

Sir ROBERT LICKLEY

CBE, BSc, DIC, DSc(Edin,Strath), FEng, FIC, FCGLI, FIEE, FRAeS, FIProdE, HonFIMechE, HonMSME, HonMIED

Robert Lickley was an aeronautical engineer of very high repute in both the British and American industries. Born in Dundee on 19 January 1912, he attended Dundee High School, graduating from Edinburgh University before proceeding to Imperial College London whence in 1933 he joined the Hawker Aircraft design office at Kingston-on-Thames. He was thus one of the early migrants from Scotland – and Wales – to the growing aircraft industry mainly based in southern England, which offered technical and intellectual opportunities to bright young engineering graduates.

Under Sydney Camm, Lickley made his mark with Roy Chaplin in the mid-Thirties by creating the project design of a single-seat eight-gun monoplane fighter. This project was conceived by the Hawker team as their reaction to the outcome of the Air Ministry specification F5/34 which Sydney Camm dismissed as “just not good enough”. The Hawker team incorporated the new Rolls-Royce PV12 engine, a retracting undercarriage and a fabric covered monoplane wing with eight Browning 0.303” machine guns buried therein. This formidable concept eventually emerged as the ‘Hurricane’, which proved a huge advance on its predecessors, very robust, and a good steady gun platform.

The Air Ministry was so impressed by the prototype’s performance that a production order was placed in 1936 for no fewer than 600 of the type. This enabled the RAF to have quite a number of squadrons in service by the critical early summer of 1940. During the Battle of Britain which followed, Fighter Command used its Hurricanes to great effect, when they shot down more enemy aircraft than all other aircraft and ground forces combined.

During the Second World War Lickley was deeply involved as chief project engineer in the development of the Hurricane, Typhoon, Tempest and Fury. He thus saw through the final stages of evolution of the piston-engined fighter to its pinnacle of performance with a top speed of around 450mph, then ushered in the jet fighter age of 500mph for Hawkers with the P1040, which ultimately emerged as the Royal Navy’s shipborne Sea Hawk.

After the war he was appointed Professor of Aircraft Design at the new College of Aeronautics at Cranfield, in Bedfordshire. In this appointment he brought on many able young engineers who later made their mark throughout the industry. These were fortunate people, as their professor had up-to-date and wide experience of aircraft design, development, and production and was thus able to impart to them all the lessons he had learned in his previous years with Hawker.

However, an opportunity beckoned in 1951 to return to industry as Chief Engineer and Technical Director of Fairey Aviation. There he showed great skill in building up a team of mostly young engineers comprising mathematicians, aerodynamicists, structural, and aero-elasticity specialists, together with development engineers and test pilots. Thus equipped, Fairey’s was able to cope with a wide range of aircraft projects including the Gannet anti-submarine aircraft for the Fleet, with a later, vital variant, the Airborne Early Warning (AEW) version.

These were the ‘bread and butter’ production aircraft for Fairey at this time. New projects included the Fairey Delta 2, a supersonic delta-wing experimental aircraft which in March 1956 smashed the world’s air-speed record by the huge margin of 300mph, reaching 1,132mph over a measured course off the Sussex Coast. The engineering team of designers, draughtsmen, and specialists was housed in a new, but modest, building at the Hayes, Middlesex headquarters of Fairey Aviation. It was remarkable that the planning and preparations for the world air speed attempt by the FD2, to be piloted by Peter Twiss, was confined to those few directly involved and was unsuspected by those others who worked in the same small building. It was a tribute to Bob Lickley’s ability to impress upon his staff, and to sustain this pressure, of the need for secrecy, mainly to ‘catch out’ the Americans, then holders of the record. A good example of ‘Chinese Walls’ of which we hear so much nowadays, albeit in a City context.

Being developed at the same time was the Fairey Rotodyne, a large, fast rotary-wing aircraft of 33,000lb design weight capable of vertical take-off and landing and aimed at the short-haul intercity market. The sole prototype flew several hundred hours, setting a world-speed record of 307kph over the 100km closed circuit in January 1959, a record that stood for many, many years. However, the Rotodyne was cancelled in 1962 on the grounds of budgetary shortage and external noise.

In addition, Fairey developed as a private venture a very small tip-jet propelled helicopter, the Ultra-Light, for a communication and observation role in the Royal Navy, operable from small ships. However it was not adopted, the Ministry of Supply sticking by the larger, heavier, Saunders-Roe Wasp, then at the prototype stage.

These Fairey projects, Gannet, FD2, Rotodyne and Ultra-Light were all handled simultaneously by the engineering team at Hayes, where Lickley was by then managing director. The total strength of the engineering team at the time, including experimental shop, test personnel, typists and administrators, was not more than 1,000 people, an amazingly small number compared with those involved in the European Collaborative ventures which followed.

Lickley and Fairey's suffered a severe disappointment when their new RAF fighter project was still-born by the ill-advised policy of Duncan Sandys as Minister for Defence, then Aviation, who opined that "the day of the manned fighter is over" and that guided missiles would reign instead. Fairey had won the competition with a design based on the successful FD2, so the cancellation very adversely affected the company's fortunes and also those of the British aircraft industry. In contrast the French government and industry seized the opportunity by initiating a design based on the FD2 concept that blossomed into the Dassault Mirage, many hundreds of which have been built and sold world-wide.

After Westland purchased the UK interests of Fairey Aviation (and Bristol Helicopters and Saunders Roe) in 1960, Lickley decided his future lay elsewhere. He returned to Hawker Siddeley as a director, where he was much concerned with their VTOL (vertical take-off or landing) ideas, which came to fruition in due course as the Harrier.

The Rolls-Royce collapse in 1971 led to Lickley being involved, through the National Enterprise Board, as leader of the board's Rolls-Royce Support Staff, where he worked hard to restore that company's aero-engine business to its present successful strong international position.

Bob Lickley was essentially a very private person who never talked of any special hobbies; for recreation, he enjoyed golf, at which he was good enough to be an effective industry representative for several years in the annual golf match between the Society of British Aerospace Companies (SBAC) and the RAF. In the office he was pretty demanding of his subordinates and perceived shortcomings drew acerbic remarks, which some found rather frightening. However the best response was a robust and well-argued case which Lickley respected. In debate he was a forceful, logical arguer but one able to accept other points of view without rancour.

He was an active member of various committees of the Aeronautical Research Council (ARC) between 1946 and 1958, and was a committee member and later a member of council of the SBAC. In addition he was President of the Institution of Mechanical Engineers in 1971 and of the Institution of Production Engineers in 1981 and 1982. He was also an honorary Fellow of the IMechE, a Fellow of the Royal Aeronautical Society, the Institution of Electrical Engineers, the Royal Academy of Engineering and of the Royal Society of Edinburgh, of which he was elected a Fellow in 1977. The Royal Aeronautical Society awarded him its British Gold Medal in 1957 and its Taylor Gold Medal in 1958. The Universities of Edinburgh and Strathclyde each recognised his contribution to aviation by an Honorary Doctorate of Science in 1973 and 1987 respectively.

Robert Lickley died on 7 July 1998. For over 50 years he was happily married to Doris May who died in April 1997. He leaves a son and a daughter.

G S HISLOP