

By Adrain Padfield/ Source of information DNB entry.

Clarke, George Thomas Smith-(1884–1960), automobile and medical engineer, was born at Lower Park, Bewdley, Worcestershire, on 23 December 1884, the eldest of seven children (one of whom was adopted) of Henry Clarke (1850–1897), brass finisher and engineer, who in 1871 married Harriet (*b.* 1851), daughter of George Thomas Smith (*b.* 1825). Between the ages of five and thirteen he received an elementary education at the national school in Bewdley, after which he attended evening classes for two years while working in a chemist's shop and also as a bus conductor.

Smith-Clarke (the surname by which he was known) joined the Great Western Railway (GWR) engineering department in 1902 and was transferred to the GWR road motor department in Slough in 1905. He studied at evening classes at the Regent Street Polytechnic, London, 1910–12, taking the City and Guilds automobile engineering course, and in 1912 he was made a draughtsman. An injury sustained in a boiler explosion left him unable to take the City and Guilds final examination. Despite this, in 1913 he was promoted to chief draughtsman. In 1915 he was appointed captain in the Royal Flying Corps, with responsibility for the inspection of all the thousands of aero engines manufactured in Coventry and elsewhere. He was particularly concerned with the standardization of jigs and gauges for magnetos and carburettors. On 26 December 1915 he married Mary (1875/6–1944), daughter of William Walker, blacksmith.

After the First World War Smith-Clarke was assistant works manager at Daimler until 1922 when he was made chief engineer of Alvis Car and Engineering Ltd in Coventry. In 1923 he redesigned the first Alvis car and a racing model, the classic Alvis 12/50, won the 200 mile race at Brooklands in October 1923. He also designed a front-wheel drive Alvis that won its class at Le Mans in 1928, and he was responsible for several fine cars in the 1930s, as well as military vehicles and aero engines when the Alvis company diversified into those areas in the years before the Second World War. Following the death of his first wife he married, on 19 February 1947 Elsie Richards (1903–1983), a nurse, the daughter of Thomas Richards, colliery manager. There were no children of either marriage. He retired from Alvis in 1950.

Smith-Clarke had become chairman of the Coventry and Warwickshire Hospital in 1935 and, until his death, he played a significant part in local hospital issues. During the Second World War, when Coventry was subjected to unremitting air attack, the main hospital buildings were destroyed. Among other duties as chairman of the emergency committee to organize best use of what was left, he designed and had built a surgical block with operating theatres in the grounds of the convalescent home at Keresley. He became chairman of the Coventry group hospital management committee in 1951 after retiring from Alvis, having been vice-chairman of its precursor since the beginning of the National Health Service. Not only interested in hospital design and organization, he helped to design and make surgical and medical equipment. When a pair of surgical scissors being used on himself (under local anaesthesia) proved ineffective, he redesigned them, and also designed an electric trepanning cutter for neurosurgery. He made a device for extracting a long pin from the femur and a machine for taking X-ray pictures at high speed for cardiological examinations.

Smith-Clarke should be remembered most for his contribution to the development of equipment for artificial respiration. In 1952 he had been co-opted onto a Birmingham hospital region subcommittee 'to investigate the efficacy of mechanical ventilators'. Upset at the distress caused to a patient taken out of an iron lung for nursing care, he redesigned all aspects of the existing Nuffield/Both iron lung or cabinet breathing machine, widely used to treat patients with respiratory paralysis caused by poliomyelitis. Most of his modifications were accepted by the hospital region and by the Ministry of Health. Kits of parts to modify 500 Both machines were manufactured by a new company, Cape Engineering, set up with Smith-Clarke's support by several ex-Alvis employees. He then designed and helped to produce a much superior (and less coffin-like) model called the Alligator, whose features were

described in the James Clayton lecture to the Institution of Mechanical Engineers (of which he was a member) in 1956. Apart from the new iron lung, Smith-Clarke's paper described junior and baby versions, a cuirasse and a rocking bed for weaning from the iron lung, and an intermittent positive pressure breathing machine. The latter became the basis of a very hardy and long-lived anaesthetic machine used in operating theatres throughout the UK.

