ASHET News

Volume 1, number 4
October 2008

Newsletter of the Australian Society for History of Engineering and Technology

Eveleigh Blacksmith's Shop no longer under threat of closure

For 17 years blacksmith Guido Gouverneur of Wrought Artworks Blacksmiths has leased the facilities of the blacksmith's shop at the former Eveleigh Railway Workshops, now part of the Australian Technology Park (ATP). With a staff including four apprentices Guido has operated the facilities as a traditional blacksmith's shop undertaking a variety of work including restoration of heritage metalwork.

Wrought Artworks was recently issued with a notice to quit by 30 September by ATP and the Redfern Waterloo Authority (RWA) which administers the government-owned site. This action appeared to have blatantly ignored the conditions of the original Development Consent for the site which stipulated that because of the exceptional significance of the machinery collection, the blacksmith's shop operated by Guido Gouverneur was to remain a long term feature of the site.

In response to the threat of closure, an open day was held at the site on Sunday 17 August. The organisers estimate that over 2000 attended.

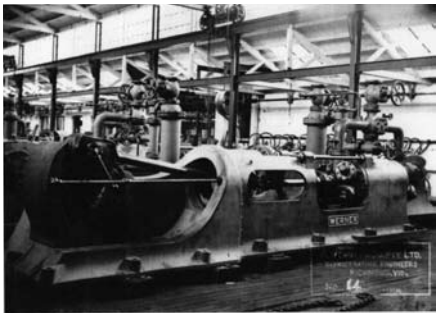
A couple of days before the meeting, RWA commenced negotiations for a new commercial lease of the facilities to Wrought Artworks. The negotiations continued and agreement has now been reached on terms for a 3x4 year lease. On 22 August State Planning Minister Sartor issued a press release *Wrought Artworks reaches agreement to stay at the Locomotive Workshops Building at Redfern.*

ASHET member Gordon Wightman writing a history of refrigeration in Australia

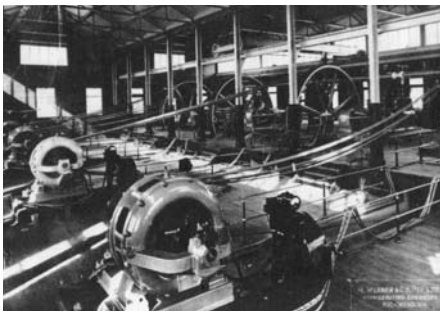
Gordon Wightman sees refrigeration as 'the forgotten invention', and this is the title he has chosen for the book he is currently writing. While the names of Perkins, Linde and Carré who pioneered refrigeration in Europe are fairly well known, the Australians including Harrison, Nicolle, Mort and Selfe who made important contributions to the development of refrigeration in the 19th century are hardly known even in their own country.

Gordon himself has spent the whole of his life in the refrigeration industry, commencing as a fitting and turning apprenticeship with the Melbourne firm R. Werner and Company in 1951. He studied at Swinburne and Melbourne Technical Colleges and progressed to designing and engineering refrigeration systems. He still enjoys the challenge of this work, His sons are the third generation of his family to work in the refrigeration industry.

In the early twentieth century design and manufacturing of refrigeration equipment became an important Australian industry, but like other manufacturing industries in Australia it has declined with competition from imports and the removal of protection.

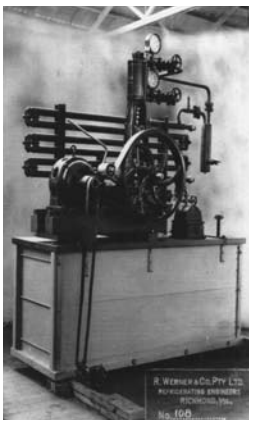


100 ton compresor in erecting shop, 1912



100 ton comressors at Government Cool Stores, Victoria Dock

The history of the company R.Werner and Company that Gordon began work with is typical. Rudy Werner, founder of the firm, was originally employed in Australia by a soda water manufacturer. However before coming to Australia he had experience with refrigeration machinery in Germany, probably including that made by the firm of Karl Linde, since his early compressors were very similar to the Linde ones. Werner began building refrigeration compressors and other machinery around 1896 and formed his own company around 1904. He established a works at Richmond, a suburb of Melbourne, and became a leading designer and manufacturer of refrigeration machinery in Australia. Machines made by the company in its early days are illustrated here. The company was taken over by Email Limited, a diversified Australian manufacturing company, in 1954. The Werner name disappeared and the Werner designs were progressively replaced by overseas manufactures and by overseas designs manufactured under licence. Email Industries was itself the subject of a complex takeover in 2002.



