

Biography - ANDREW BROUGH MILNE (1890-1979)

Andrew Brough Milne arrived in Mackay in 1913 aged 23, having been born to an influential family in Durban South Africa in April 1890. In 1911 while he lived in Durban he finished his three year engineering qualification and had already worked in several engineering workshops and a sugar mill.

On arrival in Sydney with only five pounds to his name, he worked with the cycle manufacturers Bennett and Wood for just long enough to earn the fare to Brisbane. His intention was to see Australia.

In Brisbane, Andrew came to a motor garage in Adelaide Street called Howard Motors Limited. He asked for a job, and was told to attempt to forge an unobtainable connecting rod for a motor car which had broken down in Mackay. The test was straight-forward enough, however the difficulty was extreme. All he had available was the broken part to go by. After a couple of days of heart breaking work he produced a con rod which worked so satisfactorily in every aspect including balance, that he was invited to Mackay to commence a garage. He remained in Brisbane with Howard's about two months longer purchasing the heavy lathes and equipment necessary. When this was done, he headed north by ship. The equipment arrived with him and was unloaded in the Pioneer river in 1913.

Milne had been appointed chief engineer and manager. His first job was the supervision of the construction of this first fully equipped motor garage for a group of Mackay entrepreneurs. It was called 'The Mackay Motor Garage Co. Ltd'. The location was in Brisbane Street close to the River Street end. Prior to the opening, a shop was set up in Wood Street, in premises owned by Cross Printery which had been vacated by Allsop and Wallen, Coach Builders. There were only about a dozen cars in Mackay at this time. During this period of establishing the garage, Milne taught Dr. Kay to drive his new Cadillac motor car. (In South Africa he had previously taught the first Fire Brigade officers to get their licenses). The Mackay Motor Garage Limited under Milne's direction sold many of Mackay's earliest motor cars and he taught the owners to drive.

The Mackay Mercury stated that Milne was commonly known as the 'Motor Wizard'. In the next few years there were several changes to this garage because of partnership changes and death. The motor car industry grew exceedingly fast. Andrew decided that one day he would own this motor garage business. In time he did.

Roads were almost non-existent for the motor car in those days and a record was made when Milne chauffeured Dr. Kay in his single cylinder Cadillac to Nebo and back in the same day in 1914. The community presented him with a solid gold medal for his effort, which was a quick but hazardous journey then. The trip proved that the motor car was reliable as an emergency vehicle and much faster than the swiftest horse. The medal is still in existence. The journey was written up in the Mackay Mercury in the greatest of details and included poetic excerpts. A Mercury reporter had gone along on the trip.

A couple of years prior to Milne arriving in Australia in 1913 he had already seen and worked on the first aeroplane to be sent to South Africa. Aviators in those days were people who attempted to fly an aeroplane, not just people who actually flew them. Aircraft were so primitive at the time that the South African flying machine was unable to fly to South Africa from France from where it originated. Andrew became friends with the engineer associated

with this aircraft and together they worked on its motor. Milne's interest in aircraft was rekindled in Mackay in 1915.

How this came about was that in 1914 – 1915 he became involved in fund raising for the Red Cross for the war effort. A machinery accident to his hand in South Africa had caused him to be ineligible for service in World War 1. While living in Mackay centre, he made a mock aircraft to lead a procession down Mackay's streets. In fact, it was only a motor cycle and side-car decorated with a double box shaped wing structure with rear 'pusher' propeller to resemble the South African aeroplane. After the parade he rode the motorbike/aeroplane out to the town common near Far Beach and flew the removable wing section as a gigantic kite. He was followed by a crowd of people who assisted in getting it off the ground. The result was that it flew upwards rapidly before suddenly crashing to earth.

Milne then took the first aerial photograph of Mackay. For this he designed and constructed from a benzine tin, an ultra lightweight, hand made camera with only a single lens. It used glass plates for the negatives. He then mounted this camera inside a 6ft (2 metre) box kite. The kite was sent aloft from where the present Mackay City Council chambers are today. The line was approx 2,000 feet (600 metres) long but the height of the camera above land would have been about 1,500 feet (450 metres). The camera was connected to his gents pocket watch which was timed to activate fifteen minutes after launching. As the camera could only take one snap at a time many photographs had to be taken before he deemed one satisfactory. The resultant photograph shows the town centre and the Pioneer river mouth before it was altered by the 1918 cyclone. As there are very few people and horses visible, it was probably a Sunday when the photograph was taken.

