa, Republic of	15	223	14	210
Sweden	34	833	33	801
United Kingdom	302	8,082	308	8,314
United States	47	1,739	43	1,542
U.S.S.R.	93	1,036	91	1,013
Other countries	172	2,463	173	2,475
Total all vessels	2,220	46,710	2,257	47,740

Cargo discharged and loaded

The table below examines overseas cargo discharged and loaded at Victorian ports in the years 1977-78 to 1979-80 in revenue tonnes and gross weight. The "revenue tonne" is the unit of measurement predominantly used in the shipping industry. It is the basis on which freight is charged and statistics are obtained by adding mass (tonnes) and volumetric (cubic metres) units. "Gross weight" is the total weight of cargo excluding the weight of containers, irrespective of the basis on which freight is charged. Gross weight statistics are not available prior to 1 July 1979.

VICTORIA—OVERSEAS SHIPPING: CARGO DISCHARGED AND LOADED BY PORT

Port	Discharged				Loaded			
	1977-78	1978-79	1979-80		1977-78	1978-79	1979-80	
	Revenue tonnes	Revenue tonnes	Revenue tonnes	Gross weight	Revenue tonnes	Revenue tonnes	Revenue tonnes	Gross weight
	('000)	('000)	('000)	('000 tonnes)	('000)	('000)	('000)	('000 tonnes)
Melbourne	2,896	3,356	4,607	2,558	1,781	1,967	2,760	2,327
Geelong	1,404	1,455	1,358	1,347	3,014	1,868	3,800	3,776
Western Port	1	153	101	101	1,323	2,170	1,858	1,858
Portland	195	247	206	206	492	540	1,424	1,424
Total	4,495	5,211	6,272	4,212	6,609	6,545	9,843	9,386

The table following shows overseas cargo discharged and loaded in Victoria over 1976-77 to 1979-80 classified by geographic trade area of overseas port of loading/discharge:

VICTORIA—OVERSEAS SHIPPING: CARGO DISCHARGED AND LOADED IN VICTORIA BY TRADE AREA OF OVERSEAS PORT OF LOADING/DISCHARGE ('000 revenue tonnes)

Trade area of overseas port of loading/discharge	Discharged				Loaded			
	1976-77	1977-78	1978-79	1979-80	1976-77	1977-78	1978-79	1979-80
North America	1,236	749	995	1,500	392	446	556	374
South America	31	3	1	31	60	103	74	105
Europe (including U.S.S.R.)	1,477	799	958	1,048	867	630	538	2,580
Africa	70	94	62	393	307	583	628	455
Asia	3,318	2,145	2,188	2,715	3,381	3,930	3,489	5,872
Papua New Guinea, New Zealand and the Pacific Islands	550	526	790	397	941	901	1,255	446
Indian Ocean Islands and Antarctic area	134	178	219	188	5	16	6	9
Total	6,815	4,495	5,211	6,272	5,954	6,609	6,545	9,843

VICTORIA—OVERSEAS SHIPPING: CARGO DISCHARGED AND LOADED BY COUNTRY OF REGISTRATION OF VESSEL ('000 revenue tonnes)

Country of registration	Discharged			Loaded		
	1977-78	1978-79	1979-80	1977-78	1978-79	1979-80
Antilles (Netherlands)	—	47	—	62	25	3
Australia	265	440	492	162	162	231
Belgium-Luxembourg	—	16	36	46	8	142
Bermuda	19	89	9	112	101	20
China (excluding Taiwan)	29	2	21	753	237	1,084
Denmark	310	288	138	183	186	23
France	32	25	33	8	15	69
Germany, F.D.R.	421	324	346	383	220	319
Greece	286	235	240	984	675	1,277
Hong Kong	14	66	235	55	165	273
India	10	47	26	134	39	365
Italy	49	80	25	26	28	27
Japan	616	613	858	595	1,037	1,046
Liberia	383	355	659	574	773	972
Netherlands	73	100	218	85	36	206
New Zealand	58	202	21	41	156	2
Norway	229	241	245	111	251	240
Panama	161	266	301	855	771	941
Singapore, Republic of	83	65	77	103	159	249
South Africa, Republic of	38	34	41	19	19	21
Sweden	74	136	188	28	81	132
United Kingdom	966	1,044	1,275	799	925	1,282
United States of America	214	366	298	79	174	148
U.S.S.R.	4	12	109	127	42	224
Other countries	161	118	381	285	260	547
Total	4,495	5,211	6,272	6,609	6,545	9,843

Container cargo

The following table provides details of containers and container cargo discharged and loaded at Victorian ports in 1978-79 and 1979-80. All statistics relating to containers are expressed in terms of 20 foot units. A 40 foot container is recorded therefore as 2 twenty foot equivalent units (or TEU's).

