

Who Fired the Last Shot?

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This is not the story of an aeroplane but of an early WWI aero engine, alive, well and living in Australia.

I am 93 years old and never imagined I would live to anywhere near this age. Born in Scotland right at the start of W.W.I, as a 1914, 120hp Beardmore 14 litre (854.5 cu n) water-cooled inline 6 cylinders. My parent was the Beardmore Aero Engine works, and then located at the Arrol Johnson car works, Dumfries, Scotland. They had obtained a licence to build exact copies of the, then famous, Austro Daimler Aero Engines. These engines were designed by Dr. Porsche of VW fame and powered many record breaking aeroplanes of that pre-war period.

The 120hp Austro Daimler and I are probably unique in so far as the Austro Daimler was built and used to power German 'planes, while identical Beardmores were built and used to power allied planes, who then fought against one another in the same war.

The first aircraft ever flown in actual combat, as a squadron, by the United States Army Air Corps in 1918 were British built, FE2B pusher bi-planes powered by the 120hp Beardmore engines and used as night bombers, a fact often difficult to explain to a Yank. (But, then, they don't want to know about Laurence Hargraves teaching the Wright brothers how to build and fly gliders in the 1890s either. Both are facts!)

This is an account of how I survived those years to eventually be restored to running order at the age of 60. As far as I can establish, I am the only example of my breed that is, (a) running (b) privately owned and (c) not residing in a museum.

You will find examples of my relatives in the Science Museum, London, the Shuttleworth Collection, U.K., The Porsche Works Museum, Austria, both the Sydney and Melbourne Technological Museums and the Qantas Airways private collection. Unfortunately, none of these examples appear suitable for restoration to running condition due to seized pistons or sectioned cylinders.

I entered my service career early in 1914 as Engine No. 131, War Dept. No. 650 and, in all probability was mainly used as a spare engine. There is no other explanation of why my internal parts are not in any way worn or in need of replacement. At some stage of my life my overhead valve actuating gear has been swapped with Engine No. 121 and is the only part of my system which was found to be in a worn condition. Sometime in the early 1920s I found my way to Brisbane, Australia as the spare engine for an aircraft owned by Egan's Motors, the local General Motors dealer. When my useful life came to an end, I was turned out into the vacant lot behind their repair workshop along with a very early V8 car engine. Someone decided we should be protected by covering us over with a large upturned square iron water tank. We were to stay there for somewhere around 40 years.

Meanwhile, the effects of moisture resulted in small corrosion spots on my aluminium sump pan and also badly seized my magnetos. In 1965 a young man was apprenticed as a mechanic to Egan Motors, who had prospered over the years and were still G.M. dealers. Soon after he was told by one of the very old employees that my V8 friend and I were peacefully sleeping away the years under the protection of our iron tank. The young man decided to investigate and removed the tank. He took an immediate liking to my V8 partner and asked the owners if he could purchase this old car engine. He was told that the car engine was "far too valuable as a relic" and that it would be donated to the Brisbane Museum. However, as a consolation prize, he could buy me for \$50 as "no one would want an old aero engine".

Although very disappointed, he transported me to his home where for several years I continued my interrupted sleep in the basement of the family home.

Sometime in 1967 the family moved to Sydney. For this trip I was loaded diagonally into the rear seat compartment of a 1926 Delage touring car for the 700 mile trip to Sydney. I was again stored, still on the rear seat, in a fertilizer warehouse. It was there in 1969, 39 years ago that my present owner discovered me. He was investigating a lead that the old Delage might be for sale.

My present owner took one look at me resting in the car and, even though I was in a dirty and run down condition, decided that he wasn't interested in the car and instead bought me for \$75. At least my value had increased by \$25!

Once again I was moved, this time to the home of my new owner where I was to share a workshop with a number of vintage cars including a 1926 Rolls-Royce Phantom I. At least I was in good company. Even more fortunate for me was the fact that a close friend of my new owner was experienced with aero engines and had been employed during W.W.II in the manufacture of the Australian built C.A.C version of the Rolls-Royce Merlin engine.

