

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. Two exceptions to this situation are traffic management and vehicle registration, both of which lie within the administration of the Chief Secretary. 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 advisor 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. Including the West Gate Bridge Authority, seven transport authorities report to the Minister of Transport.

The Victorian Railways is by far the largest Victorian transport authority, employing some 25,000 persons and operating a rail network of 6,658 kilometres. In the 1974-75 financial year, the Victorian Railways carried 117,000,000 passengers and transported about 11,000,000 tonnes of freight. Expenditure in this financial year amounted to \$244m. 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 eight members. The Board comprises representatives from business 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 railway 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 will be 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.

Another railway authority which plays an important role in Victoria's transport system is the Railway Construction Board. The Railways Act prescribes that "the Board shall construct and complete all lines of railway which Parliament may hereafter authorise to be constructed". The Board's major current tasks are to plan and construct the eastern railway and transport centres at Frankston and Box Hill.

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 people 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 134,000,000 persons in 1974-75. The Board comprises three members, employs nearly 4,500 persons, and maintains about 320 kilometres of tram services and 355 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. 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.

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 50,000,000 kilometres and carry more than 70,000,000 passengers a year. The Victorian Government is subsidising private buses in an attempt to restrict increases in fares and 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 \$500m programme to re-equip and modernise the metropolitan transport system with the aim of providing rapid, frequent, and comfortable public transport.

Board of Inquiry into Land Transport in Victoria, 1975

LAND TRANSPORT

Railways*Introduction*

The Victorian Railways Board had its origin in the Bland Report on Land Transport in Victoria, and its charter is to implement the principles laid down in that Report. This means the Victorian Railways should operate as a commercial undertaking, performing the part of Victoria's transport task for which it has an advantage, and managing its affairs so that revenue covers its full costs, even for capital charges and replacing assets. It should also seek to operate services meeting these criteria, without excluding the principle of cross-subsidisation. This presupposes that the Victorian Railways will be operating in a fair and equal competitive environment with other transport operators; consequently, any services the Victorian Government requires the Victorian Railways to operate, and which are uneconomic, should be paid for by the Victorian Government.

Administration

The Victorian Railways Department was established on 19 March 1856, two years after Australia's first train ran to Sandridge (now Port Melbourne). It was first administered by the Board of Land and Works, and then for various periods by either one or three commissioners. In 1973 the commissioners were replaced by a seven-member board (since increased to eight members) with a full-time chairman responsible to the Victorian Government through the Minister of Transport. The board was constituted after the Railways (Amendment) Act had been passed in December 1972.

The general manager is responsible to the chairman of the board on day to day matters, and manages the business of the Victorian Railways within the policies laid down by the board.

Geography and gauge

The Victorian railway system is centred on Melbourne, with main lines fanning out through natural gaps in the Great Dividing Range. Metropolitan lines also radiate from the city centre to most of Melbourne's suburbs.

Main lines run interstate north-east to Sydney and north-west to Adelaide. The north-east line has a broad gauge (1,600 mm) line to the New South Wales border city of Albury (306 kilometres from Melbourne) and a standard gauge (1,435 mm) line through Albury to Sydney, linking with the rest of the New South Wales rail system. Other lines are broad gauge. The north-west line leaves Victoria at Serviceton (462 kilometres from Melbourne), and links Melbourne with Ballarat (119 kilometres from Melbourne), Ararat (211 kilometres from Melbourne), and South Australia. Modern bogie exchange centres at Melbourne and Wodonga avoid the need to trans-ship much freight between standard and broad gauge lines. Other broad gauge lines from Melbourne link Victoria's major centres, and branch lines serve many other country areas of the State.

Despite having no link with the standard gauge Sydney-Perth rail line, Melbourne has direct rail access to about 75 per cent of Australia's population.

Suburban transport

The 1969 Melbourne Transportation Committee's transport plan for Melbourne in 1985 reaffirmed the demand for public transport in the foreseeable future. It emphasised the importance of improving, among other things, station car parking facilities, and tram and bus facilities at modal interchange stations to help develop the already extensive public transport network. An efficient transport service for Melbourne involves co-operation between all forms of transport, with rail offering a fast, frequent service on lines radiating from the city centre, linking with bus and tram feeder services over shorter distances.

The Victorian Ministry of Transport announced plans for major modal interchange centres for two of Melbourne's busiest suburban stations, Frankston and Box Hill, in 1975. These, together with the Horsham regional freight centre, are important pointers to the future of co-ordinated transport services throughout Victoria.

Other developments are a significant part of the Victorian Railways' plans for the future. For example, the 22 kilometre Glen Waverley line is being upgraded as a model for future suburban line improvements; work has been finished on track and signalling, and is under way on station rebuilding and lineside beautification. The line was chosen for the project after a thorough study showed that it was the line best suited to this type of improvement. The Victorian Railways Board plans to demonstrate the Railways' ability to attract passengers to trains with this type of upgrading, and prove the value of eventually upgrading all suburban services.

The Melbourne underground rail loop, on which the first train is expected to run in 1979, will help to improve services for most city-bound commuters, and its general effect on train running will benefit other suburban rail travellers. The loop will ease congestion, of both trains and passengers, at Flinders Street Station. It will give many passengers on all lines, apart from those to St Kilda and Port Melbourne, a choice of three more stations in the city centre, and many trains which now terminate at Flinders Street Station will not have to be reversed or shunted, thus simplifying the present complex arrangements.

The Victorian Railways is spending more than \$32m on work now in progress throughout the suburban system (excluding the Melbourne underground rail loop, which is being financed separately). Modern stainless steel suburban trains, and powerful main line diesel-electric locomotives, are being delivered.

Suburban improvements

Most of the work now in progress to improve and upgrade the Melbourne metropolitan rail system was recommended in the 1969 Metropolitan Transportation Committee's report, when the system carried about 382,000 persons per day. In 1975 it carried about 439,000 persons per day. A complete tally of passengers travelling for a set period each year helps decide priorities for the recommended work, and the Victorian Railways is on schedule in meeting the improvements recommended.

Work in progress includes new tracks to improve train running, advanced signalling, new station buildings, bridges, car parking extensions, and a wide variety of other improvements and upgradings to help the system cope with projected traffic increases.

A summary of major projects in progress follows.

Glen Waverley line

Extensive track improvements, as well as advanced signalling, have been completed to allow a shorter headway between trains. This will permit faster, more frequent services. Some stations have been rebuilt, others improved, and ancillary services have been developed.

At the site of the Heyington station, beside the Yarra River, a new station will be built to the design which won the Victorian Railways \$1,000 architectural competition.

Dandenong-Pakenham

In January 1975 suburban services were extended 27 kilometres from Dandenong to Pakenham, in anticipation of the rapid residential development expected in the area.

South Kensington-Footscray

A project estimated to cost \$6.1m to add two extra tracks between South Kensington and Footscray was completed in 1975. The new tracks have improved

train running on the Geelong, Ballarat, Bendigo, Altona, Williamstown, and St Albans lines. Work included extending a solid rock cutting, rebuilding the Hopkins Street road bridge, new bridges over Kensington Road and the Maribyrnong River, a new booking office and other alterations at South Kensington station, and platform alterations at Footscray station.

Sunshine-Deer Park West

An extra track has been laid between Sunshine and Deer Park West as part of a new link with the suburban system. The project featured new stations at Ardeer and Deer Park West, as well as new bridges, at an estimated cost of \$2.9m. Plans allow for eventual electrification of the extension.

Greensborough-Macleod

As at February 1976 earthworks for an extra track to speed train running on the Hurstbridge line had been suspended pending Country Roads Board advice on freeway proposals. Present plans for the \$2.1m rail project show that the freeway will cross the line between Watsonia and Macleod.

Ringwood area

Extra track and power signalling projects, costing an estimated \$6.7m, were due to be completed in 1977. They involve double track from Melbourne through to Fern Tree Gully and Mooroolbark. This will improve services.

Mordialloc-Caulfield

A third track project has been under construction, and the Glenhuntly-Cheltenham section was due to open in 1976, while the two remaining sections were expected to be ready by 1979. The third track will be signalled in both directions to allow express running according to peak hour demand. The overall project, which includes replacement of some level crossings by bridges, will cost about \$10.5m.

Other works

Other work now completed includes new stations at Yarraman, between Noble Park and Dandenong, and at Kananook, between Seaford and Frankston. Existing station buildings at Glenbervie, Glenroy, Lalor, Macaulay, West Footscray, Hawthorn, Bayswater, Fern Tree Gully, Glen Iris, East Malvern, Rosanna, and Ringwood East have been upgraded or rebuilt. Automatic signalling is gradually being extended to cover the entire metropolitan rail system.

A new signal box, and associated equipment, was introduced near Flinders Street station in 1976, and is a major step in improvements linked with the Melbourne underground rail loop.

Country transport

Similar co-operation is equally important for country transport, both passenger and freight.

The concept of regional freight centres is another example of logical co-ordination of transport services. The Victorian Railways are planning a pilot freight centre at Horsham. Rail is the most efficient means of handling full wagon loads of freight over longer distances, and the Horsham freight centre will receive and dispatch wagon loads of goods from the surrounding area in conjunction with local road pick-up and delivery services.

A more flexible door-to-door road service will replace some unnecessarily expensive branch line and small station freight operations for local deliveries, and rail will be used to its best advantage on longer distance haulage. The result is expected to be a better and more economical freight service for surrounding areas where LCL (less than car load) goods are concerned. Local stations will still handle bulk consignments.

Rolling stock

Modern stainless steel saloon type electric multiple unit trains are progressively replacing outdated wood bodied rolling stock on suburban services. The first of the new trains was delivered in late 1972, and 10 six-car trains are now being delivered each year as part of an order for 50 trains. They have forced air ventilation, with heating in winter, tinted anti-glare windows, ample noise insulation, power closing doors, and air cushion suspension. Sometimes described as "Quicksilvers", they are capable of 110 km/h travel for future express services, with a capacity, in a six-car peak hour train, of 1,500 passengers, sitting and standing, compared with about 1,300 passengers for a seven-car Harris (blue) train. The Victorian Railways hope to obtain more stainless steel units, or, alternatively, versions of the proposed Australian Urban Passenger Train, until all wood bodied trains are replaced.

Martin and King Pty Ltd have contracted to build all 250 motor and driving trailer carriages now on order, and the Victorian Railways are building the 50 trailer carriages, and assembling the bogies for the entire fleet.

Ten new 2,200 hp main line diesel-electric locomotives were ordered from the Clyde Engineering Co. Pty Ltd in May 1974 and delivery completed in 1976. Ten more 3,300 hp locomotives have been ordered from the Clyde Engineering Co. Pty Ltd with delivery commencing at the end of 1976 and, when both orders are completed, the Victorian Railways will have 294 locomotives.

Most long distance trains are diesel-electric hauled, but passenger and freight trains on the Traralgon line—Victoria's longest electrified line—are normally hauled by electric locomotives.

Country passenger services are supplemented by 102 hp to 600 hp rail cars of various types. Most interstate, and some intrastate, passenger carriages are modern steel bodied, air-conditioned stock, but a large number of wood bodied non air-conditioned types are still used on country services.

Both fixed wheel and bogie wagons handle freight traffic. Some special types can carry up to 173 tonne loads.

The Victorian Railways is building various wagons at its Newport, Ballarat North, and Bendigo North workshops, but still faces a serious shortage of bogie wagons for many kinds of freight.

Freight

Total freight tonnage for the year ended 30 June 1975 was approximately 11 million tonnes, while tonne kilometres were over 3,000 million. The main bulk traffic carried by the Victorian Railways consists of grains, which are seasonal in nature, and briquettes, which are slowly declining under the influence of competition from oil and gas. The major possibilities for future growth in the field of true bulk freight are related to the potential growth of the steel industry at Western Port and the movement of crushed stone and petroleum products.

In the field of general merchandise traffic the Victorian Railways plays a vital role in distributing goods from the manufacturing centre of Melbourne to the country areas of Victoria.

Melbourne underground rail loop

The *Melbourne Underground Rail Loop Act 1970* provided for the setting up 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 of nine members appointed by the Victorian Government 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 will be constructed on the eastern and northern boundaries of the central business district which, together with the two existing stations on the southern and western boundaries (Flinders Street station and Spencer Street station) will form a five station capacity to handle the city's work force during peak hours. Linking the three new stations, Parliament station under Spring Street, Museum station and Flagstaff station in La Trobe Street, by four underground tracks in four separate tunnels and connecting them to the existing surface tracks to form a loop, will greatly increase the train operating capacity at the centre of the system. The tunnels will be large enough to accommodate existing passenger rolling stock and possible future double deck carriages.