**VICTORIA—OVERSEAS SHIPPING: CONTAINERS AND CONTAINER CARGO
DISCHARGED AND LOADED BY VICTORIAN PORTS**

Port	1978-79		1979-80			
	Container cargo	Other cargo	Container cargo		Other cargo	
	Revenue tonnes ('000)	Revenue tonnes ('000)	TEU's Empty (number)	TEU's with cargo (number)	Revenue tonnes ('000)	Revenue tonnes ('000)
DISCHARGED						
Melbourne	1,947	1,409	12,218	127,235	2,558	2,049
Geelong	25	1,430	992	814	27	1,332
Western Port	—	153	—	—	—	101
Portland	—	247	—	5	—	206
Total	1,971	3,239	13,210	128,054	2,585	3,687
LOADED						
Melbourne	1,445	522	17,356	116,803	1,942	818
Geelong	47	1,822	—	1,930	51	3,749
Western Port	—	2,170	—	—	—	1,858
Portland	—	540	—	—	—	1,424
Total	1,491	5,054	17,356	118,733	1,992	7,850

Further references: Lighthouses, *Victorian Year Book* 1964, pp. 665-6; Principal ports of Victoria, 1965, pp. 744-7; Australian Shipbuilding Board, 1975, pp. 665-6

Port Phillip Sea Pilots

Forty-two former shipmasters operate the Port Phillip Pilot Service, sixteen of whom are also licensed for Western Port. The Service is conducted on a co-operative, non-profit basis. Licences as pilots are issued by the Marine Board of Victoria, each ingoing pilot purchasing a share of the pilot vessels and other plant. The Port Phillip Pilot Service is one of the oldest organisations in Victoria, the first pilot licence having been issued to George Tobin by Governor Sir George Gipps of New South Wales on 26 June 1839.

The following table shows the number of ships (sailing inwards and outwards) piloted through Port Phillip Heads and the entrance to Western Port during the period 1971-72 to 1980-81. Although the number of ships has increased slightly, tonnes carried has risen markedly because of larger vessels such as container, roll on-roll off, and LASH (lighter aboard ship) ships.

VICTORIA—NUMBER OF SHIPS PILOTED THROUGH PORT PHILLIP HEADS AND THE ENTRANCE TO WESTERN PORT

Year	Number of ships		Year	Number of ships	
	Port Phillip	Western Port		Port Phillip	Western Port
1971-72	3,941	567	1976-77	3,717	741
1972-73	3,921	560	1977-78	3,897	620
1973-74	3,903	644	1978-79	3,824	683
1974-75	4,117	665	1979-80	3,988	683
1975-76	3,778	744	1980-81	3,646	671

Port of Melbourne Authority

Administration

The Port of Melbourne Authority (originally the Melbourne Harbor Trust Commissioners) is a statutory body established in 1877 by an Act of the Victorian Parliament to regulate, manage, and improve the Port of Melbourne. The responsibility of executing the Act is vested in a Board consisting of a full-time chairman and five part-time members appointed by the Governor in Council for their specialised knowledge of their particular sphere in the shipping industry, i.e., exporters, importers, primary production, shipowners, and labour.

The Port of Melbourne comprises an area of 31.5 square kilometres of land and water and provides 19 kilometres of berthage.

The Port of Melbourne is one of Australia's principal ports and one of the world's leading container ports in volume of cargo handled. It is a general cargo port with major installations at Swanson Dock for overseas container handling; Webb Dock for overseas roll on-roll off and container traffic; Appleton Dock; and 32 South Wharf for overseas roll on-roll off.

Cargo pattern

Container and unit-load methods of cargo handling in the Port of Melbourne were introduced and extended during the 1960s. By 1970, the cumulative effect of gradually developing these new facilities had had a significant impact on the Port as a whole and the emphasis of cargo handling activities in the Port had shifted from the long established conventional cargo handling areas to five principal areas catering for container and unit-load ships and cargo handling methods. During the year ended 30 June 1981, the Port handled a volume of 18,688,000 tonnes of import, export, and transshipment cargo. This volume was handled by coastal and overseas shipping which paid 2,330 calls at the Port.

The changes in the character of the Port became noticeable when the first overseas container ship on the United Kingdom-Australia service arrived in March 1969. Cargoes flowing through all ports of the world are classed as either wet or dry bulk cargoes (such as oil carried in tankers or sugar carried loose in the hold of a bulk carrier) or general, which includes the variety of goods usually crated, boxed, or carried in some other individual packaging. Container ships carry this general cargo in containers of various international standard sizes.

Unit-load multi-purpose vessels, which first began to operate out of Melbourne in the overseas service in 1966 and in the coastal trade some eight years earlier, are vessels especially designed to carry containers and unit-loads, which are a collection of general cargo assembled into one load, usually on a tray or pallet. These ships can also carry conventional cargo, namely, individual items of general cargo handled and loaded separately, and handled individually inside the ship and on shore. During the year ended 30 June 1981, the Port handled 15,241,000 tonnes of general cargo (including empty containers), a decrease of 0.2 per cent on that recorded in the previous year. In 1980-81, 69 per cent of general cargo was containerised with total container throughput of 508,405 containers. The Port handled 3,447,000 tonnes of bulk cargo during the same period, a decrease of 3.2 per cent on that recorded in the previous year.

New developments

Construction work is continuing on the World Trade Centre, a complex of five integrated buildings with approximately 64,000 square metres of office, rental, and exhibition space. The Centre will be occupied by the Port of Melbourne Authority, Commonwealth and State Government departments, and commercial organisations involved in the servicing and promotion of trade. The first building of the complex is scheduled for completion in March 1982 and the remaining buildings will be completed progressively during the following twelve months.

A new container/roll on-roll off berth is under construction at 5 Webb Dock for Australian National Line's overseas operations. When completed in 1982, the berth will incorporate a large stacking area and container crane.

Container handling capacity at the Port of Melbourne will be increased when the construction of three single lift container cranes is completed. Two of the cranes will be located at East Swanson Dock and one at the recently completed 16 Victoria Dock.

Work has commenced on the new multi-purpose general cargo berth at 17 Victoria Dock. Facilities at Appleton Dock will be upgraded by the construction of increased stacking areas and a shiploader to handle bulk cargoes.

