

Dowty in a village called Atworth

by Des A.E. Rice

Many times the question has been asked, “What was a high technology firm such as Dowty doing in a Wiltshire village called Atworth? Some answers have been, “I don’t have a clue” and “Everything and everybody has to be somewhere.” That somewhere, Atworth, is on that stretch of road between Melksham and Bath. We are all aware that the Romans were in the area, but in the more recent past it was internationally famous within the aerospace industries, because of the Dowty factory.

Dowty’s – why did they come to the village? The factory was previously The New Mendip Engineering Company, but although taken into the Dowty Group during 1948, it continued under the name New Mendip until the 1970s, when it became Dowty Fuel Systems main machine shop. New Mendip would suggest that there must have been an old one. Mendip brings to mind the Mendip Hills of Somerset, Cheddar cheese, strawberries, Wells Cathedral, Wookey Hole, Cheddar Gorge and cider apples.

But this carboniferous bump with green fields tries to mask and hide the true industrial history, spanning thousands of years. It is an area subjected to speculation and urban vandalism on a scale almost unrivalled in these islands - mining, manufacturing and quarrying. Why! Even Cheddar Gorge is partially the remains of a stone quarry. The very rich mineral deposits have been exploited there since as far back as the Iron Age, especially lead. The Romans realised the wealth of their conquest by introducing organisation in the area. They used lead for many purposes, such as pipes to conduct the hot spring waters into their lead-lined baths at Aqua Sulis (Bath). Silver was an extra bonus, extracted from the lead by a Roman process called cupellation. Numismatists will know that 17th century coins of the realm, with a rose below the monarch’s head, contain Mendip and West Country silver. Cadmium, calamine, lime, iron, limestone and, as we know, large quantities of coal were extracted from the area.

Where industry flourishes, there must be good support. These needs in the Mendips were mainly water, agriculture and versatile engineering. Water appears to be no problem, the river Chew rises at Chewton Mendip; the Manor of the Ancient Lord Royal, owner of all mining rights, who took their tythes, the noble Waldegrave family (a name we may recognise); and it is here at Chewton that all the support came together.

Over the hundreds of years, the River Chew was used for ore washing. The pollution problem was enormous and the added traces of arsenic from the soil were ignored, although drinking water from this source was supplied locally and to the cities of Bristol and Bath. The creation of the Chew Valley Lake (just after the Second World War) was the cure, by building a dam, flooding the valley and installing a treatment plant near Saltford.

What has all this to do with Dowty in Atworth? Well! At the beginning of the Napoleonic Wars, when ore mining was still flourishing, an engineering works was established at Cutlers Green in Chewton Mendip, producing agricultural equipment. By the end of the 19th century, it was producing cast iron milestones and signposts. Owned by C.W. Harris, this was The Mendip Engineering Works. In 1907, it was making 3- and 5-ton steam wagons. Then in 1913, with the assistance of the local blacksmith, it was designing and building charabancs and a light car. The car was a failure, until a newly-employed foreman was promoted to works manager. He was Mr George Thatcher. With the help of his brother, Arthur, the car was redesigned. But the company, now renamed The Mendip Motor and Engineering Works, had made only a few cars when, in August 1914, the First World War broke out and war work took over.

After the war, with the Thatcher brothers as joint managers and their father as assistant, production restarted in full swing. Inflation was even fashionable then. The car cost £155 in 1914, the 1918 version cost £355.

Financial backing for the company came from a Mr W.H.B. Hope, the son of Mr John Hope, M.P. for North Somerset, Recorder of Wells. Expansion led them to transfer to larger premises in South Mead in Bristol. Although still being singly hand-built, quite a number of cars were made. One unconfirmed claim was that over 500 were produced.

The future looked bright, but then tragedy struck. Mr Hope died. His affairs were wound up, causing the firm to close through lack of capital.

In 1922, George Thatcher, with as much money as he could afford, bought a house with two tin sheds, reputed to have been the site of an ancient saw pit, on the Bath Road in Atworth. His family, Mrs Thatcher and daughter, Katie, joined him and became part of village life. He set about resurrecting the firm. With a temperamental Petters engine, odd bits and pieces, a few tools, and a Mendip car stored in the White Hart coach house, the New Mendip Engineering Company had arrived.

