At sporting events world-wide, the image of a boxing kangaroo on a green and gold flag is flown by proud Australian spectators. Australia's national identity has long been based on sporting prowess, inspiring one influential manufacturer to lament in 1945: “Great deeds in the realms of war and sport have imbued Australians with a full measure of national pride. We should be no less proud of their industrial history, but unfortunately there are few who appreciate the extent of their achievement in less than 150 years.” Despite these stirring words, it is as a sporting nation that Australians, then and now mostly identify. Happily, however, there have been several occasions where industrial design, manufacturing and sport have met to mutual advantage...

Australians - a sporting people

‘Overcoming the odds’, ‘backing the under-dog’ - how Australians love such expressions. Throughout the brief history of this country there have been several opportunities for proving Australian mettle in which local sporting prowess and design innovation has triumphed against older and larger nations. One of Australia’s great sporting heroes was the legendary Sir Hubert Opperman who rode his locally designed and manufactured Malvern Star bike to international fame. Opperman, known affectionately as “Oppy”, broke numerous world records and so brought worldwide attention to the Malvern Star brand. Oppy was referred to by the French press as a battling underdog who wrote: “Badly trained, badly helped, a victim of those circumstances which lay in wait for the non-specialist, he was compelled to bow to defeat, but the people proclaimed him because this little giant always fought it out right to the end, a thing to which the French was not accustomed.” The Malvern Star company had been established in the Melbourne suburb of Malvern in 1903 by Tom Finnigan, winner of the 1898 Austral Wheel Race. In 1920, (later Sir) Bruce Small bought the business and developed it into the largest bicycle company in Australia. Bruce Small and Oppy revolutionised the local bicycle industry with their rigorous research and development. Small would accompany Oppy on stages of his marathon rides, making numerous design improvements to the bike along the way. In retrospect, this can be viewed as an innovative example of a sportsman and a designer working in partnership in an experiential design process. In this paper, the role of industrial design education within Australia’s bicycle history will be charted. The role both design and sporting success have played within the creation of the Australian national identity will also be explored.

In his autobiography, written at the end of his sporting and subsequent political career, Oppy wryly notes that Australians expect their sportspeople to win – even against the odds. And what odds they were. Oppy wrote that when in France the
French riders “mocked our early positions, riding forward on their saddles and sitting high on their handlebars, like birds in a perch. Our big detachable tyres, great sausage balloons alongside their fast sleek-sided tubulars, were objects of close scrutiny and intense mirth. During those early days, we must have appeared like rustic yokels of the bicycle sport.” But the Australians learnt fast. He claims “we were there to learn…. Anyone who ventures abroad, whatever basic ability they may possess, must serve a period of international apprenticeship…So we speedily garbed, in matching plus-fours, sweaters and berets of the current mode, fitted singles to our machines, altered our handlebars, changed our saddle shapes, pushed them lower and behind the bracket, until we were much more accurate copies of the locals…”

And so, despite coming from a country with a brief industrial and manufacturing history, this Australian rider and the Malvern Star bike he helped develop, rode to international fame winning the 1931 Paris-Brest-Paris and claimed numerous national and international records. How did this bike company grow so quickly to become Australia’s largest?

At the time of writing, the modern bicycle design and manufacturing industry is dominated by specialist experts in all fields ranging from materials technology, product development, ergonomics, marketing, and retailing. Yet prior to WWII the whole process of creating a bike was often undertaken by individual companies. While industrial design has only been taught as a specific discipline in Australian Universities since after WWII, manufactured goods such as bicycles had been produced in Australia since the earliest years of the nineteenth century by engineers, pattern makers and other unknown, unnamed people, who were not yet known as “designers”. Nor were there professional design associations to support the design profession. So, despite the lack of professional designers taught in colleges and universities, and design bodies to support them, design and manufacturing in Australia was strong and the sportsman was often a participant in the design process. The relationship between Oppy and Bruce Small is a good example of sportsman as a de facto designer with a manufacturer.

Bruce Small seems to have been a very enlightened employer and adopted many strategies which seemed to bring success. For example, Small provided his employees with supportive employment conditions. An in-house cafeteria, medical advice about diet and general health, and superannuation for retirement were provided. Secondly, during 1941-42 there were labour shortages as men and women were serving the war effort, Small and his executives all donned overalls and worked on the manufacturing line alongside process workers. Finally, because of the shortage of labour, apprentices and executives alike were encouraged to attend classes at technical schools. As a result of this, process workers had their skills upgraded to become fitters and turners, while fitters and turners acquired the exacting skills of pattern makers. Education of employees was clearly one of the keys to the company’s success.

**Design education in Australia**

Australian designer Gordon Andrews has recently reflected on his father’s experience of designing for industry in the 1920s, and his own industrial design work
undertaken in the 1940s-1960s: “...in the days when my father was carefully and efficiently designing his products, the discipline had no name.” As Andrews suggests, the industrial design discipline arguably had neither a professional identity nor enjoyed public recognition until around WWII. But despite this rather recent history, manufacturing has long been a strong part of the Australian economy. For example, the Foy & Gibson company’s trade catalogue of 1923 reveals the diversity of pre-WWII Australian manufacturing: furniture, cooking utensils, laundry equipment, musical instruments and sporting equipment were all made locally. Even if specialist Industrial Design education was slow to develop in Universities, only appearing in Australia after WWII, workers in the early Australian manufacturing industry were given technical training in the areas of engineering, draughtsmanship and foundry work from 1827 onwards in Mechanics’ Institutes. In the State of Victoria, where much of the nation’s manufacturing (including Malvern Star) and therefore industrial design training and jobs were located, Technical Education began in 1868. By 1885 there were 36 Technical Schools in the State. All taught freehand drawing and painting, while some taught geometrical, mechanical and architectural drawing. The closest two Technical Schools to the Malvern Star business in Malvern were the Melbourne Technical College and Caulfield Technical School.