One ton brine cooler, about 1915

Gordon's book will cover the companies and people involved in the refrigeration industry from its beginnings in Australia up to the present day, their inventions and achievements. If you have information or pictures relating to the history of refrigeration in Australia, Gordon would be pleased to her from you; phone 03 5977 6668 or email gwrp@bigpond.com.au.

Dennis Quinlan

Dennis is a man of many interests. For 20 years he pursued a career in physiology at the CSIRO Division of Animal Production and the Physiology Department of the University of Sydney. Then he embarked on a two year motorcycle journey overland to Europe. For twenty five years after that he restored automotive instruments, before moving into music playing the banjo in jazz groups. Dennis ia a member of ASHET.

He is also a Velocette motor cycle owner and rider, and has researched the history of the company that built these machines that incorporated many innovations in design and won fame in international competition.

The Velocette motorcycle

Dennis Quinlan

Johann Guteman, founder of the firm

Casting an eye over motorcycles travelling along any Australian road, motorcycles per se are not that common, although with the price of petrol spiralling upwards, that seems to be changing. Should you be observant of the motorcycles you see, unless it was likely a weekend and perhaps

Continued on page 3

ASHET events

Saturday 22 November 2008

Tour of the Penrith Museum of Printing

The Museum was established in 2001 by Alan Connell who was keen to establish a working museum of printing machinery and equipment. A large proportion of the equipment was used by the former local newspaper, the Nepean Times, which was the second newspaper to be printed in the Penrith area and operated from 1882 to 1962. The Nepean Times was associated with the Colless Family, an important local family in the Penrith area.

The Museum displays 23 working machines, some of which are over 100 years of age and much of it has been restored by a team of dedicated volunteers. The machinery and equipment is typical of examples used in Australian print-shops for more than a century and provides a unique opportunity to see it in action, have it explained and to ask questions of someone who has worked in the printing industry.

Time: 11am. Duration of the tour approximately one hour.
Meeting Location: Within the grounds of the Penrith Paceway Complex which is located at the corner of Mulgoa Road and Ransley Street in Penrith, NSW.
Cost: ASHET members $5, others $7.
Bookings: phone Ian Arthur, secretary ASHET 02 9958 8397, or email sec@ashet.org.au. Pay on the day.

Lunch
There are facilities within the Penrith Paceway club to have lunch, Alan (the Museum operator), has requested if you think you might like to have lunch there at one of the bistros/restaurants within the club to advise us when you book to ensure sufficient staff are available at the Club.

Museum of Fire
If you are in Penrith visting the Museum of Printing, consider visiting also the Museum of Fire, located ess than 1 kilometer away ion Castlereagh Road. It's well worth a visit, and is open 9.30 am to 4.30 pm. No need to book. For further details go to the website http://www.museumoffire.com.au/

Tuesday 25 November 2008

Talk by Dennis Quinlan

A Pocket History of Automotive Instrumentation

With the centenary of many makes of car approaching, have you ever wondered how the instruments in your car were developed? Dennis Quinlan has spent the later part of his working life restoring many earlier instrument types from both vintage and more modern cars.

Instruments for cars and motorcycles have come a long way in the just over 100 years they have been in use yet curiously, most people cannot tell you what instruments they have in their car and to a lesser degree motorcycle. "Oh, a speedometer" is the usual and perhaps obvious reply in the era of the speed camera. But the wellbeing of what occurs under the bonnet of our car is another important aspect of our daily use of the car. Petrol gauges, oil pressure gauges, ammeters, clocks, temperature gauges, tachometers, computers to assist in getting us to our destinations, informing us of the inside and outside air temperature, our average speed and so on ... all provide us with useful, but in some cases not necessary information.

Dennis Quinlan's 20 year career in physiology at the CSIRO Division of Animal Production and the Physiology Department of the University of Sydney gave way to a two year motorcycle odyssey overland to Europe then a 25 year career into automotive instrument restoration before moving into music as a banjoist in jazz groups.

This is a joint RAHS and ASHET activity.