The Port of Melbourne Authority has adopted a policy of improving the Port's landscape including the provision of public access to viewing locations of Port activities, the development of guidelines for leasehold areas, and a general policy of beautification of the Port. Landscaping work commenced during 1980 and plans for specific areas will be implemented on a continuous basis.

1980 Forward Development Plan

The Port of Melbourne Authority has a Forward Development Strategy Plan which is revised regularly and identifies the intended direction of long-term port development

including all major future land uses. A number of intermediate stages which represent a logical development sequence consistent with the long-term development strategy are also identified.

The major considerations involved in long-term planning of the Port relate to the provision of adequate berthage (number of berths); provision of adequate land adjacent to the berths for cargo handling operations; adequacy of navigation channels and swinging basins (both depth and width); adequacy of transport links to the Port area (both road and rail); and economic and social implications of the Port to the community.

The 1980 Forward Development Plan provides for the construction of additional berths and facilities to handle anticipated trade through the Port well into the next century. The Plan includes the construction of five additional overseas container berths at Webb Dock over the next 20 years. One of these berths is to be provided by seaward reclamation beyond the existing berth at 5 Webb Dock and the other four by re-alignment and inland extension of Webb Dock.

An additional three container berths, with associated terminal areas, are proposed at Fishermens Bend which is on the southern bank of the Yarra River some 3 kilometres upstream from its mouth. This proposal would require the relocation of the Government Aircraft Factory and the Commonwealth Aircraft Corporation. It is anticipated that these berths will not be required before the year 2000.

These eight berths, together with the upgrading and reconstruction of existing upstream berths will cater for anticipated general cargo trade through the Port well into the twenty-first century.

In addition, the Plan provides for a large area of reclamation offshore from Williamstown to cater for future bulk trades. Such trades cannot be predicted statistically but could arise as a result of individual actions such as industrial location or resource development decisions. The reclamation is therefore included in the Plan as a strategy option only.

Finance

The Port of Melbourne is self-supporting and does not receive any financial grants from the Victorian Government. The Authority's revenue is derived from a number of charges paid by the users of the Port. The charges are principally wharfage rates levied on each tonne of cargo landed in, or shipped out of the Port, and tonnage rates levied on the gross registered tonnage of ships and the time they spent in Port. Other charges cover rent of sheds, hire of Port-owned cargo handling equipment, general Port services, and rental of land reserved for essential long-term Port development. Expenditure is on Port maintenance, reconstruction, modernisation, and development, with any surplus being put back into Port development. At 30 June 1981, the Authority had approximately \$379m invested in Port assets. Capital works are financed out of revenue and out of loans, which are raised and financed by the Authority itself and guaranteed by the Victorian Government. The Authority is required to pay into the Consolidated Fund of the Victorian Government approximately 4 per cent of its revenue from import wharfage and tonnage.

The following table shows particulars of the financial operations of the Port of Melbourne Authority for the years 1976-77 to 1980-81:

VICTORIA—PORT OF MELBOURNE AUTHORITY: REVENUE, EXPENDITURE, ETC. (\$'000)

Particulars	1976-77	1977-78	1978-79	1979-80	1980-81(p)
REVENUE					
Wharfage and tonnage rates	20,567	19,821	22,816	26,410	30,412
Rent of sheds	502	488	499	408	479
Special berth charges	331	279	261	220	218
Rent of lands	4,561	4,967	5,076	5,503	5,775
Crane fees	2,383	2,089	2,477	2,675	2,826
Other	2,752	2,973	3,101	4,140	5,672
Total revenue	31,096	30,617	34,230	39,356	45,382

VICTORIA—PORT OF MELBOURNE AUTHORITY:
REVENUE, EXPENDITURE, ETC.—(continued)
(\$'000)

Particulars	1976-77	1977-78	1978-79	1979-80	1980-81(p)
EXPENDITURE AND APPROPRIATIONS					
Administration and general expenses	3,199	2,869	3,238	3,359	5,851
Port operating expenses	7,547	8,027	8,783	9,593	11,057
Maintenance—					
Dredging	2,836	2,241	3,330	3,719	4,832
Harbour	298	416	483	549	626
Wharves	1,554	1,895	2,342	2,702	2,617
Approaches	439	558	618	708	776
Railways	118	135	168	137	196
Cargo handling equipment	1,240	1,295	1,401	1,567	1,748
Other properties	119	143	169	237	204
Interest	4,195	4,610	5,163	5,995	6,864
Depreciation and renewals	5,440	5,896	6,394	8,577	8,222
Insurance	507	537	428	440	515
Sinking Fund	1,000	1,000	800	2,618	342
General reserve	1,000	—	—	—	2,500
Payments to Consolidated Fund	1,250	700	667	769	836
Appropriation	—	—	—	-1,296	—
Other	1	—	1	—	—
Total expenditure and appropriations	30,743	30,322	33,985	39,674	47,186
CAPITAL OUTLAY					
World Trade Centre Project	240	3,093	2,678	14,702	24,166
Land and property	389	289	1,858	2,286	4,409
Reclamation	393	606	1,574	29	735
Deepening waterways	4,896	4,433	6,170	5,257	4,782
Wharves and sheds construction	4,262	4,494	2,706	5,407	4,170
Cargo handling equipment	409	589	14	795	5,155
Approaches construction	267	152	791	971	1,402
Floating plant	2,038	1,567	1,841	579	600
Other works, etc.	1,568	2,288	2,571	2,091	2,454
Total capital outlay	14,462	17,511	20,203	32,117	47,873
Loan indebtedness at end of period	61,303	68,769	86,448	100,833	120,247

Further references: Changing trends in port development, *Victorian Year Book* 1968, p. 745; Port facilities, 1969, p. 755; Port emergency service, 1970, pp. 750-1; Advent of new cargo pattern, 1971, pp. 715-18; New cargo handling era, 1974, pp. 749-50; Forward development plan, 1975, pp. 672-3; Co-ordinated port development plan, 1975, pp. 673-4

Geelong Harbor Trust

The Port of Geelong is under the control of the Geelong Harbor Trust which was constituted under an Act of the Victorian Parliament in 1905. The Trust consists of three commissioners appointed by the Governor in Council.