A Nebo lass by the name of Anne Davis had a sister named Lillian who worked at Lamberts Department Store in Victoria Street, Mackay. Lillian was friendly with the Marriott family, who had a beach house at Blacks Beach. One week-end Anne and Lil were invited to the beach house and Andrew Milne had also been invited. Anne usually resided in Nebo, at their family home called 'Braeside'. Her family ran the famous Fort Cooper Hotel. This may partly explain how Nebo featured in the record breaking motor vehicle trip. Andrew married Anne on 6-10-1914 and later they were to have five children.

Milne was the force behind the 'Mackay Automobile Club' which commenced in early 1914. It predated the RACQ by many years. There were only about a dozen members with cars and motorcycles in the membership. Several rallies took place with motorcycle races up and down Sea View Beach. Milne often won as he had the fastest machine. He had also brought with him from Durban the first driver's license although they were not needed in Queensland at that time. His motorcycle was also the first to be registered in the Mackay district. It was a Triumph with 3 speed Stermey Archer rear hub and a direct belt drive. The registration number was simply; '1'. It can be seen over the front mudguard in the 1914 photograph.

Milne organised Mackay's first economy runs in local cars. For this he constructed a device and fitted one to every vehicle participating to make sure a measured amount of fuel was consumed.

Andrew Milne wired one of Mackay's earliest ambulances. He also designed, built and installed the first respirator in a Mackay ambulance.

Because he was a skilled electrical engineer, Andrew was able to design and build electric motors from scratch including all of the machining and hand wiring. This he did for the Star Theatre (which had been the first School of Arts) way back when it operated as an

entertainment theatre before the town electricity supply. He operated this lighting system for the live shows there. At this time the theatre was owned by Milne's father-in-law J. J. Davis.

In late 1917 Andrew wanted to return to South Africa despite the war and the threat of submarines to shipping. Together with Anne and their two children, Grace and Winifred they returned to Durban. They left just in time to miss the 1918 cyclone. Although Milne was offered the supervisor's position of the Durban Ambulance and Fire Brigade he had to decline because Anne was extremely unhappy in South Africa. Andrew did as Anne wanted and the family returned to Mackay to start back in the motor business again.

On their return home Milne brought back from Durban with them, Australia's first bulk importation of avocado pear seeds. He distributed these to people as they travelled by ship up the Queensland coast. Although there were one or two other avocado trees in Australia by this time, the variety he introduced with the full approval of customs in Townsville was by far the largest. It was semi smooth-skinned and at times weighed a pound (1/2 kilo) or more. This variety seems to have died out in the Mackay district.

Soon afterwards Milne acquired the Star Theatre. He converted it into a very large motor dealership called Milrose Motories in partnership with Jack Rose. Later Rose left the dealership when Milne bought his share out. In addition Milne also bought that original motor car business in Brisbane Street which he had commenced. At one stage Milrose Motories advertised that their spare parts sales exceeded any other motor car dealership in Queensland. That was an amazing record considering the population of Mackay and North Queensland in those days. Milrose even had facilities for spray painting adjacent to the building.

The struggle for motor car brands was fierce in the early years and reputations were on the line. The most sought after make was Ford, particularly after the Model T was introduced. Milne desired the Ford agency but so did several others. The battle for it was settled when the Ford company decided that it would neither back Milne nor W.T. Bagnell.

In the late nineteen twenties just before the American stock market crash and subsequent great depression Milne decided to give the motor business away. The bitter in-fighting over brands caused him to want to concentrate on engineering not car sales. Nothing gave him greater satisfaction than making one-off solutions for single applications. Milne's forté was in making deceptively simple solutions to individual problems.

Andrew Milne had been associated with the motor trade from 1913 to approx 1930. Up to this time he sold and serviced vehicles such as Overland, Cadillac, Chevrolet, Buick, Little, Hupmobile, Kret, Hudson, Essex, Willys-Knight, Falcon-Knight, Overland, Whippet and Wolseley motor cars; Karrier, Leyland, Dennis, Belsize trucks and commercials; Cletrac and Twin City tractors; and Indian motorcycles.

