

Newsletter of the Australian Society for History of Engineering and Technology

ASHET committee for 2012 elected with a new treasurer, Eric Metzke

At the annual general meeting each year ASHET members elect a new committee that will serve for the next twelve months until the following annual general meeting.

This year in April members elected the following committee:

Office bearers

President: David Craddock
Senior vice-president: Robert Renew
Vice-president: Mari Metzke
Secretary: Ian Arthur
Treasurer: Eric Metzke

Ordinary committee members:

Ian Jack
Beverley Johnson
Neil McDonald

The only new committee member is Eric Metzke, who replaces John Roberts as treasurer. Eric Metzke is a retired Electronics Engineer. Melbourne trained, he started work with STC at the Watsonia Army Barracks maintaining signal transmitting and distribution equipment. He came to Sydney with STC to work at the Army's base at Dundas. During this time he re-met Mari [their having first met as teenagers] and married.

His work with Hawker Siddeley and related companies took him to mining sites throughout Australia and New Guinea installing and commissioning new electronic equipment. During the last twenty years before his retirement he worked with the Megadata/MITS/Logica group of companies as a project manager, both in Australia and overseas in the Philippines and China on electronic controls for power systems.

Eric was for many years a Scout Leader at 1st Waitara Scouts in Sydney's north and an enthusiastic rognainer. Eric's interests are varied

and include anything related to engineering and technology, military and Australian history.

Since retiring he has spent his time travelling and maintaining investment properties, and has spent a considerable amount of time assisting in improving and repairing his children's properties. More recently travel throughout outback Australia in a 4X4 and camping trailer has managed to nicely pass the time.



Eric Metzke, ASHET treasurer

History of newspaper publishing in Australia: recently completed oral history project

ASHET and the Canberra Division of Engineers Australia have just completed a project to record in a set of oral history interviews some important parts of the history of newspaper printing and publishing in Australia. ASHET and Engineers Australia were equal partners in the project.

We now have oral history records from four of the people associated with the Queanbeyan Printing Museum. This museum tells in a series of working exhibits the story of Australian country newspapers production from its earliest days up to the recent past. Many of the exhibits come from the printing works of the Queanbeyan Age, which closed in 1994.

At that time the Chairman of Directors, Jim Woods OAM established the museum and gathered a team of volunteers to maintain in working condition and display all of the machines and technology for publishing a provincial newspaper. Jim and members of his team guide visitors around the museum every weekend.

Jim himself is now 98. He has worked in the printing industry all his life and took charge of the Queanbeyan Age in 1956. For our project he made two hours of oral history record. The other three records in the set were made by members of the museum team who have unique stories to tell. One of them, Kevin Hoare, records how he installed electronic typesetting at the *Cairns Post*, the first newspaper in Australia to employ the new technology, which has since become universal throughout the industry.

The oral history records made in the project are of archival quality, and we plan to lodge copies of them with the state Library of NSW to include in its collection of oral history archives. We will also soon have them available on ASHET's website along with text summaries of their content.

For more about the Queanbeyan Printing museum go to its website <http://www.queanbeyanprintingmuseum.com>



The Wharfedale printing machine was the "bread and butter" machine of printers for both commercial work and newspaper production. Originally it would have printed between 1,000 and 1,200 papers per hour.

This machine was very old and worn when retired at The Crookwell Gazette in 1950. There it sat until being resurrected in early 2004 and transported and lovingly restored for inclusion in the Museum.

Tuesday, 24 July, 2012**Talk by Bob McKillop**
The Garbage Question

Bob McKillop will be the guest speaker at the joint RAHS/ASHET evening on 24 July. He will cover the themes of his new book, *Managing our Waste: an environmental history of Flat Rock Creek and the Willoughby Incinerator, 1900-2011*, in a lively presentation on the role of garbage collection and disposal on the North Shore.

Managing our Waste traces the history of rubbish collection and disposal in Willoughby and neighbouring municipalities and the evolving role of local government in this core function. It commences with Sydney's outbreak of bubonic plague in 1900 which shaped the role of local government in waste management.