Entrance to the Port is by 24 kilometres of channel dredged to a depth of 11 metres and a width of 122 metres. There are sixteen effective berths in the Port and two berths at the Commonwealth Explosives Pier, Point Wilson, owned and operated by the Commonwealth Government. The Harbor Trust operates a commercial slipway for vessels up to 1,000 tonnes, and a container berth equipped with a 40 tonne single-lift crane which came into operation in November 1981. Trade of the Port for 1980 totalled 6,988,719 tonnes (imports 1,914,822 tonnes, exports 5,073,897 tonnes).

The following table shows particulars of the financial operations of the Geelong Harbor Trust for the calendar years 1976 to 1980:

VICTORIA—GEELONG HARBOR TRUST: REVENUE, EXPENDITURE, ETC. (\$'000)

Particulars	1976	1977	1978	1979	1980
REVENUE					
Wharfage, tonnage, and special berth rates	2,195	2,618	3,100	3,092	3,269
Shipping services	1,852	2,198	2,445	2,550	1,937

VICTORIA—GEELONG HARBOR TRUST: REVENUE, EXPENDITURE, ETC.—*continued*
(S'000)

Particulars	1976	1977	1978	1979	1980
REVENUE— <i>continued</i>					
Rents, fees, and licences	185	212	285	302	302
Freezing works and abattoirs	191	99 }	363	496	459
Other	31	179 }			
Total revenue	4,454	5,306	6,193	6,440	5,967
EXPENDITURE AND APPROPRIATIONS					
Management expenses	1,588	1,657	1,773	2,079	1,789
Shipping services	1,524	1,665	1,933	1,959	1,489
Maintenance—					
Wharves and approaches	296	292	324	333	354
Harbour	309	327	275	139	136
Floating plant	71	76	96	111	9
Other	64	72	69	74	129
Interest on loans	151	142	115	83	70
Sinking Fund	26	22	15	14	11
Depreciation provision	906	844	861	848	807
Other	193	16	32	57	18
Total expenditure and appropriations	5,128	5,113	5,493	5,697	4,812
CAPITAL OUTLAY (NET)					
Floating plant	—	27	—	—	—
Land and property	55	11	263	97	425
Wharves and approaches	9	191	103	193	9,331
Other	38	43	11	79	34
Total capital outlay	102	272	376	369	9,790
Loan indebtedness at end of period	2,560	2,239	1,479	1,371	1,126

Portland Harbor Trust

Situated on the south-west coast of Victoria, Portland is a modern, deep-sea port which is experiencing major expansion of both trade and port facilities. The port is within thirteen kilometres of the main interstate and overseas shipping lanes, with deep water approaches to the entrance of the harbor basin.

In addition to the five existing berths, the Portland Harbor Trust is constructing a new berth to cater for the shipping requirements of the aluminium smelter which is being constructed at South Portland.

The port is equipped with facilities for the berthing of all types of bulk and general cargo vessels, the pre-shipment storage of bulk and refrigerated cargoes as well as open space for the assembly, handling, and storage of containerised and unitised cargoes. There is a network of road and rail services connecting the port and the town of Portland to all regions of mainland Australia.

Overall trade through the port during 1980-81 amounted to 1,628,779 tonnes, a reduction of 15 per cent compared with 1979-80.

Exports accounted for 1,115,257 tonnes and imports for 513,522 tonnes of port trade.

The following tables show particulars of shipping, trade, and financial operations for the Portland Harbor Trust during the years 1976-77 to 1980-81:

VICTORIA—PORTLAND HARBOR TRUST: TRADE AND SHIPPING SUMMARY

Year	Trade vessels	Other vessels	Gross tonnage	Total exports (tonnes)	Total imports (tonnes)	Total trade (tonnes)
1976-77	109	31	1,510,906	274,346	419,708	694,054
1977-78	121	21	1,786,532	567,531	559,431	1,126,962
1978-79	102	13	1,656,901	527,399	596,119	1,123,518
1979-80	165	10	2,885,022	1,438,993	474,355	1,913,348
1980-81	139	30	2,351,153	1,115,257	513,522	1,628,779