Selling petrol, doing repairs and general engineering, the firm ticked along. Mr Wilf Bonham-Lovatt, who had been apprenticed at the Southmead works, came to work with him. A contract with Westland Aircraft in 1927 led to the acquisition of more machinery and a Crossley paraffin engine, which would be started most mornings with the aid of a blow lamp, was the main source of power. On one occasion, the fly-wheel declared independence of the engine and an employee narrowly failed to stop it with his head, before it hit the wall.

It was in about 1932 that work began to arrive from a new company called Aircraft Components. This was the very first contact with Dowty.

There were times when Mr Thatcher had taken on so much work that he would install second-hand machines in places such as barns around the village, to fulfil his contracts. Machinists were acquired by various means, by adding to the few skilled men he had, by poaching young farm workers, who, with very little instruction, would be thrown into the deep end and asked to work to finer limits than expert toolmakers. In their enthusiasm and despite their lack of knowledge in standard engineering practices, they learned to turn out very good work. They must have thought it was better than 'tatty picking'.

In the 1930s, money problems were always a companion of the business. In some weeks, certain employees would lend Mr Thatcher their own savings to pay other wages. One village family invested enough money whereby he could employ their sons.

It was after George Thatcher's brother, Arthur, joined him that things picked up. Arthur was a brilliant engineer. It was he who had designed the 1919 improved version of the Mendip Car, the M4.

In 1970, a Doctor Blakeney Edwards of Cheddar contacted Arthur to say that he was restoring an M4 car. Then a very old man, Arthur's response was, without any original material at all, to draw the car for him in every detail of geometry, screws, nuts and bolts, together with all the dimensions, based totally on his memory of over 50 years before.

In 1935, although the general public was unaware of it, the Government began to prepare for war. Old underground workings in this area were being developed as stores and factories. At this time, the Thatchers were awarded sub-contract work on aircraft details. Other firms, who were also doing Ministry work, came in with more contracts and invested money with them.

At the outbreak of war, the Mendip became a shadow factory and with rapid expansion more land was bought. The need for floor space meant that the two old cars were thrown out for scrap. New buildings were erected. The largest, a Bradberry hanger workshop, was for the production and assembly of fully powered rotating gun turrets, for one of the R.A.F.'s three main defence aircraft, the Boulton Paul Defiant. The main machine shop was thereafter referred to as The Turret Shop.

The Thatcher brothers had the opportunity to exhibit their skills to the full. When doing second and third sub-contract work for Westland that they had been given by Vickers Armstrong Supermarine, they were to try to solve the problem of instability and the interchangeability of the wings of the Spitfire fighter plane. This they did with great success. Just in time, because this was in 1938. In 1941, Vickers in Southampton dispersed and evacuated into small units in this area after being bombed out completely.

The Mendip employees grew in wartime to around 600, of which two-thirds were women. When peace came, the force dwindled to less than 60. Dowty of Cheltenham, needing the skills of old friends, took them into their Group in 1948.

Who and what is Dowty? George Dowty, born in 1901 in Pershore, Worcestershire, was a seventh son and one of twins to a family who had no engineering background at all. He spent hours with his twin brother, Edward, flying model aeroplanes and gliders from their bedroom window. This was the boy who, in 1956, was knighted for services to aviation. After leaving Worcester Royal Grammar School at the age of 14, he was apprenticed to a local well-established engineering firm, with a wage of six shillings a week.

At the end of his apprenticeship, he broadened his practical experience at other factories and workshops, including Dunlops, before joining the famous Gloucester Aircraft Company, where in 1924 he became a draughtsman. In his work he became absorbed with ideas for reducing the bumpy and damaging landings of aircraft. That, at best, relied on rubber blocks, similar to motor car engine mountings, in the rigid undercarriages. The only form of breaking was a tail skid that scraped the ground. He tried to interest his employers and other manufacturers in his designs to improve the problem. The timing could not have been worse. Britain was in recession. Companies were closing down or shedding staff. Money was not available to explore the untried ideas of an unknown young draughtsman.

