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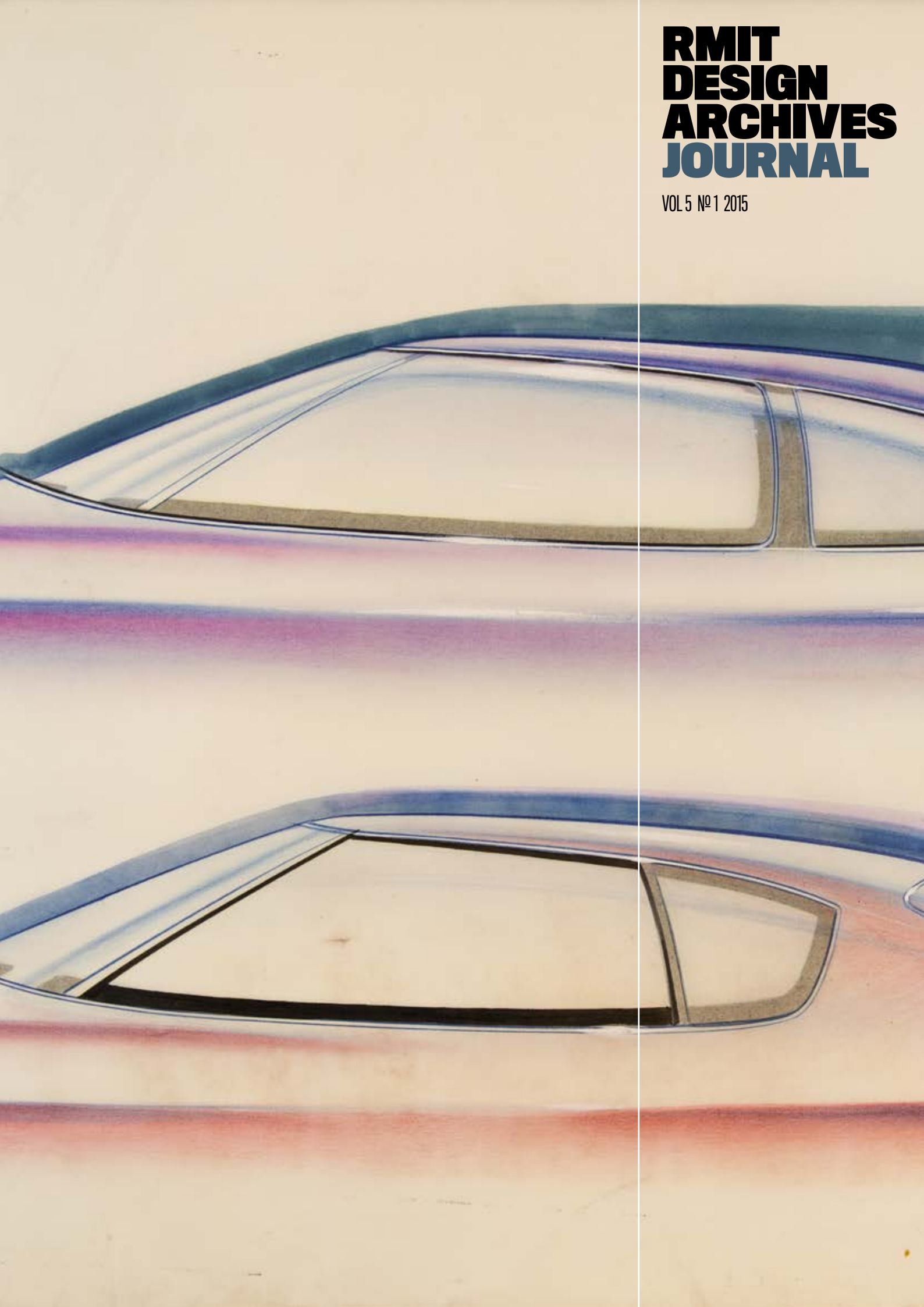

ARTICLES

EXHIBITION REVIEW

Cover and this page
Phillip Zmood, drawings of styling exercises for HQ Monaro Coupe roof concept.

RMIT Design Archives

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This issue of the RMIT Design Archives Journal focuses on the Australian car and in particular on its design. Its genesis lies in research undertaken for the *Shifting Gear: Design, Innovation and the Australian Car* exhibition at the National Gallery of Victoria, a curatorial collaboration with David Hurlston, Senior Curator of Australian Art at the NGV.

During the course of my research I discovered that while vehicles have been manufactured and designed here since the late nineteenth century their design genealogy is little understood. I also realized that there are opportunities for the academy to engage in scholarly research into the history of automotive design and it is hoped that this issue of the RMIT Design Archives Journal will generate wide interest in the subject.

Australia has a highly developed and very active car culture, the realm of museum curators, historians, enthusiasts, collectors, car clubs, car manufacturers and entities such as the RACV and Victorian Historic Racing Register who collectively possess a wealth of knowledge, much of it tacit and unrecorded. The academy, which has hitherto supplied engineers and designers to this industry, but not historians, can play a significant part in the articulation and dissemination of this historical knowledge, and in so doing help to build a scholarly history of Australian automotive design, developing not only research protocols and models but also the next generation of scholars to carry forward the work. And it is timely that this work is undertaken now, as the industry undergoes its most dramatic restructure for a century and the Australian-made family car becomes a distant memory.

A number of the country's best designers and engineers have made their mark in the automotive field with innovations that achieved international success. In the racing world this is particularly true – Jack Brabham, Ron Tauranac and Phil Irving with the backing of local Melbourne company Repco, designed and built the BT19 in which Brabham won the 1966 Formula I World Championship and the Constructor's Championship, a unique dual achievement. GMH, Ford Australia and Chrysler Australia all produced Australian variants of American cars that exhibited design and engineering characteristics unique to this country. Their designers had and continue to have global careers.

As we look to how the automobile of this century will respond to new economic, environmental and industrial pressures, it is well to consider the achievements of the past when Australia embraced the possibilities afforded by new automotive technological advances with great success. Examining how our designers succeeded throughout the twentieth century in a competitive industrial environment so far away from the European and American centres of action may well provide clues to our future success.

Harriet Edquist, DIRECTOR

PEER
REVIEWED
ARTICLE

EARLY AUTOMOTIVE DESIGN IN AUSTRALIA

Norman Darwin

For two periods in Australia's history, the 1920s and the 1950s, the motor industry was the largest sector of Australian manufacturing. While a great deal has been written about it, a survey of the material relevant to this study shows that little deals with automotive design.

Herbert Thomson, steam car phaeton 1896-98. Museum Victoria, Melbourne.

Gift of Mrs O Stening, 1960. Thomson was the designer and engineer of this car and the coachbuilder was Martin & King of Armadale.

Keith Winser's 1955 compilation *The Story of Australian Motoring, the complete history of motoring, from the first horseless carriages to our cars of today* and John Goode's *Smoke, Smell and Clatter: the revolutionary story of motoring in Australia* (1969) were early attempts to cover the history of Australian motoring from a personal perspective but neither authors provided sources for their colourful descriptions of characters and events.[1] In *Australians on the Road* (1979), motor journalist Pedr Davis interviewed a number of researchers of early motoring history but again failed to provide any references for his work.[2]

Car salesman Albert Cheney's *From Horse to Horsepower* (1965), Laurence Hartnett's *Big Wheels and Little Wheels* (1964) and Nancy Buttfield's *So Great a Change: the Story of the Holden Family in Australia* (1979) were autobiographical accounts of some major events in the early car industry written from first-hand knowledge.[3] By contrast Harold Paynting's *The James Flood Book of Early Motoring* (1968) was a compilation of primary sources and high definitition photographs from 1895 to 1905.[4] Company histories for this period are quite plentiful, at least for the 'big three' American manufacturers and include Norm Darwin's histories of Holden and Ford, Don Loffler and John Wright's histories of Holden, and Bill Tuckey and Gavin Farmer's accounts of Ford and Chrysler.[5] In addition to these published sources, a number of unpublished doctoral theses have investigated the early Australian motor industry from various perspectives – economic (Peter Swan), government interaction with motor enterprises (Geraldine Lazarus), state intervention, managerial control and unionism (Robert Tierney), industrial policy (John Laurent) and industrial development (Colin Forster).[6]

While all these studies provide excellent political and social background to the industry, and histories of manufacturing and production, none looks at the development of design in the early coachbuilding period, or considers the unique body designs that Holden, Ford and Chrysler produced in the 1930s. Of the many Australian motor body building firms in the early and formative years of the industry only four have had anything published about them and then as company histories.[7] An exception is John

THE THOMSON NO. 1 STEAM CAR.
The Australasian Coachbuilder and Wheelwright. PLATE 189. VOL. XI.

Wright's *Special: The untold story of Australia's Holden* (2008), a study of the Australian Holden car between 1945 and 1948 where factors leading to its gestation, design, development and manufacture are detailed.[8] More broadly, Michael Bogle included some comments about car design in his 1999 study of Australian design while Harriet Edquist and David Hurlston made it the focus of their 2015 survey exhibition and catalogue *Shifting Gear: Design, Innovation and the Australian Car*.[9]

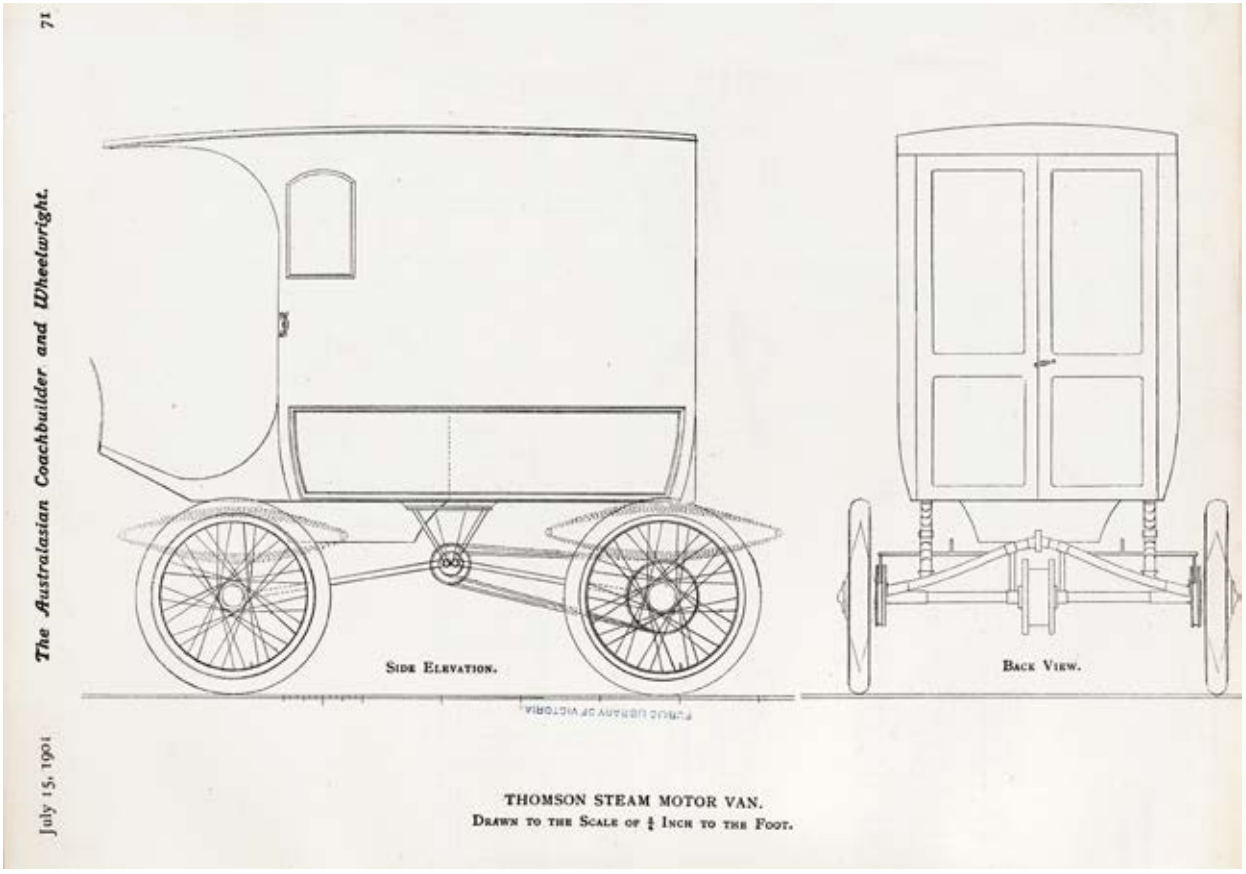
The first cars

Australia's first motor cars began to appear from 1897 and by 1901 two firms, the Thomson Motor Car Company and the Tarrant Motor and Engineering Co, commenced production of motor cars. While neither was ultimately successful, both led the way to a body building industry that dominated Australian manufacturing through the 1920s and again in the1950s.

Herbert Thomson began his quest in 1895, establishing a business in Armadale, Victoria, making small steam engines and boilers.[10] By the end of 1896 Thomson had the beginnings of a self-propelled vehicle, little more than a four-wheeled cycle, which was seen on Melbourne's streets being tested, an event vividly described by Keith Winser.[11] This grew into a 6-seater vehicle with a Martin & King built body, that made its debut at the Malvern Cricket Ground in June 1898.[12] The following year the car was on display at Royal Melbourne Show, fitted with Dunlop's new pneumatic tyres.[13] The Thomson car was relatively light with a wooden body adapted from a buggy and Thomson maintained the buggy style body throughout production. He powered his car by a kerosene fired steam boiler. The double compound 4-cylinder condensing engine was his own design and was directly connected to the rear axle by a chain providing a top speed of 20mph and a 50 mile journey.[14]

Thomson, the son of a Scottish carpenter and wheelwright, was born in Prahran on 13 July 1870. In 1885 he built his first steam engine and fitted it to a boat subsequently used on the Yarra River. Following studies in engineering Thomson set up business and was joined by Edward Holmes. Some historians have credited Holmes with the design of Thomson's second car, but this appears unlikely as Holmes's strengths lay in the promotion of the Thomson Motor Car Company, established in Flinders Street, Melbourne.[15]

In 1900 the two men loaded their car onto a steamer and went to Sydney, displaying the vehicle at the Royal Easter Show. Buoyed with the reception and a first prize, it was decided to take the car to Bathurst, and from there drive back to Melbourne. This feat earned the pair enormous publicity en route and for the first time Australian newspapers took the 'horse-less carriage' seriously. Thomson Motor Car Company went on to produce 12 steam vehicles, mostly 4-seater hooded-buggies which had



revised chassis and bodies. Launched in 1901, they cost £300 and were available in several forms, including a 'Royal'. Two vans were sold to the Post Office for mail delivery and at least one fire engine was built. Despite the Thomson car having an efficient condensing steam engine it could not compete with the petrol engined vehicles that began to arrive in quantity after 1901. By 1907 the Thomson Motor Car Company had rationalised its business to producing boilers at the Armadale premises and selling imported motor vehicles.[16]

Like Thomson, Harley Tarrant was based in Melbourne and while his first car, built in 1899 with a Benz engine, was unsuccessful (it crashed into a wall on its first outing) the next, in 1901, using Tarrant's own engine design, proved to be reliable and was able to be sold. Tarrant was joined by Howard Lewis and together they formed a company that was to become one of Australia's largest motor houses.