As a result of the planning and investigations which were undertaken by the Victorian Railways and the Railway Construction Board from 1960 to 1971, plans for the junctions of the underground tracks with the surface system were available when the Authority was constituted. Civil construction for the loop is divided into a number of major components.

The consortium, comprising John Connell—Mott, Hay and Anderson, Hatch, Jacobs acts as the principal consultant responsible to the Authority for overall control of the project and for the design and supervision of contracts for underground construction generally outside the railway boundary; the Railway Construction Board is responsible for the design of tunnels under sidings and running tracks and ramps within the railway boundary; the Victorian Railways carries out construction of tunnels and ramps within the railway boundary and is responsible for the design and construction of trackwork, signalling, and communications and overhead wiring and ancillary works for electric traction.

The Authority employs a small staff of administrative and technical officers for financial control and technical review. The co-operation between the Authority, the principal consultants, the Victorian Railways Board (as users of the loop), and the Railway Construction Board has been a feature of the project to date.

Since the commencement of work on the loop in 1971, construction activities have increased from year to year and are expected to reach a peak in the period 1976–77.

Civil engineering construction for the loop comprises four major components:

- (1) Construction below street level of three additional city stations—Flagstaff, Museum, and Parliament, so named after the adjacent features on the route of the loop;
- (2) construction under La Trobe and Spring Streets of four tunnels for four separate underground tracks to link the three underground stations with the surface system;
- (3) construction under railway sidings and running tracks of tunnels and ramps for underground tracks to connect with the surface system in the areas between Flinders Street and Richmond stations and between Spencer Street and North Melbourne stations; and
- (4) construction of a new overpass structure parallel to Flinders Street from west of King Street to Queens Bridge to provide for two additional tracks between Flinders Street and Spencer Street stations.

Electric power supply, signalling, and communications essential for train operation on the loop are further components of the project.

With the letting of contracts for under street tunnelling for the Burnley lines loop and Caulfield/Sandringham lines loop between Flagstaff and Museum stations, and for the overpass structure between Spencer Street and Flinders Street stations, all civil works for these two loops are now under construction. This brings within sight the first operating phase of the project and the realisation of the loop concept as an integral part of the suburban rail system.

The concrete structure for Museum station is taking shape as the open cut excavation progresses from the Swanston Street to the Elizabeth Street end. This incorporates a concourse with escalator inclines leading to island platforms on two levels, the lower serving the Northern and Burnley lines loops and the upper the City Circle/Clifton Hill lines and Caulfield/Sandringham lines loops. Booking halls will be offset from the concourse and incorporated in the basement of re-development on La Trobe Street frontages.

Mining methods are being employed for the excavation of Parliament station platforms which are in a region of firm rock, the lower platform being approximately 37 metres below the surface. Each platform is being formed by widening of the circular track tunnel over the length of the platform, the finished cross section being elliptical in shape. This widening allows for construction of platforms which are in pairs on two levels conforming to the configuration of the track tunnels. The upper and lower pair are separated by a layer of existing rock and both pairs are separated laterally by a wall of rock through which openings will be provided to allow passage between platforms at the same level. Booking halls just below street level are in the course of construction at the north and south ends with escalator inclines leading to both levels of platforms.

Construction of Flagstaff station differs from the methods adopted both at Museum and Parliament. While a monolithic concrete structure similar to that at Museum is required because of incompetent rock, the station site is not suitable for open cut construction. The construction procedure evolved is unusual. The concrete structure incorporating station facilities takes the form of arch-roofed two level concrete boxes. Two sloping access tunnels (adits) have been driven, one to the upper level box and one to the lower level. From these adits drifts are being excavated east and west of the centre of the station to form each corner of the boxes. Raise-boring equipment is used to drill holes which are filled with concrete to form vertical columns between the upper and lower drifts. Concrete beams, constructed in the upper and lower drifts and separated by the concrete columns in the bored holes, will form the basic structure to support each roof arch and the ground above it while the space below is excavated for compartments for trains and platforms.

Under street tunnel construction for the underground portion of the loop tracks which commenced at the Flinders Street boundary of the Jolimont railway yards advanced in 1976 in a northerly direction under Spring Street to the commencement of the curve under the Commonwealth Centre at La Trobe Street.

Tunnels are being excavated partly by a tunnel boring machine and partly by conventional mining methods using a mechanical excavator and explosives as required to remove the harder layers of rock. Considerable progress has also been made at the Spencer Street end of La Trobe Street where tunnelling commenced at the Adderley Street boundary of the railway yards advancing in an easterly direction towards William Street. The tunnels under Spring Street and La Trobe Street are circular or horseshoe in shape in cross section. Tunnels under railway sidings and running tracks both at the Jolimont and Spencer Street ends are rectangular in cross section constructed in reinforced concrete in open cut. Running tracks and sidings which could not be slewed, or temporarily taken up, were bridged during excavation and construction of the reinforced concrete box section tunnels and the ramps leading to the surface where the underground tracks will junction with the existing tracks.

This work which in general is on railway property, is being carried out by the Victorian Railways Board. It is nearing completion in the area between Flinders Street and Richmond stations and is well advanced between Spencer Street and North Melbourne stations.

The construction of the overpass adjacent to Flinders Street has necessitated the rearrangement of the traffic flow in the vicinity of Queens Bridge and the relocation of a number of services. These preliminary works are nearing completion thus preparing the area for the main contract to proceed.

Concurrently with increasing activity in civil works, preparation of designs and contract documents for electrical and mechanical equipment, electric power supply and distribution, and signalling and communications, has been advanced to a stage where major contracts are currently being awarded in these areas, as for civil works.

Finance

In 1974-75 Victorian Railways passenger income rose by \$2.8m compared with 1973-74. The main factor in this increase was a \$1.9m increase in passenger revenue. On the freight side revenue increased by \$9.9m compared with 1973-74.

Operational expenses

An increase of \$54.9m in expenditure was due in large measure to the effects of wage increases flowing over from the previous year or granted during 1974-75—the overall increase in wages amounted to \$45.8m. 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 factor makes the railways extremely vulnerable to the financial effects of inflationary 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 \$512.9m at 30 June 1975. After deducting the value of securities purchased from the National Debt Sinking Fund and cancelled (\$87.7m), the net liability on current loans outstanding at that date was \$425.2m.

The total liability of the State for railways construction, etc., at 30 June 1975 (which includes the liability referred to in the previous paragraph) was \$574.9m. Deduction of securities purchased from the National Debt Sinking Fund and cancelled (\$119.6m) together with cash at credit in the Fund (\$0.5m) reduced the amount outstanding at the end of the year to a net liability of \$454.8m.

The *Railways (Funds) Act 1961* provided that interest and other charges on moneys 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 moneys borrowed for the purposes of the *Railways Act 1958* on and after 1 July 1960. The total annual interest payable on the liability of \$454.8m at 30 June 1975 amounted to \$27.0m at an average rate of 5.947 per cent. Of this amount, the Victorian Railways are liable for \$13.3m. In addition, the State is required to pay a contribution of \$5.4m at a rate of 4.5 per cent on cancelled securities.

Additional funds, which amounted to \$79.6m at 30 June 1975, 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.)

Further reference, 1976

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 660.

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 1971 to 1975 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		
1971	386,769	427	19	387,215
1972	395,032	484	19	395,535
1973	403,158	561	19	403,738
1974	416,357	663	19	417,039
1975	442,723	1,030	19	443,772

(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 1975 the capital cost of rolling stock, after being written down in accordance with the *Railways (Finances Adjustment) Act* 1936, and allowing for depreciation was : \$122.5m broad gauge, \$10,661 narrow gauge, and \$4.5m uniform gauge.

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 five financial years 1970-71 to 1974-75 are shown in the following table :

VICTORIA—RAILWAYS STAFF : NUMBERS, SALARIES, ETC.

Period	Average number of employees			Salaries, wages, and travelling expenses
	Salaried staff	Wages staff	Total	
				\$'000
1970-71	5,369	20,811	26,180	101,825
1971-72	5,383	20,587	25,970	108,272
1972-73	5,303	20,495	25,798	125,025
1973-74	5,378	19,865	25,243	153,910
1974-75	5,520	20,454	25,974	199,729

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 1971 to 1975 :

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

Rolling stock in service	1971	1972	1973	1974	1975
Locomotives—					
Steam	38	37	26	22	19
Electric	35	35	35	35	35
Diesel electric	246	249	249	249	249
Other (a)	95	95	92	92	92
Total	414	416	402	398	395
Passenger coaches—					
Electric suburban	1,090	1,090	1,084	1,079	1,120
Other (b)	616	597	584	576	556
Total	1,706	1,687	1,668	1,655	1,676
Goods stock (c)	20,000	20,264	19,831	19,438	19,223
Service stock	1,617	1,602	1,588	1,594	1,612

(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 1972 to 1976 is shown in the following table. It should be noted that the Victorian Railways operate certain services in New South Wales. At 30 June 1975 the total length of these services was 326.6 route kilometres. This distance is included in the single track broad gauge section of the following table.

**VICTORIA—RAILWAYS ROUTE DISTANCE AT 30 JUNE (EXCLUDING
ROAD MOTOR SERVICES)
(route distance)**

Lines open for traffic	1972	1973	1974	1975	1976
Single track					
—Broad gauge (a)	5,850	5,829	5,816	5,789	5,784
—Narrow gauge	13	13	13	13	14
Double track					
—Broad gauge (a)	707	710	719	720	719
Other multi-track—Broad gauge (a)	130	135	136	136	137
Total route distance	6,700	6,687	6,684	6,658	6,654

(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 1970–71 to 1974–75 is shown in the following table :

VICTORIA—RAILWAYS TRAFFIC (EXCLUDING ROAD MOTOR SERVICES)

Traffic	1970–71	1971–72	1972–73	1973–74	1974–75
Traffic train kilometres—Country	'000 7,673	7,662	7,747	7,803	7,815
Suburban	'000 13,382	13,337	13,290	13,584	14,291
Goods	'000 12,468	12,176	12,020	11,958	11,769
Total	'000 33,523	33,175	33,057	33,345	33,876
Passenger journeys—Country	'000 4,080	3,954	4,180	4,507	4,963
Suburban	'000 138,131	133,840	108,970	110,141	112,757
Total	'000 142,211	137,794	113,150	114,648	117,720
Goods and livestock carried	'000 tonnes 12,690	11,795	11,475	11,370	11,057

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 1972-73 to 1974-75 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		
	1972-73	1973-74	1974-75	1972-73	1973-74	1974-75
Grain—						
Barley	198	237	355	50,676	66,003	105,477
Wheat	1,595	1,431	2,021	505,213	453,345	634,888
Other	189	141	135	46,002	34,812	30,115
Flour	123	134	145	28,850	30,767	30,411
Stockfood and fodder	147	84	84	50,492	22,551	21,520
Fruit—						
Fresh	125	124	108	49,493	47,791	41,095
Dried	85	35	48	46,690	18,421	26,228
Beverages	183	182	188	44,275	43,667	46,139
Solid fuels	1,112	1,036	986	194,488	184,036	178,103
Cement	923	918	852	102,501	110,186	101,454
Mining and quarry products	273	376	334	70,368	103,702	96,605
Dairy produce	77	51	35	15,782	11,727	8,473
Milk, condensed, powdered, etc.	78	119	85	14,820	22,380	17,735
Tinplate	131	106	51	41,958	32,993	15,292
Iron, steel, and metals, unfabricated	723	759	629	224,062	204,070	163,663
Manures	868	908	470	219,871	226,580	124,277
Motor cars and accessories	296	298	267	94,428	89,295	75,248
Petroleum products	375	423	427	100,213	114,262	123,381
Paper products	229	236	226	59,359	64,101	64,435
Pipes	72	114	110	18,020	30,639	27,978
Timber	297	276	242	95,553	87,696	76,997
Wool	151	134	129	34,249	30,611	30,698
All other goods	2,967	3,036	2,875	980,526	1,032,760	976,962
Total goods	11,217	11,158	10,802	3,087,889	3,062,395	3,017,174
Total livestock	258	212	255	76,692	63,769	74,265
Grand total goods and livestock	11,475	11,370	11,057	3,164,581	3,126,164	3,091,439

Railways revenue and expenditure

Revenue for 1974-75 increased by \$14,360,000 compared with 1973-74. Total working expenses increased by \$54,873,000 as compared with the previous year.