Open air tips and dumping at sea were the initial means of garbage disposal for most councils, but community reaction to resultant beach pollution in the 1920s brought pressure for improved methods of disposal. The Australian patented products of the Reverberatory Incinerator & Engineering Company with industrial buildings designed by Walter Burley Griffin to integrate with the landscape in a residential setting dominated the municipal incinerator market at this time. The Willoughby Municipal Incinerator, which opened in 1934, is a central focus of the presentation.

Bob McKillop has published a number of books on aspects of New South Wales history, particularly railways. He is also a prominent member of the Willoughby District Historical Society.

This is a joint activity of ASHET and the Royal Australian Historical Society.

Venue: History House, 133 Macquarie Street, Sydney

Time: 5.30 for 6 pm

Cost: \$8.00 Includes light refreshments on arrival

Bookings: phone RAHS on (02) 9247 8001 or email history@rahs.org.au

Tuesday, 21 August, 2012**Talk by Bill Phippen**
To be advised

The Hawkesbury River Railway Bridge was the largest bridge in Australia until the construction of the Sydney Harbour Bridge. It was the final link in the railway connection of the four eastern colonial capitals. Speaking at a banquet on Dangar Island to mark the opening on 1 May 1889, Henry Parkes chose as his theme that the physical link of steel was but a step towards the goal of political union through Federation. Yet after a short life the bridge needed to be replaced.

The presentation looks at its deficiencies which were apparent from the beginning, until the effective failure of the bridge in 1937. The construction of the new bridge is covered in detail with emphasis on how the 1946 bridge deliberately avoided the pitfalls of the 1889 work. The new bridge was designed and built completely within the NSW Railways Department and the story highlights the immense capacity of that organisation. Skilled professional photographers were employed to record the work and their images now reside within the Railway Resource Centre of the Australian Railway Historical Society, together with the personal photographs and diaries of resident engineer W K King and the manuscript report of Chief Civil

Engineer Albert Fewtrell. The lecture ends with a surprising link to another bridge only a minute's walk from History House.

Bill Phippen graduated in Civil Engineering from the University of Sydney in 1976 and spent most of his working life as a licensed builder. Shortly after graduating he joined the Australian Railway Historical Society and has volunteered his building skills to the Society at their premises in Redfern, Central and Alexandria, as well as being a guide for their St James Tunnel Tours until they had to be abandoned.

He has also spent 36 years as a volunteer with TAD Disability Services, a charity formed by technically skilled people in the mid seventies to solve the everyday needs of people living with disability, when standard equipment wouldn't work. He has been on the board since 1976, and President since 1997. In 2010 he was named senior Volunteer of the Year and listed by the Sydney Morning Herald as one of the 100 most influential people in Sydney.

When the paid position of Manager of the Railway Resource Centre within the Australian Railway Historical Society became vacant in 2010 the job was offered the job to Bill as it was recognized that his long history of working with volunteers made him well suited to the job.

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Thursday, 13 September, 2012 (History Week)**Talk by Chris Miley*****Technology in Wool and How We Fell Off the Sheep's Back***

In its early days the industry in Australia was a leader in embracing new technology, though now it seems reluctant to innovate. In this talk, Chris Miley will describe how technology helped to define the characteristics of wool fibre and how technology helped to market it.

Chris began his time in the industry from 1965 working in shearing teams in the north west of Western Australia. He joined the French wool buying and processing firm Dewavrin in 1968, and in 1976 joined another French firm Vanlaine where he worked for 17 years. In 1997 he moved to Sydney where he joined the Australian Wool Exchange and managed its operations in NSW and Queensland. He retired in 2008.

This is a joint activity of ASHET and the Royal Australian Historical Society.

Venue: History House, 133 Macquarie Street, Sydney

Time: 5.30 for 6 pm

Cost: \$8.00 Includes light refreshments on arrival

Bookings: phone RAHS on (02) 9247 8001 or email history@rahs.org.au

More ASHET events

There are details of events up to the end of 2012 on the ASHET website at www.aset.org.au/activities/

ASHET Lightning Ridge project

The Commonwealth government has recently made a grant of \$20,500 to ASHET under its *Your Community Heritage* program. The title of the project is Lightning Ridge Opal Mining Heritage. The project will tell the story of the local development of machines and technology for opal mining at Lightning Ridge.