Born in Clunes in Victoria in 1860, Harley Tarrant studied civil engineering and became a surveyor.[17] By 1897 he was experimenting with kerosene internal combustion engines and then designed and built his own high-speed oil engine, marketing it under the Harley-Tarrant Motor Syndicate at 108 Russell Street, Melbourne.[18] Within two years he was operating at Queensbridge Street, South Melbourne, with Howard Lewis who left the Kellow Cycle Co. once he saw the potential of the motor car, joining Tarrant in partnership.[19] Lewis was born in England,

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Top
Two Thomson Motor Vans are known to have been sold to the Post Office. *The Australasian Coachbuilder and Wheelwright* (later *The Coach and Motor Builder*), 13 July 1901. State Library of Victoria, Melbourne

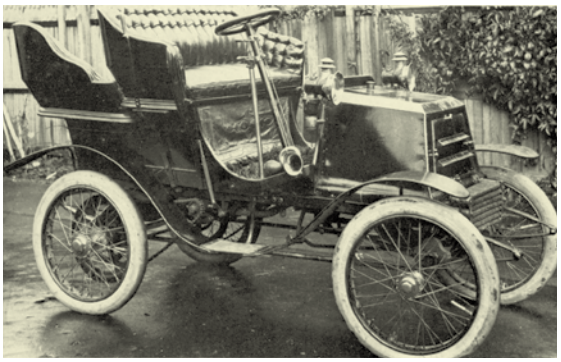
Middle
Harley Tarrant, daughter and wife ride in the 2-cylinder 10hp Tarrant car. This was the 6th car produced in c1904. Source: Museum of Victoria, Melbourne

Bottom
Tarrant's second car, built in 1900, was powered by a 6hp Benz engine and sold to Mr W H Chandler, seen here with his family. Source: Museum Victoria, Melbourne

Opposite page
The Thomson Motor Car Co production steam car, *The Australasian Coachbuilder and Wheelwright*, 13 July 1901. State Library of Victoria

the son of an iron worker, and arrived in Australia in 1879. He trained in the furniture trade, became a talented racing cyclist and retired in 1892 to work in the Melbourne cycle store.[20] In 1903 Tarrant and Lewis were joined by Stuart Ross who returned from Europe with the Australian rights to sell the Argyle car. This combination of manufacturing and importing was to establish the Tarrant Motor and Engineering Company as an important motor business. In addition to the Tarrant car the company sold F.I.A.T, Sunbeam, FN, De Dion and Argyle. The difficulty for Tarrant was the time it took to build his own cars which was, according to Ross, three to four months.

Unlike Thomson, who used the same style for all his vehicles, Tarrant kept abreast of changing trends in design. The bodies for his first two cars were built by Alex Smith who adapted two buggy bodies, one behind the other. From car three however, Tarrant adopted the current Roi des Belges style, also used by coach builders Dan White and Burton & Knox on late Tarrant cars. Tarrant's cars lacked hoods and windscreens, the latter only appearing on the last of his vehicles in 1906. They were also more rugged than the Thomson and the Tarrant's success in trials proved its strength. Tarrant had initially chosen an oil fueled engine (kerosene),[21] either 2 or 4-cylinder, that developed 8 and 14hp.[22] By 1905 a form of petrol (Benzine) was available and plentiful proving Tarrant's choice was right. It was also an instant start whereas Thomson's steam car took some 15 minutes to reach driving pressure. When production of Tarrants stopped around 20 cars had been produced.[23]



Perhaps one of Tarrant's most inspired moves was the purchase of Alex Smith's coach and wheel factory in Clifton Hill in 1906, which he renamed the Melbourne Body Building Co.[24] When Tarrant took the Victorian Ford distribution in 1907 the body building company moved to larger premises, first to Carlton then to Little Lonsdale Street. Eventually, a large modern factory was built in West Melbourne to meet the demand for T Ford bodies in the early 1920s. The firm was then employing 300 men.[25]

A third early manufacturer, Vivian Lewis, was essentially a bicycle manufacturer who ventured into self propelled vehicles in 1899.[26] His first effort was a motor triplet cycle, seen on Adelaide streets in March 1899. A second four-wheeled vehicle was produced in November 1900 and used an air-cooled 2 hp engine built by the Lewis works manager, Tom O'Grady. O'Grady later produced a water-cooled 5hp unit for the car. The Lewis Motor House produced several cars up to 1906 but found more profit in motor cycles and importing the Star, Renault, Oldsmobile, De Dion, Daimler, Clement Talbot and Rover cars.[27]

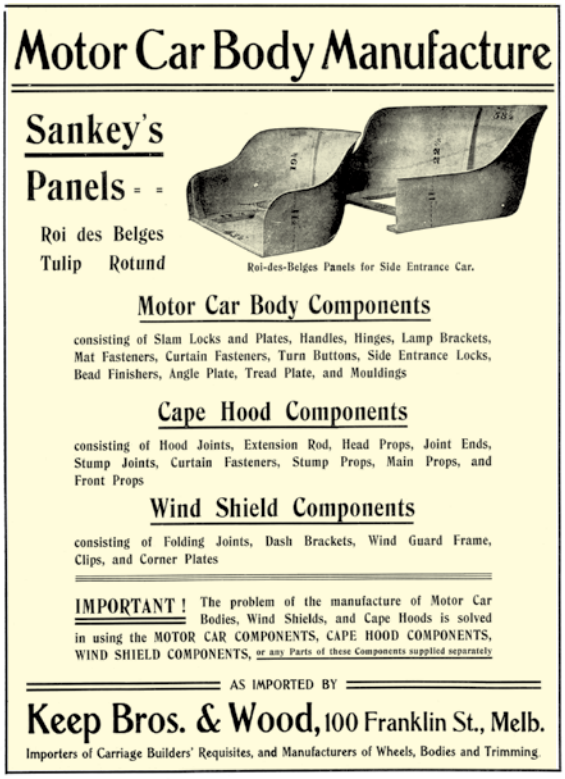
The body building industry

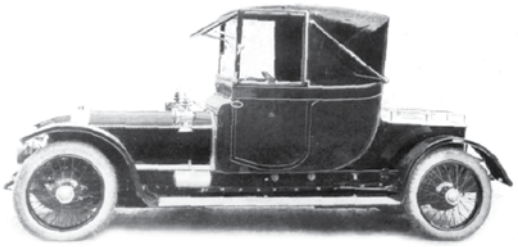
While the manufacture of complete cars struggled to get moving in Australia, body building gained a foothold. As in Europe and America, the Australian car body grew from the coach and carriage trade and as many imported cars came in as a rolling chassis, particularly those purchased by wealthy owners, there was plenty of scope to develop this specialised industry. While the horse drawn coach was mechanically a simple vehicle it did require a degree of engineering that was originally carried out by the blacksmith. Australia had developed an iron industry early in the colonies' histories and this accelerated during the gold rush period. Firms like Langlands Foundry, Mort's Dock Engineering, John McIlwrath and Robertson, Martin and Smith began producing steam engines, windlass machines, pumps, railway trucks, locos and crushers and the blacksmith was eventually superseded by the machinist, fitter, mechanic and engineer.[28] The production of engines and transmissions for automobiles in Australia could not have happened without this emerging engineering industry.[29] Even the coach body builder, who shaped timber, was replaced by the sheet metal worker and welder. Only the coach painter was able to transfer his skills to automotive body building.

All the same, Tarrant, Thomson and Lewis had nothing much to copy when they embarked on their initial designs; there was no special steel, elliptic springs, differential gears or balloon tyres. The solid rubber wheels from buggies and coaches rattled engines to bits on the rough roads causing constant failures.[30] Dunlop's pneumatic tyres began to arrive

This page
Left
The first production Tarrant, but the second car built, featured a modified buggy body produced by Alex Smith. Source: Museum Victoria, Melbourne.

Right
Typical cycle car or 'quad'. This example was produced by Ballarat bike manufacturer, Davis & Franklin Cycle Co in 1901. N Darwin Collection





in Australia in late 1899 and were quickly adopted by early motoring engineers.[31]

Alex Smith claimed that his Tarrant bodies were Australia's first purpose-built motor bodies. They had been produced in timber and closely followed British and French design of the era.[32] Smith continued working for the Melbourne Motor Body Co as manager, and was almost exclusively building bodies for Tarrant and, with Englishman James Flood, produced Australia's first closed car, a convertible Brougham, in 1907.[33] Flood was later to establish his own body building works first in West Melbourne and then in St Kilda Road.

The Melbourne Motor Body Co was not the only firm to establish itself on the coach-building trade. Holden Motor Body Builders acquired F T Hack & Co in 1917[34] and Town & Country Co Ltd took over the Brisbane firm of Walter M Trevethan's in 1911.[35] More commonly, coachbuilders changed over to motor body builders by forming a subsidiary or a separate department until the coach building department ceased. The transition from horse-drawn coach to motorised vehicle was discussed at length at the eighth Carriage & Waggon Builders Association of Australasia Convention held in Adelaide in 1909. R A Duncan of Duncan & Fraser presented a paper on 'the effect of the motor car on the carriage trade' where he concluded: 'I feel satisfied the motor industry will give the carriage building trade a great run and so it is well for you to get into it as soon as possible'.[36] Duncan & Fraser certainly embraced the motor trade, becoming one of Adelaide's large motor companies building and selling Fords.

Daniel White was a Melbourne coachbuilder who quickly turned to motor bodies. White had argued in the Education Royal Commission of 1901 for apprenticeship schooling and was vocal in the cause for tariffs on imported bodies in 1916 and 1917.[37] White served as President of the Chamber of Manufacturers in Melbourne and on the Council of the Working Men's College (RMIT University).[38] The College, founded in 1887, housed Melbourne's main automotive trade school. Edward Carlton was the body building instructor and he had moved from instruction in coachbuilding to motor body building as the school evolved with the trade. Carlton was passionate about his work and in 1911 published an article on motor car design in which he described its early history:

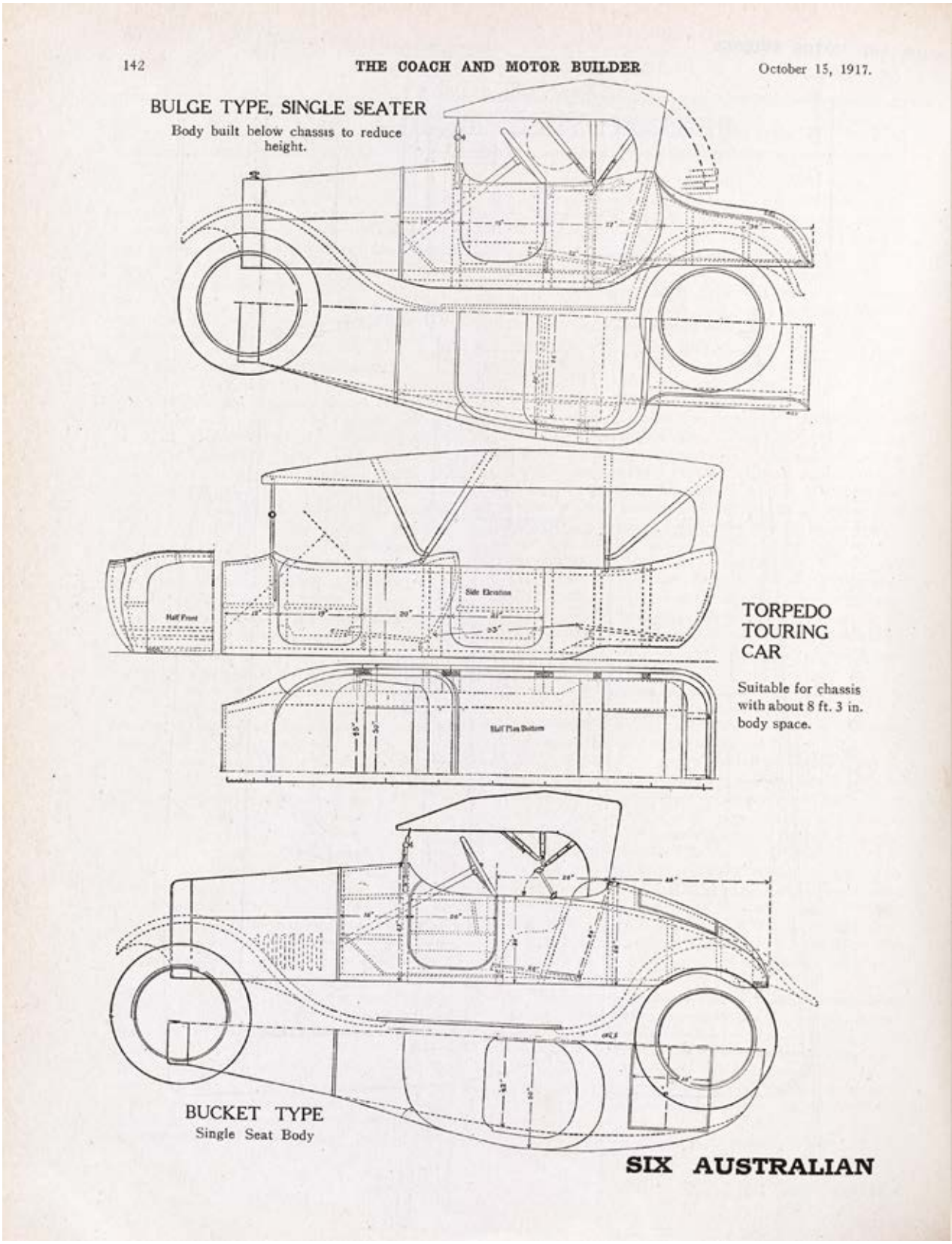
> Like all new industries, the Motor Car has been subject to variations and improvements; following the *rear*-entrance car came the 'Roi-des Belges' or 'Tulip' pattern, having *side* entrance; then the 'Rotund', which has been superseded by the 'Torpedo', a flush surface car, on lines similar to what the name conveys. These came under the heading of phaetons or touring cars. Representing the higher grade of pleasure cars came the 'Limousine', a closed-in car; the 'Laundaulette' (of which the taxi-cab is a variation), one of the most popular of all the cars, owing to its being so easily converted from a closed to an open car; the 'Motor Brougham', 'Cabriolet', etc.[39]

The Roi des Belges style was commonplace by 1906 having been introduced to Australia by Fred Hack in 1905, the flush sided Torpedo body followed in 1908 and for about four years both bodies were produced,

This page
Left
Advertisement for Roi des Belges pressed steel body parts produced by Sankey in England and sold by Keep Bros & Wood, *The Coachbuilder Book of Designs* , 2nd edition, J E Bishop & Co, Sydney, 1909

Top right
The Working Men's College established automobile body building classes under instructor Edward Carlton in 1905. Advertisements for the courses appeared regularly in *The Australasian Coachbuilder and Wheelwright*

Bottom right
L E Cutter and Co of Ballarat produced this bespoke body to suit a 1910 Rolls Royce chassis, *The Australasian Coachbuilder and Wheelwright* , 15 September 1910



142 THE COACH AND MOTOR BUILDER October 15, 1917.

BULGE TYPE, SINGLE SEATER

Body built below chassis to reduce height.