VICTORIA—RAILWAYS REVENUE AND EXPENDITURE

Particulars	1970-71	1971-72	1972-73	1973-74	1974-75
	\$'000	\$'000	\$'000	\$'000	\$'000
REVENUE					
Passenger, etc., business—					
Passenger fares	31,859	34,806	35,971	38,343	40,283
Parcels, mails, etc.	4,097	4,322	4,515	4,885	5,736
Other	112	101	91	154	131
Goods, etc., business—					
Goods	62,829	62,370	59,937	60,057	69,653
Livestock	1,221	1,566	1,364	1,179	1,631
Miscellaneous	550	619	732	743	637

VICTORIA—RAILWAYS REVENUE AND EXPENDITURE—*continued*

Particulars	1970-71	1971-72	1972-73	1973-74	1974-75
Miscellaneous—					
Dining car and refreshment services	3,583	3,592	3,808	4,369	5,418
Rentals	2,468	2,655	2,710	2,904	3,100
Bookstalls	1,085	1,085	1,139	1,263	1,434
Advertising	251	259	273	300	335
Melbourne Underground Rail Loop Authority special levy	447	952	899	895	922
Other	257	464	491	635	807
Total revenue	108,759	112,791	111,930	115,727	130,087
EXPENDITURE	\$'000	\$'000	\$'000	\$'000	\$'000
Working expenses—					
Way and works	26,153	27,909	31,605	36,278	45,517
Rolling stock	33,469	35,429	39,330	47,444	61,234
Traffic	44,107	47,314	54,194	67,175	87,220
Electrical engineering branch	4,681	4,827	5,165	6,112	7,512
Stores branch	1,838	1,972	2,201	2,872	3,642
Pensions	6,176	6,533	7,308	8,325	9,695
Service grants and retiring gratuities	1,463	1,519	1,511	1,615	1,605
Contributions to Railway Renewals and Replacement Fund	400	400	400	400	400
Contributions to Railway Accident and Fire Insurance Fund	1,497	1,936	1,807	2,347	2,626
Pay-roll tax	2,325	3,400	4,006	6,067	8,957
Long service leave	2,551	2,355	2,621	3,036	3,786
Appropriation to Melbourne Underground Rail Loop Authority construction	447	952	899	895	922
Other (a) (b)	4,108	4,355	5,280	6,340	10,663
Total working expenses	129,215	138,902	156,327	188,906	243,779
Net revenue	-20,456	-26,109	-44,397	-73,180	-113,692
Debt charges—					
Interest charges and expenses (b)	8,081	9,077	10,021	10,893	12,043
Exchange on interest payments and redemption	91	81	66	44	55
Contribution to National Debt Sinking Fund	365	393	419	455	497
Net result for year	-28,993	-35,660	-54,903	-84,572	-126,287
Proportion of working expenses to revenue	per cent	per cent	per cent	per cent	per cent
	118.8	123.1	139.7	163.2	187.4

(a) Including interest paid to the Commonwealth Government under the Railways Standardisation Agreement, namely, in 1970-71, \$200,408; 1971-72, \$195,510; 1972-73, \$190,613; 1973-74, \$185,714; and 1974-75, \$180,816.

(b) Including loan conversion expenses.

The gross revenue and working expenses per average kilometre of railway worked for each of the years 1970-71 to 1974-75 are shown in the following table :

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

Particulars	1970-71	1971-72	1972-73	1973-74	1974-75
Average number of kilometres open for traffic	6,705	6,700	6,687	6,685	6,658
Gross revenue per average kilometre open	\$ 16,621	16,824	16,727	17,300	19,525
Working expenses per average kilometre open	\$ 19,247	20,705	23,347	28,212	36,556

Road motor services

The following table shows, for each of the years 1970-71 to 1974-75, 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	1970-71	1971-72	1972-73	1973-74	1974-75
Bus kilometres	354,480	353,362	360,064	351,494	372,849
Passenger journeys	902,700	857,406	759,209	760,684	792,952
Gross revenue	\$ 64,010	71,384	73,832	76,047	89,302
Working expenses	\$ 161,068	178,072	207,348	307,021	385,838
Capital expenditure at end of year (less depreciation written off)	\$ 19,292	19,252	19,212	19,172	19,132

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 cost in full.

Tramway and omnibus services*Melbourne and Metropolitan Tramways Board*

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 metropolitan area, and a fleet of buses operating on routes permitted by the Transport Regulation Board.

VICTORIA—MELBOURNE AND METROPOLITAN TRAMWAYS BOARD :
TRAMWAYS

Period	Track open at end of year		Tram kilometres	Passenger journeys	Operating receipts	Operating expenses	At end of year	
	Double	Single					Rolling stock	Persons employed ^(a)
	kilometres	kilometres	'000	'000	\$'000	\$'000	number	number
1970-71	217	3	23,978	109,779	16,576	18,881	696	4,323
1971-72	217	3	23,759	101,962	19,026	20,937	696	4,331
1972-73	217	4	24,443	104,719	19,852	23,938	(b)696	4,283
1973-74	217	4	23,873	109,368	20,552	29,370	(b)697	4,193
1974-75	217	4	23,840	111,077	20,916	37,176	(b)713	4,575

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

(b) Includes 42 in reserve or idle.

As the population increases and the use of private motor vehicles extends, passengers using public transport become fewer and this causes financial strain. Notwithstanding this, the Board has a policy of expansion and in 1961 acquired a privately owned network of buses in the rapidly developing suburbs of Box Hill, Nunawading, Ringwood, Mitcham, Doncaster, Bulleen, and Warrandyte, and extended some other services.

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

Period	Route kilometres	Bus kilometres	Passenger journeys	Operating receipts	Operating expenses	At end of year	
						Rolling stock	Persons employed (a)
		'000	'000	\$'000	\$'000	number	number
1970-71	224	11,294	22,753	3,710	4,991	273	4,323
1971-72	230	11,190	20,471	4,067	5,396	272	4,331
1972-73	233	11,882	20,993	4,308	6,393	(b)272	4,283
1973-74	237	11,918	22,168	4,486	7,939	(b)272	4,193
1974-75	242	12,027	22,658	4,555	9,941	(b)263	4,575

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

(b) Includes 17 in reserve or idle.

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

Particulars	1970-71	1971-72	1972-73	1973-74	1974-75
REVENUE					
Traffic receipts	20,107	22,879	23,909	24,751	25,168
Miscellaneous operating receipts	179	214	251	287	303
Non-operating receipts	231	259	511	293	325
Total revenue	20,517	23,352	24,671	25,331	25,796
EXPENDITURE					
Traffic operation costs	11,070	12,143	14,332	17,587	22,729
Maintenance—					
Permanent way	988	1,236	1,298	1,331	1,603
Tramcars	2,850	2,948	3,499	4,118	5,096
Buses	1,078	1,196	1,416	1,710	2,216
Electrical equipment of lines and sub-stations	675	744	842	945	1,237
Buildings and grounds	330	324	403	515	621
Electric traction energy	812	802	804	856	889
Fuel oil for buses	218	249	275	329	374
Bus licence and road tax fees	22	21	22	22	9
General administration and stores department costs	1,563	1,737	1,885	2,355	3,019
Pay-roll tax	427	625	771	1,174	1,721
Workers compensation payments	524	543	649	1,382	1,822
Depreciation	937	922	920	918	909
Non-operating expenses	92	100	106	110	147
Provisions—					
Long service leave	350	366	471	619	690
Retiring gratuities	532	611	732	1,077	1,262
Accrued sick leave	61	70	59	76	146
Public risk insurance	288	297	325	618	827
Interest on loans	1,448	1,498	1,630	1,678	1,947
Total expenditure	24,265	26,433	30,438	37,419	47,264
Net surplus (+) or deficit (-)	-3,748	-3,081	-5,767	-12,088	-21,468
Capital outlay	712	856	945	992	6,059
Loan indebtedness at 30 June	26,010	26,822	27,620	28,457	31,935

The following tables show an analysis of operating receipts, operating expenses, etc., for each of the years 1970-71 to 1974-75 :

VICTORIA—MELBOURNE AND METROPOLITAN TRAMWAYS BOARD :
TRAMWAYS : OPERATING RECEIPTS, OPERATING EXPENSES, ETC.,
PER KILOMETRE, 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
1970-71	16,576	69.13	15.10	18,881	78.74	113.91
1971-72	19,026	80.08	18.66	20,937	88.12	110.04
1972-73	19,851	81.21	18.96	23,938	97.93	120.59
1973-74	20,552	86.09	18.79	29,370	123.03	142.91
1974-75	20,916	87.74	18.83	37,176	155.94	177.73

VICTORIA—MELBOURNE AND METROPOLITAN TRAMWAYS BOARD :
MOTOR OMNIBUS SYSTEMS : OPERATING RECEIPTS, OPERATING
EXPENSES, ETC., PER KILOMETRE, 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
1970-71	3,710	32.85	16.31	4,991	44.19	134.53
1971-72	4,067	36.34	19.87	5,396	48.22	132.68
1972-73	4,308	36.26	20.52	6,393	53.80	148.40
1973-74	4,486	37.64	20.24	7,939	66.61	176.97
1974-75	4,555	37.87	20.10	9,941	82.66	218.24

Private motor omnibus services

The following table shows particulars of the operations of Victorian private omnibus services. In addition, details of route operations, charter, school, and other special services are included. In the year 1974-75 route operations accounted for 51 per cent of total distance travelled, while charter, school, and other special services accounted for 18, 30, and 1 per cent, respectively.

VICTORIA—PRIVATE MOTOR OMNIBUS SERVICES

Particulars	1970-71	1971-72	1972-73	1973-74	1974-75	
Number of vehicles	2,875	3,030	3,171	3,118	3,115	
Distance—Petrol vehicles	'000 kilometres	53,076	53,459	51,231	50,062	46,333
Diesel vehicles	'000 kilometres	39,926	43,200	47,759	51,204	50,076
Total distance	'000 kilometres	93,002	96,659	98,990	101,266	96,408
Revenue	\$'000	\$'000	\$'000	\$'000	\$'000	
Expenditure—	26,330	28,628	32,074	35,916	44,379	
Drivers' wages	9,104	10,236	11,368	13,753	17,334	
Repairs and maintenance	3,149	3,477	3,845	4,250	5,486	
Depreciation	2,239	2,364	2,464	2,557	2,647	
Other	8,674	9,741	11,008	12,360	15,410	
Total expenditure	23,166	25,818	28,685	32,920	40,877	

VICTORIA—PRIVATE MOTOR OMNIBUS SERVICES—*continued*

Particulars	1970-71	1971-72	1972-73	1973-74	1974-75
Assets (a)—					
Motor vehicles	6,258	7,221	7,457	7,261	7,454
Other assets	10,264	11,024	12,333	13,559	14,755
Total assets	16,522	18,245	19,790	20,820	22,209
Liabilities (a)	7,042	8,177	9,612	10,834	11,525

(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, both being replaced by privately operated bus services. Parts of the Ballarat and Bendigo systems were re-opened during 1972 as tourist attractions operating during weekends and holidays.

Further reference, 1976; Melbourne tramways 1930-1961, 1963

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 MARCH 1976

Type of registration or licence	Annual rate
REGISTRATION	
Motor cycle (without trailer, etc.)	\$5.55 plus \$0.50 surcharge (b)
Motor cycle (with trailer, etc., attached)	\$8.25 plus \$0.50 surcharge (b)
Motor car (private use)	\$0.80 for each power-weight unit (a) plus \$0.50 surcharge (b)
Motor car (private and business use)	\$1.00 for each power-weight unit (a) plus \$1.00 surcharge (b)
Trailer (attached to motor car)	From \$3.40 each, according to the unladen weight and use
Motor car (commercial passenger vehicle) operating on a stage omnibus service	\$2.00 plus \$1.00 surcharge (b)
Motor car (commercial passenger vehicle) operating on a temporary school service licence	\$20.00 plus \$1.00 surcharge (b)
Motor car (used for carrying passengers or goods for hire or in the course of trade)	From \$1.50 to \$2.15 for each power-weight unit (a) according to the unladen weight and the type of tyres plus \$1.00 surcharge (b)
Motor car (constructed for the carriage of goods, including station wagons) owned by primary producer and used solely in connection with his business	From \$0.40 to \$1.75 for each power-weight unit (a) according to the number of wheels and the type of tyres (when more than one motor car is so owned, the rate shall apply to one motor car only) plus \$0.50 surcharge (b)
Mobile crane, self-propelled (used otherwise than for lifting and towing vehicles)	\$36.60 (unless a lower fee would otherwise have been payable) plus \$1.00 surcharge (b)
Recreation vehicle	\$3.00 for vehicle with not more than 3 wheels, in any other case \$10.00

VICTORIA—REGISTRATION AND LICENCE RATES AT 1 MARCH 1976—*continued*

Type of registration or licence	Annual rate
LICENCE	
Driver's or rider's licence	\$18.00 issued for a three year period (An appointment fee of \$5.00 and testing fee of \$10.00 is payable by all applicants for new licences)
Learner's permit	\$2.00 for twelve months and \$2.00 for a three month extension, if required. Appointment and testing fees as above, are also payable
Instructor's licence	\$40.00 issued for a three year period

(a) 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.