Object of the project is to research, record and present the history of the unique developments, mostly carried out by working miners and local mechanics, of machines and technology for the small scale mining of opals at Lightning Ridge, NSW.

Some of this technology, such as the auto-hoist, has spread around the world. This is recent history as the first of these machines was developed in 1951, and there are still people at Lightning Ridge who were directly involved in the early developments. The story will be presented in a large graphic display along with exhibits of some of the machines, at the Australian Opal Centre, Lightning Ridge, with an on line version of the display on the ASHET website. The display will include text, diagrams and photographs in a permanent form on panels



ASHET party in 2011 viewing an auto-hoist at Lightning Ridge. This simple machine, invented at Lightning Ridge, allows a miner working on his own at the bottom of a shaft, to hoist a bucket of ore to the surface and dump it on the stockpile.

ASHET applies for grant to record history of NSW timber truss bridges

ASHET has just submitted an application for a heritage grant of up to \$5,000 to assist in recording the history of timber truss bridges in New South Wales. If our application is successful we will be able to record interviews with four engineers who have led the way in ensuring that the history and heritage of these bridges is preserved.

The first of these bridges was built in 1861 and the last in 1936. Over that period the design of the bridges developed through several stages, with improvements at each stage in the economical use of materials, load capacity of the bridges and ease of maintenance. 407 of these bridges were built in almost every part of the state. Only 62 remain, and these include examples of every stage in the development of design and construction.

Most of the timber bridges have been replaced by steel and concrete that are more economical to build and maintain. Almost all the remaining ones are still in use and are being carefully maintained and conserved.

ASHET has undertaken to match the grant funds with work on the

project by ASHET members and to meet any of the project costs not covered by the grant. ASHET member Michael Clarke will be the project manager. We will not know until later in the year whether our application has been successful.



Mataganah Creek Bridge, built in 1896 and recently upgraded by the owners, Bega Shire Council. The bridge is one of the earliest examples of the Allen Truss.

About ASHET

ASHET, the Australian Society for History of Engineering and Technology, is a non-profit society, incorporated in New South Wales and affiliated with the Royal Australian Historical Society. ASHET currently has 92 members.

It was formed in Sydney in 2003. Its objects are to encourage and promote community interest and education in the history of engineering and technology in Australia. It has members throughout Australia, with most in Sydney and other parts of New South Wales.

ASHET has regular program of events in Sydney, and looks forward to establishing groups with programs of activities in other centres.

ASHET meetings in Sydney are mostly held at History House, 133 Macquarie Street, Sydney, on weekday evenings, as joint meetings with the Royal Australian Historical Society. In addition ASHET arranges daytime visits to places of historical interest.

ASHET has held weekend or longer tours to the Mudgee, Lithgow and Goulburn areas, and to northern Tasmania. For 2008, we are planning a tour to Broken Hill by rail and coach.

ASHET is managed by a committee of five office-bearers and three ordinary committee members. A complete new committee is elected at the annual general meeting each year.

If you are interested in the idea of serving on the committee or otherwise contributing to running ASHET or expanding its range of activities, call or email the secretary Ian Arthur, talk to any committee member or make a nomination.

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ASHET

Hedley Williams, farmer, and his collection of old farm machines

Hedley Williams of Lima East, about 20 km south of Benalla, in north eastern Victoria, is a farmer, aged ninety three. He owns a remarkable collection of farm machines, all of them used on his property at various times. Over the years he bought many items at local clearing sales, and used these acquisitions for parts to repair and adapt the machines he used on the farm.

Many of his machines were originally drawn by horses. Hedley bought his first tractor, an English built Fordson Major, in 1951, and it soon entirely replaced horse power on his farm. He modified his existing machines as needed and then built up a collection of machines that could use the tractor's power take-off.

Over the decades the Williams farm at Lima East has diversified to incorporate many types of farming, including an orchard (apples, pears, peaches) for 10 to 15 years, dairying until 1970, sheep (Polwarths) for 40 years, cattle for 70 years, crops (oats), horticulture for 40 years and market gardening (pumpkins, potatoes and cabbages).

