

WILLIAMS, DANIEL HOWELL (1894 - 1963), aerodynamicist

Name: Daniel Howell Williams

Date of birth: 1894

Date of death: 1963

Parent: Mary Helena Williams (née Howell)

Parent: Griffith John Williams

Gender: Male

Occupation: aerodynamicist

Area of activity: Science and Mathematics; Space and Aviation

Author: Dennis John Wright

Born 27 June, 1894 at Ffestiniog, Merionethshire, the son of **Griffith J. Williams**, schoolmaster, and his wife, Mary Helena. He was registered as Daniel John but later adopted his mother's maiden name, Howell. His father was later H.M. Inspector of Mines for north Wales. He was a nephew of Sir Richard J. Williams, Mayor of Bangor, 1913-20. He was educated at Friars School, Bangor and in October 1912 he entered the University College of North Wales with an Entrance Exhibition. His main course of study was in Mathematics which he read under Professor G.H. Bryan, F.R.S., one of the founders of the science of aerodynamics. An outstanding student he won several scholarships and prizes including the R.A. Jones Prize in mathematics (1914). Throughout his life he suffered from a weak heart and on this account was allowed to complete his studies despite the war. He graduated in 1917 with 1st-Class Honours in Pure Mathematics and 2nd-Class Honours in Applied Mathematics. For a short time he continued to work with Professor Bryan and Dr. Selig Brodetsky of Bristol on problems of aircraft stability. In October 1917 he joined the staff of the Aerodynamics Division of the National Physical Laboratory, Teddington, where he remained until his retirement. He was a prominent member of Kingston Congregational church being particularly active in Sunday school work. For many years he was treasurer of the London branch of Old Bangorians, returning frequently to Wales. He never married and died 27 January 1963 at Teddington, where he lived with his sister Enid.

Dan Williams's early work at the National Physical Laboratory was concerned with theoretical and wind tunnel work on airships and in this he was associated with **Dr. Robert Jones**. However, he soon moved away from this to the wind tunnel study of aircraft performance. At this time the general theories underlying the study of aircraft wings (aerofoils) were still the subject of controversy. In 1924 Dan Williams and L.W. Bryant carried out fundamental experiments which amongst other things provided verification of the law of Kutta and Joukowski connecting the lift of an aerofoil and the circulation around it. This important work was later published in *Phil. Trans. Roy. Soc.* (1925). Following the loss of the airship R.101 in 1930 Dan Williams returned to work on airships. At the request of the Court of Inquiry he and A.R. Collar carried out a step by step calculation to determine the final flight path of the airship. This monumental labour occupied some 9 months using the relatively primitive methods of calculation then available and resulted in the award of the R.38 Memorial Prize of the Royal Aeronautical Society. Dan Williams also received the thanks of the Chairman of the Court of Inquiry, Sir John Simon, for his work. For much of his subsequent career he carried out experimental work using the Compressed Air Tunnel at the N.P.L. (see under **Robert Jones**). In addition to papers in scientific journals he was author of 36 Reports and Memoranda issued by the Aeronautical Research Council substantially advancing the progress of aerodynamics.

Author

Dennis John Wright

Sources

Aeronautical Research Council Reports and Memoranda, No. 2570

The Old Bangorian, 1963

information from Miss Margaret G. Jones and Professor A. R. Collar

University College of North Wales, Bangor, manuscript collection

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