Contrary to the trends in such an economic climate, while still working for the Gloucester Aircraft Company, in 1931 George Dowty formed his own company, Aircraft Components Limited. His aim was to follow the example of Messier of France and Bendix of America, pioneering new products and building specialist knowledge. Brochures were produced to advertise his designs. He struggled on, with an accommodation address in London from which a friend in the city would field any enquiries, which were then sent to his home in Cheltenham.

The recession deepened and prospects for his ideas grew dimmer. Then, at last, came a ray of hope - an order from the inventor of the autogiro, Don Juan de la Cierva, for a consignment of his shock absorber legs. The order was received causing some embarrassment, because the company he had set up had no premises, no staff and no means of fulfilling it. In the end, in a bit of a panic, the struts were made with the help of two friends working in their spare time, one on a treadle-operated lathe in his basement and the other in a small wooden garden shed.

It was the next order for six of his internally sprung wheels that proved the turning point. It was this that prompted him to give up his job at Glosters and devote himself full-time to his new enterprise. The order in question was from the Japanese firm of Kawasaki, requiring a delivery within eleven weeks. He charged them £550 a pair and made £450 profit on the whole order, working night and day in a tiny mews loft in Cheltenham costing two shillings and sixpence a week.

The largest piece of equipment he owned was a hand-operated pillar drill, just £50 of capital and a couple of friends, the machining being sub-contracted around the town. The seemingly impossible was achieved. Kawasaki's order was completed before schedule,

so much to their delight, that they later bought the manufacturing rights for £1,000. Dowty internally sprung wheels were later fitted to the R.A.F. Gladiators Lysanders and Fury's.

Before long, the company expanded into new premises in a monumental mason's yard. Orders arrived for absorber struts, tail wheels and complete under-carriage units from Glocesters, Saunders Roe, Bristols, Hawker, de Havilland and many companies in Italy, Germany, Denmark, Sweden and Siam. Some sub-contract work came to New Mendip.

Not everything went successfully. Plagued by the lack of capital, Dowty would turn his hand to anything, even making such things as metal garden labels.

In 1935, he was employing 59 people, with only £5,000 worth of orders. Yet, still with expansion in mind, he bought Arle Court on the outskirts of Cheltenham, with its mansion, eight cottages and 100 acres of land, for £6,000.

For the following four years, thanks to a massive influx of orders to help re-equip the R.A.F. for the impending war in Europe, the company developed and perfected complete hydraulic controls for aircraft.

When war was declared on the 3rd September 1939, the company was ready with a well-knitted team of designers, highly efficient production facilities and a vast network of sub-contractors all over the country. Dowty Equipment became the company's new name in 1940.

During the war, nearly all British aircraft that was built embodied Dowty products. The list of names is too numerous to give, but a few include Hurricane, Beaufighter, Typhoon, Whirlwind, Manchester, Lancaster, Halifax, Stirling, Blenheim, Hampden, Henley, Sunderland, Skua, Anson, Dominie, Master, Lysander, Rapide, and the allies' first jet aircraft the Gloucester Whittle E28/39, which first flew on the 15th of May 1941, also, the first jet fighter to see action, the Gloucester Meteor. At the end of the hostilities in 1945, Dowty had built 87,786 landing gears and 984,388 hydraulic units

The swinging cuts in orders when peace came allowed the skills and knowledge that had served destruction in the war to be applied in a constructive way. Hydraulics for the run-down mining industry, pit props which were made from Lancaster undercarriages, railway marshalling yard controls, whereby shunted wagons no longer depended on a man running beside hanging onto a handle to apply the brakes.

By the mid-1950s, the diversification flood-gates were open. Many take-overs took place, multinational since during the war, always expanding. In 1990, there were more than 50 operations in 17 different countries, employing 15,022 people. These included aerospace equipment and systems and support featured in over 200 current types of aircraft for 30 air forces and 300 civil operators in 90 countries. £73 million was ploughed back into research in 1991.