Very soon I found myself completely dismantled and about to undergo my 55 year periodic inspection and service. I knew there was nothing seriously wrong with me but I was certainly due for a thorough internal check-up, clean out and a complete external renovation. My crankshaft was not oval and was unmarked. Cylinder bores were clean and parallel. Thin wall steel pistons and rings were in excellent condition. Twin Beardmore-manufactured carburettors equipped with annular floats, aviation style, needed minor attention but my twin Bosch magnetos were in terrible condition. This was largely due to the effect of years of dampness and the resulting corrosion while stored in the iron tank. Fortunately the only parts I had lost in all that time were a set of magneto points, the water manifold connecting my six individual water cooled cylinders, my high tension lead conduits and one of my two sets of original spark plugs. Naturally all my rubber water connections and electrical wiring needed completely replacing. Somewhere along the way I had fallen over and badly bent my handmade copper inlet manifold. This resulted in a great debate as to who could be trusted with my repair. Eventually my friends achieved this with some special jigs and tooling and much praying before the application of heat on the badly damaged sections.

I have great pride in my electrolytically deposited copper water jackets which completely encase each of my cylinders from crankcase level upwards. I am pleased to report that despite my 90 odd years; these are as good as when I was just a girl.

My second hand valve gear was something of which I was not very proud but, after much special attention, the externally mounted Desmodromic valve gear, with its transverse multi-leaf cantilever springs, was good enough to install back into my cylinders. Each set has its own hand-screwed brass grease cap as the only means of valve gear lubrication.

One cold night in July I suffered a terrible accident when one of my attendants dropped a complete cast iron exhaust valve assembly on to a concrete floor. To my horror, I felt my exhaust valve seat crack right across my valve face! It looked like my running days were over. Where do you find spare parts for a 1914 Beardmore Aero Engine?

My owner was horrified and spent many days pondering over my future welfare. He then took a long shot and contacted one of the museums who housed an identical relative. The curator listened to my problem and, after being assured that my cracked assembly was quite good enough for display purposes; they arranged a transplant with a unit from my unusable relative. We all breathed easily again.

My Edison 5 ribbed spark plugs were tested and found to be in working order. This was just as well because they have a special type of dome-shaped shrouded point arrangement which is self-cleaning to cope with the half gallon of oil I burn every hour. This is similar to the Silver Ghost cylinder lubrication. The oil I consume is delivered by an external Bosch squash plate driven oil pump, the internals of which were beautifully constructed by a master craftsman. Strangely, this oil pump only delivers oil to galleries above my main bearings from where it is still a drip feed. As I carry 4 pints of oil in my sump to splash feed my big ends, I was never intended to fly upside down.

The water to cool my cylinders is circulated by a centrifugal water pump. Someone presented me with a large matching copper-cased Italia radiator, just as old as I am. This keeps me nice and cool as long as I don't try to run for more than ½ an hour.

My magnetos were completely reconditioned by another of my owner's friends and someone else presented me with a BTH hand-wound starting magneto just the same as I had in my flying days.

My friends kept leaving me from time to time to work on the old cars which lived in the same workshop. After several years, I realised that at long last I was being reassembled. I found myself mounted on a specially constructed channel iron engine frame of very robust dimensions.

Eventually, in 1977, the day came when I was to return to active service. My cylinders were primed with great difficulty because I now had a test flywheel on my propeller boss in place of my normal 10ft. long laminated wooden propeller. With great excitement all around me, my magneto switches were turned to the "ON" position and the hand-wound magneto was wound vigorously.

From one of my six specially built stub exhausts, I emitted a single ear-shattering explosion.

My owner and friend took flight and ran to the workshop door thinking I was about to explode. My owner's children and their dogs ran from the workshop and couldn't be persuaded to return.

Everyone really did believe that I had just fired "the last shot of W.W.I"!

To cut a long story short, it was decided that I should acquire a new geared flywheel and a 24 volt geared starter motor because the problem of priming my 14 litre capacity was too great. I now start up at the touch of my starter button. Once I am running and warmed up, I run happily enough despite the incredible noise and the smoke that is accompanied by a long blue flame from each of my stub exhausts.

The Royal Australian Air Force museum at Point Cook got to hear of my exploits. They used a lot of my relatives in the early 1920s. My owner says that when my running days are over and my little exhaust flames have gone out, that's probably the place where I will retire to spend the rest of my days in peace and quiet.

Somehow, I think I will miss the noise, fun and attention I can now create

I love to give demonstration runs and used to be in great demand to appear at local air shows and even Vintage car events but the last run was in 1981. Perhaps my owner could be persuaded to bring me to a suitable RROC event to stage my final run. Who knows?