**VICTORIA—PORTLAND HARBOR TRUST: REVENUE, EXPENDITURE, ETC.
(\$'000)**

Particulars	1976-77	1977-78	1978-79	1979-80	1980-81
REVENUE					
Wharfage rates	370	505	529	696	701
Grain terminal	723	594	—	—	—
Shipping services	227	365	384	830	891
Other services and revenue	341	343	466	640	971
Interest	3	15	276	352	478
Victorian Government grant	1,220	1,000	1,450	1,500	1,530
Extraordinary revenue	—	—	—	—	827
Total revenue	2,884	2,822	3,105	4,018	5,398
EXPENDITURE AND APPROPRIATIONS					
Administration	356	429	489	583	615
Maintenance	140	192	222	226	206
Shipping services	343	395	407	509	540
Depreciation	55	30	72	70	391
Interest on loan	1,402	1,416	1,482	1,620	1,845
Sinking Fund	56	55	212	258	297
Loan redemption	110	117	140	—	—
Grain terminal (excluding depreciation)	353	271	—	—	—
Other	127	182	242	233	284
Total expenditure and appropriations	2,942	3,087	3,266	3,499	4,178
CAPITAL OUTLAY					
Port rail system	—	—	83	34	—
Road works	—	—	—	105	—
Reclamation	5	—	37	206	88
Grain terminal	54	—	—	—	—
Deepening waterways	—	—	82	—	—
Wharves and sheds	919	509	329	368	2,496
Other	46	322	198	908	409
Total capital outlay	1,024	831	729	1,621	2,993
LOAN INDEBTEDNESS AT 30 JUNE					
Victorian Government	3,823	3,823	3,823	3,823	3,823
Public	20,401	21,284	22,383	23,189	24,005
Total loan indebtedness	24,224	25,107	26,206	27,012	27,828

Western Port

Western Port is an extensive inlet eastward of and adjacent to Port Phillip, and is separated from it by the Mornington Peninsula which is about 16 kilometres wide. The Port is sheltered from Bass Strait by Phillip Island at its south-eastern end and the waters between the western side of this island and the mainland form the entrance to the Port. It is approximately 42 kilometres from the entrance to the northern extremity of the inlet.

Although the entrance contains some large sandbanks, a deep water channel up to 31 metres deep marked by 37 light buoys runs close to the island. This navigable channel extending from the western entrance to Crib Point is 20 kilometres long with low water depths of 14.3 metres and 14.9 metres, in the northern and western arms, respectively. Tidal rises are of the order of 3 metre springs and 2 metre neaps.

The Crib Point Jetty provides two berthing heads each 38 metres in length: No. 1 with 15.8 metres of water alongside for 100,000 tonne tankers; No. 2 with 12.8 metres of water alongside for 40,000 tonne tankers. The Long Island Jetty has a berthing head of 108 metres in length for 100,000 deadweight vessels with 15.8 metres of water alongside. Steel Industry Wharf No. 1 consists of loading ramp 28 metres in length (curved) and fender wharf of 46 metres in length for vessels with stern door up to 10,000 tonne. Steel Industry Wharf No. 2 consists of a wharf 152 metres long for vessels up to 19,500 deadweight. Depth alongside for both Steel Industry Wharves—12.2 metres.

VICTORIA—WESTERN PORT: PORT TRAFFIC

Year	Petroleum products		Steel and cars	
	Tankers	Tonnes	Vessels	Tonnes
		'000		'000
1976-77	376	11,165	81	572
1977-78	319	11,362	79	570
1978-79	368	10,799	89	703
1979-80	335	11,142	94	759
1980-81	362	10,423	77	758

AIR TRANSPORT

Civil aviation*Administration*

The Victorian *Air Navigation Act* 1958 prescribes that control of aviation within Victoria shall be vested in the Commonwealth Government. The Air Navigation Act and Regulations in Victoria are consequently administered by the Commonwealth Department of Transport through its Director in Melbourne.

The functions performed by the Department include:

- (1) Registration and marking of aircraft;
- (2) determination and enforcement of airworthiness requirements for aircraft and the issue of certificates of airworthiness, certificates of type approval, and supervision of aircraft design;
- (3) licensing of pilots, navigators, aircraft radio operators, flight engineers, and aircraft maintenance engineers;
- (4) licensing of airline, charter, and aerial work operators, and supervision of their activities;
- (5) provision and maintenance of aeronautical communications, navigation aids, aerodromes, and landing grounds;
- (6) establishment and operation of air traffic control, flight service, aeronautical information, search and rescue, and fire-fighting and rescue services; and
- (7) investigation of aircraft accidents, incidents, and defects.

Victorian aerodromes

The major aerodromes in Victoria are owned and operated by the Commonwealth Government through the Department of Transport. Since 1957, Commonwealth Government policy has been that aerodromes (except capital city airports) should be owned and operated by local government authorities under the local ownership plan.

At present in Victoria there are seven Commonwealth Government owned aerodromes at Melbourne (Tullamarine), Avalon, Bacchus Marsh, Essendon, Mallacoota, Mangalore, and Moorabbin, as well as thirty-three licensed aerodromes at Ararat, Bairnsdale, Ballarat, Benalla, Bendigo, Birchip, Corryong, Echuca, Grampians, Hamilton, Hopetoun, Horsham, Kerang, La Trobe Valley, Leongatha, Maryborough, Mildura, Nhill, Orbost, Portland, Robinvale, St Arnaud, Sale, Sea Lake, Shepparton, Stawell, Swan Hill, Warracknabeal, Warrnambool, Whittlesea, Wycheproof, Yarrabank (heliport), and Yarram.

The licences of all licensed aerodromes, except Grampians, Whittlesea, and Yarrabank (heliport), are held by the appropriate local government authority. Under the local ownership plan, the Commonwealth Government pays 50 per cent of the development costs of new aerodromes or transfers existing aerodromes free of cost to local authorities and then pays 50 per cent of future approved maintenance and development costs. Similar assistance is given to the local authority to develop and maintain aerodromes which are, or will be, served by a regular public transport service. Local authorities which have received developmental assistance include Ararat, Bairnsdale, Benalla, Bendigo, Birchip, Echuca, Hamilton, Hopetoun, Horsham, Kerang, La Trobe Valley, Leongatha, Maryborough, Mildura, Nhill, Stawell, Swan Hill, Warrnambool, Wycheproof, and Yarram.