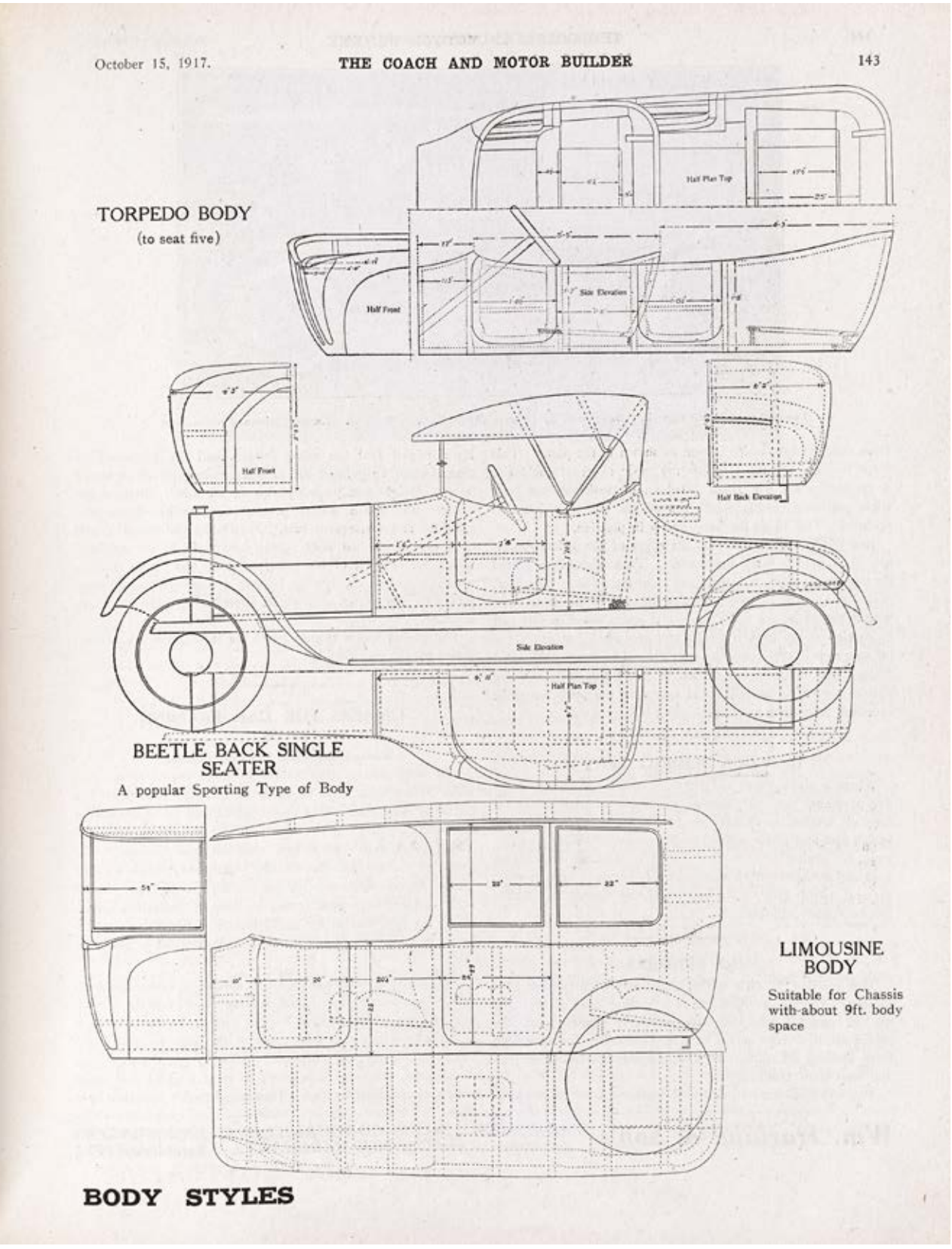
TORPEDO TOURING CAR

Suitable for chassis with about 8 ft. 3 in. body space.

BUCKET TYPE

Single Seat Body

SIX AUSTRALIAN



The Australasian Coachbuilder and Wheelwright and its successor *The Coach and Motor Builder* regularly published drawings and photographs of both coach and motor bodies. Bodybuilders were able to scale up these drawings to full size chalk layouts, usually on the floor of the workshop, *The Coach and Motor Builder,* 15 October 1915

by which time the Roi des Belges style was dated as it carried passengers higher and was thus more exposed to the elements.[40]

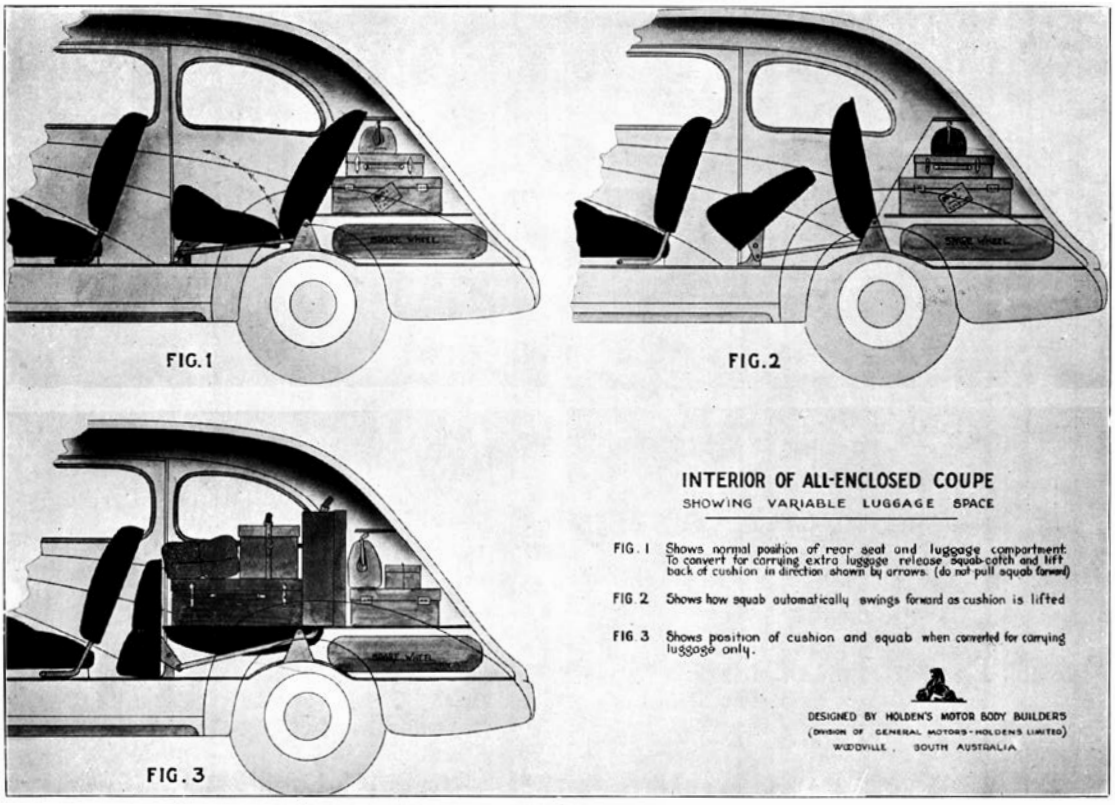
The quick adoption of the Torpedo body and introduction of a closed car in 1907 by Tarrant showed that Australia was keeping pace with international design. By 1920 the Torpedo style body merged with the car bonnet giving the motor car a continuous line from the radiator to the rear. According to Penny Sparke this was when the visual language of the modern motor car became distinct from that of the 'horseless carriage'.[41]

The establishment of American companies in Australia

1917 was a critical year for the Australian body industry. Under pressure to conserve shipping space the Federal Government introduced a tariff on imported car bodies. Within a year the production of local bodies had exploded, T J Richards, Duncan & Fraser, Smith & Waddington, Steenbhom Ltd, Melbourne Motor Body Company and Holden Motor Body Builders became mass producers of standardised bodies. In the first year of volume production the Melbourne Motor Body Company was producing some 70 bodies per week utilising a workforce of 200 men.[42] In Sydney the Ford distributor, Davies & Fehon had not considered a local body for the T Ford as had Tarrants in Melbourne and Duncan & Fraser in Adelaide. Steenbhom Ltd was immediately contracted by Davies & Fehon and a new plant was constructed in 1918 employing 250 men who turned out 75 bodies per week. Arthur Davies funded this by taking a 51% interest in a new company, Steenbhom (Australia) Ltd.[43]

Despite the larger companies building standardised bodies there was little standardisation about them. The pattern was common and the result gave the appearance that each body was the same. In Holden's case the same body pattern was used on Dodge, Buick, Ford, Fiat and Hudson chassis. James Holden said of the process: 'the fact that one side of the body might not measure exactly the same as the other to within fairly wide limits did not seem a matter of great importance in the early days'.[44] He added that if a panel didn't quite fit it was a matter of 'shaving off a little timber or adding a little metal to make things go-together'.[45] Little pressing of panels was done owing to the cost of hydraulic presses. In 1923 Holden's biggest press was just 25 tons. A Melbourne company, Hydro Press advertised press capacity using a patented rubber bag and female die method but it was unsuited to high capacity runs.[46] Prior to 1923, Holden and T J Richards contracted Simpson & Sons of Adelaide, who were general hardware manufacturers with some small press capacity, to produce small curved body sections that were then incorporated into the hand-made body. Generally local panel pressings were small, and large curved items like the cowl were imported with the chassis.

Melbourne Motor Body Company claimed to have installed Australia's first large panel press, a 350 ton Hamilton, in the late 1920s but Holden Motor Body Builders had a locally-made 250 ton press in 1924.[47] Holden's were pressured into building the press by General Motors. An agreement reached in 1923 with the GM Export Company gave Holden's all GMs



body production in Australia. It also gave them access to GM technical know how and GM expected the Holden product to conform to their build standards.[48] So Ronald Evans, an experienced planning and mass production expert, was dispatched from America to supervise construction. On arrival in late 1924 he chose Forward Downs & Co, mining equipment manufacturers, to build the press.[49] Meanwhile, in January 1924, Tom Hawkes, a wood mill superintendent at GM Canada, had arrived bringing with him a disassembled 1924 Chevrolet body so that the Holden body builders could use it as a model.[50] Holden's then established an engineering drawing office under Bert Wylie, a trained layout draftsman. Wylie subsequently trained the men who would in the 1930s design the two unique Holden body styles, the coupe utility and all-enclosed coupe.[51]

By 1924 the market in Australia was being driven by GM and Ford products. The T Ford while initially dominating the Australian market was under threat from GM's Chevrolet. GM were far better organised in Australia. Their export company had established an office in Sydney from November 1912.[52] Their first representative, E S Pendleton, began the task of assigning GM agencies, the first being to H C Richards carrying the 1913 Oakland Model 42.[53] Ford and Dodge on the other hand relied on Australian distributors in each state to individually import and sell their product. In 1923 Ford came to the realisation that the Australian Ford sales lagged behind GM and so dispatched Hubert French to investigate.[54] French was alarmed at what he found.

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Top
The framing assembly line c1923 at Holden Body Builders, King William Street, Adelaide. Trolleys were hand pushed along a simple rail line.
N Darwin Collection

Middle
The upholstery assembly area c1921 at Holden Motor Body Builders, King William Street plant.
N Darwin Collection

Bottom
1923 Charmers touring car with a standardised Holden Motor Body Builders' Body. The same body fitted Buick, Dodge, Chevrolet, Austin, Fiat, Hudson and Hupmobile.
N Darwin Collection

Opposite page
GMH All-Enclosed Coupe patented folding rear seat. The patent is still active today and many station wagons still use this design, *GMH Pointers*, vol 2 no 3, 1935

The drawing office at Holden Motor Body Builders Engineering, Woodville, South Australia, c1933. N Darwin Collection

Each state was building a very different body, and some only had three doors on the tourer instead of four.[55] In April 1924 French made his recommendations to Wallace Campbell, Vice President of Ford Motor Company, which resulted in Ford establishing their plant at Geelong in 1925 with French as Managing Director.[56] On incorporation, Ford Australia immediately took all the manufacturing business from the distributors. Overnight Duncan & Fraser in Adelaide, Steenbhom in Sydney and Queensland Motor Agency in Brisbane closed. Tarrants in Victoria struggled on selling other makes. Ford took the current US body design and employed a number of Geelong body builders together with Duncan & Fraser to produce T bodies until their own body plant was operational.

Conclusion

As the 1920s grew to a close the Australian automotive industry had shifted into a two-tier structure. The three American producers, Ford, GM and Chrysler dominated the sector with Australia-wide distribution networks. GM led sales by sourcing bodies from Holden Motor Body Builders and then assembled them in each state. Chrysler ran a similar structure but Ford produced bodies and initally assembled cars only at Geelong. The second tier producers, mainly Austin, Morris, Standard, Renault, Willys, Graham and Studebaker either contracted Holden, T J Richards, Melbourne Motor Body Builders, Floods, Martin & King, Steenbhoms or Smith & Waddington for bodies and assembled or imported whole cars. But the Wall Street crash changed everything, and most of the original body

builders closed or were absorbed into other enterprises. Holden became part of GM, T J Richards was purchased by Chrysler, Melbourne Motor Body Company became Ruskin Motor Bodies and was eventually purchased by Austin, Smith & Waddington, and Steenbhoms closed; only Flood and Martin & King continued, although Martin & King were eventually purchased by Clyde Industries.[57]

Norman Darwin is a historian of the Australian automotive industry and is carrying out postgraduate research at RMIT into the early history of Australian automotive design.

Endnotes

1 Keith Winser (compiler), *The Story of Australian Motoring: the complete history of motoring, from the first horseless carriages to our cars of today*, (Melbourne: Fortnightly Motor Manual, 1955); John Goode, *Smoke, Smell and Clatter: the revolutionary story of motoring in Australia* (Melbourne: Lansdowne Press, 1969).