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

NOTE. The minimum annual fee for the registration of any motor vehicle other than a motor cycle is \$16.00.

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

Type of licence	1971	1972	1973	1974	1975
Drivers'	1,524,104	1,585,095	1,660,454	1,801,203	1,829,298
Riders'	42,292	49,023	51,354	55,707	56,576
Total	1,566,396	1,634,118	1,711,808	1,856,910	1,885,874

The following table shows the number of motor vehicles on the register by type at the end of 1962 and 1971 (motor vehicle census years), and at 31 December 1972 to 1975. Particulars of Commonwealth 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)	At 31 December—			
			1972	1973	1974	1975
			'000	'000	'000	'000
Motor cars	610,974	929,477	987.1	1,054.9	1,123.0	1,194.9
Station wagons	69,528	201,884	207.3	213.0	219.8	233.0
Light commercial type vehicles—						
Open	94,470	89,764	91.0	93.4	97.7	104.1
Closed	31,851	46,539	49.7	53.3	57.7	61.8
Trucks—						
Rigid	76,591	79,386	82.1	87.2	92.1	97.1
Articulated		9,417	9.7	10.5	11.1	12.4
Other truck type vehicles	2,890	3,520	3.9	4.3	4.7	5.3
Buses	3,409	5,129	5.6	6.0	6.6	7.1
Motor cycles	15,802	28,160	36.7	44.7	47.3	49.4
Total	905,515	1,393,276	1,473.1	1,567.4	1,660.0	1,765.1

(a) A revised classification of motor vehicles was adopted for the census of motor vehicles at 30 September 1971. The principal differences between the new classification and that at 31 December 1962 are:

- (i) "Light commercial type vehicles" include utilities, panel vans, and trucks with carrying capacity under one tonne, and ambulances and hearses.
- (ii) "Rigid trucks" include utilities and panel vans with a carrying capacity of one tonne 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". Direct comparisons, therefore, between the two censuses can only be made for the categories motor cars, station wagons, and motor cycles. However, for comparative purposes utilities registered at 31 December 1962 have been included in the classification "light commercial vehicles—open" and panel vans and ambulances and hearses, registered at the same date, in the classification "light commercial type vehicles—closed". 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 Commonwealth Government-owned vehicles (other than those of the defence services):

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

Make	Motor cars			Station wagons		
	1973	1974	1975	1973	1974	1975
Alfa Romeo	132	378	642	..	..	..
B.M.W.	252	385	408	..	..	..
Chrysler (a)	9,156	7,892	8,372	1,319	1,823	1,677
Datsun	9,415	10,908	13,542	316	323	690
Fiat	452	783	631	..	..	..
Ford	23,846	25,803	24,015	4,519	5,121	5,300
Holden (b)	28,002	23,163	25,329	6,599	5,031	5,498
Honda	1,312	2,942	2,876	..	..	..
Jaguar	209	335	398	..	..	..
Leyland (c)	5,943	4,742	1,666	1	..	..
Mazda	6,967	9,170	6,782	728	1,375	1,509
Mercedes Benz	758	1,070	798	..	..	..
Peugeot	511	687	895	..	2	..
Renault	1,705	1,630	1,579	197	358	415
Rover	153	152	192	75	132	..
Saab	79	197	169	..	..	..
Statesman	1,268	1,393	1,355	..	..	..
Subaru	225	324	334	..	67	233
Toyota	9,718	12,180	13,370	602	990	1,711
Triumph	544	519	543	..	..	..
Volkswagen	1,636	1,585	1,896	542	228	398
Volvo	1,138	1,422	1,638	106	294	399
Other	455	766	743	39	73	213
Total	103,876	108,426	108,173	15,043	15,817	18,043

(a) Dodge, Hillman, and Mitsubishi are included with Chrysler.

(b) Excludes Statesman, which is shown separately.

(c) From 1 January 1973, Austin, Morris, M.G., and B.M.C. are included with Leyland.

**VICTORIA—REGISTRATIONS OF NEW MOTOR VEHICLES OTHER THAN
MOTOR CARS, STATION WAGONS, AND MOTOR CYCLES
ACCORDING TO MAKE**

(Includes Commonwealth Government-owned vehicles other than those
of the defence services)

Make	1974 (a)				1975 (a)			
	Light commercial type vehicles (a)		Other (a)	Total	Light commercial type vehicles (a)		Other (a)	Total
	Open	Closed (b)			Open	Closed (b)		
Bedford	..	r2	953	r955	..	1	1,368	1,369
Chrysler (c)	1,211	9	758	1,978	1,038	4	817	1,859
Daihatsu	r1	186	241	r428	25	53	104	182
Datsun	516	161	307	984	458	263	467	1,188
Ford	1,930	2,282	916	5,128	1,894	2,892	862	5,648
Holden	3,390	2,697	11	6,098	3,080	2,843	4	5,927
International	..	..	1,254	1,254	..	1	1,247	1,248
Kenworth	..	..	115	115	..	..	121	121
Land Rover	224	6	102	332	212	4	98	314
Leyland	179	307	130	616	171	184	227	582
Mazda	272	482	332	1,086	396	640	231	1,267
Mercedes Benz	..	..	194	194	..	..	186	186
Suzuki	131	24	..	155	310	193	..	503

VICTORIA—REGISTRATIONS OF NEW MOTOR VEHICLES OTHER THAN
MOTOR CARS, STATION WAGONS, AND MOTOR CYCLES
ACCORDING TO MAKE—*continued*

(Includes Commonwealth Government-owned vehicles other than those
of the defence services)

Make	1974 (a)			1975 (a)				
	Light commercial type vehicles (a)		Other (a)	Total	Light commercial type vehicles (a)		Other (a)	Total
	Open	Closed (b)			Open	Closed (b)		
Toyota	..	335	1,796	2,131	..	279	2,906	3,185
Volkswagen	44	1,092	201	1,337	42	1,026	528	1,596
Volvo	..	..	117	117	..	..	138	138
Other	r127	r25	r254	r406	199	16	384	599
Total	8,025	7,608	7,681	23,314	7,825	8,399	9,688	25,912

(a) From 1 January 1972 a revised classification of motor vehicles has been adopted and used also as a basis for a census of motor vehicles at 30 September 1971. For further information see notes to previous table on page 664 dealing with vehicles on the register.

(b) Includes ambulances and hearses.

(c) Chrysler includes all Dodge, Commer, Hillman, and Mitsubishi vehicles.

Transport Regulation Board

General

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 of 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 Co-ordinator of Transport was appointed 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.

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

Particulars	1970-71	1971-72	1972-73	1973-74	1974-75
Licences issued "as of right"—					
40 kilometres of Melbourne	15,622	15,901	16,489	18,113	20,877
40 kilometres of Ballarat, Bendigo, or Geelong	1,546	1,577	1,667	1,869	2,176
40 kilometres of owner's place of business	6,779	6,787	7,004	7,683	9,159
Primary producers (vehicles over 2 tonnes load capacity)	17,271	17,477	17,534	17,363	17,132
Butter, milk, and cheese factories	388	355	347	420	344
80 kilometres of owner's place of business (vehicles up to 4 tonnes load capacity) (a)	56,215	56,612	58,658	47,995	34,155
State-wide rights for carriage of own goods (vehicles not exceeding 500 kilograms)	..	..	..	10,358	19,890
Third Schedule (basically perishable) commodities	13,111	13,294	13,461	12,108	10,189
Approved decentralised secondary industries	1,058	1,128	1,192	1,430	1,630
80 kilometres of Melbourne	..	..	..	318	481
80 kilometres of Portland	..	..	..	10	36
Bulk tankers—petroleum products	..	..	..	185	466

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

Particulars	1970-71	1971-72	1972-73	1973-74	1974-75
"Discretionary" licences—					
Passenger—					
Omnibuses	3,320	3,391	3,450	r3,537	3,555
Taxis and hire-cars	3,493	3,486	3,464	3,531	3,572
Omnibus temporary/special	156	163	177	r171	183
Goods	14,986	14,699	14,756	12,451	10,862
Goods—passenger	30	26	25	22	19
Total licences issued	133,975	134,896	138,224	r137,564	134,726
Financial transactions—	\$'000	\$'000	\$'000	\$'000	\$'000
Revenue	2,742	2,946	3,125	4,510	6,296
Expenditure (including payments to local authorities for comfort stations and bus shelters)	2,871	2,949	3,231	3,900	5,218
Levy to Transport Fund	..	..	..	..	356
Balance	-129	-3	-106	610	722
Collections—	\$'000	\$'000	\$'000	\$'000	\$'000
Road maintenance contributions collected and transferred direct to Country Roads Board	8,905	9,138	9,745	10,362	10,039
Motor boat registration fees collected and paid to Tourist Fund	282	305	333	397	580
Log book fees	11	10	10	11	10

(a) Vehicles up to 6 tonnes load capacity after February 1974.

Licences, permits, and drivers' certificates.

During the year ended 30 June 1975 the Board issued 108,941 goods permits for temporary variation of the operations of a vehicle. There were 17 new tow truck licences issued and at 30 June 1975 there were 720 licences on issue. At that date 23,403 drivers' certificates were on issue: 5,848 bus, 15,109 taxi, 674 temporary, and 1,772 tow-truck.

Buses

Commercial buses at 30 June 1975 totalled: metropolitan 1,426, urban 139 (Ballarat 37, Bendigo 26, and Geelong 76), country 1,900, touring omnibus 90, and temporary special licence, 183.

Taxis and hire-cars

Taxis and hire-cars at 30 June 1975 totalled: metropolitan 2,918, urban 201 (Ballarat 50, Bendigo 37, and Geelong 114), and country 453.

Passenger fares

At 1 July 1975 adult bus fares were 15c, 25c, 30c, and 32c, respectively, for the first four sections travelled, rising by 1c up to section 8 and thereafter by various amounts. Taxi fares at that date were 40c flagfall (including the first 105 metres) and 5c for each additional 210 metres.

Goods and passenger applications

For the year ended 30 June 1975, the Board heard 3 goods and 62 passenger applications at public hearings. The majority of the applications were determined and settled without the need for a public hearing and numbered 3,993 goods and 2,915 passenger cases.

Commercial goods transport

Following a recommendation of the Bland Report on Land Transport in Victoria, the Board has been pursuing a policy of simplifying transport regulation by the issue of licences or long-term permits, as opposed to the previous emphasis on single trip permits.

This is a phase of the overall recommendation that road and rail services should eventually operate in a competitive condition, subject to both modes, i.e., road and rail transport, meeting their proper costs.

This rationalisation process has been largely responsible for the fall in permits issued, from 164,119 in 1972-73 to 108,941 in 1974-75. This new policy gives positive benefits to both transport operators and the Board through reduced administrative procedures.

In July 1974, amendments expressing physical quantities in the *Commercial Goods Vehicles Act 1958* in metric terms, were implemented. Vehicle specifications are now in terms of tonnes, and road charges are calculated on the basis of kilometres travelled.

Motor boats

The Board is responsible for the registration of motor boats (under 20 metres in length) and for keeping records of ownership. On 1 January 1975, the *Motor Boating (Amendment) Act 1974* became operative. This introduced increases in registration fees, refunds for cancellation of registration, and new enforcement and safety provisions including "on the spot" fines, a compulsory observer in a boat towing skiers to be at least 15 years of age, and a maximum of three skiers to be towed at any one time.

Fees collected from motor boat registrations totalled \$579,647 for 1974-75. 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.

At 30 June 1975 there were 71,059 motor boats registered by the Board.

*Passenger services**Victorian Government subsidy on route buses*

The subsidy scheme became effective on 1 October 1974 and provides financial assistance to route bus operators in three areas:

- (1) Subsidy for operations;
- (2) low interest loans for bus purchase; and
- (3) reduction of Transport Regulation Board licence, and registration fees, to a nominal level (\$2 per annum).

This Victorian Government subsidy scheme for bus operators is the first of its kind to operate in Australia and has been largely responsible for increasing the number of new buses being brought into operation.

Taxi industry

As part of its programme to increase the efficiency of the taxi industry, the Board has instituted several new policies. On 1 October 1975, a second higher tariff for taxi services was introduced. This higher tariff operates between the hours of 9.00 p.m. and 6.00 a.m. Monday to Friday, from 1.00 p.m. Saturday until 6.00 a.m. Monday, and on public holidays and "out-of-area" hirings. The new rate represents a 20 per cent loading on normal rates. The Board has been studying a proposal for a scheme to amalgamate taxi depots and radio systems. It is believed that such an amalgamation would increase efficiency and the level of service within the industry. In order to maintain an adequate standard of vehicle, it is mandatory that a taxi be replaced after four years of service.