From 1920 Smith-Clarke was interested in amateur radio (having an early callsign 2PV) and attempted radio communication with Alvis drivers at Brooklands. He took out a patent for a loud-speaking telephone in 1926 and he tried to help children with hearing problems by providing the local hospital with an amplifying system and headphones. Astronomy was another of his interests: he built several telescopes for use in his garden including a spectrohelioscope, taking a photograph of a partial solar eclipse in 1951. A fellow of the Royal Astronomical Society, he advised the astronomer royal about the construction of a 100 inch telescope at Herstmonceux, and was later connected with Sir Bernard Lovell and the Jodrell Bank radio telescope.

A perfectionist who combined vast theoretical knowledge with great practical ability, Smith-Clarke had a modest and retiring manner. He retained his west midland accent all his life. He died at his home, Shenandoah, 4 Stoneleigh Road, Gibbet Hill, Coventry, on 28 February 1960. A memorial service was held at St Mark's Church, Coventry. It was rumoured that he would have been honoured in the 1960 birthday honours list if he had survived. Leaving aside his many engineering achievements for his country in two world wars, such recognition would have been merited for his medical engineering efforts alone, which he regarded almost as a hobby, but which brought succour to many seriously ill patients.

#### Adrian Padfield

**Sources** A. Padfield, 'Captain G. T. Smith-Clarke: automobile and medical engineer', *Journal of Medical Biography*, 8 (2000), 89–96 · private information (2005) [G. Clarke; A. Varney; A. Smith] · *The Times* (29 Feb 1960), 14; (12 March 1960), 8 · G. T. Smith-Clarke, 'Mechanical breathing machines', *Institution of Mechanical Engineers: Proceedings*, 171 (1957), 52 · K. Day, *Alvis: the story of the red triangle* (1981) · b. cert. · m. cert. · d. cert. · census returns, 1901

**Likenesses** photograph, 1920x29, repro. in Padfield, 'Captain G. T. Smith-Clarke', 89 · photograph, 1950x59, repro. in Padfield, 'Captain G. T. Smith-Clarke', 95

**Wealth at death** £15,487 3s. 4d.: probate, 3 June 1960, *CGPLA Eng. & Wales*

# *A Bewdley Genius*

*Re-discovered by Doug  
Pound . . .*

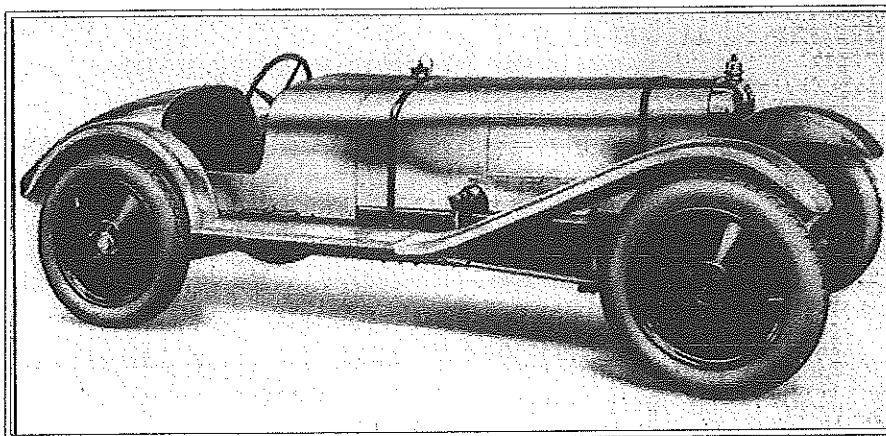
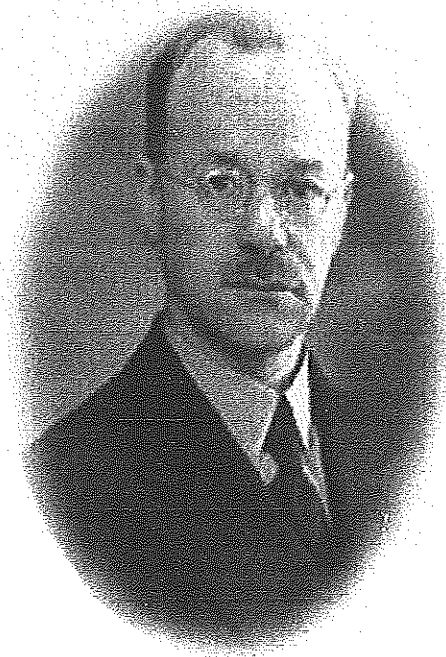
Do you recall those absolutely stunning 'Alvis' cars of yesteryear? The 'Speed 20' of the 1930s was bound to turn heads whenever it appeared. Did you know that the chief engineer of the Alvis Company was born at Number 6, Lower Park, Bewdley? I thought not! Read on . .