2 Pedr Davis, *Australians on the Road* (Adelaide: Rigby, 1979).

3 S A Cheney, *From Horse to Horsepower* (Adelaide: Rigby, 1965); L J Hartnett, *Big Wheels and Little Wheels* (Melbourne: Lansdowne Press, 1964); Nancy Buttfield's *So Great a Change: the Story of the Holden Family in Australia* (Sydney: Ure Smith, 1979).

4 Harold Paynting, *The James Flood Book of Early Motoring* (Melbourne: James Flood Charity Trust, 1968).

5 Norm Darwin, *History of Holden since 1917* (Newstead,Vic: Ford Publishing,1983); Norm Darwin, *History of Ford in Australia* (Newstead, Vic: Ford Publishing, 1986); Don Loffler, *She's a Beauty. The story of the first Holdens* (Adelaide: Wakefield Press, 1998); John Wright, *Heart of the Lion. The 50 year history of Australia's Holden* (St Leonards, NSW: Allen & Unwin, 1998); Bill Tuckey, *True Blue. 75 Years of Ford in Australia* (Sydney: Ford Australia, 2000); Norm Darwin, *100 Years of GM in Australia* (Ballarat, Vic: H@ND Publishing, 2002) and Gavin Farmer, *Great Ideas in Motion - A History of Chrysler in Australia 1945-1981* (Adelaide: Illing Books, 2010).

6 Peter Swan, 'General Motors-Holden and the Australian automotive industry in economic perspective', PhD dissertation, Monash University, 1972; Geraldine Lazarus, 'Development of the motor industry in Australia – a study of government intervention', PhD dissertation, Monash University, 1981; Robert Tierney, 'The Australian automotive industry 1939-1965: a sociological study of some aspects of state intervention, managerial control and trade union organisation', PhD dissertation, Macquarie University, 1991; John Laurent, 'Industry policy and the Australian motor industry 1920-1942', PhD dissertation, Griffith University 1993, later published in the Royal Australian Historical Society Journal, 80, 1 & 2, June 1994; Colin Forster, 'Industrial development in Australia 1920-1930, PhD dissertaion, Australian National University, 1964.

7 Frank Daley, 'The Holden Saga', Melbourne, Vic: Unpublished manuscript held by Mortlock Library SA, 1960; Buttfield, *So Great a Change*; Tuckey, *True Blue*.

8 John M Wright, *Special: The untold story of Australia's Holden* (Crows Nest, NSW: Allen & Unwin, 2008).

9 Michael Bogle, *Design in Australia 1880 -1970* (Sydney: Craftsman House, 1998); Harriet Edquist and David Hurlston, *Shifting Gear: Design, Innovation and the Australian Car* (Melbourne: National Gallery of Victoria, 2015).

10 Max Gregory, 'Australia's Horseless Carriages', *Restored Cars Magazine*, 1982, 50, 11.

11 Keith Winser, 'Story of Australian Motoring', *Motor Manual Magazine*, 1954, 15.

12 *The Australasian*, 12 August 1899, 27.

13 *The Australasian Coachbuilder and Wheelwright Journal*, 15 July 1901.

14 'The Thomson Steam car', *The Australasian Coachbuilder and Wheelwright Journal*, 15 July 1901.

15 H Downing, 'Thomson, Herbert (1870–1947)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, http://adb.anu.edu.au/biography/thomson-herbert-8795/text15423, published first in hardcopy 1990, accessed online 23 January 2015.

16 See the Thomson Motor Car Company catalogue (c1903) in the Museum Victoria collection showing White, Holley, Duryea, Benz and Stanhope motorcars; http://museumvictoria.com.au/collections/items/1701142/catalogue-the-thomson-motor-works-list-of-motor-cars-armadale-victoria-circa-1903.

17 Joe Rich, 'Tarrant, Harley (1860–1949)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, http://adb.anu.edu.au/biography/tarrant-harley-8747/text15323, published first in hardcopy 1990, accessed online 23 January 2015.

18 *The Austral Wheel*, February 1898, reproduced in Paynting, *The James Flood Book of Early Motoring*, 72.

19 Ann G Smith, 'Lewis, William Howard Horatio (1868–1939)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, http://adb.anu.edu.au/biography/lewis-william-howard-horatio-7190/text12433, published first in hardcopy 1986, accessed online 23 January 2015;

20 *The Australian Motorist*, 1 Nov 1939, 126.

21 Although called 'oil' engines, they were fuelled by kerosene. Following the invention of carburettors, American gasolene (Benzine) was safer to use and became the accepted motor fuel.

22 Doreen Holmes, 'The Tarrant Story', in Paynting, *James Flood Book of Early Motoring*, 86.

23 Holmes, 'The Tarrant Story', 77.

24 *The Sunday Times*, 8 October 1905, 8.

25 'Flourishing Melbourne Industry', *The Argus*, 28 October 1925, 30.

26 *The Critic*, 11 March 1899, quoted by Leon Mitchell, http://earlymotor.com/lewis/cars/html/austfirst.htm

27 Davis, *Australians on the Road*, 36.

28 J G Burrell, *One Hundred Years of Engineering in Victoria* (Melbourne: Institute of Engineers, 1934).

29 B Carroll, 1987, *Australian Made* (Parkville, Vic: Institution of Production Engineers Australian Council, 1987), 407.

30 'Local History Recalled', *The Daily News*, 5 October 1927, 3.

31 The Dunlop Pneumatic Tyre Co first advertised pneumatic motor car tyres in September 1899; see *The Australasian*, 23 September 1899, 22.

32 'Flourishing Melbourne Industry', *The Argus*, 28 October 1925, 30.

33 Paynting, 'Sunny Jim Flood', *The James Flood Book of Early Motoring*, 28.

34 Darwin, *100 Years of GM in Australia*, 25.

35 'A new motor car and machinery company', *Brisbane Courier*, 8 August 1911, 12.

36 Quoted in a session report, *The Advertiser* (Adelaide), 12 April 1909, 10.

37 'Minutes of Evidence - Technical Education Vic Royal Commission', Parliament of Victoria, (Melbourne, Vic: Government Printer ,1901), 501-579.

38 Margaret Steven, 'White, Daniel (1834–1923)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, http://adb.anu.edu.au/biography/white-daniel-9070/text15987, published first in hardcopy 1990, accessed online 23 January 2015.

39 E Carlton, 'Carriage building and its relation to the motor car', *The College Quarterly*, 7, August 1911, 19.

40 Jonathan Wood, *Coachbuilding – The hand-crafted car body* (Oxford, UK: Shire Library, 2008), 18.

41 Penny Sparke, *A Century of Car Design* (London, UK: Barrows, 2002), 10.

42 *Geelong Advertiser*, 13 August 1917, 3.

43 Darwin, *History of Ford in Australia*, 16.

44 James R Holden, 'Reminiscences of 25 years in Australia', a speech to Holden old-timers in Adelaide 10 Aug 1951. Transcript given to Tom Wylie and held by his son, Don Wylie.

45 Holden, 'Reminiscences'.

46 Holden, 'Reminiscences'.

47 Paynting, *The James Flood Book of Early Motoring*, 178; Darwin, *The History of Holden Since 1917*, 16.

48 *General Motors World*, April 1931, 'GM Export Company', 3.

49 Holden, 'Reminiscences'.

50 Holden, 'Reminiscences'.

51 The Holden Coupe Utility and Ford Coupe Utility appear to have been designed at the same time but independently of each other. Lewis Bandt's Ford ute was released first.

52 *General Motors World*, June 1936, 4.

53 GM Export Company ran their first advertisement for the Model 42 Oakland in the November 1912 issue of the *Australian Motorist*.

54 Hubert French arrived in Australia with Ford serviceman, Mel Brooks, in November 1923. A series of letters back to Ford Canada became known as 'The French Report', a copy of which was located in the Ford Australia archive. French became the first Managing Director of Ford Australia; Joe Rich, 'French, Hubert Charles (1882–1961)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, http://adb.anu.edu.au/biography/french-hubert-charles-10249/text18125, published first in hardcopy 1996, accessed online 23 January 2015.

55 Darwin, *History of Ford in Australia*, 17.

56 Darwin, *History of Ford in Australia*, 42.

57 Eric Richards, 'Richards, Tobias John Martin (1850–1939)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, http://adb.anu.edu.au/biography/richards-tobias-john-martin-8196/text14337, published first in hardcopy 1988, accessed online 23 January 2015.


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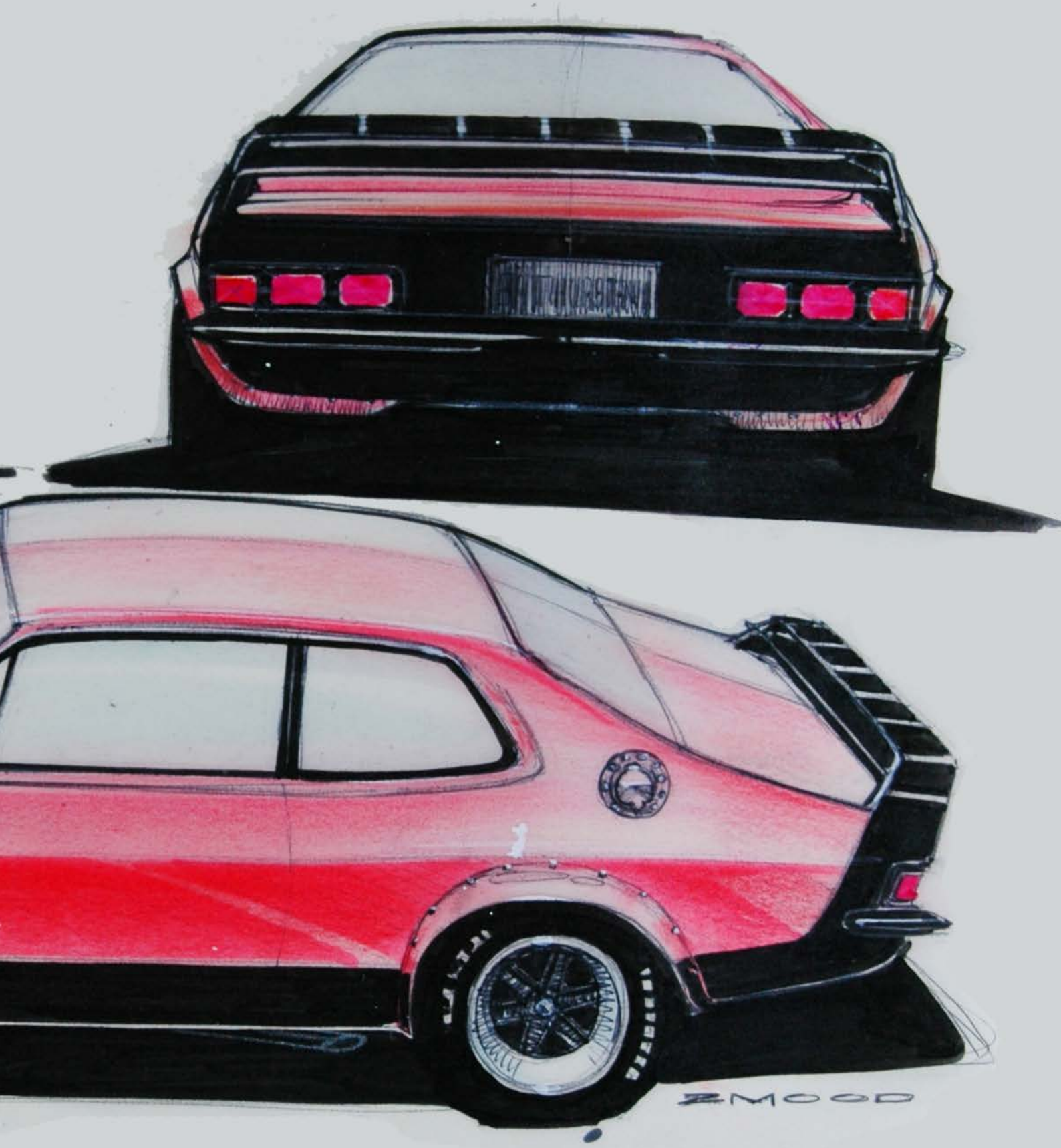

ZMOOD

INTERVIEW PHILLIP ZMOOD

Tony Lupton

Tony Lupton talks to Australian car designer Phillip Zmood about the influences that shaped his career and some of the highlights in his life in car design.

When Phillip Zmood was a child, back in the 1950s, packages containing copies of *The Saturday Evening Post* arrived from America every few months at the family home in Victoria. The quintessential American news magazine wasn't often seen in Australia and Zmood was so fascinated by the lush illustrations he began copying them himself.

Zmood drew houses, made plaster models, thought about the colour and shape in the Norman Rockwell cover illustrations and then he started drawing cars. The cars in the pages of the magazine and the cars in his imagination.

By the time he was 13, in 1956, he had drawn his first concept car, an exotic, sporty convertible. 'I was trying to imagine a car from the distant future, from 1970', he says.

Possessing ambition as well as talent, he took his drawing to General Motors Holden and asked for a job. 'I wanted to join their trainee program, but they sensibly told me to go back to school'.

He succeeded eventually. Zmood would ultimately become the first Australian to head the General Motors Holden design studio and is recognised as one of the most influential figures in Australian automotive design. By 1970, the 'distant future' of his childhood concept car, he was designing the sporty HQ Holden Monaro coupe. It was a marvellous example of life imitating art.

Back in 1956, the Holden bosses must have seen something of Zmood's potential, along with his determination, because they didn't just fob him off. Regular meetings followed over the ensuing years and while there was still no job they looked at his work and helped keep him supplied with drawing materials and he kept drawing.

At a time when most people didn't even own a car, the Zmood family had some interesting and uncommon vehicles.

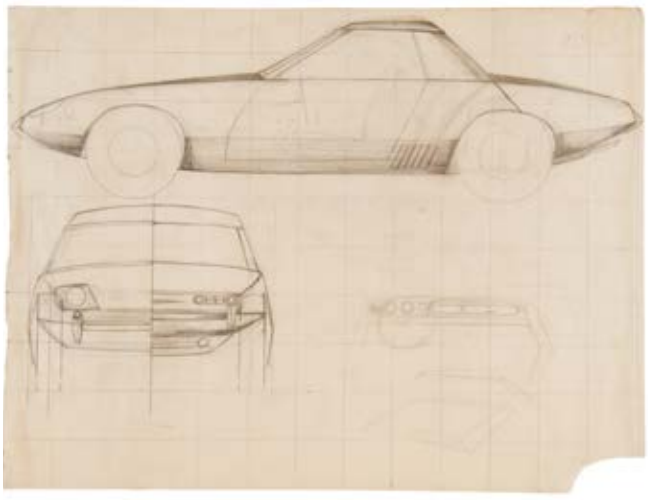
'My grandfather had Studebakers and my father drove a Straight 8 Buick. Later on the family had taxis and I used to help Dad who did his own repairs. I enjoyed taking things apart and making mechanical gizmos. I knew that in addition to drawing I wanted to be involved in making things'.