Because of significant increases in operating costs during 1974-75, the Board approved two increases in metropolitan taxi fares. These occurred in July 1974 and March 1975.

Road maintenance charges

The owners of commercial goods vehicles with a load capacity exceeding 4.1 tonnes are required to pay a tonne-kilometre charge as compensation for wear and tear caused to Victorian roads. The total amount collected (\$126m since 1956) is paid to the Country Roads Board Fund—Maintenance Account. An amount equal to 6 per cent of collections is recouped to help defray the collection costs (which currently amount to about 13 per cent of the amount collected).

The financial year 1974-75 witnessed a decline in the actual amount of road charges collected (\$10.362m in 1973-74, compared with \$10.038m in 1974-75). This decline is probably a result of the prevailing economic conditions. Vehicle operators have been subjected to marked increases in costs and decreases in transport demand. Moreover, some have suffered from credit restrictions and bad debts. The resultant slackening of transport activity has led to a decrease in road maintenance revenue.

Appointment of additional inspectors

During 1974-75, the Board appointed 10 additional transport inspectors to be stationed at various regional offices (two each at Wangaratta, Shepparton, Bendigo, Horsham, and Hamilton). The primary objective of these additional inspectors is to increase the supervision of the transport of goods between Melbourne and these centres.

A problem of growing proportions has been the operation of "pseudo-interstate" operators. These operators carry goods between Melbourne and the above centres, but via the State border. The result is a loss in revenue to the Victorian Railways (which would have handled many of the goods now carried by these operators). It is planned that these additional inspectors will be able to increase the level of policing of such activities.

Installation of computer

The Board is planning to install a computer. The computer will be an "on-line" system, which will process and record information now dealt with manually. Initially the computer will handle information concerned with motor boats, road charges, and commercial goods transport, and it will significantly improve administrative procedures in dealing with the public.

Further reference, 1976; Metropolitan Transportation Committee, 1974

West Gate Bridge Authority

The Authority is presently constructing the West Gate Bridge over the lower reaches of the Yarra River, Melbourne, and, under the terms of its franchise from the Victorian Government, will operate and maintain this bridge, together with its associated works, as a toll crossing.

Under the provisions of the *Lower Yarra Crossing Authority Act 1965*, the Authority finances the construction of this project by raising private loans from savings banks, life assurance offices, private superannuation funds, and other lenders, and such loans are subject to the prior approval of the Victorian Treasury and the Governor in Council.

The Act requires that the cost of the project is to be amortised within a period of not more than forty years from the date on which the bridge is opened to traffic and as soon as it is free of all encumbrances it is to be handed over to the Victorian Government.

Work has continued on the completion of the erection of the five central steel spans of the main bridge. By October 1976, the two flanking spans on the east side (17 steel box sections) had been erected and erection of the east cable support tower had commenced. On the west side, twelve steel box sections had been erected together with the west cable support tower, and the first set of temporary cables to assist in support of the main span over the Yarra River during erection had been installed.

Modification and strengthening of the steel box sections fabricated prior to the collapse of a span of the steel bridge on 15 October 1970 are now approximately 70 per cent complete. All new steel orthotropic deck panels have been fabricated and delivered to the site and fabrication of new plates for replacement boxes has also been completed.

The delays in completion of the project and construction now being carried out during a period of high inflation have resulted in the escalation of costs beyond the control of the Authority or the contractor, and in May 1976 the estimated project cost was \$135m plus holding charges.

The Authority has been very mindful of the provision of adequate feeder routes to the bridge, particularly on the eastern approaches. The Victorian Government has recently approved in principle the extension of the freeway (F9) easterly to link with Kingsway and St Kilda Road in South Melbourne and detailed planning of this work has commenced. When completed, this extension should ensure that the demands of traffic wanting to use the West Gate Bridge can be met in the medium term.

Further reference, 1976

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 Chief Secretary 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 every road accident reported. From 1960 to 1972 the information on these report forms was transcribed by the Australian Bureau of Statistics to punch cards for research and analysis purposes of the Authority. Accidents occurring in 1973 and 1974 were recorded by the Bureau on computer tape. Since the commencement of 1975 both the coding of reports and production of magnetic tapes has been conducted by the Authority.

The State Traffic Accident Record which shows all reported accidents by location and road user movements has been produced from 1968 to 1974, inclusive. Since 1974 the Authority has provided each quarter's data to highway authorities within two months of the end of that quarter. Accident field data and survey information form the basis of research for use by the Victorian Government, the Parliamentary Road Safety Committee, and the promotion work in road safety practices by the Authority. Another major function of the Authority is to set standards for the correct use of traffic control items and to approve applications by highway authorities for installation of defined devices. The Authority recommends to the Minister the application of amounts from the Traffic Authority Fund as subsidies for traffic control signals, school or pedestrian crossings, and any other works, signings, or markings calculated to improve road safety or traffic control.

The Authority reports to the Minister of Local Government on proposals by highway authorities to close streets. The Authority advises the Victorian Government on the establishment of speed limits and is the sole body responsible for the establishment or alteration of speed restriction zones. The start of the 1975 school year saw the introduction of the School Crossing Supervisor Subsidy scheme whereby municipal councils can receive subsidy payments for the employment of school crossing supervisors. In November 1974 the Authority began to implement a governmental directive that a complete system of intersection control be introduced throughout Victoria. The first phase of the four phase "Statcon" plan, namely, the creation of a 3,000 kilometre priority road network in the Melbourne metropolitan area, was more than 90 per cent complete by June 1975.

The communication of road accident prevention practices has been carried out through a wide range of promotional, advertising, and publicity activities, and the annual conduct of road accident counter measure seminars. Special campaigns have been concerned with the young drinking driver, elderly pedestrians, correct wearing of seat belts, motor cycle rider and passenger visibility, the use of child restraining devices, child safety, and country drivers.

Information campaigns have advised of new legislation, such as the introduction of the 60 mph and 100 km/h absolute speed limits, retrospective fitting of seat belts, prohibition of children under 8 years of age from travelling in the front seat of motor vehicles unless adequately restrained, and compulsory blood alcohol testing of victims over 15 years of age who are admitted to hospital. In 1974 the Authority produced the Victorian road code booklet in English and four other languages, in an effort to communicate in simple terms the principles of safe driving and acquaint drivers with the current road law. Since 1974, the "Before You Drive" question and answer booklet has been produced with the co-operation of the Victoria Police to aid candidates in obtaining learner driver permits.

Research into behavioral aspects of road safety measures began in 1975 and expanded in 1976 to include a study of driver training and alcohol counter-measure activities. The latter includes publicity and legislation evaluation and the statistical analysis of blood alcohol data from road accident victims entering hospitals.

Further reference, 1976

Motor Accidents Board

Historical background

The Motor Accidents Board of Victoria has been made responsible for setting up and administering the first "no fault" motor accident insurance scheme in Australia under new legislation which 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—"accidents" in the true sense of the word—that payment of some compensation is seen as a social liability paid for by the community.

The beginning of the Victorian Government's move for a "no fault" system of motor accident insurance was in the recommendations 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 February 1974.

The object of the legislation is to provide for a significant portion of the losses and expenses incurred by road accident victims, regardless of fault. Of prime importance in this legislation is that common law rights are preserved. The Act does enable prepayment of what have generally been included in "special damages" to those accident victims who elect to proceed at common law. The injured thus have no financial pressure from unpaid accounts or loss of wages as they did under the previous system where slightly less than 50 per cent of casualties received no benefits at all. The system is not confined to the third party; it includes all parties. A "no fault" insurance scheme does this by excluding any attempts to introduce degrees of fault, allocation of negligence, and similar concepts.

Benefits

Persons injured in motor vehicle accidents in Victoria which occur on or after 12 February 1974, are entitled to compensation from the Board. The main benefits are the payment of 80 per cent of income lost (after tax) for 104 weeks, subject to limits of either \$120 or \$200 per week, depending on whether the incapacity was before or after 15 April 1975. The Board may also make payment to people eligible for workers compensation benefits up to the difference between the workers compensation payment and the above amounts.

In most cases, the victims are reimbursed for the cost of all reasonable medical, ambulance, and hospital services provided in Victoria by reason of the injury within five years of the date of the accident. Most hospitals and doctors have made arrangements to submit their accounts direct to the Board. Victims are also paid 80 per cent of the reasonable costs of therapeutic and other relevant costs, including household help incurred within five years of the accident.

On death as a result of an accident, 80 per cent of reasonable funeral expenses and five eighths of the person's net income to a maximum benefit at the rate of either \$93.75 or \$156.25 per week, depending on whether death occurred prior to or on or after 15 April 1975, is paid to certain dependants for up to 104 weeks. Special provisions relate to guardians of children who are not cared for by the surviving spouse.

The persons entitled to benefits are any Victorian resident, any person injured by a "registered motor car" ("registered motor car" means a vehicle that is registered or is required to be registered in Victoria), and any person injured by an unidentified vehicle.

There are some exceptions to the new scheme. Thus, applications for the loss of income by injured persons will not be admitted in the following circumstances:

- (1) Where the net loss of income is less than \$50, or where the income loss arises from incapacity of two days or less;
- (2) where the person injured was driving a motor vehicle, under the influence of intoxicating liquor or a drug, and is subsequently convicted;
- (3) where the injured person was driving a motor vehicle without ever having held a driving licence;
- (4) where the injured person was in an uninsured motor vehicle owned by him;
- (5) where the injured person was using a motor vehicle in the course of committing a serious crime; or
- (6) where the injured person was in a motor car in a place other than a highway and taking part in a race or other competition or trial.

However, in the event of death, these exceptions do not apply to applications made by dependants.

No benefits whatsoever are payable in the case of injured train or tram passengers.

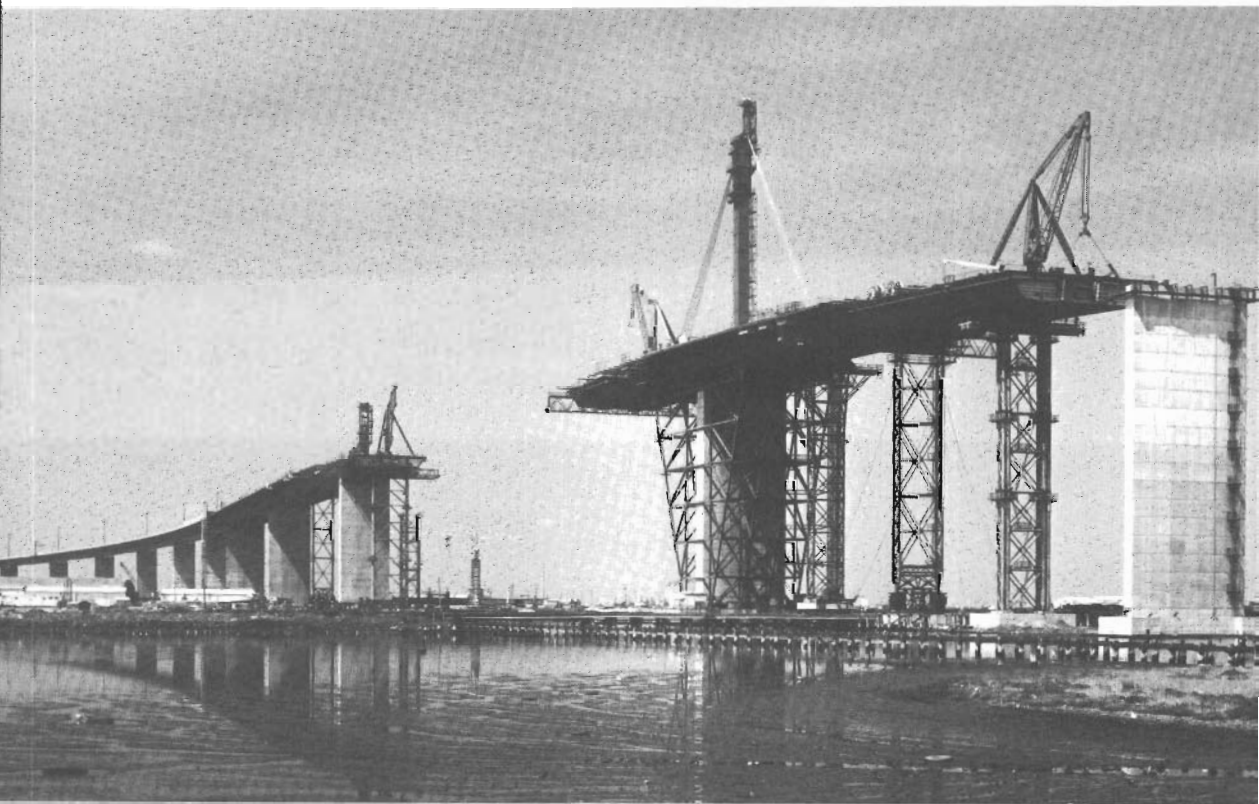


Nomad 22, a twin turbo-prop utility aircraft manufactured at the Government Aircraft Factories at Fishermens Bend. This aircraft, designed to operate economically on short range low density traffic systems, has capacity for twelve passengers, or alternatively 9 cubic metres freight volume.