The assistance authorised by the Commonwealth Government to Victorian local authorities for aerodrome works during the year ending 30 June 1980 was \$753,074 for development, and \$333,508 for maintenance works.

In addition to these main aerodromes, there are hundreds of authorised landing areas which serve the needs of the increasing number of light aircraft users throughout Victoria.

Classification of flying activities

Flying activities are classified by regulation into the following categories:

Private operations

These are operations in which an aircraft is used for personal transportation—private or business, carriage of persons or goods for other than hire or reward, or other activities of a non-commercial nature. The extent of this activity within Victoria may be gauged from the fact that there were 848 aircraft classified in the private category and approximately 5,825 licensed private aeroplane pilots in Victoria at 30 June 1980.

Aerial work operations

These operations refer to aircraft being used for aerial survey, spotting, photography, agriculture, flight training, and the cartage of goods for purposes of trade. In terms of hours flown, the most significant operations are agricultural and flight training. To 30 June 1979, over 102,600 training hours were flown by training organisations in Victoria.

Charter operations

These consist of flights for the carriage of passengers or cargo for hire or reward, but which may not be notified to the general public as being operated between fixed terminals or to fixed schedules, or for the carriage of passengers or cargo between fixed terminals to fixed schedules in circumstances in which the accommodation in the aircraft is not available to members of the public. During the 1950s, most charter operations were conducted in single engine aircraft, but there is an increasing use of twin engine aircraft. Twin jet aircraft are being used increasingly in executive-type work. At 30 June 1979, there were 101 Victorian based operators licensed to conduct charter operations; over 44,000 hours were flown by these organisations.

Commuter operations

Since the end of the Second World War, country or feeder air services within Victoria have commenced on different occasions but ceased operations when they proved to be uneconomic. In 1966, the Commonwealth Government decided that a new attempt should be made to provide this type of air service between Melbourne and numerous country centres. As it was felt charter operators would be prevented by the Air Navigation Regulations from operating to a fixed schedule, it was decided to grant certain exemptions under the Regulations. A charter operator who met appropriate additional requirements and standards would be permitted to operate air services between centres to a fixed schedule and on a regular basis. This type of operation is usually known as a commuter service.

By October 1967, exemptions under the Regulations had been granted to three operators. Using single and light twin engined aircraft capable of carrying six to thirteen passengers, these operators were approved to operate services to Stawell, Ararat, Ballarat, Kerang, Swan Hill, Echuca, Shepparton, La Trobe Valley, West Sale, and Bairnsdale, and to the interstate centres of Albury and Merimbula. Some of these services commenced in November 1967 and others followed with varying degrees of success and continuity. At June 1981, Victorian commuter services of the type in question were operating between the following centres on a regular basis: Essendon — Strahan — Queenstown — Hobart, Essendon — Smithton, Essendon — Flinders Island, Essendon — Ararat — Stawell — Horsham, Essendon — Sale-Bairnsdale, Essendon — Warrnambool — Hamilton — Portland, Melbourne — Shepparton, Melbourne — Bendigo—Swan Hill — Mildura, Melbourne — Cooma — Merimbula, Melbourne — Wagga Wagga — Canberra, Mildura — Renmark — Adelaide, and Mildura — Hay — Sydney.

Regular public transport

Although commuter operations are regular public transport services, this heading usually refers to aircraft operating in accordance with an airline licence, to carry passengers and cargo according to fixed schedules and on specified routes.

Services based or terminating at Melbourne Airport are domestic—Ansett Airlines of Australia and Trans Australia Airlines, or international—Qantas Airways, Air India, Air Nauru, Air New Zealand, Alitalia, British Airways, Cathay Pacific, Garuda Indonesian Airways, J.A.T. (Yugoslavia), K.L.M. Royal Dutch Airlines, Lufthansa, Malaysian Airline System, Pan American World Airways, Philippine Airlines, Singapore Airlines, and Thai Airways International.

Gliding clubs

Gliding is mainly carried out at Ararat, Bacchus Marsh, Benalla, Barnawartha, Bendigo, Colac, Derby, Horsham, Kurweeton, La Trobe Valley, Laverton, Leongatha, Mildura, Moorooduc, Mt Beauty, and Swan Hill. Many other areas are used to a lesser extent. A Commonwealth Government subsidy is granted to clubs through the Gliding Federation of Australia.

Control of air traffic

Control of air traffic is maintained by the Commonwealth Department of Transport through its air traffic control organisation. This includes the closely co-ordinated sections of operational control, which are concerned with each individual flight; airport control, which applies to all movements on or within 32 kilometres of an aerodrome; and area control, which controls aircraft along the main air routes to ensure the avoidance of collisions. In conjunction with air traffic control, the Department maintains a wide range of air navigation aids and a comprehensive search and rescue organisation. The function of navigation aids is described in detail on pages 773–6 of the *Victorian Year Book* 1965. Special articles on Air Traffic Control and the Omega navigation facility can be found on pages 551–2 of this *Year Book*.

Melbourne (Tullamarine) Airport

The Tullamarine site of 2,140 hectares was chosen for the development of Melbourne Airport when Essendon Airport could not be further enlarged. The completed aerodrome is 20 kilometres from the G.P.O., Melbourne, 7 kilometres from Essendon Airport, and is accessible by a freeway.