Meanwhile overseas, Andrew's relatives were making the 'Rolls Royce of motorcycles' the Brough Superior, which shows that perfection in engineering ran in the family. However Anne still would not agree to leave Mackay. Andrew felt that his chances of success lay in other countries like the USA but he reluctantly stayed.

In 1927 Milne acquired land at 20-24 Malcomson Street. On this site he designed and sub-contracted to Mr Zammit the builder, the first Mackay house completely clad in fibrolite on the exterior. He had the fibro sent up from south. Shepherd's and Porter's were later to sell it locally. The cases the fibro came in were used for interior walls, and then wallpapered.

He decided against the usual tongue and groove timber. The house was years before its time because it was also the first Mackay home with flat ceilings in every room. At this time other houses had sloping ceilings to some outside rooms. For the foundations Milne went into the bush, and cut down local hardwood trees into three metre lengths. Then he lathed the upper 2 metres into perfectly symmetrical wooden house posts. The shavings filled an area of many cubic yards. The root ball was left intact on each post, and then "planted" into the foundation and then concreted in, greatly improving and strengthening the overall cyclone resistance.

This home was also the first in North Mackay to have electricity. He self-wired the house. Later Andrew assisted the Mackay Regional Electricity Board employees to connect it to the town supply. He had waited many years for them to come. Milne taught one or two of Mackay's first electricians their trade although he never applied for an Australian electrician's license himself. At Eimeo the Milne beach house was the first with gas lighting and also the first with home generated electricity.

On this Malcomson Street property, Milne built an engineering shed for his own business called A.B. Milne: Manufacturer of Agricultural Implements. In 1928 he commenced work in conjunction with three Eton cane farmers, T.F. Ross; G.L. Petersen; and C.G. Petersen; for him to design and manufacture, and for all four to jointly patent a "Cutter Cane Planter" which used a reciprocating gear mechanism driven from one rear wheel. The patents were taken out before they were built. Milne then built four prototypes, one for each of them. Later he made necessary modifications before they went into production.

The 1930 "Cutter Cane Planter" was the first 'cutter' planter in Queensland but was soon challenged by a rival Hodge cutting model. Willman and Charles Hodge had made cane planters long before the 'Cutter Cane Planter' but with these it had been necessary to cut up the cane by hand before planting.

Milne bought the three Eton farmers out in 1936. He considered he could develop an improved system. The result was a new oscillating cutting mechanism. He called this device a 'Wavy Track' and it was thereafter manufactured as the "Milne Cutter Planter" until 1962 at which time Mr. C. Etwell of Walkerston purchased the rights to manufacture. Demonstration machines were exported to Venezuela, Angola, Ceylon, Barbados, El Salvador, Malaysia, and Peru.

When 'pineapple disease' broke out in Queensland sugar cane, Andrew Milne worked with the CSIRO to develop a cure. He designed a spray to treat the cane at the time of planting. It was a great success.

A few of Andrew Milne's other ideas included providing the impetus, control of membership, and 'working bees', for the first Mackay speedway which had a track not far from the Barnes Creek gardens. He also built a multi-coloured revolving lighting system for the popular Mackay dances when electricity was in its infancy.

Way back in 1914 Milne and Neilsen repaired the X Ray machine for the Base Hospital. While it was in Milne's possession he converted it to work as a wireless telegraph. It was capable of morse because it predated voice projection. This was the first 'wireless' operated device in Mackay.

In 1923 Andrew Milne made his own wireless set out of several parts. At this time there were only two stations in Australia, 2FC and 2BL. Reception could be obtained on short wave. His

children broadcast and received their own transmissions privately until there were other wireless sets locally. Later in 1925 when wireless technology was a little more advanced Milne constructed the first wireless sets for sale in Mackay. They were still not available commercially from south. In 1925 he acquired Mackay's first wireless station dealer's broadcast licence. It had the call sign 4BM for Brough Milne. It preceded 4MK by several years. One wireless set he sold and assisted in making is still able to be seen at Greenmount museum. It is a five valve set and the case and loud speaker were constructed by the Cook family members. Afterwards when sets were starting to be made commercially, Milne sold Mackay's first brand-name wireless parts and sets for; Gilfillan, Healing, and Atwater Kent brands. Milne travelled to cane properties and showed country people how a simple wireless aerial could be made from three felled trees.

