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Honorary Fellow
1903-1973



IF a pioneer is defined as a man who goes before to prepare the way for the main body, then James Allan Jamieson Bennett was a rotorcraft pioneer. When after the crude trial and error period of the primitive helicopter we started to apply scientific tools to our problems, we entered into a new period which I like to call "the dawn of rotary wing aerodynamics". As a young man Bennett worked in this twilight of a new era and his first paper, in 1933, stands among the early scientific contributions which were then concerned mainly with fundamentals such as the different speeds in the advancing and retreating sectors of the rotor and the immediate consequences therefrom aerodynamically as well as structurally. It was also the era of the Autogiro, and Bennett, like his senior *da la Cierva*, had great faith in the potential of the auto-rotating rotor. This, I believe, was the deep reason for the controversy between Bennett and myself in those days on the method of rotor control in which he stoutly defended the "tilting hub control", which was a feature of the *Cierva* Autogiros, against the "feathering control" of the *Hafner* gyroplane which is now generally used in helicopters. *Lock* later showed that we were both looking at different aspects of the same thing, the difference being mainly in the emphasis on the different objectives—autogyro and helicopter. Bennett's great faith in the autogyro principle is also reflected later in his design concept of the *Gyrodyne* and the *Rotodyne* which, apart from the hovering mode, are basically autogyros. An excellent and more recent insight into Bennett's mind on this subject is presented by the *First Cierva Memorial Lecture* in 1961 in which he discusses the era of the Autogiro. Many say that Bennett was essentially an aerodynamicist, a specialist, leaving to others the nut and bolt implementation of

basic ideas. Against this view I must stress that after *Cierva's* death in 1936, Bennett was in charge of the design and the development of the *C-40 Autogiro* in all its technical aspects. Later he led the design team of the *Fairey Gyrodyne* and also made initial studies for the design of the *Rotodyne*, which shows he had abilities in a wide range of disciplines well beyond the limited field of aerodynamics.

After some 25 years in industry, Bennett decided to devote the remainder of his life to teaching and his enthusiasm for the subject inspired many young men. His short rotorcraft courses at the College of Aeronautics, Cranfield invariably included, apart from the explicit subject, the inoculation of the "rotary wing bug".

Outside his work Bennett had many interests. He was a keen tennis player in his young days of a calibre to give him later the umpire's seat in important matches. He played a sophisticated game of bridge and he also played the piano. I remember well the night during the last war when the Germans made the big raid on Manchester. Bennett and I worked then at the Central Landing Establishment at Ringway and ran a joint home on the outskirts of Manchester. On that night things came down all round us and the noise was deafening. We sat in the lounge listening with apprehension. Suddenly Bennett got up and went to the piano and began playing a mixture of *Beethoven's Fifth Symphony* and the *Missa Solemnis* in D, slowly and with power and feeling, accompanied by the fantastic orchestral noise outside, an unforgettable rendering of those great musical works.

James Bennett was born on 1st July 1903 in Glasgow. He studied at Glasgow, London and Göttingen Universities, and after a short spell at Imperial Chemical Industries, joined G. and J. Weir Limited and later the *Cierva Autogiro Company* where he worked notably on the *C-40 Autogiro* until the beginning of the last war. Then came the war period of short appointments, the Army, the Air Ministry, the Airborne Forces Experimental Establishment, the British Air Commission in the USA and the US Army Air Technical Service Command. After the war he joined the *Fairey Aviation Company* as head of the helicopter branch where he was engaged with the *Gyrodyne* and the beginning of the *Rotodyne* until 1952. Then he went back to the USA to join *Hiller Helicopters* and later the *Stanford University*. In 1954 he returned to the UK to join the College of Aeronautics at Cranfield as Professor of Aerodynamics and in 1962 became Deputy Principal of the College. In 1969 he returned to California, this time to teach at the Naval College at Monterey. Last year he was involved in a car accident there in which his wife was killed. Bennett himself suffered multiple injuries, which even though he recovered superficially, turned out to be the primary cause of his death on 27th February of this year. He leaves a son and a daughter.

Apart from his substantial academic qualifications Bennett received a number of distinctions, notably the Honorary Fellowship of the American Helicopter Association in 1968, the *Louis Breguet Memorial Trophy* in 1959, and Honorary Fellowship of the Royal Aeronautical Society in 1968. He became President Elect of the Royal Aeronautical Society in 1969 but his departure to the USA later in the year prevented his installation as President of the Society in the following year.

R. Hafner