The 15 kilometres of runways and taxiways were completed early in 1968. The north-south runway (2,591 metres) and the east-west runway (2,286 metres) are both designed for the operation of modern jet aircraft. The structures are 147 centimetres thick and are capable of taking the weight of the Boeing 747 ("Jumbo" jet) and supersonic aircraft. High speed turnouts have been provided to both runways which allow aircraft to turn off the runway at 100 kilometres per hour. The north-south runway was extended to 3,658 metres in 1972. There is a provision for future development of the east-west runway to extend to 2,743 metres and for a second set of parallel runways.

Civil aviation statistics

Domestic passenger movements, which represent the total of embarkations and disembarkations for each Victorian aerodrome served by a regular service for the years 1976 to 1980 were as follows:

VICTORIA—DOMESTIC PASSENGER MOVEMENTS OF REGULAR AIR SERVICES

Airport	Passenger movements				
	1976	1977	1978	1979	1980
Melbourne	4,114,456	4,291,450	4,628,254	4,908,893	5,173,483
Mildura	19,094	20,214	23,078	22,283	21,238
Hamilton	7,210	7,009	7,610	6,714	6,178

The following table shows particulars for 1979 and 1980 of regular interstate and intrastate air services terminating in Victoria:

**VICTORIA—REGULAR INTERSTATE AND INTRASTATE AIR SERVICES
TERMINATING IN VICTORIA**

Particulars		Interstate		Intrastate		Total	
		1979	1980	1979	1980	1979	1980
Kilometres flown	'000	50,382	49,428	535	527	50,917	49,955
Passenger kilometres	'000	3,963,696	3,974,082	11,828	11,219	3,975,524	3,985,301
Freight—							
Tonnes		75,492	69,150	61	52	75,553	69,202
Tonne kilometres	'000	55,965	50,350	22	19	55,987	50,369
Mail—							
Tonnes		5,968	6,967	—	—	5,968	6,967
Tonne kilometres	'000	5,202	5,957	—	—	5,202	5,957

The first of the following tables deals with aircraft registered and licences issued by the Commonwealth Department of Transport in Victoria, while the second describes activities at Melbourne (Tullamarine) Airport:

VICTORIA—AIRCRAFT REGISTERED AND LICENCES ISSUED

Particulars	1976	1977	1978	1979	1980
Registered aircraft	1,240	1,363	1,499	1,531	1,562
Student pilot licences	3,756	4,299	4,520	5,436	5,613
Private pilot licences	3,948	4,184	4,747	5,548	5,825
Commercial pilot licences	851	934	970	805	904
Airline pilot licences	1,131	1,154	1,205	1,294	1,365
Aircraft maintenance engineer licences	1,216	1,263	1,326	1,337	1,390

VICTORIA—MELBOURNE (TULLAMARINE) AIRPORT

Particulars	1976	1977	1978	1979	1980
Domestic aircraft movements	68,473	68,558	72,159	70,065	72,028
Domestic passengers embarked	2,065,897	2,144,619	2,276,812	2,451,235	2,584,332
Domestic passengers disembarked	2,063,022	2,146,831	2,275,750	2,457,658	2,589,151
International aircraft movements	7,528	8,578	9,309	9,131	9,907
Passengers arriving/departing overseas	653,529	685,219	710,045	893,210	971,376

Air Traffic Control

Introduction

The Commonwealth Air Navigation Regulations specify the functions of Air Traffic Control which are to prevent collisions between aircraft, and, on the manoeuvring area, between aircraft and obstructions; expedite and maintain an orderly flow of air traffic; provide such advice and information as may be useful for the safe and efficient conduct of flights; control the initiation, continuation, diversion, or termination of flight in order to ensure the safety of aircraft operations; and notify appropriate organisations regarding aircraft known to be or believed to be in need of search and rescue aid and assisting those organisations as required.

The flights of all passengers are monitored by Air Traffic Control even before take-off and supervised all the way.

Operational Control

Operational Control is responsible for establishing contact with the flight crew, before the flight, to check weather, flying conditions and the flight plan.

While other Air Traffic Control sections regard an aircraft as one of a pattern of flights and are concerned with its safe separation from other aircraft, Operational Control considers each aircraft individually.

In the event of weather deterioration at the destination, Operational Control determines how best to direct each aircraft in the light of its available fuel reserves, possibly to an alternative airport, or to return to its port of departure or to allow it to "hold" over its destination while waiting for the weather to improve.

Should an aircraft experience an in-flight emergency, Operational Control has the responsibility for providing search and rescue assistance.

Traffic Control

Traffic Control keeps aircraft separated safely on the main air routes and around the main airports.

To safeguard traffic *en route* and converging on main airports, the Department of Transport, Australia, has set aside controlled air space in which all aircraft movement is under the supervision of Air Traffic Control. These bands of air space, or "sky highways", generally extend from 10,000 feet to 45,000 feet. The controlled air space surrounding a major airport and its approaches comes down to ground level.

Aircraft may only operate in controlled air space when equipped with two-way radio and stipulated navigation aids, and may operate only on pre-arranged routes and at flight levels approved by Air Traffic Control. These routes are provided with navigation aids such as radio beacons; at the major airports special instrument landing systems are available.

At major airports, control of air traffic from take-off until before landing is carried out from the Area Approach Control Centre (AACC). The primary means of control in the AACC is by radar and the radar coverage of an area depends on the function of the controller using it. The radar system in the AACC is known as "bright display" which enables controllers to view their radar screens under normal light. Before the introduction of bright display radar, controllers had to view radar screens in almost total darkness.