Venue: History House, 133 Macquarie Street, Sydney
Time: 5.30 for 6 pm
Cost: $7.00 Includes light refreshments on arrival
Bookings: phone RAHS on (02) 9247 8001 or email admin@rahs.org.au

Other event, not ASHET

Monday 27 October 2008

Talk by Rod Caldwell

A Study of Engineering Heritage at Ironbridge, UK

Birmingham, Manchester, Leeds, Sheffield, Glasgow; engineers and historians will immediately recognize the roll-call of the heartland of the Industrial Revolution. But less widely known is that the starting point for this commercial and social upheaval was what is, certainly now, a much more idyllic setting. The valley of the upper Severn in Shropshire has conveniently located deposits of coal, ironstone and, in earlier times, wood for charcoal. A focal area for this activity was the 1779 iron bridge of Abraham Darby from which the town and gorge take their names.

A number of iron-based and other industries sprang up about this time, scattered throughout the district and it is notable that much of the early work of Thomas Telford was in the county. This collection of sites has earned the area World Heritage Status.

After looking at the Iron Bridge itself in detail, the speaker will discuss development in steam engines of the same era ie, putting the products of ironmaster Darby et al to other practical use, particularly referring to the educational value of the creation of replicas.

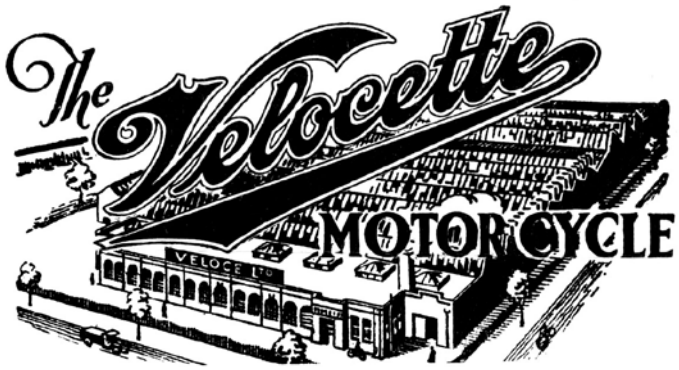
Rod Caldwell is well-known in the engineering heritage movement as a stalwart of the Newcastle Engineering Heritage Committee and for his work with Fort Scratchley. He is particularly suited to give this talk as he spent a year of degree studies in heritage management at the Ironbridge Institute. Rod is a member of ASHET.

This is not an ASHET event. It is organised by the Engineering Heritage Committee of Engineers Australia, Sydney.

Venue: Engineers Australia, Harricks Auditorium, Ground Floor, 8 Thomas Street, Chatswood
Time: 5.30 for 6 pm
Cost: None
Bookings: No need to book.Visitors are welcome.

on a quiet road, you would be unlikely to see the name Velocette on a petrol tank. Velocette appears to be a French name and usually this is the comment when somebody stops to look.

But no, let me take you back to late in the 19th century, Slender indeed is the connection between Velocette motorcycles and patent medicines and yet it is real enough. Had it not been for bottles of jollop, the firm of Veloce Ltd, might not have come into existence over 100 years ago.



Velocette logo

Such a statement needs an explanation. Going back to the 1880s, when a Birmingham, England industrialist Johann Guteman had some spare capital to invest, his choice fell on a patent medicine concern known as Isaac Taylor & Co. Cough medicines and corn plasters were reasonable money spinners, but by 1896 the bicycle boom had hit Britain in a big way. Johann Guteman formed an offshoot of his Taylor enterprise and under the style of Taylor Gue Ltd, went into the manufacture of frames, lugs and other bicycle parts.

In 1904 a small British company, Ormonde, was manufacturing motorcycles with Belgian Kelcom engines and bought frame components from Taylor Gue. Shortly after Taylor Gue swallowed up the Ormonde concern, discarded the Belgian engine, making one of their own and the new model was named Veloce – a musical term indicating "with great rapidity" or "quick". With the Veloce launched, the Ormonde faded out, alas so did the Veloce- with great rapidity – and by May 1905 the firm of Taylor Gue Ltd had gone down the slot.

Founding of Veloce Ltd. in 1905

Johann Guteman was back in business again by July and shortly after anglicised his name to Goodman, naming the business Veloce Ltd, the firm that would have been 100 years old in 2005. Owners' clubs all around the world celebrated this centenary with rallies etc. Making roller skates, cycle parts (even a prototype car) and anything else offered, Veloce struggled back to the motorcycle field in 1910 and remained there until they went into liquidation in February1971.