Commonwealth Department of Transport—Air Transport Group

The West Gate Bridge in October 1976, showing progress on the erection of the central steel spans.

West Gate Bridge Authority





A section of the Melbourne Underground Rail Loop, showing the Caulfield/Sandringham lines loop under Wellington Parade.

Melbourne Underground Rail Loop Authority

Swanson Dock, the overseas container complex at the Port of Melbourne. More than \$100 m has been invested in this complex by the Melbourne Harbor Trust and lessee companies.

The Melbourne Harbor Trust Commissioners



Statistical data

The Board is in a unique position to collate information relating to persons who are killed or injured on the roads, particularly in regard to the nature of injuries suffered. It classifies the injuries reported which are described by the injured person in his application, by the treating doctor in his account, and by the hospital when the account is rendered. The injuries are coded in terms of the Eighth Revision of the International Classification of Diseases and can be related to the type of vehicle as stated on Motor Registration Branch records with respect to the registered number of the vehicle reported to the Board as being involved in the accident, to the status of the person concerned, i.e., whether he is a driver or passenger (and the particular seat occupied in the vehicle), pedestrian, etc., and to the type of accident, e.g., rear end collision, head on collision, etc., as reported on the application form. The type of accident is coded in accordance with the system in use by the Road Safety and Traffic Authority. However, the data is not absolutely complete in respect of all road accidents, since there will still be cases where persons are injured, probably mostly with minor injuries, who did not claim on the Board and there will be workers compensation cases where no claim on the Board is made. There will also be a number of cases where claims have not been notified by the time the statistics are produced. However, it is the first time in Australia that it has been possible for a statutory authority to bring information of this kind together and it should be of significant value in research into accidents involving injury and the extent of injuries suffered.

The Board has applied considerable knowledge and expenditure to the development of computer services. A computer system has been installed and total development will combine an on-line claims processing system with batch processing which already produces statistics, accounting information, and bulk monthly payments. Information will be available to professional and research groups, and special investigations in related fields can be assisted. Furthermore, the Board welcomes practical suggestions to further public educational and preventive measures, or measures which help to ensure optimum care of the injured.

It is also the Board's policy to promote and expedite optimum standards of rehabilitation. A rehabilitation officer has been appointed to consult with existing institutions and to advise on requirements for meeting new demands as they arise.

Any innovation such as this requires a process of trial and adaptation to highlight irregularities and difficulties. Nevertheless, this new system already removes delays and leaves the personal and social requirements of rehabilitation uncomplicated by financial and legal matters. It does this without abolishing the time tested civil law rights and thus makes the Motor Accidents Act a significant piece of social legislation. The community's interests are protected through the continuing co-operation of applicants, employers, hospitals, doctors, and those who supply para-medical services.

The public is concerned at the rapidly rising costs of owning a car, including insurance premiums. A good case can be made for some limitation of access to common law for cases of trivial and minor injury and related costs. If a lower limit of even \$2,000 were imposed, it is estimated that 80 per cent of claims would disappear, and costs, administrative and legal, would be reduced by one third. Consequential relief of pressure on the system would allow speedier processing of the more serious cases. The Victorian system does not abolish or limit civil law rights in any way. Indeed, in addition to its low cost and provision of prompt payment, it provides further specific rights to the victims of road accidents and their dependants.

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 minor severity of injury 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 those shown on page 271.

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
1965-66	14,110	933	20,277	442	29	635
1966-67	14,077	963	19,994	433	30	615
1967-68	15,113	868	21,932	458	26	664
1968-69	15,622	964	22,498	465	29	670
1969-70	17,030	1,065	24,502	498	31	716
1970-71	15,327	996	22,067	440	29	634
1971-72	14,988	884	21,090	424	25	596
1972-73	14,611	949	20,312	408	27	568
1973-74	13,452	877	18,634	372	24	515
1974-75	12,649	887	17,706	345	24	483

The table which follows provides a description of types of road users killed or injured in road traffic accidents occurring during the years 1972-73 to 1974-75 :

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

Description	1972-73		1973-74		1974-75	
	Killed	Injured	Killed	Injured	Killed	Injured
Drivers of motor vehicles	334	7,872	313	7,272	334	6,848
Motor cyclists	54	1,505	68	1,445	71	1,499
Passengers (any type)	305	7,764	253	7,179	275	6,829
Pedestrians	230	2,385	210	2,075	185	1,897
Pedal cyclists	26	757	30	640	21	604
Other	..	29	3	23	1	29
Total	949	20,312	877	18,634	887	17,706

Particulars of victims of road traffic accidents during the years 1972-73 to 1974-75 are shown according to age in the following table :

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

Age group (years)	1972-73		1973-74		1974-75	
	Killed	Injured	Killed	Injured	Killed	Injured
Under 5	39	726	35	675	28	621
5 and under 7	21	419	18	361	14	328
7 and under 17	81	2,368	77	2,147	75	1,967
17 and under 21	171	4,268	167	3,994	179	3,935
21 and under 30	194	4,695	181	4,422	199	4,155
30 and under 40	90	2,254	74	1,991	75	1,964
40 and under 50	91	1,828	80	1,664	84	1,515
50 and under 60	77	1,481	73	1,245	73	1,296
60 and over	155	1,402	169	1,390	159	1,413
Not stated	30	871	3	745	1	512
Total	949	20,312	877	18,634	887	17,706

Further reference, 1976 ; Traffic Commission, 1961-1971 ; Australian Road Safety Council, 1966

SEA TRANSPORT

Shipping

Introduction

During the 1830s settlers quickly found that, because of the absence 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 for many decades encouraged the regular use of ships to a greater extent than other coastal areas of the State, with cargoes from the western region including dairy products, livestock, and timber, and from the eastern region, fish. Servicing of the goldfields of Walhalla and the Tambo valley was also provided.

The Port of Melbourne was established in 1876 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 the 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 oil 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 the 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 1973-74 and 1974-75 :

VICTORIA—TASMANIA : SEAROAD SERVICE (a)								
Name of vessel	Passengers		Accompanied vehicles		Trade vehicles (b)		Mail vans	
	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75
<i>Empress of Australia</i>	110,462	114,663	33,351	30,171	115	59	319	305
<i>Bass Trader</i>	106	52	15	10	451	259	173	103
Other Australian Shipping Commission vessels	2	1	1	1	7,741	8,859	..	63
Total	110,570	114,716	33,367	30,182	8,307	9,177	492	471

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

(b) Motor vehicles available for sale.

Vessels entered and cleared

The number of vessels entering Victorian ports, the number cleared from those ports, and their total tonnage in each of the five years 1970-71 to 1974-75 were as follows :

VICTORIA—OVERSEAS AND INTERSTATE SHIPPING						
Particulars		1970-71	1971-72	1972-73	1973-74	1974-75
Entrances	number	3,920	4,052	3,680	3,530	3,496
	'000 net tonnes	24,440	26,087	22,419	r21,840	21,244
Clearances	number	3,925	4,058	3,670	3,510	3,508
	'000 net tonnes	24,465	26,046	22,338	r21,725	21,313

Nationality of shipping

The countries of registration of vessels which entered or were cleared at Victorian ports during the years 1973-74 and 1974-75 were as follows :

VICTORIA—NATIONALITY OF SHIPPING
(^{'000} net tonnes)

Vessels registered at ports in—	Vessels entered		Vessels cleared	
	1973-74r	1974-75	1973-74r	1974-75
Australia	8,810	8,030	8,778	8,060
Denmark	155	422	161	422
France	30	78	30	78
Germany, Federal Republic of	738	715	756	705
Greece	805	466	799	465
Hong Kong	59	61	59	69
India	142	86	137	89
Italy	367	258	383	255
Japan	1,379	1,314	1,370	1,321
Liberia	788	941	781	950
Nauru	79	111	82	111
Netherlands	729	591	742	585
Antilles (Netherlands)	332	234	332	234
New Zealand	201	136	201	137
Norway	781	799	779	785
Panama	670	918	629	952
Singapore	193	239	186	243
South Africa	57	62	57	62
Sweden	357	422	357	411
United Kingdom	4,006	3,744	3,993	3,756
United States of America	539	635	505	641
U.S.S.R.	207	367	205	368
Yugoslavia	105	51	89	68
Other	311	564	314	546
Total	21,840	21,244	21,725	21,313

Shipping entered at Victorian ports

Particulars of shipping which entered each principal port of Victoria are shown in the following table for the years 1973-74 and 1974-75 :

VICTORIA—VESSELS ENTERED AT EACH PORT

Class of vessel	Melbourne		Geelong		Portland		Western Port	
	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75
NUMBER								
Overseas—								
Direct	485	520	101	108	33	33	41	50
Other	1,001	1,049	170	175	51	26	79	139
Interstate	1,038	1,039	187	137	28	23	304	197
Total	2,524	2,608	458	420	112	82	424	386
NET TONNES (^{'000})								
Overseas—								
Direct	r2,662	3,010	r668	782	r246	226	r818	879
Other	r6,707	6,670	r1,578	1,409	r253	124	r264	752
Interstate	r3,340	3,379	r1,037	746	r242	179	r4,023	3,089
Total	r12,709	13,059	r3,283	2,936	r741	529	r5,105	4,720

Cargoes discharged and shipped

The following tables show the tonnage of overseas and interstate cargoes discharged and shipped in Victorian ports during 1973-74 and 1974-75, as

well as the tonnage of overseas cargoes discharged and shipped during the years 1972-73 to 1974-75 according to the countries of origin and consignment, and the nationalities of the vessels in which the cargoes were carried:

VICTORIA—CARGOES DISCHARGED AND SHIPPED AT EACH PORT
(’000)

Particulars	Melbourne		Geelong		Portland		Western Port	
	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75	1973-74	1974-75
DISCHARGED								
Interstate—								
Tonnes	1,504	1,740	569	510	11	24	448	350
Cubic metres	1,330	1,146	8	3	..	..	..	..
Overseas—								
Tonnes	2,354	1,579	1,960	1,451	266	244	116	82
Cubic metres	3,660	3,788	16	28	..	3	..	..
SHIPPED								
Interstate—								
Tonnes	1,067	1,280	785	833	..	..	8,688	7,899
Cubic metres	1,377	1,331	2	..	..	..	7	13
Overseas—								
Tonnes	1,687	1,818	1,566	1,732	99	121	1,515	1,573
Cubic metres	1,212	1,001	24	43	..	..	..	..