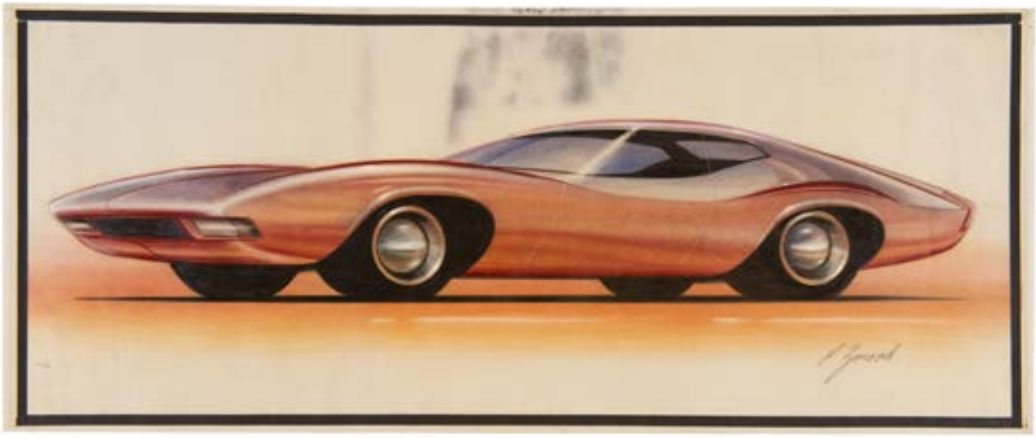
Yet another influence that spurred Zmood's interest in drawing cars was a relative who happened to work as an automotive advertising artist. It seems the idea may have been planted early that a living could be made from drawing cars.

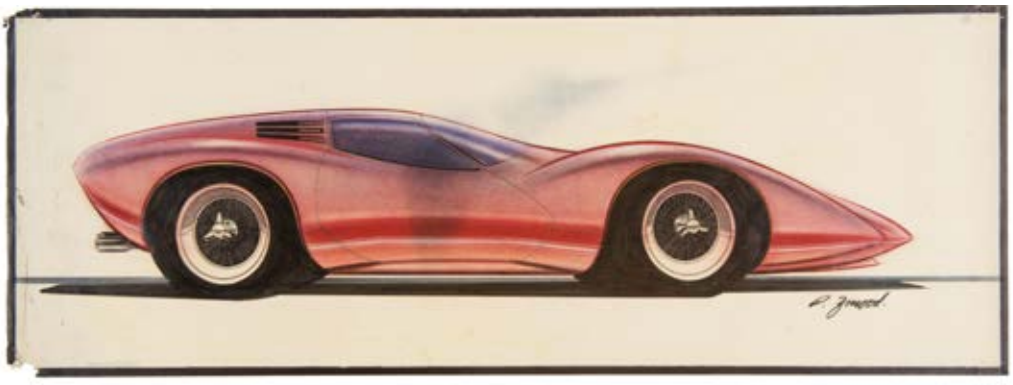
After finishing secondary school, Zmood studied for a Diploma in Industrial Design at RMIT. He entered the prestigious British Carriage and Automobile Manufacturer's Automobile Body Design Competition, which was open to students living in all Commonwealth countries. His design for an open sports car that he called the Gannet won the international award and prompted stories in the local newspapers.

Previous pages
Phillip Zmood, drawing of styling proposals for LJ Torana XU-2 V8. RMIT Design Archives

This page
Phillip Zmood, preliminary drawings of styling proposals for the Gannet 1000 which won first prize in the British Carriage and Automobile Manufacturers design competition in 1963. RMIT Design Archives







This page
Top
Phillip Zmood, drawing of advanced styling proposal for concept car, GM Detroit, USA, 1967. RMIT Design Archives

Middle
Phillip Zmood, drawing of styling proposal for Torana GTR-X, GMH, Port Melbourne. RMIT Design Archives

Bottom
Phillip Zmood, drawing of advanced styling proposal for Chevrolet Corvette, GM Detroit, USA, 1967, RMIT Design Archives

Opposite page
Phillip Zmood, drawing of advanced styling proposal for Oldsmobile, GM Detroit, USA, 1967. RMIT Design Archives

'That design was how I thought a new version of the MGB might be developed', he explains. 'It had a chiselled, wedge shape instead of the current rounded panels. A rotary engine was located over the rear wheels and there was an innovative roof with telescopic panels and rear window that slid down behind the seats'.

After completing his industrial design diploma, Zmood joined GMH in 1965, soon after their new Fishermans Bend technical centre was opened. It was fortuitous timing. General Motors, Holden's American parent, had some forward thinking managers in Australia and a development program for talented new employees.

'The American who was head of Holden design, Joe Schemansky, understood the creativity of automotive design and the need for skills development', says Zmood.

When he started in the design studio at GMH, Zmood was literally given a blank canvas. 'Joe Schemansky showed me into a room and told me to just draw cars. It was an opportunity to be creative'.

After only a year at Fishermans Bend, Zmood was sent to Detroit for six months special training as part of the GM development program. He spent a month in six GM division design studios, starting in Advanced Design and then moving through Buick, Cadillac, Oldsmobile, Pontiac and Chevrolet.

'The Advanced Studio was where they did the crystal ball stuff. Gazing into the future'.

He got to drive around in another new hot car every few days. Cars like a convertible Chevrolet Chevelle or an Oldsmobile Toronado, the sporty muscle cars Australians only saw in the movies.

In Detroit, Zmood was in company with the long-serving head of GM Design, Bill Mitchell, and some of the cars he took home in the evening and drove on weekends were Mitchell's own customised specials.

He worked with senior designers like Larry Shinoda, who had worked on the Corvette Stingray, had recently been involved in the sleek redesign of the Chevrolet Corvair for 1965 and would soon, after shifting across to Ford, design the 1969 Boss Mustang. The experiences kept on coming.

'I once drove with Larry Shinoda on the GM test track in a mid-engined V8 Corvair show car that did over 130 mph. That car never made it into production'.

In addition to sampling some of the legendary cars of the 1960s, the experience in America exposed Zmood to the most advanced techniques in car design that were about to be introduced to Australia.

'I started at GMH at a time when they were just starting to implement US design techniques', he says.

'In Australia we had been using wood and plaster for modelling designs, based on the English craft system. The Americans didn't like this and used special clay, which was much more flexible and easy to modify. Basic materials like vellum-type papers, inks and tapes used in the studio were more advanced in the USA'.

Back in Australia after his stint in Detroit, Zmood was influenced by the deputy head of design, another American named John Schinella. He became a role model and mentor with his enthusiasm for integrated design and harmony.

'John Schinella understood line and form', says Zmood. 'He gave an American interpretation to European design cues and saw that in a car both engineering and design need to come together'.

While GM in Detroit had historically set the Holden design briefs and provided the management and oversight, local designers at GMH had been responsible for the design work on Holden models. There was a belief at GM that eventually Holden would manage all parts of the design and manufacturing process on its own.

'In the first place, our job was to find ways to do things more cheaply and efficiently because of the low volume of production in Australia. Because of our ability to do this, GM management eventually

realised we were just as good at design and possibly more innovative than they were'.

For Zmood himself, after working on the HQ Holden and heading the Torana design studio, there was a stint at GM's Opel subsidiary in Germany. After returning to Australia he spent three years as Holden's Deputy Director of Design under Leo Pruneau, the last of the American directors of design at GMH.

'Leo Pruneau, whose accomplishments included leading the design of the hatchback Torana and the first Commodore, brought more of a European aesthetic to GMH design. He stood for precision and refinement of design and was a charismatic leader'.

Upon Pruneau's reassignment in 1983, Zmood became the first Australian to be appointed Director of Design at GMH, a position he held until 1998.

'Remember that times were bad in the auto industry in 1983', he points out. 'At that time GMH did some clever things to improve the quality and value of the Holden Commodore. There was a good culture with the company and unions working together. Later in the 1990s, development of the VT Commodore again really spotlighted us with GM for our skills in design and our smart approach to management'.

After major work on the Monaro, Torana and Commodore, another landmark in Zmood's career occurred in the mid-1990s, when General Motors commissioned Holden to design a show car for display in the United States. With development of what was known as the Buick XP2000 project, the wheel had turned full circle and Australian design expertise was being brought directly to Motor City from Melbourne.

The Buick XP2000 show car was a breakthrough for GMH. Designed and built in Melbourne, the car was shown at the Detroit Motor Show and to Buick dealers around the United States.

Having started his career in the era of plaster models, Phillip Zmood has more recently helped usher in the new era of digital design and global manufacturing. This included setting up the first General Motors technical joint venture in China. 'We were early into using digital design techniques in Australia', he said. 'We had to keep the costs of design and production down so we needed the ability to do things quickly.

By integrating our physical drawing and modelling with digital technology we shortened development time by 30%. This gave us an edge'.

After a career in Australia, America, Europe and Asia and designing some of Australia's iconic cars, Zmood now has the opportunity to reflect on the role of the automotive designer. 'In retrospect, I see myself as an automotive architect rather than a designer', he says. 'With cars, it's not just about form but ergonomics and the total package. Like an architect, you have to consider aesthetics, cost, timing of the project and the needs of the customer'.

Tony Lupton is a Melbourne writer and classic car enthusiast.

This page
Phillip Zmood, drawing of front design proposal for LH Torana XU-2. RMIT Design Archives

Opposite page
Phillip Zmood, preliminary drawing of styling proposal for 'Peter Brock' LH Torana. RMIT Design Archives

PEER REVIEWED ARTICLE

WOMEN IN THE EARLY AUSTRALIAN AUTOMOTIVE INDUSTRY: A SURVEY

Judith Glover and Harriet Edquist

This survey of current research into the Australian automobile industry focuses on the ways in which women experienced the new technologies of speed and mobility in the early decades of the twentieth century. It is organised into three themes: women as drivers and mechanics, their opportunities as production workers, and as designers and engineers.

Women were already familiar with the independence afforded by the bicycle in the late nineteenth century and turned their attention to the automobile when it appeared around 1900. They embraced the new technology primarily as drivers and, to a lesser degree, mechanics and in doing so contributed significantly to the enterprises of nation-building in the early modern period. As Graeme Davison observed, the motorcar:

> promised a new era of female independence although. . .the costs and hazards of motoring restricted it to a minority of well-to-do adventurers. The motoriste, as she sometimes called herself, was a figure of self-conscious emancipation, whose mechanical enthusiasm, zest for speed and power, and sometimes mannish dress, set her apart from her more conventional sisters.[1]

Current research suggests that women's participation in the production of cars did not commence until after the establishment of the major foreign-owned companies such as General Motors-Holden (GM-H) and Ford, particularly after the mobilisation of female labour during World War II. And while research in the area is as yet rudimentary, it appears that Australian women's contribution to automobile design and engineering took several more decades to evolve.

Drivers, adventurers and mechanics

Of the three areas treated here the most comprehensive research has been carried out in the area of women's mobility, particularly their engagement with the automobile as drivers and mechanics. Australian women were early participants in this global phenomenon as Australia had begun to develop a local auto industry in the 1890s and had established car clubs and motorsport fixtures by the beginning of the twentieth century. In 1904 Florence Thomson, wife of Ben Thomson, a South Australian dentist, drove from Adelaide to Melbourne (approximately 725km) in eight days in a 5hp Beeston Humberette 'dressed for the part in leather overalls, peaked cap, ear-flaps, mask, and goggles'.[2] Her husband was the first person to undertake this drive in 1903, the same year Florence entered the Opening Run at the Automobile and Motorcycling Club of South Australia meet. She also participated in the far more challenging Dunlop Reliability Trial in 1905, from Sydney to Melbourne, in a 6 hp Wolseley and was enthusiastically cheered along the way. Her feat, which might have been a long-distance world record for a women driver at the time, was recorded in Algernon Darge's extensive photographic survey of the race.[3] By 1914 women were such enthusiastic motorists that Margaret Allen could report in *The Australian Motorist:*

> a motor car is really preferable to a husband in many ways. . .it is more manageable and is such a delightful companion and form of amusement. If you take care of it it remains true to you and responds to your every wish and whim.[4]

Kimberley Webber points out that by this time Allen 'had been her father's chauffeuse for two-and-a half-years and had driven over 2000 miles in her Delauney Belleville'.[5] Her father gave her a Detroit Electric car in 1915, which enabled some of the freedom and independence she wanted. But it was too safe. Allen, like other women at the time, preferred something faster and more dashing such as the Studebaker which became her next car.[6]

It was from among the ranks of Victoria's women motoring enthusiasts that the RACV drew twenty-five of its most regular drivers for the World War 1 Volunteer Transport Unit, otherwise known as the Volunteer Motor Corps. The RACV and the Red Cross both organised volunteers to transport wounded soldiers in their motor vehicles, leading to a certain amount of rivalry as to whose group was to meet which ship.[7] One of the RACV's drivers was Mrs Cox of Parkville 'a motoriste of wide and long experience' who had been driving 'ever since motoring became the fashion in Australia'. She regularly responded to the summons to meet the hospital ships in her brown Talbot to transport wounded servicemen.[8]

After the war, women became more visible in Australia's rapidly developing motor racing scene at endurance trials and on the track. For example, in 1921 Miss Braithwaite completed the difficult 1000-mile Alpine Trail organised by the RACV in one of the first Citroëns to arrive in Australia,[9] and Vida Jones, who ran a financially successful brewing business with her husband in Lithgow, NSW, became a highly skilled and competitive racer and touring driver. During the late 1920s and early 1930s she took part in country reliability trials, time trials, and was a regular speedway racer in Sydney in her supercharged 1750 Alfa Romeo. She also owned a Hyper Lea-Francis that she campaigned with other drivers.[10] Jones stopped racing when her husband died in 1933 by which time she had become something of a legendary figure. Molly Turner Shaw, a

Mrs Gordon Simpson and Joan Richmond sitting in Richmond's 3 litre GP Ballot racer in July 1934 Brooklands Museum Collection, courtesy Silodrome

Melbourne architect, raced in a stripped down Austin 7, a favourite on the Melbourne racetracks in the 1920s, and in 1932 'appeared daringly togged-out in trousers and goggles when acting as a mechanic at the Australian Grand Prix at Cowes.'[11]