Captain George Thomas Smith-Clarke, M.I.Mech.E., F.R.A.S., F.R.Ae.S., M.S.A.E. (USA) was born in Bewdley in 1884. He was originally plain 'Clarke' but he changed it to 'Smith-Clarke' to relate to his mother's industrial forebears.

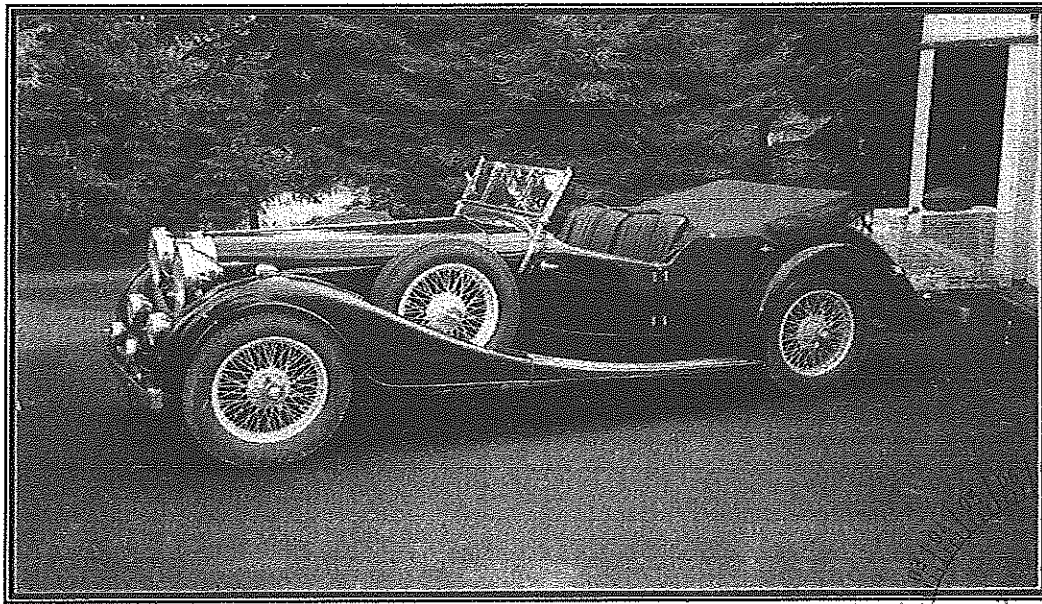
As a teenager he worked in a Bewdley chemist's shop and later as a bus conductor, probably whilst furthering

his education at the Regent Street Polytechnic.

Having a strong leaning to all matters technical he joined the Great Western Railway in 1901 at the age of 17. In 1904, whilst still in Bewdley, he built a motor-cycle from water-piping! He went on to develop wireless communications equipment and X-ray machines.