VICTORIA—OVERSEAS CARGOES DISCHARGED AND SHIPPED ACCORDING
TO GEOGRAPHIC TRADE AREAS

Geographic trade area of origin or consignment	1972-73		1973-74		1974-75	
	Discharged	Shipped	Discharged	Shipped	Discharged	Shipped
North America and Hawaiian Islands—						
Tonnes	519,192	266,921	621,147	225,422	500,608	356,370
Cubic metres	494,707	125,912	680,067	90,540	698,271	85,248
South America—						
Tonnes	1,411	251,603	2,669	125,016	1,093	56,326
Cubic metres	232	10,319	601	2,044	7,635	32,377
Europe (incl. U.S.S.R.)—						
Tonnes	284,292	582,930	401,680	437,475	244,479	547,457
Cubic metres	1,158,330	331,291	1,241,105	240,471	1,483,153	189,065
Africa—						
Tonnes	64,733	300,911	82,965	166,120	55,362	267,810
Cubic metres	26,183	61,267	44,112	53,041	29,887	48,244
Asia—						
Tonnes	2,671,844	3,110,735	2,878,897	2,948,391	1,907,864	3,100,128
Cubic metres	1,003,937	438,921	1,441,451	469,045	476,956	449,272
Papua New Guinea, New Zealand, and Pacific Islands—						
Tonnes	378,744	424,016	517,445	962,358	431,488	916,484
Cubic metres	238,990	373,315	268,320	380,731	122,099	238,255
Indian Ocean Islands and Antarctic area—						
Tonnes	145,600	12	190,750	1,160	214,504	222
Cubic metres	336	2,374	9	185	1,123	940
Total—Tonnes	4,065,816	4,937,128	4,695,553	4,865,942	3,355,398	5,244,797
Cubic metres	2,922,715	1,343,399	3,675,665	1,236,057	3,819,124	1,043,401

**VICTORIA—OVERSEAS CARGOES DISCHARGED AND SHIPPED
ACCORDING TO NATIONALITIES OF VESSELS
(’000)**

Vessels registered at ports in—	1973-74				1974-75			
	Discharged		Shipped		Discharged		Shipped	
	tonne	cubic metre	tonne	cubic metre	tonne	cubic metre	tonne	cubic metre
Australia	20	258	25	120	16	202	47	75
Denmark	10	59	40	18	115	103	19	16
France	9	27	13	4	4	56	16	21
Germany, Federal Republic of	230	329	195	95	192	294	148	63
Greece	215	67	372	24	51	48	338	22
Italy	111	78	57	24	44	79	33	97
Japan	552	540	722	104	370	664	455	2
Liberia	406	129	357	25	334	60	569	47
Netherlands	260	207	338	66	115	142	333	13
Antilles (Netherlands)	409	16	19	14	236	11	13	152
New Zealand	9	218	7	276	70	98	46	35
Norway	488	156	202	51	384	233	204	15
Panama	78	4	635	4	82	99	958	76
Singapore	18	61	84	46	30	55	120	74
Sweden	69	141	113	55	24	159	93	191
United Kingdom	1,497	1,064	1,366	244	1,103	1,120	1,070	21
United States of America	49	144	61	21	46	171	58	118
U.S.S.R.	49	33	81	..	25	43	132	..
Other	217	145	179	..	114	182	593	..
Total	4,696	3,676	4,866	1,236	3,355	3,819	5,245	1,043

NOTE. Part of the cargo is recorded in tonnes and part in cubic metres. As the total cannot be stated accurately as either tonnes or cubic metres, each is recorded and published separately.

Further reference, 1976; Lighthouses, 1964; Principal ports of Victoria, 1965; Australian Shipbuilding Board, 1975

Port Phillip Sea Pilots

Thirty-nine former shipmasters operate the Port Phillip Pilot Service, eighteen 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 one 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 1965-66 to 1974-75. Although the number of ships has not increased, 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
1965-66	4,759	67	1970-71	4,322	541
1966-67	4,606	142	1971-72	3,941	567
1967-68	4,481	127	1972-73	3,921	560
1968-69	4,388	171	1973-74	3,903	644
1969-70	4,433	377	1974-75	4,117	665

Further reference, 1976

Melbourne Harbor Trust *

Administration

The Melbourne Harbor Trust Commissioners is a financially independent, corporate body operating under the provisions of the *Melbourne Harbor Trust*

* A comprehensive article describing the history of the Melbourne Harbor Trust can be found on pages 158-160 of this *Year Book*.

Act 1958 and amendments. The land and waters of the 27½ square kilometre Port area are vested in the body corporate which is appointed by the Governor in Council. It comprises a full-time chairman who also is virtually the Port's managing director, and five part-time commissioners who, in accordance with the Act must be associated with various port activities, i.e., shipping, primary production, imports, exports, and labour.

The Melbourne Harbor Trust Commissioners is both the Port authority and the conservancy authority of the Port of Melbourne. The Trust maintains, improves, and develops the Port, and is empowered under its Act to make regulations for the management and financing of the Port subject to the approval of the Governor in Council.

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 1976 the port handled a volume of 16.60 million tonnes of import, export, and transshipment cargo. This volume was handled by coastal and overseas shipping which paid 2,433 calls at the Port.

The changes in the character of the Port became really 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 twelve months ended 30 June 1976 the Port handled 3.72 million tonnes of bulk cargo, and 12.88 million tonnes of general cargo including empty returns; 7.58 million tonnes of general cargo was carried in 385,880 containers.

Floating dock

The Port's new floating dock was purchased by the Victorian Government in Hamburg, West Germany, in 1974. It is 156 metres in length, 30.8 metres in width, and 12.6 metres in depth, and replaced the Duke and Orr's dry dock. The new dock which is positioned immediately downstream of the new low-level bridge and adjacent to 12 South Wharf has a larger capacity than Duke and Orr's and can accommodate ships to 17,000 tonnes dead weight, its pumping capacity being capable of lifting a ship of that size in 40 minutes. The closure of Duke and Orr's severed the direct link the dock had with the Port of Melbourne, but it will not be lost to posterity, since it is hoped to use the old dock as the focal point of a Maritime Museum for Victoria.

The provision of a new dock for Melbourne was one of two major projects brought about by the proposed low-level bridge planned to cross the main

navigation channel of the Port between berths 6 and 7 North Wharf and berths 10 and 11 South Wharf. The new crossing will form an important part of a ring-road system for the City of Melbourne. The other major project brought about by the proposed bridge is the resiting of the specialised facilities for the Union Steam Ship Company's ships from berths 1 and 2 North Wharf (see below).

Roll-on roll-off facilities

The Melbourne Harbor Trust from the late 1950s has been involved in capital works programmes devoted principally to new specialised areas in the Port of Melbourne to handle container/cellular and roll-on roll-off ships. The most notable has been the Swanson Dock four-berth container complex, and the roll-on roll-off complex at Webb Dock. During 1976 construction work was commenced at Swanson Dock on a further two berths. In addition complete modernisation of berths 16 to 21 Victoria Dock to accommodate modern cargo handling requirements is planned, together with further expansion and modernisation at Webb Dock.

The Johnson Street Bridge project made redundant berths up to 6 North Wharf and 10 South Wharf. Included on the North Wharf section of the Port were berths 1 and 2 which were roll-on roll-off berths for the Union Steam Ship Company of New Zealand vessels operating services to Tasmanian and New Zealand ports.

Preliminary work on the reconstruction and redevelopment of berths 5, 6, and 7 Victoria Dock, now called 5 and 6 Victoria Dock, for the Union Steam Ship Company roll-on roll-off services began soon after the Victorian Government decided that the Johnson Street Bridge had to be built to ease congestion of vehicular traffic in the city proper and also allow a faster and uninterrupted flow of traffic between industrial areas—including the port and commercial establishments on both sides of the Yarra River. The new roll-on roll-off terminal became operational on 1 May 1975.

The completed project today is equipped with two roll-on roll-off berths, two stern loading ramps, a new terminal of approximately 4.45 hectares, three steel framed sheds, a sub-station to cater for crane, ramp, lighting, and other power needs, a rail siding into the terminal, and crane rails built on the wharf apron for a future container crane, if needed.

Finance

The Port of Melbourne is self-supporting and does not receive any financial grants from the Victorian Government. The Trust'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 spend 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 1976 the Trust had approximately \$154m invested in port assets. Capital works are financed out of revenue and out of loans, which are raised and financed by the Trust itself and guaranteed by the Victorian Government. The Trust is required to pay into the Consolidated Fund of the Victorian Government approximately 8 per cent of its revenue from wharfage and tonnage.

The following table shows particulars of the financial operations of the Melbourne Harbor Trust for the years 1971 to 1976 :

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

Particulars	1971	1972	1 Jan. 1973 -30 June 1974 (a)	1974-75	1975-76
REVENUE					
Wharfage and tonnage rates	10,038	9,397	18,187	14,124	18,192
Rent of sheds	679	652	1,030	639	518
Special berth charges	363	319	522	439	324
Rent of lands	2,220	2,492	4,545	3,555	4,396
Crane fees	1,618	1,320	3,049	2,547	2,191
Other	1,345	1,298	2,782	2,852	2,297
Total revenue	16,263	15,478	30,115	24,156	27,918
EXPENDITURE AND APPROPRIATIONS					
Administration and general expenses	1,584	1,626	2,286	2,156	2,222
Port operating expenses	3,929	4,258	7,138	6,825	7,127
Maintenance—					
Dredging	938	1,410	2,149	1,663	1,554
Harbour	156	185	315	300	320
Wharves	774	898	1,398	1,204	1,466
Approaches	173	203	337	323	383
Railways	68	70	93	93	96
Cargo handling equipment	429	387	838	865	1,087
Other properties	33	46	195	116	117
Interest	2,329	2,506	4,118	3,088	3,715
Depreciation and renewals	3,024	2,745	5,494	4,399	4,844
Insurance	134	122	254	250	330
Sinking fund	800	..	1,350	650	1,000
General reserve	..	..	2,000	1,000	2,300
Payments to Consolidated Fund	1,634	1,486	1,470	916	1,117
Other	23	..	..	52	1
Total expenditure and appropriations	16,029	15,942	29,435	23,900	27,679
CAPITAL OUTLAY					
Land and property	1,272	336	539	6,444	1,327
Reclamation	975	195	1,250	1,241	513
Deepening waterways	1,624	1,013	3,710	2,881	3,095
Wharves and sheds construction	1,651	1,660	4,930	5,222	3,914
Cargo handling equipment	453	704	237	239	1,618
Approaches construction	374	638	492	699	427
Floating plant	15	47	545	1,765	3,901
Other works, etc.	1,030	594	692	443	1,072
Total capital outlay	7,394	5,187	12,395	18,934	15,867
Loan indebtedness at end of period	44,059	45,644	48,051	51,060	56,018

(a) Eighteen months ended 30 June 1974. The Trust's accounting period was altered from a calendar year to a fiscal year from 1 January 1973.

Further reference, 1976 ; Changing trends in port development, 1968 ; Port facilities, 1969 ; Port emergency service, 1970 ; Advent of new cargo pattern, 1971 ; New cargo handling era, 1974 ; Forward Development Plan, 1975 ; Co-ordinated port development plan, 1975

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 of 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 nineteen 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 has floating plant which includes six tugs, several barges, and one diesel-powered floating crane of 35 tonnes.

The following table shows particulars of the financial operations of the Geelong Harbor Trust for the calendar years 1971 to 1975 :

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

Particulars	1971	1972	1973	1974	1975
REVENUE					
Wharfage, tonnage, and special berth rates	2,724	2,050	2,096	2,175	2,169
Shipping services	853	773	1,100	1,512	1,233
Rents, fees, and licences	117	132	136	145	158
Freezing works and abattoirs	100	95	150	171	179
Other	58	50	22	17	26
Total revenue	3,852	3,100	3,504	4,020	3,765
EXPENDITURE AND APPROPRIATIONS					
Management expenses	601	745	985	1,324	1,488
Shipping services	841	839	992	1,383	1,541
Maintenance—					
Wharves and approaches	187	147	186	207	229
Harbour	183	146	162	177	213
Floating plant	26	23	32	36	53
Other	41	33	41	58	71
Interest on loans	376	310	263	210	156
Sinking fund	69	49	48	31	29
Depreciation provision	861	873	892	913	905
Port development fund	500				
Other	93	24	25	11	33
Total expenditure and appropriations	3,778	3,189	3,626	4,350	4,718
CAPITAL OUTLAY (NET)					
Floating plant	..	3	4	..	..
Land and property	40	171	140	46	75
Wharves and approaches	120	178	103	124	18
Other	6	19	..	111	91
Total capital outlay	166	371	247	281	184
LOAN INDEBTEDNESS AT 31 DECEMBER					
Victorian Government	74	67	67	33	..
Public	6,854	4,865	4,763	3,110	2,611
Total loan indebtedness	6,928	4,932	4,830	3,143	2,611

Further reference, 1976

Portland Harbor Trust

Situated on the south-west coast of Victoria, the Port of Portland is administered by a board of three commissioners and serves an area of more than 103,000 square kilometres of western Victoria and the south-east of South Australia. The Port is within a few kilometres of main shipping routes with deep-water approaches right to the entrance of the harbour basin.

New trades established during 1974-75 involved the export of live sheep, completion of a bulk tallow terminal, and a pipeline to handle supplies of sulphuric acid imports for fertiliser manufacture. It was possible to cater for this traffic without delay as ample open space at the rear of existing berths was available, as well as a substantial area of reclaimed land on No. 2 Quay.

In order to keep pace with current shipping trends, the Portland Harbor Trust has received Victorian Government approval to proceed with the construction of a new heavy duty cargo berth that will, ultimately, be utilised to handle fully integrated container traffic or roll-on roll-off vessels. This new project comprises the first stage of development along the eastern side of No. 2 Quay.

In contrast with the development projects undertaken during 1974-75, port trade showed an overall decline of 55,030 tonnes (8.62 per cent) when compared with the previous year's trading figures. Despite a major drop in the volume of import traffic during 1974-75, the Port's export trade rose by 58.5 per cent.