Georgine Clarsen's important 2008 study *Eat My Dust: Early Women Motorists* showed how women across the world embraced automobile technology as mechanics and taxi drivers, long-distance adventurers and political activists.[12] She records the journeys of three pioneering groups of women who crossed Australia in the mid to late 1920s: Marion Bell and her young daughter; Gladys Sanford and Stella Christie, and, Jean Robertson and Kathleen Howell. In October 1925 Marion Bell and her 11-year-old daughter left Perth in an Oldsmobile Six on a well-publicised trip that headed north to Port Hedland, Broome and Katherine before turning south east down to Brisbane and Melbourne, then back to Perth via Adelaide by April 1926. Between March and July 1927, the redoubtable Gladys Sandford left Sydney, and drove all the way to Perth, back to Adelaide then up to Darwin and back to Sydney. She had driven 16,093km 'and undertaken running repairs, including re-assembling the engine. On the one occasion she needed help, she short-circuited the transcontinental telegraph-line to gain the aid of technicians'.[13] In 1925 Jean Robertson teamed up with Kathleen Howell, a former school friend, and set a new record for the Perth to Adelaide trip of two days and ten hours in a Lancia Lambda tourer, racing the transcontinental train.[14] Other trips across the continent followed during which these women 'created some of Australia's earliest outback road maps for Shell in exchange for fuel'.[15]

In 1931, Robertson and Howell joined Joan Richmond and took the long-distance motor journey

to another level when they set out for Europe driving stock Rileys, having applied to enter the Monte Carlo rally. Richmond had driven a Citroën at trials and speed events from 1926 and in a Riley Brooklands was placed fifth in the 1931 Australian Grand Prix at Phillip Island. As the *Brisbane Courier* noted, the Australian team comprised three very accomplished drivers: 'Miss Jean Robertson and Miss Kathleen Howell, holders of the present Perth-Adelaide record, and two of the most experienced overland motorists in the Commonwealth, Mrs Charles Goldham, of Toorak, and Miss Joan Richmond, the well-known track racing motorist'.[16] Several months later, at Monte Carlo, they 'put up a wonderful performance, all three cars finishing, a feat seldom accomplished with three perfectly stock machines'.[17] They reached England in February 1932 when Victor Riley offered Richmond a drive with Elsie Wisdom in the 1000-mile race at Brooklands. 'They drove a Riley Brooklands 9 at an average speed of around 90 mph for the best part of twelve hours, recovering from a spin and other mishaps. The win, in one of the longest races held at Brooklands, was rightly celebrated'.[18]

This page
Top left
On the Road to Oodnadatta, South Australia, 1927. State Library of Victoria, Melbourne. Photographer: Jean Beatson

Top right
Kathleen Howell (presumed) squatting down and putting lengths of matting under front wheels of car, 1927. State Library of Victoria, Melbourne. Photographer: Jean Beatson

Bottom left
Elsie Wisdom and Joan Richmond, July 1932. Brooklands Museum Collection, courtesy Silodrome

Bottom right
These three MGs were driven by the so-called 'Dancing Daughters' at Le Mans in 1935. The drivers were Margaret Allen and Colleen Eaton; Doreen Evans and Barbara Skinner; Joan Richmond and Joan Simpson. Brooklands Museum Collection, courtesy Silodrome

Opposite page
Top
Jean Robertson and Kathleen Howell before setting out on Perth to Adelaide trip. State Library of Victoria, Melbourne

Bottom
Pam Ingram with her Austin Healey Sprite in 1962. Ingram raced at Calder and Sandown Park in her specially prepared Austin Healey and also in an Elfin Sports. Lexine Anastasios Collection

Indeed for the next eight years Richmond

> competed throughout Europe in many makes of car with great success. Riley, Singer, Triumph, MG, HRG, AC, Ballot, and Fiat to name a few. She competed in seven Monte Carlo Rallies, also RAC Rallies, Rallies of the Alps, and on road and hill climb circuits such as Brooklands, Le Mans, Donington, Shelsley Walsh and many more.[19]

Richmond abandoned racing during the war but not before she had established her reputation as Australia's first professional racing driver.

Clarsen argues that the transcontinental journeys undertaken between the wars by these women contributed to Australia's emerging national identity. Driving around the continent was seen as a nation binding activity, bringing the states together and taking possession of the country (Aboriginal ownership being completely discounted). The media's fascination with female drivers criss-crossing the continent also reflected a desire of the new nation to appear civilised. Adventurous women represented the modernity of a young and forward nation in the 1920s as long as the media was allowed to feminise them to some degree.[20]

While the media tended to celebrate the exploits of women motorists in the interwar years, the situation changed somewhat after World War II, as can be seen in the coverage of the Redex durability trials which ran from 1953 to 1955.[21] The trials were not professional races but a series of performance stages that circumnavigated the continent over 6,500 miles (10,460km) and were celebrated as more exacting (and exciting) than the famous Monte Carlo rally in Europe.[22] The Redex trials attracted both professional teams supported by commercial interests and also private motorists 'driving their precious family car on a strictly limited budget'.[23] As Clarsen notes, this broad participation was a key to their success, but so was their 'barely controlled anarchy', vividly captured in the extensive newspaper reportage and on film. Clarsen argues that 'the trials unfolded as a coming-of-age story, a narrative of post-war optimism and abundance, in which Australia was finally to inherit its own (mini) industrial revolution'.[24]

However, the media liked to present a masculine ideal of the drivers and the 'Redex trials worked towards defining Australian motoring as a hyper-

Trim department at Holden Motor Body Builders, Woodville, South Australia, c1928.
N Darwin Collection

masculine enterprise in which physical endurance, strength and a bush mechanic's prowess were highly valued qualities'.[25] Therefore those few women who chose to enter the trials did so against this dominant media narrative. But enter they did. In 1953 nine women lined up against 500 men for the Redex competition. Some teamed up with men, such as experienced trial driver Marie Higgs who entered as navigator with Bill McLachlan and thought they had a chance of winning; some joined forces with their husbands, and from Sydney came the all-women team, Lois Rowe, Nola Rowe and Diana Brunton.[26] The following year the *Australian Women's Weekly* entered the all-woman team of Helen Frizell, Enid Nunn and Nan Broughton in a Humber Super Snipe, the last two women had driven ambulances during the war.[27] There were also the so-called 'granny' entrants Charlotte Hayes (in a Volkswagen) and Winifred Conway. Driving an Austin in the 1953 trial, 'Granny Conway', a 63-year-old widow from Rose Bay, was initially much derided, but won over the country with her no nonsense, calm and articulate approach. She simply refused to accept she could not race and then did it on her own terms, rejecting the aggressive and competitive nature of some male contestants.[28]

Women also competed in other arenas. Diana Davison Gaze raced an MG TC and SSK Mercedes at the Rob Roy Hillclimb, holding the Ladies TC record for some time and the Ladies record in the Mercedes in 1948.[29] 'Geordie' Anderson, the wife of Cyril Anderson who held the Queensland Jaguar agency at Westco Motors, won the first 24 hour race at Mt Druitt with Bill Pitt in a Jaguar XK120 in 1954 and finished 7th behind 6 Volkswagens in the 1957 Mobilgas Trial around Australia in a Jaguar Mark VIII.[30] Sydney motorcycle racer Edna Wells took on visiting Irish champion speedcar racer, 'Flying' Fay Taylour, in a series of exhibition races in Sydney in October 1952. Driving a Ford special speedcar, Wells won two out of the three races in her first outing in a midget (these small racing cars are called speedcars in Australia).[31] In fact women continued to compete on the racetrack and in rallies for the remainder of the century, although not in large numbers.

While it was normal to drive with a mechanic in the early years of racing, women often became adept at keeping their cars in working order, as Gladys Sandford demonstrated on her 1927 transcontinental journey. Ruby Watson of West Melbourne joined the Volunteer Motor Corps during World War I; she had apparently driven since she was a schoolgirl and

was very experienced. She was also described at the time as a capable mechanic, 'besides being a cool hand at the wheel'.[32] Alice Anderson took this technical ability a step further when she established a garage in Kew in 1919 and gained the distinction of 'being the first woman in Melbourne to conduct a motor garage for the public, and in that sphere [she] achieved much success'.[33] Miss Anderson's Motor Service, offered 'petrol sales, vehicle repairs, a driving school, a 24-hour chauffeur service, either with the garage's cars or the client's vehicles stored on the premises' and driving classes and mechanical instruction classes for women.[34] Jean Robertson was one of her pupils. 'For an extra fee women could work alongside mechanics on their own cars; a programme enabled women to work as pupil-mechanics to learn the mechanical side of motoring'.[35] The all-woman garage employed eight drivers and mechanics in the early 1920s who, during one day, might be 'serving petrol, washing and greasing cars, and handling a Rolls Royce or Stanley Steamer, to driving customers to the races'.[36] Anderson was a popular driver during the war and published her ideas on women as career mechanics in *Woman's World*. She also patented a 'Get Out and Get Under Trolley' for ease of access when working on cars.[37] When she died in 1926 the garage was taken in hand by her friend Ethel Bage and while less successful 'was still operating in 1942 when the last of the staff left to join the women's services in World War II'.[38]

Anderson's story seems to have been unusual in any context although Clarsen recounts the case of Scottish woman Dorothee Pullinger who persuaded her father to open up his munitions factory in Tongland, south-west Scotland to train women as engineers and machinists during World War I.[39] After the war the factory was given over to car production and Pullinger and her team of women produced the first car for female consumers – the Galloway - which went into production between 1920 and 1923, after which the plant was forced to close and join its parent company in Dumfries.

The production line

If women's enjoyment of greater freedom and mobility as car drivers has been relatively well documented, their participation in the car industry as production workers is far less well understood for this early period. To date no evidence has come to light of women working in the early body building shops, although admittedly research into this area of our automobile history is not well developed. It is probable that their entry onto the shop floor came with mechanised automobile production. Certainly it appears that by 1928 women formed the staff of the trim shop at Holden, Woodville, South Australia, and a careful study of their conditions of employment and the type of work they were engaged in would be a valuable addition to our understanding of the early auto industry and women's work in Australia. Robert Tierney's research into state intervention, managerial control and trade union organisation in the auto industry has revealed that 'between July and December 1939 Woodville employed on average 168 women, comprising 5.1 per cent of the plant's total workforce of 3,268 persons'. They worked in two areas – the trim fabrication shop and the springs shop, undertaking the 'female' tasks of sewing, pasting, pleat stuffing and cushion and squab springs assembly.[40] To have built up these numbers by 1939 suggests that the women recruited to Woodville during the 1920s stayed on, or returned after the Depression; presumably GM-H, as Holden's had become, was seen as offering stable work.

During World War II women moved into the industry in relatively large numbers stimulated by active government measures. By July 1942 'Woodville employed 1,330 women, working as riveters, press machinists, third-class machinists, bench assemblers. . .touch-up painters, rackers-up as well as sewers, springs assemblers etc.,' that is, in numerous roles traditionally undertaken by men.[41] The women's wages were set by the Women's

SPORTS ROADSTER with body in Tanuara and mouldings and centre of rear deck in Virginia Cream. Fenders are black, wheels Virginia Cream.

SPORTS ROADSTER with body in Empress Yellow and with black mouldings, striped with Virginia Cream. Fenders are black, louvres on the bonnet have a black line and wheels are Orinoco Vermillion.

TWO EXAMPLES OF FORD CARS WITH COLOR SCHEMES CHOSEN BY A GROUP OF AUSTRALIAN ARTISTS.

Plate 68.

Employment Bill enacted by the Curtin Government in 1942 at 90% of the wages of men, although not all the plants paid the full amount. From time to time men went on strike in protest at women doing their work. For example there was unrest at one company where cores for motor cylinders were traditionally made by skilled male workers who took from one to three hours. When these were handed over to women and boys, they were produced in half the time. Women were also employed by the GM-H Woodville and Beaufort plants to work on the construction of fighter bombers and other arms production. This employment was not guaranteed after the war and many women were sacked to make way for returned ex-servicemen. When they re-entered the industry it was into traditionally, lower paid 'female' roles.[42] In 1951 Woodville employed 149 women (fewer than in the 1930s) primarily in the trim and springs departments while in 1964 there were only 548 women employed in the entire Victorian vehicle industry mainly as machinists, janitors, canteen attendants and other relatively unskilled work. Tierney argues that 'gentlemen's agreements' between management, right-wing trade union organisations and conservative male enclaves endeavoured to exclude or reduce women's participation in the workforce after the war.[43] In consequence, during the 1960s the issues of equal pay for women and the right of women to work in traditionally male roles were battled out in unions and automotive plants across Victoria. There is a certain irony here as American automotive historian Margaret Walsh has pointed out, in that while men controlled the production of cars, increasing numbers of women after the war used them to enhance their social freedoms as consumers and drivers.[44]

Automobile design

While Tierney has provided an outline of women's participation on the production line, research into Australian women's engagement with the auto industry as designers and engineers has barely commenced, unsurprising perhaps as Australian automobile design is a nascent field of research. Car design in Australia emerged from the motor body building trades and skills, which flourished in the inter-war period. John Laurent notes that in 1940, when GM-H and Ford were well entrenched, there were 215 motor body building plants in Australia which had one of the highest levels of car ownership in the world.[45] While there is no record to date of any women working in these independent body shops, by the end of the 1920s two women suddenly emerge as colour consultants to the major companies. By this time colour had become an important point of market differentiation between the competing American companies GM and Ford, the former, under the direction of Harley Earl, strategically and successfully using colour and annual model turnover to challenge the dominance of Ford's phenomenally successful black Model T.[46] Responding to this challenge, in 1929 Ford Australia engaged advertising entrepreneur George Patterson, who had studied 'scientific management' and marketing in New York, to fight back. Patterson's campaign revolved around colour and included attractive brochures on 'Colour Harmony' which described how well-known artists George Lambert, Thea Proctor and Sydney Ure Smith had selected colour combinations for a range of Ford cars. Patterson and Ford recognised both the significance of colour in product design and the usefulness of collaborations between artists and industry, ideas that were promulgated in advanced design circles such as the Bauhaus during the 1920s. Patterson published an explanatory article in the December 1929 issue of *Art in Australia*:

> The fight for public favour has forced manufacturers to revolutionise their methods of production and also the presentation of their products. So long as public demand could be satisfied by the engineer and factory operative, the manufacturer had the situation well in hand. But immediately the public demanded more artistic form and brighter appearance, the industrialist was faced with a problem which could not be solved within his own organisation. Thus he was forced to seek the help of sculptors to determine form, and called upon celebrated artists to decide the vexed question of colour. . .
>
> Feeling that the time had come to try and secure colour combinations that were both artistic and in harmony with Australian life, the Ford Company of Australia Pty. Ltd. decided to enlist the help of leading Australian artists. It sought the advice of George W. Lambert, A.R.A., Sydney Ure Smith, and Miss Thea Proctor, who, for several months, collaborated with factory experts and paint manufacturers in determining a wide range of colour combinations applicable to the various types of Ford cars.[47]

1929 improved Ford roadsters; colours selected by Thea Proctor, George Lambert and Sydney Ure Smith, for the Ford Motor Company of Australia, *Art in Australia* , no 30, December 1929