The photographs here were all taken during 2012 and show a few machines that are still in use and others that lie abandoned around the

homestead. A few of the choice items have been acquired and removed by collectors of old farm machinery.

The McKay Sundercut disc plough is of a kind that became very popular after the Second World War, when tractors were replacing horse power. Hedley has a couple of other ploughs (not illustrated here) that date from the horse-drawn era.

Hedley purchased the seed drill new in about 1960. It is used for planting crops and pasture grass. It is designed for planting crops and pasture grasses and for being towed by a tractor.

Like most other farmers in the area, Hedley made grass

hay in good years when there was more than enough to feed the farm animals, and made it into hay for later use in times of drought or seasonal shortage of feed. After cutting, the hay was raked with the Bamford hay rake and then baled in a hay press. The hay press Hedley used was a stationary Cliff and Bunting machine, dating from 1936.

A more efficient way of making and baling hay, that Hedley did not use, was a machine towed by a tractor that cut the grass, and baled it in a single operation.

Another set of important farm activities was dealing with weeds and pests. Hedley had a slasher, for slashing bracken and heavy undergrowth. It was towed by a tractor. Hedley built himself a weed sprayer mounted on a utility truck chassis. For dealing with pests he had a poison cart originally horse drawn, that scratched a furrow and dropped poisoned feed (diced apple). He later adapted this for use with a tractor so that it dropped the bait automatically.



Cliff and Bunting stationary hay press, around 1931



McKay Sundercut plough



Mitchell seed drill purchased new about 1960



Bamford side delivery hay rake



Rabbit hole ripper attached to Fordson tractor



Slasher for ferns and undergrowth



Poison cart



Spray tank made by Hedley for killing noxious weeds, mounted on a utility chassis



Manure spreader

Digging up rabbit burrows was made easy by a ripper mounted on a tractor.

In later years, Hedley concentrated on growing vegetable and flower crops. He uses a rotary hoe for cultivating these crops. The rotary hoe is an Australian invention, perfected in the 1920s by Arthur Cliff Howard who came from a New South Wales farming family. It was soon a commercial success

and has spread throughout the world. It comes in various sizes, the smallest ones pushed by hand like a awn mower, and the larger ones self propelled or toed by a tractor. Hedley has owned several of them, and still uses a couple of them regularly.



Large rotary hoe



Small rotary hoe

Further reading

Graeme R. Quick, *Remarkable Australian Farm Machines*; Rosenberg Publishing, Sydney 2007.

Margaret and Phillip Simpson, *Old Farm machinery, Australia; a field guide and source book*, Kangaroo Press, Kenthurst NSW, 1988.

Frances Wheelhouse, *Digging Stick to Rotary Hoe: men and machines in rural Australia*, Cassell Australia, Melbourne Victoria, 1966

Hedley Williams of Lima East



Hedley Ronald Williams was born in Benalla on 24 October 1919, moving to Creamery Lane, Lima. East, just after his first birthday.

Hedley's grandfathers both immigrated to Victoria from the United Kingdom in the mid 1800's in search of a new way of life. James Williams, from Worcestershire in England, first came to Benalla in 1870 and settled there.. Mark Evans, Hedley's maternal grandfather had immigrated to Victoria, from Devonshire England. with his family when he was just eight years old. In the 1860's he and his twin brother Luke made their living bullock driving from Melbourne to Beechworth and eventually selected land first in Swanpool and then in Lima East. Mark married Annie Hyland in 1877 and they had 10 children, most of whom remained in the district.

Hedley's mother was Violet Williams (nee Evans) daughter of settler Mark Evans, and his father was a local carpenter, Harold Williams of Benalla. Hedley is the third of their five children. {1919, Wallace (1924) and Laurie (1926). In 1920 Harold &

Violet purchased a property on Creamery Lane Lima East from George McKean and it is this property, Stamilea, where Hedley still resides today.

School years

1925 to 1936 were Hedley's school years. Hedley and his siblings would walk the 1.5 kilometres to school at Lima East and back.

Hedley was among the first few to take the daily bus trip to and from Benalla to attend High School. Hedley and his siblings would ride their bikes to the Swanpool Store to meet the school bus at 8:00am in the morning and sometimes did not arrive back home until 6:00 pm.