***The 1926 Alvis 12/80 supercharged front wheel drive car offered at £1,000 and guaranteed to lap Brooklands at 100 mph. What a stunner.***



***The Alvis SP.25 3½ litre tourer of 1937. What a cracker!***

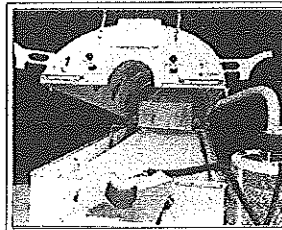
His natural capacity for design, invention and engineering must have shone through this period because in 1915 he was commissioned in the rank of Captain as Officer-in-Charge of the Aeronautical Engines Inspection Directorate for Coventry, the hub of British engine manufacture.

After the Great War he was appointed Assistant Works Manager at Daimler before joining the Alvis Company as Chief Engineer. He worked constantly at the improvement of engine, chassis, and suspension design.

In 1937 the clouds of war loomed again and he turned his attention to the construction of aero engines. His interests were so widespread that he combined this important work with the Chairmanship of the Coventry and Warwickshire Hospital. When the hospital was totally destroyed in the great Coventry air-raid of April 1941 he personally supervised and designed its re-building and re-equipping.

He designed from scratch an incredible number of surgical instruments during the 1940s, improving the quality of treatment beyond all imagination.

In 1952, during the 'polio' epidemic (before the Salk vaccine), the 'Iron Lung' was the only means of keeping a victim alive, through forced breathing. Captain Smith-Clarke was appalled by the primitive nature of these machines and completely re-designed them. Modification kits were produced to update the old models and assembly of the new design went ahead.



***The Captain's new improved Iron Lung was delivered to hospitals all over the world.***

His fascination with astronomy led to a Fellowship and his interest in radio communication produced a sophisticated Amateur Radio station, callsign G4RK, with which he made contacts throughout the world.

***May I suggest that this Titan of technology receives recognition in the Town of his birth? A plaque in Lower Park, for instance?***



## Proposed Blue Plaque to be fixed to 6, Lower Park, Bewdley, Birthplace of Captain G.T. Smith-Clarke

The clear intention in this proposal by Bewdley Civic Society and the Alvis Register and Alvis Owner Club is to mark and draw attention to the fact that Captain G.T. Smith-Clarke, acknowledged to have made a significant contribution in his work as an automobile engineer and also a medical engineer, was born and lived the early part of his life at 6, Lower Park, Bewdley.

The design utilises the fact that blue plaques have the status of being recognised as perhaps the best and most authoritative way of celebrating the life of a person where this is in some way being related to a particular building, such as their place of birth or their place of residence. The design of the plaque therefore follows traditional blue plaque characteristics in regard to its circular shape, size at around 300mm dia, colour light to mid blue with lighter blue raised outer edge and lettering in white. The text is kept as simple as possible with the name(s) of those promoting the award around the outer edge and the name of the person being celebrated in the centre together with their dates of birth and death and description of their achievement. The blue plaque will therefore be recognised from distance as denoting a place where somebody of importance is connected but will need to be viewed from close up to display its information in full. The top of the plaque has therefore been positioned lower than the ground floor window heads and about in line with the head of the entry doorway serving no 6 and no 7, Lower Park and in the centre of the outer brick pier [although the middle and inner pier would be equally suitable] The public footpath and track from Lower Park leading to the Friends Meeting House, Cricket Club and other residences passes in front of No 6 and is less than a 1m from the front of the house separated by metal railings, approximately 1m high. Physical access to read the plaque is therefore quite reasonable at the same time as offering some protection and privacy to the ground floor windows, so the main access consideration is in relation to the readability of the plaque. Making the plaque significantly larger and thereby increasing text size proportionately as well as altering text colour and background would undoubtedly improve its ledgeability but would not we feel be an acceptable option in terms of departure from standard blue plaque design and because it would be too dominant and detract from the listed building itself.

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05/03/2008