Meanwhile in Adelaide, home of Holden's coach builders, the *Register* applauded Proctor's involvement in the project arguing that 'modern woman, slim, quick and vivid, must have a car to match her personality. Old-fashioned colour schemes go overboard'; modern art comes to 'the rescue with new lines and colours'.[48] The *Register* went on to discuss South Australia's own Barbara Sandford, who was 'making a study of colour harmony in cars' at Woodville:

> where she chooses materials, fittings and carpets. In short, she sees to it that the finished product looks entirely satisfactory from a woman's point of view. She, too, likes bright colours for sports cars.[49]

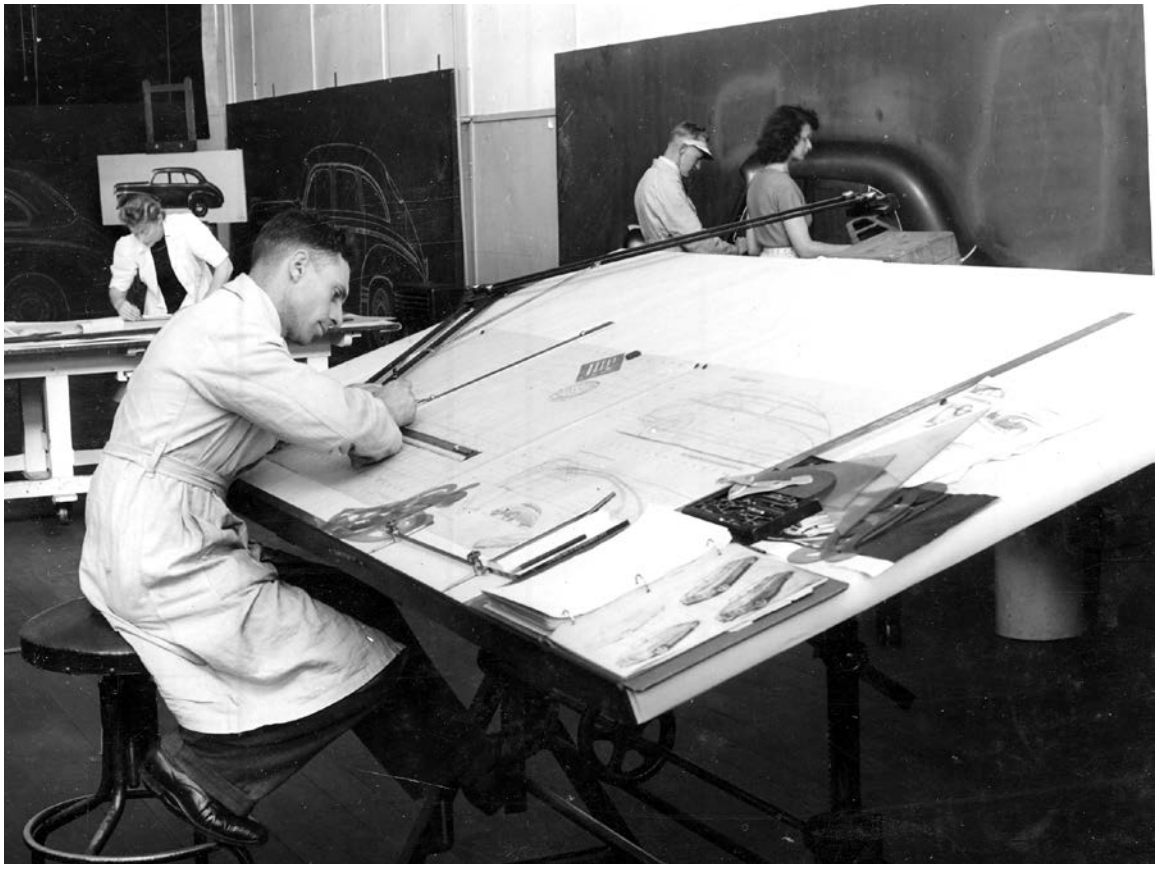
Sandford worked for Holden's on the 1930 Chevrolet and Buick models, coordinating the exterior paintwork and interior upholstery, a combination of responsibilities that now goes under the heading of 'colour and trim'. In this she appears to have been a pioneer and would have worked with the female staff of the trim department as well as male staff of the engineering department. After this bright flash, women disappear from the record as design advocates for many decades although it is possible that they had some input into automotive design studios during the war. Norm Darwin's history of Holden includes a photograph of two women styling clay models and another of women working in the engineering studio at Woodville in the war years.[50] After the war as we have seen they continued to work in the trim department but not as design advisors, although in 1953 GM-H replicated Ford's 1929 strategy and commissioned Sydney interior design consultant Mary White to coordinate colour schemes for the Holden.[51] She apparently:

> started the vogue for pink and blue cars. [She] painted the first model a shell pink. The interior was a symphony in pale grey, with foam rubber seats upholstered in Italian tapestry. . .Her next colour scheme was pale blue with the interior upholstery done in off-white leather, the seats covered in dull blue cloth, and Chinese lacquer-red cushions.[52]

Whether GM-H's employment of women in the design studio went any further than this is not known. According to Penny Sparke, Ford and GM in America started to employ women as interior stylists in the 1940 and 1950s; Ford had two women in 1945 and six by 1947 while GM had nine women in their studios by 1958 where 'their visualizing talents were confined to car interiors, colours, and accessories'.[53] One of these women was Suzanne Vanderbilt, an industrial designer who specialised in styling the interiors of GM's luxury cars, such as the 1958 Cadillac Baroness, for a female market.

While the embedded gender inequality of the Australian workplace was an important factor in inhibiting women's participation in all aspects of the auto industry so was the foreign ownership of these concerns. It was not until the late 1960s that Australian men had a major input into the design of the cars they produced at GM-H, Ford Australia and Chrysler Australia; that area being closely controlled by their American parent companies which, like their Australian counterparts, fostered a very male culture.[54]

What this survey indicates is that in the first half of the twentieth century women engaged with the Australian automotive industry and car culture in a number of ways and with varying degrees of success. They embraced the new technologies afforded by the motorcar as drivers and consumers and made it their own. Women could achieve this because owning and driving cars was a private matter; rules had not been invented to prevent them from enjoying the possibilities and advantages of this new



This page
Artists work on the Australian car in Holden's Fisherman's Bend Engineering studio. In the background can be seen two women, a tracer and an airbrush artist.
N Darwin Collection

Opposite page
Modellers producing 1/8" scale model of the proposed Holden car at the Fisherman's Bend Engineering studio, c1946.
N Darwin Collection

technology. As long as they could afford to drive or own a car, or their parents or husband could, they were free to exercise their ambitions, and this remained true throughout the century.

Participation in the manufacturing sector of the automobile industry appears to have been possible for women at Holden's in the 1920s and GM-H in the following decades if not at other plants, but on what conditions is not known. When women did enter the automotive plants in significant numbers during World War II to undertake work that had traditionally been carried out by men, they did not receive equal pay for that work, and in the post-war period their employment was set against a discriminatory organisational and managerial culture that resisted offering them 'men's' work or equal pay.

While research on women designers and engineers in the Australian auto industry is as yet rudimentary it appears that it was not until the late twentieth century that their numbers became noticeable in these areas of production, more or less replicating the European experience.[55] However, further research may reveal earlier examples, particularly at Woodville.

In terms of Australian design history this survey has indicated that published research is limited in the areas of women as industrial designers in the auto industry, and automotive design as an historical subject. To date automobile design has remained outside the purview of scholarly research in Australia, which admittedly does not have a great track record in industrial design research generally. An exception is provided by Michael Bogle who commented on both 'colour harmony' and post-war automobile design in his 1998 history of Australian design and also recognised the fact that Australia's first industrial designers were to be found in the motor industry.[56] Generally however it has been enthusiasts and historians outside the academy who have published the histories of GM-H, Ford, Chrysler and other manufacturers and marques in Australia although not from the point of view of design. Darwin's current research into the early history of Australian automotive design is the first in-depth study undertaken in this field of our industrial design history. Yet the industry has been a mainstay of Australian and particularly Victorian manufacturing for over a century, and has been far more important to the economy and the very formation of twentieth-century Australian culture than the products that usually form our canon of industrial design and figure in our research on Australian modernism. It will not be until we have a more sophisticated understanding of Australia's automotive design history that the place of women within it will be understood.

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Endnotes

1 Graeme Davison, *Car Wars. How the car won our hearts and conquered our cities* (Crows Nest NSW: Allen & Unwin, 2004), 29.

2 'A Pioneer Lady Motorist', *Chronicle* (13 June 1929): 21, accessed online 30 January 2105 through the Australian National Library archive, http://nla.gov.au/nla.news-article87456520; Earlymotor.com.; http://earlymotor.com/serpolettes-tricycle/pdf/serpolettes-tricycle-04.pdf, pp. 18-19, accessed online 1February 2015.

3 This volume was displayed in the exhibition curated by Harriet Edquist and David Hurlston, *Shifting Gear: Design, Innovation and the Australian Car*, at the National Gallery of Victoria, 6 March to 12 July 2015.

4 Margaret Allen quoted in 'Miss Allen Interviewed', *The Australian Motorist* (1 October 1914): 154-55, in Kimberly Webber, 'Women at the Wheel' in Charles Pickett (ed.), *Cars and Culture: Our Driving Passions* (Sydney: HarpersCollins/Powerhouse Museum, 1998), 86-87.

5 Webber, 'Women at the Wheel', 87.

6 Webber, 'Women at the Wheel', 88.

7 Information of Helen Stitt, email correspondence, 26 March 2015.

8 Quotation from a clipping from the RACV archives, courtesy of Helen Stitt.

9 Harriet Edquist, 'Racing cars, sports cars and specials', in Harriet Edquist and David Hurlston, *Shifting Gear: Design, Innovation and the Australian Car* (Melbourne: National Gallery of Victoria, 2015), 47.

10 K A Johnson, 'Jones, Nina Eva Vida (1882–1966)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, http://adb.anu.edu.au/biography/jones-nina-eva-vida-6879/text11923, published first in hardcopy 1983, accessed online 31 January 2015; Kent Patrick, *Bill Thompson. Australian Motor Racing Champion* (Glen Osmond, South Australia: Kent Patrick, 2011), 110-117.

11 Jessie Serle, 'Shaw, Mary Turner (Mollie) (1906–1990)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, http://adb.anu.edu.au/biography/shaw-mary-turner-mollie-15801/text27000, published first in hardcopy 2012, accessed online 15 March 2015.

12 Georgine Clarsen, *Eat My Dust: Early Women Motorists* (Baltimore: Johns Hopkins University Press), 2008.

13 Carol J Baxter, 'Sandford, Gladys (1891–1971)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, http://adb.anu.edu.au/biography/sandford-gladys-11609/text20729, published first in hardcopy 2002, accessed online 12 March 2015.

14 Clarsen, *Eat My Dust*, 131.

15 http://archives.unimelb.edu.au/explore/exhibitions/past/everybody_loves_a_road_trip/women_pioneers, accessed 14 March 2015.

16 'Monte Carlo Rally', *The Brisbane Courier* (28 July 1931): 4, http://trove.nla.gov.au/ndp/del/article/21699932, accessed 24 March 2015.

17 Edquist, 'Racing cars, sports cars and specials', 47.

18 http://speedqueens.blogspot.com.au/2010/07/elsie-wisdom.html, accessed 20 March 2015.

19 http://www.joanrichmond.com/?page_id=58, accessed 20 March 2015.

20 Clarsen, 'Driving Australian modernity: conquering Australia by car', in *Eat my Dust*, 123-131.

21 Georgine Clarsen, 'The Flip Side: Women on the Redex Around Australia Reliability trials of the 1950s', *Humanities Research* 17(2): 17-36, 2011.

22 Clarsen, 'The Flip Side: Women on the Redex Around Australia Reliability trials of the 1950s', 17.

23 Clarsen, 'The Flip Side: Women on the Redex Around Australia Reliability trials of the 1950s', 19.

24 Clarsen, 'The Flip Side: Women on the Redex Around Australia Reliability trials of the 1950s', 21.

25 Clarsen, 'The Flip Side: Women on the Redex Around Australia Reliability trials of the 1950s', 23.

26 'Nine Women among 500 men in 192 cars', *The Sydney Morning Herald*, 27 August 1953, 9S; Clarsen, 'The Flip Side', 27-28.

27 'All-women team drives for us in exciting car test', *The Australian Women's Weekly*, 23 June, 1954, 17.

28 'Granny stole the limelight, *The Sunday Herald* (Sydney), 20 September 1953, 9; Clarsen, 'The Flip Side: Women on the Redex Around Australia Reliability trials of the 1950s', 30-35.

29 Stewart Wilson, *Almost Unknown, The Story of Squadron Leader Tony Gaze OAM DFC* (Lane Cove NSW: Chevron Publishing Group, 2009), 190-191.

30 http://forums.biante.com.au/archive/index.php/t-936.html accessed 13 March 2015; M French, 'Anderson, John Cyril (1904–1983)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, http://adb.anu.edu.au/biography/anderson-john-cyril-12136/text21743, published first in hardcopy 2007, accessed online 31 January 2015; http://en.wikipedia.org/wiki/Bill_Pitt_(racing_driver).

31 'Sydney woman will race Fay Taylour', *The Sydney Morning Herald*, 4 December 1952, 5S.

32 Quotation from a clipping from the RACV archives, courtesy of Helen Stitt.

33 'Shot through head. Death of Miss Alice Anderson', *The Argus*, 18 September 1926, 41; http://trove.nla.gov.au/ndp/del/article/3809717, accessed 14 March 2015.

34 Georgine Clarsen, 'Anderson, Alice Elizabeth Foley (1897–1926)', Australian Dictionary of Biography, National Centre of Biography, Australian National University, http://adb.anu.edu.au/biography/anderson-alice-elizabeth-foley-12772/text23041, published first in hardcopy 2005, accessed online 14 March 2015.

35 Clarsen, 'Anderson, Alice Elizabeth Foley (1897–1926)'.

36 Mimi Calligan, 'Alice Anderson, Garage Proprietor', in Marilyn Lake and Farley Kelly (eds), *Double Time Women in Victoria – 150 years* (Melbourne: Penguin, 1985), 310.

37 'Shot through head. Death of Miss Alice Anderson', *The Argus* (18 September 192: 41, http://trove.nla.gov.au/ndp/del/article/3809717, accessed 14 March 2015.

38 Clarsen, 'Anderson, Alice Elizabeth Foley (1897–1926)'; Clarsen, 'The Flip Side', 25.

39 Georgine Clarsen, 'A Fine University for Women Engineers: A Scottish Women's Munitions Factory in World War One', *Women's History Review*, 12: 3 (2003), 333-356.