The early Velocettes

The early Veloce models were 4-stroke engines. But in 1913, Percy Goodman, one of Johann's two sons, designed a neat little 221cc (62x73mm) two-stroke and since it was much smaller than the Veloce, it was dubbed Velocette. WW1 halted production before it could reach a peak, but with the return of peace, the Velocette became the bread-and-butter line. Back in 1913 Veloce had made a racing debut, chasing advertising success, with two strokes continuing for them without major success until the early 1920s. Percy, assisted by younger brother, Eugene were engaged in producing an engine which really found the fortunes of Velocette. Named the model K, it was a 348cc (74x81mm) overhead camshaft single cylinder engine, the first truly successful British OHC design.

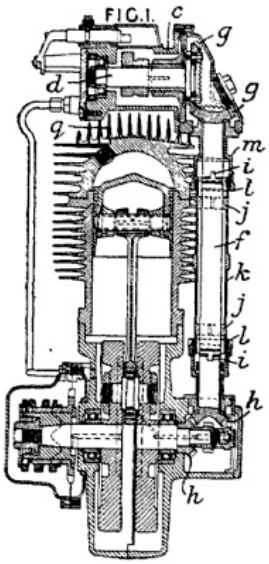
Teething troubles with the engine design appeared in its first use in a race in the Isle of Man Tourist Trophy races (IOM TT), but the following year the engine won the event by 10 minutes and Velocette as a motorcycle manufacturer obtained worldwide recognition. Veloce were an innovative company and the following year developed and patented a positive stop gear change mechanism that allowed foot change rather than the hand change used till then. They continued to manufacture two stroke engined motorcycles through the 1930s, with their last production

Improvements relating to internal combustion engines

Publication number:	GB252822
Publication date:	1926-06-10
Inventor:	
Applicant:	PERCY JOHN GOODMAN; VELOCE LTD
Classification:	
- international:	***F01M9/10;*** **F01M9/00;**
- European:	F01M9/10
Application number:	GB19250006881 19250313
Priority number(s):	GB19250006881 19250313

Abstract of **GB252822**

252,822. Goodman, P. J., and Veloce, Ltd. March 13, 1925. Casings; cylinders, cooling.- An overhead cam shaft d is driven by bevel gearing g, h and an intermediate shaft f, which is provided with Oldham couplings i and mounted on bearings j in an enclosing tube k. This tube has gland connections at l with the gear casings m to give flexibility. Cooling-fins q are provided between the cylinder head and the casing c of the cam shaft. Oil escaping through the holes in the cam-shaft casing, which receive the valve rockers is caught in traps and returned to the casing.



Data supplied from the ***esp@cenet*** database - Worldwide

Percy Goodman's patent for the improvemnts incorporated in the 1926 Model K

run in 1946 and these were all destined for the overseas market.

The small 250cc two stroke engine was suitable as a "ride to work" utilitarian design and Veloce patented a throttle controlled oil pump and did away with the need to mix oil in petrol, as is still used in lawn mowers today. The Japanese motorcycle industry adopted this facet of two stroke design in the 1960s with much fanfare, calling it "posiforce" lubrication, despite Veloce having introduced it all those years before.

The OHV Velocettes, introduced in 1932

The OHC design also continued through the 1930s, with a design cleanup in 1935 and finally ceasing production in 1949. It proved difficult to obtain skilled labour to assemble, what was, then a complex design, In 1932, Veloce introduced an overhead valve (OHV) design into their range with a pushrod, high camshaft design, initially as a 250cc single cylinder, then followed by a 350cc and 500cc version. These had model designations MOV, MAC and MSS The MAC had by far the longest production run, up to 1960, and often out riding one of my Velocettes I never cease to be amused by people speaking to you, invariably with the comment "I had a MAC when I was a young lad".

In 1937, in conjunction with BTH (British Thompson Houston), the ignition system manufacturers, they introduced the first automatic ignition advance mechanism for a magneto on a motorcycle. Prior to this the ignition spark was advanced manually Cars in the 1910-20 era also utilised this manual idea.

Velocette continued to enjoy racing success through the 1930s and 1940s, introducing a radical new 500cc twin cylinder supercharged engine for the 1939 TT races. Again teething trouble prevented success, the long layoff due to WW2 and a supercharger ban following the war, pigeon-holed this design. Up to then all motorcycles had relatively primitive suspension on the front of the motorcycle and none on the rear; they were dubbed "rigid frames". Gravel, pot-holed roads of the era made riding sometimes hazardous.

The chief designer at Veloce, Harold Willis, flew a De Havilland DH60 Moth aircraft, nicknamed "Clattering Kate" and read the aviation journals of the day. Hydraulic undercarriages for aircraft were only introduced in the early 1930s and Willis made a trip to visit George Dowty at his infant Aircraft Components Ltd, company in Gloucestershire. The outcome was a miniature aero hydraulic strut that Veloce adapted to their racing motorcycles in 1936 and the motorcycle frame as we know it today was introduced at the IOM TT races that year.