The Departures Radar Controller controls departing aircraft until they climb to their designated *en route* track and altitude. The departing aircraft are then handed over to a Sector Controller who ensures that the aircraft are separated from all other traffic. As the aircraft begin their descent to their destination, control is transferred to the Arrivals Controller who spaces the aircraft coming from various directions into an orderly sequence.

On reaching the terminal area, control is transferred to the Approach Radar Controller, who is operating beside the Departure Controller, and with the aid of a radar on which all traffic within a 40 mile radius of the airport is shown, guides the aircraft through the terminal area, and marshals aircraft into a safe and orderly landing sequence. He relinquishes control to an Aerodrome Controller who directs the landing at the final approach.

A separate control procedure, known as the Flight Progress Board, is located adjacent to each radar control position and enables the Procedural Controller to know the position of each aircraft in his area and take over immediately in the event of a radar breakdown.

Aerodrome Control

Aerodrome Control is situated in the glass enclosed control tower. The Aerodrome Controller, visually, and with the help of a radar screen, ensures that arriving aircraft are separated on final approach.

Once an aircraft has landed, and has cleared the duty runway, the pilot changes to a separate radio frequency on which the Surface Movement Controller gives him directions for taxiing. The Surface Movement Controller is also responsible for directing all movements on the aerodrome, except around the terminal buildings and on the duty runway. Once aircraft enter the duty runway for take-off, control passes to the Aerodrome Controller who speaks to both departing and arriving aircraft.

Flight Service

Aircraft operating in areas away from the capital cities are usually outside controlled air space and in-flight information is provided by the Department of Transport's Flight Service Unit. This provides information essential for safe operations to aircraft operating outside controlled air space. On the basis of that information and by observation of right-of-way rules, pilots provide their own anti-collision service.

Omega

Introduction

The establishment of the Australian Omega Facility was examined by the Joint Committee on Foreign Affairs and Defence. This Committee, an all party standing body, published its findings on Omega in a report entitled *Omega Navigational Installation*. The conclusions of the Committee favoured Australia's participation in the world-wide system.

The Omega navigation facility offers shipping and aviation of all nations the means of determining their position in almost any part of the globe, at any time of day, or night, and in any weather. The Australian facility, at Darriman, Gippsland, Victoria, will complete the network of eight installations in various countries and bring Omega to a state of global coverage.

Like Omega stations in other parts of the world, the Australian station will only transmit signals for navigation and time dissemination purposes. No message will be sent or received by the station.

The facility will be staffed, operated, and controlled by Department of Transport Australia in the same manner as all other navigation facilities operated by that Department. It will be open for inspection by the public during normal hours.

Radio navigation aids: "Omega"

A seafarer whose vessel is out of sight of land relies on astronomical observations or radio navigation aids to find his position. When the sky is overcast, astronomical observations cannot be made and reliance must be placed on radio aids. Radio navigation "beacons" to assist in position fixing have existed for many decades, but it was not until the Second World War that means were developed to enable vessels to determine their position accurately by using radio signals.

Such radio systems are still in use today and the two best known are "Decca" and "Loran". However, Decca and Loran do not provide ocean-wide coverage as they are restricted in range by certain characteristics of radio-signal propagation. A new approach to obtain complete ocean coverage arose from the use of lower radio frequencies than had been previously used.

Originally conceived as a maritime system to provide radio position fixing for vessels anywhere on the earth's oceans, Omega is also suitable for use by aircraft and land vehicles. It can provide a position fix of moderate accuracy (sometimes as good as 1.5 to 4 kilometres) at any time and in almost any part of the globe by the use of a special Omega receiver. Signals from at least three Omega transmitters must be received to obtain a position "fix".

A special means of using Omega signals, but giving somewhat improved position fixing accuracy over a limited area, is known as Differential Omega. Differential Omega is at present experimental and an additional fixed transmitting station is needed, broadcasting error correction signals to ships or aircraft in the vicinity.

Eight Omega transmitters are needed to provide world-wide coverage and the decision to implement the scheme was made in 1968. Seven of the eight facilities are in operation, and the existing Omega transmitters are located in Argentina; Japan; Liberia; Norway; La Réunion (a French island off the east coast of Africa), and the United States (North Dakota and Hawaii).

The dominating feature of a typical Omega transmitting installation is the single 427 metre steel lattice tower supporting the antenna. From the top of the Omega tower, sixteen cables radiate out and down to concrete anchor blocks at ground level. These are spaced evenly around a circle at a radial distance of 730 metres. The total area of the installation is therefore approximately 260 hectares. Two buildings on the site contain the transmitting apparatus. The antenna radiates a radio signal of 10 kW in power or about the same as a typical ABC broadcasting station.

Further references: History of civil aviation, *Victorian Year Book* 1962, p. 742; Classification of flying activities, 1964, pp. 843-4; Radio aids to air navigation in Victoria, 1965, pp. 773-6; Aerial agricultural operations, 1966, pp. 764-5; Flying training in Victoria, 1967, pp. 783-5; Regular public transport, 1968, pp. 779-81; Commuter services, 1969, pp. 790-1; Radar development in the Melbourne area, 1971, pp. 748-50; Aerodrome local ownership plan, 1974, p. 791; Use of radar in traffic control, 1975, pp. 682-4; Civil aircraft manufacture, 1977, pp. 688-90

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