40 Robert Tierney, 'The Australian Automotive Industry 1939-1965: A sociological study of some aspects of state intervention, managerial control and trade union organization', PhD thesis, Macquarie University 1991.

41 Tierney, 'The Australian Automotive Industry 1939–1965', 120-121.

42 Tierney, 'The Australian Automotive Industry 1939–1965',

153.

43 Tierney, 'The Australian Automotive Industry 1939-1965', 158.

44 Margaret Walsh, 'Gender on the road in the United States: By motor car or motor coach?' *Journal of Transport History* 31:2 (2010): 212.

45 John Laurent, 'Industry Policy and the Australian Motor Industry, 1920-1942', *Journal of the Royal Australian Historical Society*, 80 (1984), reprinted in Michael Bogle (ed) *Designing Australia. Readings in the History of Design* (Annandale NSW: Pluto Press, 2002), 77-79.

46 Penny Sparke, *A Century of Car Design* (London: Mitchell Beazley, 2002), 22-23.

47 George Patterson, 'Art and the Ford Cars' (*Art in Australia*, no 30, December 1929, n.p.), reprinted in Ann Stephen, Andrew McNamara, Philip Goad (eds) *Modernism & Australia. Documents on Art, Design and Architecture 1917-1967* (Carlton: The Miegunyah Press, 2006), 169, and 'Colour Harmony', *The West Australian*, 12 December 1929, reprinted in Michael Bogle (ed) *Designing Australia*, 73.

48 Edquist, 'From horseless carriage to modern icon', 13.

49 'Modern art and motor cars', *The Register News-Pictorial* (19 December 1929), 28, quoted in Edquist, 'From horseless carriage to modern icon', 13.

50 Norm Darwin, *The History of Holden since 1917* (Newstead Vic: E L Ford, 1983), 161; Edquist, 'From horseless carriage to modern icon', 12.

51 Michael Bogle, *Design in Australia 1880–1970* (North Ryde Sydney: Craftsman House, 1998), 124.

52 'Women today', *The Christian Science Monitor* (7 May 1953), quoted by Ann Stephen, 'Trafficking in cars and women', in Charles Pickett (ed.), *Cars and Culture: Our Driving Passions* (Sydney:HarpersCollins/Powerhouse Museum, 1998), 107.

53 Sparke, *A Century of Car Design*, 211.

54 For local designers in the auto industry see Harriet Edquist and David Hurlston, *Shifting Gear*, passim.

55 Sparke, *A Century of Car Design*, 211–213.

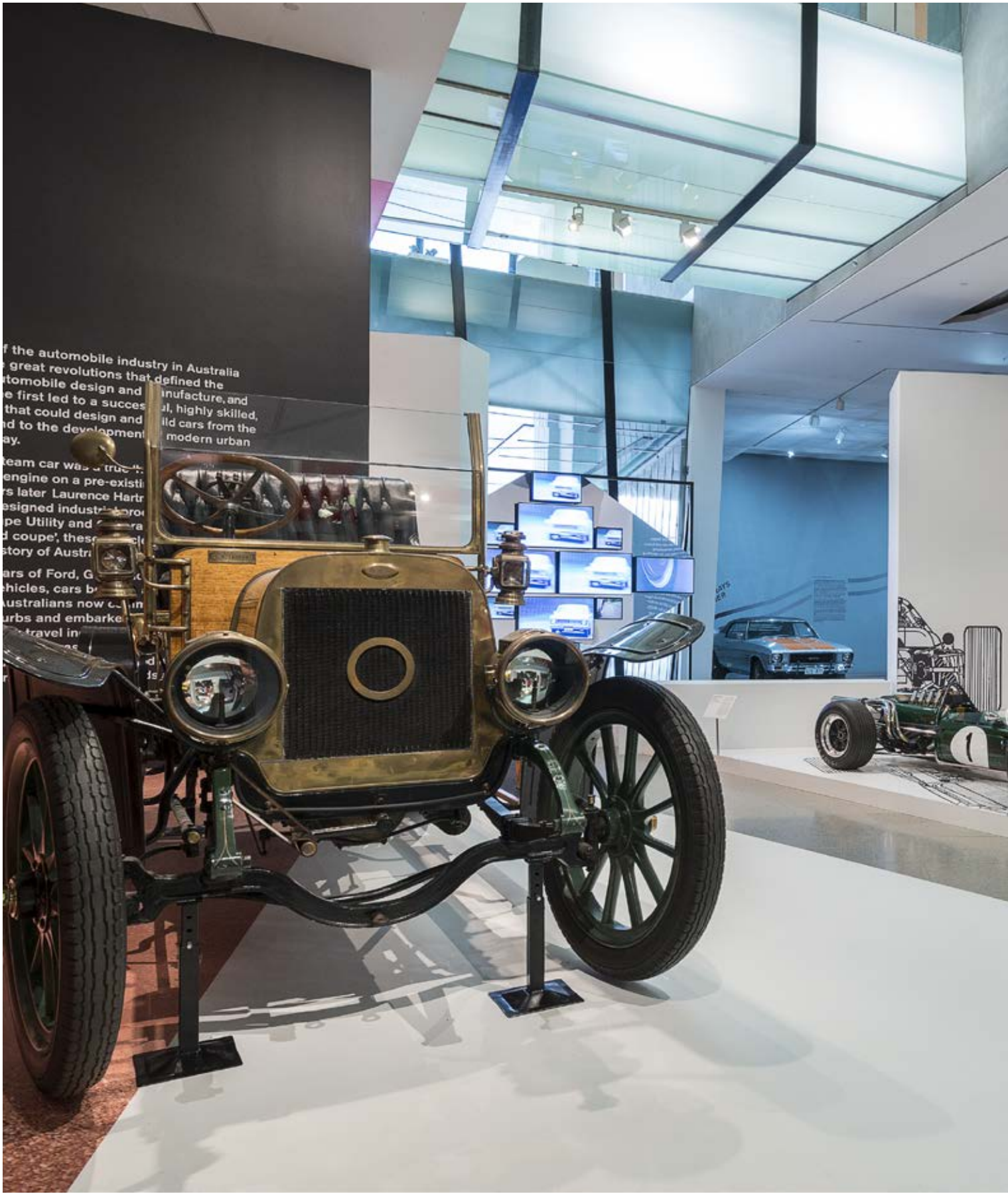
56 Bogle, *Design in Australia 1880-1970*, 75.

EXHIBITION REVIEW

SHIFTING GEAR: DESIGN, INNOVATION AND THE AUSTRALIAN CAR

Tony Lupton

CURATED BY HARRIET EDQUIST AND DAVID HURLSTON, NATIONAL GALLERY OF VICTORIA
6 MARCH–12 JULY 2015



As the National Gallery of Victoria holds the first exhibition in an Australian art institution devoted to the car as an art object, it is timely to consider why this didn't happen long ago.

The car is both a product of modern society and a driver of social change. Its appeal gave rise to car culture, which in turn helped shape popular culture, and the pervasive effect that cars have had on urban planning, work patterns and domestic life give the automobile a leading role in the story of the last century. Notwithstanding this status as a social and cultural phenomenon, the car has been largely neglected by art and design historians. The single noteworthy contribution to scholarly study of car design was provided by Penny Sparke's 2002 book, *A Century of Car Design*, although unfortunately, from an Australian perspective, it ignores Australian car designers and their creations. Perhaps a reason for this omission is our own failure to tell the unique story of Australian automotive design in the first place.

In staging *Shifting Gear: Design, Innovation and the Australian Car*, the National Gallery of Victoria has provided an overdue antidote to this failure. The 23 cars on display highlight Australia's automotive capability stretching back over a century, emphasising design and innovation in family cars, sports and performance cars and racing machinery. And at a time when the three remaining major manufacturers are about to cease building cars in Australia, the exhibits take us on a journey through our history that begs the question 'why are we unable to keep doing this sort of thing?'

It's been an interesting ride. As the oldest car in the exhibition, the Thomson steam car built in Melbourne in the late 1890s illustrates, function really dominated form in the early years of motoring. This didn't mean cars couldn't still be beautiful, but beauty wasn't a major consideration in their construction.

By the 1930s, cars became streamlined as aerodynamic principles were applied to their design and the form of the car was now as important as its function. Innovative Australian design was at the forefront of some of these developments in form. The Pontiac Sloper, an all-enclosed coupe seen in *Shifting Gear*, is an example of this proto-hatchback style developed by GMH at Woodville, South Australia. The Ford utility coupe displayed next to the Pontiac was the first vehicle to combine a passenger car cabin and a light truck body in a unified design. Through the art deco period, all sorts of sculptured objects, from chairs to tea pots, made their way into art galleries. Cars became curvaceous,

This page
Installation view of the *Shifting Gear: Design, Innovation and the Australian Car* exhibition showing three significant Australian-designed cars: Tarrant two-seater roadster, 1906; Brabham BT19, 1966; HQ Holden Monaro GTS, coupe, 1971–74.

Next page
Installation view of the *Shifting Gear: Design, Innovation and the Australian Car* exhibition showing the Tarrant two-seater roadster 1906 and partial views of the 1938 All-Enclosed Coupe on a Pontiac chassis (left) and the Coupe Utility on a 1934 Ford chassis (right).

Images courtesy National Gallery of Victoria. Photographic Services.

Photographer: Predrag Cancar

SHIFTING GEAR EXHIBITION REVIEW CONTINUED

flowing representations of the age. Though represented in paintings and posters to evoke power, speed and excitement, the cars themselves remained parked outside the galleries. There was no Bauhaus for automobiles. If there had been, the study of cars as designed art objects may have happened earlier.

The Museum of Modern Art in New York was the first major art institution to consider cars as works of art when it staged *8 Automobiles* in 1951. It had then already been over half a century since the earliest automobiles were created and even MoMA took another two decades to start a permanent car collection. Numerous galleries and museums since then have included cars as part of more general design exhibitions or have considered particular eras in vehicle design from an artistic perspective. In 2012, London's Victoria & Albert Museum featured those British cultural icons, the E-Type Jaguar and the Mini, alongside the mini-skirt and more prosaic domestic and industrial objects in its exhibition, *British Design from 1948: Innovation in the Modern Age*. And back in 2009, cars featured at the NGV itself, as part of an exhibition of furniture, sculpture and other works designed by three generations of the multi-talented Bugatti family. But *Shifting Gear* now puts cars themselves on centre stage as art objects and celebrates the people whose creativity and skill brought them into being.

To help analyse the role that Australian car design has played and to understand the rise and fall of the local car manufacturing industry, it is useful to consider the divergent paths of the Australian and Italian motor industries after World War 2.The very notion of Italian design is something that has meaning in the popular imagination. In the automotive field, Italian manufacturers took cars into the world of art. Think of Lancia, Alfa Romeo, Maserati and Ferrari. They define Italian style and the eras in which they were made. It was largely due to the influence of Italian designers after World War 2 that the car as art began to enter the popular consciousness. It is no accident that one of the cars in *8 Automobiles* and the first in MoMA's permanent collection was Italian, the Cisitalia 202 GT, designed by Pininfarina in Turin.

In the early days of motoring, coach building was the dominant method of car construction. The coach builder made a car body that was placed on the chassis and running gear provided by the manufacturer. These coach builders were proto-designers. At the height of the coach building era between the wars, there were over 90 motor body building firms operating in Australia. But after 1945 they fell by the wayside or were subsumed into the large overseas motor companies that set up shop here.

In Italy, instead of disappearing, coach building firms like Ghia, Bertone and Zagato transformed themselves into consultant designers and their studios became as well known as the leading Paris fashion houses. The centrality of the aesthetic in Italian manufacturing, the importance of racing and pitching to the niche market of high-end performance cars based on racing success gave them an edge. Fusing the aesthetic with adrenalin, they built racing cars for the road and traded off the high octane image. It had international appeal. In Australia, however, prosaic family cars built for local consumption were the mainstay of the industry. And the family car became the basis of popular racing entertainment. Hotted up and sometimes developed almost beyond recognition, this process gave birth to some spectacular machines and helped sales of winning brands, but did not lead to a home-grown industry with a global market.

In the field of racing car design, as opposed to mass market road cars, Australian improvisation skills came to the fore in a breed of hybrid cars that flourished during the 1950s. Specials like the Maybach, the Molina Monza and the Ausca, all featured in *Shifting Gear*, mixed and matched engines and other mechanical parts with specially designed bodies. They were successful racing cars but they weren't designed with mass-production in mind. The Elfin marque continued this domestic racing tradition into the 1960s, while the international racing pinnacle was reached in 1966, when Jack Brabham won the world drivers and constructors championships in the Repco Brabham BT19, on display at the NGV. Designed by Brabham's partner Ron Tauranac and using a Repco engine, Australian automotive design took on the world and won.

Road-going specials were also produced in the 1950s by small, independent outfits. In New South Wales, cars like the Ascort, Proctor and Geneer were made in limited quantities. In Victoria there was a series of Bolwell cars culminating in the Nagari, a yellow convertible version of which is in *Shifting Gear*. The Bolwell Nagari sold in larger numbers and was available fully assembled, unlike many earlier specials offered only as kits. An Australian version of the idea behind the Shelby Cobra, the Nagari combined a powerful Ford engine with a light sports car body, but without major manufacturer support its local success could not be translated into the export markets that might have given it a secure future.

Through the latter decades of the 20th century, however, Australian designers continued to make significant contributions in the local design studios of GMH, Ford and Chrysler, especially by the time the HQ Holden, XA Falcon and Valiant Charger were introduced in the early 1970s. High performance examples of these three cars in *Shifting Gear* illustrate the blending of local, American and European influences that give Australian design its individuality. Subsequently, local designers have worked within the major companies on designs for international markets. Designers in Melbourne led the work for General Motors on their American Camaro released in 2009 and also for the 2015 Buick Avenir concept car, on display at the NGV. Although it is not built in Australia, Ford's new Ranger was designed here. In one positive sign for the future, GM, Ford and Toyota have announced that their design centres will remain in Australia when local car manufacturing comes to an end.

In an echo of Italy years ago, in California today there are around 25 independent design studios working in automotive design. It seems many manufacturers are recognising the value of using outside expertise in designing cars to better meet the needs of customers and to suit local conditions in disparate markets. This trend is also an opportunity for Australian designers. Design is integral to manufacturing and the future of Australian manufacturing hinges on quality design expertise. In the future that could involve designers working for the major auto manufacturers as in-house designers or independent consultants and also designing for high-value, low-volume manufacturers.

Australia can play a significant role in the future automotive industry. But to do so successfully our own story of car design needs to be better understood, showcased and celebrated. *Shifting Gear* is an important step in telling that story.

These automotive styling exercises were drawn in the 1950s by industrial designer, Ian Edgar, when he was a young trainee with British Motor Corporation, Sydney. RMIT Design Archives

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