In 1922 Milne experimented with talking movies, using a process of sound directly on the film. The exact method he was using is unknown. However his work predated by around five years the first movies with sound on the film.

For the 1925 Federal election Milne acted in conjunction with the Mackay Mercury. In another first, by using short wave the reporters published the latest details via the wireless rather than the overland telegraph.

Milne was the first person to foster carting cane in a motor truck. It happened around August 1925. It was in a Ford model T truck with a Runstal axle. A load of between 2 and 3 tons was carted up a strong hill. The farmer was Mr. Tom Cowan of Mt. Pelion. Milne stepped out of the vehicle and said, "Congratulations, you are now the first man to haul cane [by motor vehicle means] in the Mackay district." Soon afterwards Milne arranged demonstrations for other farmers.

In 1930 Andrew and Anne travelled by motor car to Melbourne and back in a Whippet motor car. For this trip he built Mackay's first box trailer. It had a lid and wood-spoke wheels from a crashed Ford model T truck. With meticulous recording the Whippet vehicle covered a distance of 5322 miles (8800 kilometres) at an overall 28.01 miles per gallon. The vehicle was fitted with a Milne designed collapsible double bed arrangement in the roof.

A few years later Andrew built Mackay's first campervan. It was a caravan aboard a truck with a forward bed over the driver's cabin. Together Andrew and Anne set off to make a path to the Gulf of Carpentaria. They succeeded in getting further than Cooktown but after that, more often than not, Anne had to walk while he drove in order to find a way. Unfortunately the bush, mountains and ravines proved impenetrable. They were forced to turn back disillusioned.

Andrew Milne's big chance for fame came in 1936 when he obtained an Australian patent for a 2 forward speed automatic transmission. It was almost identical in principle to that used by cars today, in that it was epicyclic with sun wheel and planet wheels etc. It used a standard fluid flywheel. He was confident it would make him very rich. Milne failed to raise enough money and interest locally or south to have it manufactured. Drivers in 1936 were complacent about automatic gearboxes but Milne hoped that automatic cars might soon be manufactured in Australia. In that event he would get royalties. However his patent expired in 1952. By this time automatic transmissions of a similar principle existed in America. General Motors waited until after 1952 before manufacturing the Holden Hydramatic in Australia. His chance for recognition was lost.

Typical of the engineering work Milne performed were specialised inventions. For a Brisbane based company he designed and built all of the equipment for a confectionery production line. The devices were extremely simple to use. They included a lolly wrapper which put the little twists on each end, all with the turn of a handle and even a revolving chocolate Easter-egg making machine. He did not patent any of these inventions. However he did patent several others. Among these were, a gearless agricultural chipper, a changeover gas converter, and a remote control for a twin-engined launch to be controlled from the bridge. The beauty of Andrew Milne's inventions lay in their simplicity and functionality.

In 1946 Andrew Milne built the first monohedron hulled boat in Australian waters. The monohedron was the forerunner of the Deep Vee hull. The monohedron design was invented by the famous American naval architect Lindsay Lord just months before. Milne exchanged correspondence with Lord over design and 'Sea Spray' was the result. It was a 23 ft (7 metre) lightweight plywood fishing boat with an inboard Ford V8 engine. This was in 1946 and Sea Spray was the fastest boat in Mackay for many years because it could travel at 20 knots at a time when 10 knots was considered very fast. Sea Spray was called out for sea rescues on occasions. The boat was berthed at Eimeo in Mackay's first beach boat-shed, launched on cane rail-lines and hauled up and down by petrol motor.

Andrew designed and built Mackay's first portable cement mixers and hired them out for small jobs. This provided Mackay home handy people with a valuable little service. Several other miscellaneous Milne inventions were a fairy floss machine; a device made at the request of a local fish shop, which could peel and cut potatoes into slices for chips; and a parrot beak branch trimmer of the same principle as in stores today. He also made a mono-wheeled box trailer which anyone could reverse. For his children he made clever toys, such as clockwork boats, sailing boats, and a dinghy converted into an oversized swing. Andrew made patterns for the children's clothes from sketches seen in books. He also devised spectacular floats for processions. One of these, reported in the Mercury in the 1920s, looked like the front section of two different makes of cars cut and joined together. It gave the appearance of being able to be driven forwards from either end. Another had revolving lights on its car wheels which puzzled people as to how the wires would not get tangled.