Hay pressing 1930s

After gaining his leaving certificate Hedley started working with his father building houses in Benalla. They would milk the cows in the morning, go to Benalla, building all day, then come

home and milk again.

One of the first houses he worked on was the building of the new house at Stamilea, 'Stamilea' is the name of the property that the Williams' have lived in for 92 years, although it has not always been known by that name. 'Stamilea' is an anagram of Lima East and was named by Hedley.

Full time farming

Eventually Hedley turned to farming full time but he never lost his carpentry skills, using these talents in later years with the lathe to create masterpieces that he sold as well as many 'made to order' pieces at the request of his friends and daughters.

Over the decades the Williams farm at Lima East has diversified to incorporate many types of farming, often simultaneously including an orchard (apples, pears, peaches) for 10 to 15 years, dairying until 1970, sheep (Polwarths) for 40 years, cattle for 70 years, crops (oats), horticulture for 40 years and market gardening (pumpkin, potatoes and cabbages) which were particularly in demand during the construction of the power line in 1925 and 1926.

Of particular note, Hedley ran a Polwarth Stud at Stamilea for many years during the 1950s and 60s. Polwarth sheep, so called 'dual-purpose' sheep, were prized for both their good meat and long fine wool. Hedley eventually gave up the Stud, but continued to farm sheep. Around the 1980s he found an unexpected niche farming coloured Polwarth sheep. The fleeces were prized by spinners and weavers who visited to select that special piece from a variety of colours (blacks, greys, browns, mottled combinations of colours and white) and to obtain that characteristic long staple of the Polwarth that was so useful for spinning.

Not satisfied with just farming sheep, Hedley studied wool classing so that he could class his own wool clip, and that of his neighbours the Heaney's, whose shed he used for shearing his white sheep. Hedley won many prizes for his Polwarth ewes and rams at horticultural shows in Benalla, Mansfield and

Euroa. He also exhibited fleeces and in 1964 won champion fleece at Benalla Agriculture & Pastoral Show.

Up until 1951 when the first tractor was purchased, all farm machinery was horse drawn. In the tradition of that generation, when the horses were phased out to be replaced by the tractor, Hedley set about converting all the farm machinery from horse drawn to tractor drawn. Inventiveness was/is always required on the farm to adapt to external events and requirements. For example, during the war the GEC truck was redesigned to run on charcoal, as there was a shortage of petrol.

Hedley was conscripted into in the Second World War, serving as a gunner in New Guinea with the 106th Anti-Tank Attack Regiment. He and his regiment were attached to the 1st Brigade and were involved in the defence of Scarlet Beach at Finschhafen. He was appointed a gun layer in 1942 and later a gun fitter in 1944, before being discharged early in response to his father's request for assistance on the farm

On 11 April 1966 Hedley married Marjorie Heywood of Warrenbayne at the Methodist Church in Benalla and they spent their honeymoon touring Tasmania. Hedley and Marj then settled down to have a family of two daughters: Meredith Williams of Canberra and Dawn Williams of Melbourne.

Dahlias -1960's to present

In the late 1960's Hedley began growing flowers to assist in supplementing the family income. He predominately grew gladioli until one day he was offered a trade by a gentleman from Benalla (Theo Dahl). The trade was dahlia tubers for gladioli corms. Hedley quickly saw the potential for dahlias to be very popular cut flowers and proceeded to increase the number he planted each year. In recent years he has had over 400 different varieties and often planted over 1200 tubers. Over a period of 25 years he achieved many awards for his striking blooms and was honoured with approximately 16 Bronze Medallions for Best Exhibits.

Since his wife Marjorie died a couple of years ago, Hedley has lived on his own at

Stamilea. He drives to Benalla once a week. Hedley is completely deaf and his family converse with him by writing notes on a pad. Telephone, radio and TV are of no use to him, but he communicates with the world by mail and fax. This enables him to carry on his business of selling dahlia tubers by mail order. Dahlia enthusiasts come great distances to his annual show of dahlias and place orders for the coming year. All the work of growing the dahlias, cultivating, lifting and separating them each year and sorting and packing the tubers for sale is done by Hedley himself.



Hedley with dahlia 'Lilactime', April 2012