The following table shows particulars of the financial operations of the Portland Harbor Trust for the years 1970-71 to 1974-75 :

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

Particulars	1970-71	1971-72	1972-73	1973-74	1974-75
REVENUE					
Wharfage rates	282	323	285	347	288
Tonnage rates	58	59	41	37	48
Shipping services	290	287	227	209	225
Victorian Government grant	692	580	785	1,314	974
Grain terminal	563	559	236	265	417
Cold store operations	..	33	32	18	51
Other	74	92	78	122	87
Total revenue	1,959	1,933	1,684	2,312	2,090
EXPENDITURE AND APPROPRIATIONS					
Administration	131	165	183	233	298
Maintenance	97	111	133	120	167
Shipping services	210	214	221	290	300
Depreciation	41	43	52	52	52
Interest on loans	958	1,021	1,055	1,123	1,220
Sinking fund	50	52	53	51	54
Loan redemption	74	86	87	93	98
Grain terminal (excl. depreciation)	282	268	163	179	196
Cold store operations	..	20	25	16	35
Other	6	..	..	..	..
Total expenditure and appropriations	1,849	1,980	1,972	2,157	2,420
CAPITAL OUTLAY					
Port rail system	2	3	23	97	..
Road works	..	..	..	..	156
Reclamation	26	7	6	7	208
Grain terminal	22	69	253	114	2
Deepening waterways	26	49	61	1	72
Wharves and sheds	275	188	32	69	199
Breakwater construction	12	..	..	60	4
Floating plant	..	57	358	44	..
Other	96	175	68	123	53
Total capital outlay	459	548	801	515	694
LOAN INDEBTEDNESS AT 30 JUNE					
Victorian Government	3,673	3,673	3,673	3,673	3,673
Public	16,968	17,502	18,055	18,612	19,114
Total loan indebtedness	20,641	21,175	21,728	22,285	22,787

Further reference, 1976

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 southerly 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 runs close to the island. This navigable channel extending from the western entrance to Crib Point is 21 kilometres long with low-water depths of 14 metres and 15 metres, respectively, in the northern and western arms. Tidal rises are of the order of 3 metre springs and 2 metre neaps.

The following table shows particulars of port traffic through Western Port for the years 1971-72 to 1974-75 :

VICTORIA—WESTERN PORT : PORT TRAFFIC

Year	Petroleum products		Steel and cars		General cargo	
	Tankers	Tonnes	Vessels	Tonnes	Vessels	Tonnes
		'000		'000		'000
1971-72	467	13,426	..	..	34	11
1972-73	318	9,587	22	54	34	19
1973-74	247	10,500	88	497	..	..
1974-75	329	10,128	68	461	4	1

Further reference, 1976

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 Regional Director in Melbourne.

The functions performed by the Department include the following :

- (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, aerial work, and charter 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.

Aerodromes

Victoria is served by eight Commonwealth Government-owned aerodromes at Melbourne (International), Essendon, Moorabbin, Avalon, Bacchus Marsh, Mallacoota, Mangalore, and Sale and by twenty-seven licensed aerodromes at Ararat, Bairnsdale, Ballarat, Benalla, Birchip, Corryong, Echuca, Hamilton, Hopetoun, Horsham, Kerang, La Trobe valley, Maryborough, Mildura, Nhill,

Orbost, Portland, Robinvale, St Arnaud, Shepparton, Stawell, Swan Hill, Warracknabeal, Warrnambool, Whittlesea, Wycheproof, and Yarram.

The licences of all the licensed aerodromes except Whittlesea are held by the local government authority. Under the aerodrome local ownership plan assistance is given to local authorities to maintain licensed aerodromes on a \$1 for \$1 basis. 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 Ballarat, Bendigo, Birchip, Hopetoun, La Trobe valley, Maryborough, Portland, Robinvale, St Arnaud, Shepparton, and Warrnambool. The assistance authorised by the Commonwealth Government to Victorian local authorities for aerodrome works in the year ending 30 June 1976 was \$100,000 for development and \$112,763 for maintenance works.

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

Private operations

In this category, aircraft are used for the personal purposes of the owner. The extent of this activity within Victoria may be gauged from the fact that there were 495 aircraft registered in the private category and approximately 3,700 licensed private aeroplane pilots in Victoria at 30 June 1976.

Aerial work operations

Aerial survey, spotting, agricultural operations, advertising, flying training, aerial ambulance operations, and aerial photography are examples of the operations included in this category. In terms of hours flown, the most significant operations are agricultural and flying training. To 31 December 1975 over 71,198 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 31 December 1975 there were 84 Victorian based operators licensed to conduct charter operations. To 31 December 1975 over 47,770 hours were flown by these organisations.

Commuter services

Since the Second World War country or feeder air services within Victoria have commenced on different occasions but ceased when they proved to be uneconomic. In 1966 the Commonwealth Government decided 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.

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 1976 commuter services of the type in question were operating between the following centres on a regular basis: Essendon-Sale-Bairnsdale-Canberra, Essendon-Deniliquin, Essendon-Warracknabeal-Horsham, Essendon-Warrnambool-Portland-Hobart, Melbourne-Swan Hill, Melbourne-Flinders Island, and between Essendon-Merimbula on a seasonal basis.

Gliding clubs

Gliding is mainly carried out at Bacchus Marsh, Benalla, Bendigo, Casterton, Colac, Corowa, Horsham, Kurweeton, La Trobe valley, Laverton, Leongatha, Mildura, Moorooduc, and Tocumwal. Many other areas are used to a lesser extent. A Commonwealth Government subsidy is granted to clubs through the Gliding Federation of Australia.

Air traffic control

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.

Melbourne (Tullamarine) Airport

The Tullamarine site of 2,140 hectares was chosen for the development of Melbourne Airport when Essendon could not be further enlarged. The completed aerodrome is 20 kilometres from the G.P.O., Melbourne and 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. They are 147 mm 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 km/h. 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 1972 to 1975 were as follows:

VICTORIA—DOMESTIC PASSENGER MOVEMENTS ON REGULAR AIR SERVICES

Airport	Passenger movements			
	1972	1973	1974	1975
Melbourne	2,950,316	3,582,157	3,990,847	4,137,338
Mildura	13,478	16,130	17,707	19,786
Hamilton	7,774	9,695	9,622	8,842

The following table shows particulars for 1974 and 1975 of regular interstate and intrastate air services terminating in Victoria :

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

Particulars	Interstate		Intrastate		Total	
	1974r	1975	1974r	1975	1974r	1975
Kilometres flown	'000 55,258	54,692	342	351	55,600	55,043
Passenger kilometres	'000 3,338,889	3,437,328	8,181	9,141	3,347,070	3,446,469
Freight—						
Tonnes	63,054	56,967	51	40	63,105	57,007
Tonne kilometres	'000 49,800	45,756	24	28	49,824	45,784
Mail—						
Tonnes	4,258	4,311	13	11	4,271	4,322
Tonne kilometres	'000 3,533	3,633	6	5	3,539	3,638

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

VICTORIA—AIRCRAFT REGISTERED AND LICENCES ISSUED

Particulars	1971	1972	1973	1974	1975
Registered aircraft owners	475	528	504	658	647
Registered aircraft	795	817	891	1,012	1,015
Student pilot licences	2,927	2,751	2,963	2,910	3,005
Private pilot licences	3,225	3,484	3,615	3,737	3,747
Commercial pilot licences	761	844	850	862	892
Airline pilot licences	914	888	963	1,057	1,085
Aircraft maintenance engineer licences	990	1,040	1,121	1,134	1,100

VICTORIA—MELBOURNE (TULLAMARINE) AIRPORT

Particulars	1971	1972	1973	1974	1975
Domestic aircraft movements (a)	30,411	59,985	67,517	72,037	71,993
Domestic passengers embarked	737,360	1,474,973	1,798,331	1,994,115	2,068,415
Domestic passengers disembarked	733,127	1,474,664	1,783,826	1,996,732	2,068,923
International aircraft movements (b)	4,309	5,757	6,117	6,389	7,278
Passengers arriving/departing overseas(b)	185,094	280,235	587,976	465,642	551,626

(a) Domestic operations transferred from Essendon to Tullamarine from 20 June 1971.

(b) International operations transferred from Essendon to Tullamarine from 1 July 1970.

Civil aircraft manufacture

The major proportion of the aircraft manufacturing industry in Australia is located in Victoria and centred mainly in the Melbourne area.

One hundred and twenty-eight organisations in Victoria have been approved by the Commonwealth Department of Transport (Air Transport Group), after inspection by airworthiness officers, to manufacture aircraft parts. Many of these organisations are small, and aircraft manufacture is a minor part of their normal activities. The total is made up of a number of aircraft maintenance firms which occasionally fabricate small components and replacement parts.

A significant activity is also carried out by a number of specialist manufacturers who are engaged in the supply of items such as wheels, tyres, brakes, aircraft safety equipment, fuel tanks, and controls. For example, one company manufactures aircraft tyres ranging in size to suit aircraft from small two-seat trainers to four-engined jet transports.

The standards necessary for the civil aviation industry are maintained by the Commonwealth Department of Transport, which requires that an organisation has approved design data, adequate facilities, and skilled staff to engage in the activity. This is followed up by a system of inspections at regular intervals by the Department's airworthiness staff to ensure that these standards are maintained.

Many of the larger organisations are also engaged in the manufacture of military aircraft and components, and this activity is carried out under a separate system of control.

Of the larger firms, the Commonwealth Aircraft Corporation Pty Ltd at Fishermens Bend is building Bell 206 helicopters for civil and military use, and fifteen were completed in 1975. The manufacture of components subcontracted from other organisations is a feature of the modern aircraft industry and the same company is making parts for Sikorsky helicopters (U.S.A.) and the Australian-designed AESL "Airtrainer", now being built in New Zealand, as well as participating in the local "Nomad" project.

The Government Aircraft Factories at Fishermens Bend and Avalon are a division of the Commonwealth Department of Industry and Commerce and also share in this "offset" work. Rotor blades for Bell helicopters, bonding and assembly work on Boeing 727 elevators, and rudders and outer flap construction for the Fokker F28 "Fellowship" airliner are carried out at the Fishermens Bend factory.

The most significant civil aircraft manufacturing project for many years is the Government Aircraft Factories' "Nomad" light utility transport. At 3,864 kilogrammes maximum weight, the "Nomad" lies between a light piston engined aeroplane and a small airliner. It is powered by two 400 hp Allison 250-B17 propeller-turbine engines and is designed for short take-off and landing (STOL) capabilities, with a unique double slotted flap wing which was developed at the Aeronautical Research Laboratories, Fishermens Bend.

A team of engineers was formed in 1970 to design the "Nomad" for both civil and military customers. Air Navigation Orders, Section 101.21, and United States Federal Aviation Regulation (F.A.R.) Part 23, for civil light aeroplanes, were nominated as the design standards. During the development of the project, an extensive series of wind tunnel, structural, and systems tests were carried out—mainly at the Aeronautical Research Laboratories. Tests required to demonstrate compliance with the design standards were witnessed by the Commonwealth Department of Transport's airworthiness engineers. Representative samples of major structural components have been subjected to ultimate loads, imposed by hydraulic jacks and weights in a test rig.

Flight testing commenced at Avalon Airfield in July 1971 with "Nomad" model N2 serial 01. This aircraft was later joined by aircraft N2-02, which facilitated the flight testing and demonstration programme.

The results of all structural, systems, and flight tests were recorded in a series of reports issued by the manufacturer and constitute the "type data" for the "Nomad" aeroplane. After assessing these reports and making ground and flight conformity inspections, the Commonwealth Department of Transport awarded a Certificate of Type Approval on 11 August 1972 for the "Nomad" model N2.

Development of the "Nomad" series of aircraft continues with the model N22 production version, which has a lightened structure and improved undercarriage, the model N22B, which has improved engines for high altitude performance, and the "stretched" N24 with a lengthened fuselage.

Nomad production was still building up during 1976 and twenty-five aircraft were completed at Avalon, including the two prototypes and a model N24. Total production authorised to date is 105 production aircraft of the various models. Recently, two N22Bs were exported to Sabah (Malaysia), three to the Philippines, and three have been ordered by Australian operators. The model

N24 programme received a temporary setback because of an accident during the test flight of a modified version. Five N24s are under construction for the Northern Territory Medical Service. The manufacturer has three N22 aircraft demonstrating to potential customers in Australia, Europe, and South America. To improve the export potential, United States' certification is currently being negotiated with the airworthiness authority of that country—the Federal Aviation Authority.

Further reference, 1976; History of civil aviation, 1962; Classification of flying activities, 1964; Radio aids to air navigation in Victoria, 1965; Aerial agricultural operations, 1966; Flying training in Victoria, 1967; Regular public transport, 1968; Commuter services, 1969; Radar development in the Melbourne area, 1971; Aerodrome local ownership plan, 1974; Use of radar in air traffic control, 1975

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