Milne was involved with boat building and design. Once, he developed a stacking three-piece dinghy which could fit into a car boot and could be taken to the water by one person. He also built several other Mackay boats named, Whippet (1920s), Sea Hawk (1930s), and Osprey. The latter was a 27 footer launched during world war two. It came complete with Milne made stainless steel cooking implements and travelled at 12 knots.

In the mid nineteen fifties Milne decided to design and build a nine berth 40 ft launch with maximum space utilization. As fibreglass was unobtainable for such a large craft at the time, he constructed a half steel 3/16" hull to the waterline with double diagonal planking upwards. He was assisted by Mr. Alan Benbow of Andergrove. At first 'C King', as the launch was named, was to have used a V12 Alison wartime aeroplane engine but petrol was prohibited for charter work. Milne was therefore forced to use two diesel tank engines with greater weight and less power instead. The sleek exterior was extremely similar to large power boats of today, although people thought it looked unusual then. All weight was kept to an absolute minimum. Remarkably, C King weighed in at only 5 ½ tons displacement compared to 8 plus tons for a comparably sized fibreglass boat of today.

However, on launching in 1962, it was found that the substitution of the tank engines caused her to be down in the nose. C King could still travel at 12 knots which was a very good speed

in those days for a 40 footer. Milne was devastated by his mistake. He wanted 18 knots. Eventually he decided not to redesign C King because he felt he was getting too old. However he did acquire a Sea Captain's and Marine Engineer's certificates in 1963 at the age of 73. He and Anne continued to travel to the reefs around Mackay in their boats until they were both in their eighties. Upon retirement Milne continued as a consulting engineer for specialised problems in Mackay and district.

In 1977 a Gold Coast newspaper published an article on Andrew and Anne's combined driving record. It was entitled '120 years without a bingle'. Andrew had obtained his driver's license in Durban prior to 1913. Anne was believed to hold the longest accident free female driver's license in Queensland. Anne officially obtained it in 1921 under Andrew's tuition. She took the test in Mackay's first ambulance, which had then been purchased by Andrew privately and converted into Mackay's first utility car.

While in Durban prior to 1913 Milne had been employed at the Natal Cane By-product Distillery where they produced a product known as Natellite which was 100% Alcohol, made up of about 70% methylated spirits and 30% Ether. Milne had 'considerable experience with this mixture in motor cars' and '[could] vouch for [its] entire satisfaction after [the vehicles had] a through clean out and re-adjustment'.

Over 60 years later, in the last few years of his life, Andrew Milne sought to develop an alternative energy source. His idea was to convert water into the powerful mixed H₂O gas by driving 240v AC town supply electricity through water. He obtained scientific results which showed that this method is far cheaper (although far more dangerous) than the DC method of electrolysis which separates water into separate Hydrogen and Oxygen. He claimed a motor car could run on this combined gas with a modification to the carburettor to increase the air intake. Consequently he designed a mobile gas generator and mixing valve for a combustion engine. However despite corresponding with many government ministers, the CSIRO and several scientists in Australian universities, he had little positive response and was forced to give up his experiments when he was 87 years old.

Andrew and Anne were indeed fortunate to celebrate their 65th wedding anniversary in 1979. Not very long afterwards Andrew Milne died in Mackay at the age of 89. His wife Anne died in 1992 aged 96. Andrew Milne had been a member of the Mackay Chamber of Commerce, and the Progress Association of North Mackay and Eimeo.

In 1995 the Malcomson Street house was demolished. There is now little remaining physical evidence to remind us of the multi-faceted talents of this man, Andrew Brough Milne, who obviously could have achieved much more in the USA. Mackay benefited from his ingenuity nevertheless.

Jeffrey Warren Smith B.A. (History) JCU

PO Box 640
Newtown, Sydney NSW 2042.
Wed. 27 October 1999