MEDALIST FOR 1938

For contributions to the development of aircraft engine design and for the specific design of the sleeve-valve aircraft engine.

SIR A. H. ROY FEDDEN

The advancement of aeronautics in the 20's and 30's was a triumph of mingled daring, skill, science, engineering, construction; and not least, the rapid development of better, more powerful, more reliable engines.

To the latter art one of the principal contributors was Alfred Hubert Roy Fedden, born in Bristol, England, on June 6, 1885; in his time to become one of the world's leading authorities on aircraft power plants. He was knighted in 1942 for his contributions to aeronautics.

Fedden was educated at Clifton College, and took the engineering course at Bristol Merchant Venturers Technical College. In 1906, at the age of 21, he joined Brazil Staker and Company, Fishponds, Bristol, and for two years was in charge of touring car design. From 1909 to 1914 he was Chief Engineer; in 1914 he became Director and was in charge of engineering on internal combustion engines.

In the period from 1915 until the end of World War I he was engaged in aircraft engine manufacture, producing the Rolls-Royce, Hawke and Falcon liquid-cooled engines and the 8-cylinder Renault air-cooled engine. In 1920 the Bristol Aeroplane Company appointed him Chief Engineer of its Engine Department, a position he held until 1942. Here he completed development of the Jupiter engine, which earned world-wide recognition for reliability and efficiency. With restless eagerness for improvement, he continued to develop new and successful air-cooled engines, including the Lucifer, Mercury, Cherub and Pegasus.

While these poppet-valve engines were in course of development and refinement, he also carried out intensive research on single sleeve-valve engines, for Fedden was a firm believer in the advantages of this design. The earliest 9-cylinder sleeve-valve radial air-cooled aircraft engine was the Perseus, built in 1932, the first sleeve-valve engine to be used for aircraft propulsion. The Perseus was followed by a series of notable sleeve-valve engines, including the Aquila, Tarus, Hercules and Centaurus.

During World War II Fedden served as special advisor to the Ministry of Aircraft Production, and after the war as aircraft advisor to NATO. He remained active as a consultant until 1960.

Continually alert to coming developments, Fedden early perceived the possibilities of jet propulsion in commercial as well as military aviation. He was responsible for the original layout of the Bristol Theseus gas turbine. For his role in creating some of the most successful aircraft engines of the era, Fedden was knighted in 1942. In delivering the 32nd Wilbur Wright Memorial Lecture before the Royal Aeronautical Society in 1944, he urged development of the turbine to increase flexibility and reduce fuel consumption, forecasting that "for high-speed civilian flying at high altitudes, pure jet propulsion could compete with reciprocating engines for periods in excess of three hours and ranges over 1500 miles."

Fedden spent much of his time after retirement teaching at the College of Aeronautics at Cranfield University. He died on November 21, 1973.