Recognition of the importance of early Technical Education in building Australia’s manufacturing base was summed up in an exhibition held in 1934: “The efforts being made to establish Australia as a manufacturing country in the face of keen and well-organised competition from highly industrialised countries, should be sufficient to emphasise the need for providing the skilled craftsman and the foreman of the future with every opportunity of obtaining the highest degree of proficiency in their work. A knowledge of the fundamental principles of his trade, the ability to understand drawings, and some definite experience in those allied sections of his work which cannot at present be taught in the employer’s workshop, are some of the attributes which technical education brings to the craftsman.”

The array of full-time Diploma courses offered in Victorian Technical Schools suggests how Australia was responding to the perceived need to industrialise more fully: Applied Chemistry, Applied Science, Applied Art, Architecture, Building and Contracting, Commerce, Agricultural Engineering, Automotive Engineering, Chemical Engineering, Civil Engineering, Electrical Engineering, Municipal Engineering, Mechanical Engineering, Marine Engineering, Mining Engineering, Refrigerating Engineering, Metallurgy, Institutional Management and Needlecraft. In addition to these, a wide range of trade subjects were available to train Australian workers for factories. These included: Armature Winding, Blacksmithing, Boilermaking, Brass Finishing, Cabinet Making, Coach and Motor Body Building, Coach and Motor Body Trimming, Coach and Motor Body Panel Beating, Instrument Making, Machine Knitting, Machine Shop Practice, Metal Founding, Milling and Gear Cutting, Motor Mechanics, Oxy-acetylene Welding, Process Engraving, Sheet Metal Work, Toolmaking, Toy Making, Wireless Mechanics and Wood Machining. Despite the strength of Australia’s rural mythology as portrayed in paintings, literature, films and the popular press, in fact more Australians since Federation in 1901 have lived in cities and worked in factories than lived on the land as farmers.

Sportsmen as designers

The collaboration between Opperman and Small was clearly beneficial for the success of Australian sport and profitable for the Malvern Star business, and it also led to improvements in bicycle design. In 1945 internal company marketing claimed: “It was also to have a profound effect on the improvement of cycle design, because
what Bruce and Oppy discovered on their journeyings and in Oppy’s marathon rides, went into improvements in Malvern Star…” Thus Oppy is an example of a sportsman engaging in research and development, acting as an industrial designer. This is known today as action research and user-centred design where the designer does not solely dictate the design to his users but takes advice from the user, in this case the sportsman, about what they want in his design objects. Oppy was not always a great “designer”. His earliest design legacy was bizarre, using a pigskin to craft a makeshift tube for his tyres. He later recalled that during his earliest racing days he “dreaded above all time-wasting punctures. My father, a butcher in Cranbourne at the time, made special pigskin inserts for my tyres. While they were used with good results on the first day, and my win to Wangaratta by 15 minutes was free of deflation, when discarded for the next leg…I felt as though lead had been stripped from my calves.”

Perhaps Oppy’s greatest design contribution was in being an “early adopter” of technology and he brought to Australia the latest in fashion and technical innovations. Some of Oppy’s innovations were fashion based – such as emulating Continental clothing and popularising it in Australia. In 1932 the Cyclo-gear was the first derailleur imported into Australia and Oppy’s use of the product unofficially endorsed and popularised it. He also specified a handle bar for his bikes that has subsequently become known around the world as the “Oppy bar”. Oppy’s using, endorsing and so popularising new technology is similar to the contemporary example of the black rider Major Taylor who used an adjustable reach head stem which became known as the “Major Taylor” head stem. In more recent times, Greg LeMond similarly effected changes in the designs of performance bikes with his Tour de France winning triathlon bars. By specifying new products, the sportsman plays a key role in new product development often challenging the engineer and manufacturer to make changes, and popularising new products with the consumer. The sportsman should therefore be acknowledged alongside the design educator, the designer, and manufacturer in contributing to the development of consumer products.

Finally, the influence of Australian sporting success on Australian national identity needs to be considered. At the time of writing, given that the Australian flag with its British roots is controversial and that discussions about becoming a republic appear often in the local media, many have suggested a new flag might better reflect Australia in the 21 century. Images of kangaroos have long been used as signifiers of nationhood. Early examples can be seen in artworks and advertising from the 1890s onwards and it is fairly typical that as an Australian abroad Bruce Small had a kangaroo emblem on his car as he supported Oppy’s marathon rides. The rider later reflected that this patriotic emblem spurred him on to greater efforts. The image of a boxing kangaroo on a green and gold flag seems to have become Australia’s new, unofficial, symbol of national identity, while the mascot of Australia’s premiere road race, the Jacob’s Creek Tour Down Under, is a cartoon character of a kangaroo riding a bike. Appropriately, he is named “Oppy”.

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1 The Associated Chambers of Manufacturers of Australia (1952) *Made in Australia Exhibition*, Melbourne, Royal Melbourne Exhibition Buildings, Forward.
3 The full history of Malvern Star has been well documented by Rolf Lunsmann. See Lunsmann, R. (2003) “Malvern Star in post-war Australia: the story of Australia’s favourite...

iv Opperman, p. 97.
v Opperman, p. 90.
v Opperman, p. 90.

xiv Education Department of Victoria.

xvi Opperman, p. 75
xiv Opperman, p. 171
xvi Opperman, p. 170
xviii Opperman, p. 100