Research was George Dowty's passion. Thomas Edison held 1,000 patents. Dowty personally held over 500. But some of his ideas were so odd that they could be mistaken for jokes – blinkers for chickens, to prevent them from pecking each other; transparent plastic bracers, belts and sock suspenders, but the plastic was unstable and disintegrated when exposed to sunlight. A few trousers must have fallen down! Liquid spring suspensions for cars that were too expensive for the motor trade; plastic football boot studs which were later produced by footwear manufacturers; Oleo pneumatic motor cycle forks that relied on 'O' ring seals and were pumped up with a cycle pump. They were fitted to many famous makes, including B.S.A. and Phelan and Moore Panther.

Today, Dowty Seals, the 'O' ring specialists, has a product range of nine and a half million different items. 187,000 propellers, which had notched up over 150 million in service flying hours by 1990, were made by Dowty Rotol, who also made the landing gears, including the giant legs for the A330 and A340 Airbuses.

Sir George Dowty died in 1975. Those who knew him might agree that he was an engineer, inventor and businessman, but he was essentially a shy man. Ideas, not management, concerned him most. He was occasionally abrupt, which sometimes showed when he was obliged to make speeches. In September 1966, when unveiling the plaque at the opening of the Atworth Dowty Sports and Social Club House, he said, "Right, it's open. You have got your club house at last, but who the devil put it down here by the swarf sheds? I'm telling the manager now to remove them."

Another time, when visiting the Atworth machine shop, he picked up a component that had been processed and asked, "What's this?" "A spring", he was informed, to which he snapped, "A spring! A spring! What a ruddy way to make a spring." The astonished machinist's tobacco pipe dropped from his mouth and smashed onto the floor.

The 1960s, '70s and '80s supplied Atworth with as much work as it could cope with - small valves to operate activators, helicopter shafts and units for Westlands, fuel systems and controls for most of the major engine-makers. Engines such as these, which are only a few, include Adour engines in Jaguars, R.B.199 in Tornados, Pegasus in AY-8A Harriers (the jump jet), M45 in VFWs, M53 in Mirage 2000s and Spey engines in Phantoms.

The Spey engines made by Rolls Royce were the subject of a manufacturing licence granted to the Peoples Republic of China in December 1975. To assist in this project, Chinese aeronautical engineers attended a production course in Atworth on machining and quality control during 1976/77. They lodged in Melksham and the Stagecoach Motel in Corsham. They were very enthusiastic to learn through their interpreters.

Dowty Fuel Systems became a separate unit within the group in 1953. Dowty New Mendip was made a part of that business in the mid-1970s and shut down production in

September 1991. The machinery and office equipment was auctioned on 20th and 21st November 1991. The boardroom table was sold for £2,500. A large part of Dowty was taken over in 1992 by the I.T. Group and in that year the Fuel Systems Division made nearly £12million, although greatly reduced in capacity. But this was not enough return for the I.T. Group, who in September 1993 sold the business to Dowty's long-time greatest competitor, Lucas. For some, it is sad to see the decline of so many firms, with the waste of the great skills that had taken a life-time to acquire. After 69 years, the Mendip, as it was known to employees and villagers, is now history. Extinct, just as the Mendip motor car is, and also the best cider apple orchards in Somerset that now lie at the bottom of Chew Valley Lake. Yes! Gone forever!

To look back, with the departure of Dowty, Atworth's major employer, it was difficult to imagine what would take its place. Time is always the instrument of change. After a while, the workshops were let by a developer as industrial units and stores. On the sports field, over the football pitch and putting green, a printing works appeared, but the office block was another story. The demolition took a very long time, much more time than the building of it in 1961. Not until June 1997 was the concrete footings laid, from which grew a housing complex that is now known as Atworth Court. There had been suggestions that a name reflecting the site's past history might have been chosen, such as Mendip or Dowty Close and Thatcher Court. Perhaps the opportunity was missed. Bradley Road in Trowbridge has a Spitfire Retail Park, in recognition of local contribution to the Second World War effort, built on an aircraft factory site.

A knighthood for George Dowty ensured that he is remembered. George Thatcher, the brilliant engineer, employer and benefactor, will have his place in history, for it was because of him that The Mendip and Dowty came to be in a village called Atworth.

1991

Amended:1997