Velocette's "everyman" machine, the LE

However, Eugene Goodman was convinced the companies fortunes lay with an "everyman" machine and Veloce introduced a new design in 1948, a 150cc, soon expanded to 200cc, horizontally opposed, twin cylinder, water cooled, shaft driven, weather enclosed cycle with rear suspension. It was dubbed the LE, but again teething troubles with the design and a population, whilst hungry for personal transport, ensured it languished in sales. Veloce were forced to continue with their single cylinder models, with gradual changes to these such as rear suspension, but still a basically early 1930s design.

Veloce, it should be made clear, were hardly the only motorcycle concern to come to this conclusion. In Germany, Italy, France, Japan, etc, all eyes were turned toward making an "everyman" machine to

Velocette LE model; illustration from the ctalogue

mobilise the citizens during the difficult post-war years. Mopeds, clip-on small engines, small capacity motorcycles, and scooters were the most popular vehicles during this time, as automobiles were still rare and expensive. Some of these designs became quite successful, but very few of these manufacturers survived past the mid-50's, as conditions began to change with a general rise in prosperity, and motorcycles were no longer necessary as cheap transport, as the car had become again relatively inexpensive with rising wages.

Thus motorcycles became socially what they are today; thrilling transport, but not generally a necessity. Perhaps had Veloce the depth of capital to increase production, they could well have survived, but that seems unlikely given the fall of nearly all other motorcycle manufacturers throughout the world by the early 1970's, leaving only four Japanese (out of many more who also didn't survive – Marusho, Bridgestone, etc.), Harley Davidson, BMW, and a few Italian companies, out of the hundreds who had sprung up, thrived for a while, then died.

British Government taxation changes forcing price increases meant that, with a small output, Veloce struggled to produced 100 motorcycles a week; economies of scale eluded them and with a constantly increasing bank overdraft it was only a matter of time before insolvency overtook

Velocette on Lennox bridge

them. This occurred in February 1971, ironically at a time when the LE design was popular with UK police forces, and the Honda 50cc Cub everyman's machine, coupled with a successful advertising jingle " You meet the nicest people on a Honda" had proven Eugene Goodman's everyman concept was on the right track, albeit at the wrong time.

Velocettes in Australia

How might Velocette fit into the motoring history in Australia? Overseas markets were always high on Veloce Ltd priorities and ex empire colonies were an obvious choice. The Adelaide motorcycle dealer, Lou Borgelt made his first trip to England in 1922, bent on securing some motorcycle dealerships; Veloce was one of them. In Sydney the P & R Williams family secured the distributorship for NSW during the 1920s and with Velocette success in racing in the IOM, this followed into Australia, names such as Don Bain, Ron Kessing, Sid Willis come to mind. During the late 1930s and 1940s, Australia was Velocette's biggest overseas market. It was similar for other major British makes, such as BSA, Norton, Matchless, AJS. But as we moved into the 1960s government increases to CTP insurance premiums caused a recession in motorcycles sales in Australia. In fact in NSW only three Velocette motorcycles were sold in a 5 year period; this can't have helped Veloce Ltd.

What of Velocette today? Ironically, interest is strong for this make in the vintage/classic motorcycle scene, spare parts are freely available and manufactured worldwide, so keeping them running is not a problem. And as mentioned at the beginning , you are more likely today to see a happy band of enthusiasts riding them on a sunny weekend day than utilised for their usual purpose, transport for the masses.

Further Reading

Joseph W. E. Kelly, *A History of Veloce Limited-Motor Cycle Manufacturers, Hall Green, Birmingham*, thesis, submitted for a PhD at the University of Bradford, 1979.

R. W. Burgess & J. R. Clew, *Always in the Picture*, Goose & Sons, Publishers.1971.

Ivan Rhodes, Velocette, *Technical Excellence Exemplified*, Osprey Publishing, 1990.

C. E. "Titch" Allen, *The Velocette Saga*, Amulree Publications, 1994.

ASHET News is the newsletter of the Australian Society for History of Engineering and Technology Incorporated ABN 47 874 656 639
ISSN 1835-5943

11 Heights Crescent Middle Cove NSW 2068
Phone: 02 9958 8397 Fax: 02 9967 0724
Email: sec@ashet.org.au
Website: www.ashet.org.au

ASHET