

# Record

## Andrew Stratton

Dr Andrew Stratton who has died aged 76 was a talented research physicist mathematician and applied system analyst.

He was a broadly-based scientist, prolific in ideas and with the determination to press them forward towards a practical conclusion. Although on occasion he occupied posts outside the defence field, his career centred on defence science where he pursued his several disciplines relentlessly, sometimes to the discomfort of those who failed to share his view.

In the laboratory he was personally responsible for significant innovations in weapon fusing, guidance and control, but his outstanding achievement lay in the field of airborne inertial navigation where in the late '50s his shrewd analytical mind and practical awareness identified the future potential for an important British industrial capability. Leading a small team he pioneered, with international acclaim from our allies, the UK development of a sensitive inertial reference platform into a highly accurate airborne navigation system. Such systems are now in everyday use in military and civil aircraft worldwide and great credit must be attributed to Stratton for his contribution in those early days.

His passionate interest in navigation knew no bounds and continued throughout his life, stimulated by the common theme of exploring the fundamental principles that lay behind the technology. As an operational analyst of complex systems, Stratton adopted a strictly formal, mathematical approach to problems previously solved by more subjective judgement, thus providing a structured, quantitative basis for sound decision-making.

Andrew Stratton was born on 5 September, 1918, and educated at the Skinners Company School at Tunbridge Wells. In 1936 he entered the University College of the South West at Exeter to read Special Physics where his contemporaries remember him as the star student. He graduated with a First Class Honours Degree in Physics and later added a MSc. degree in mathematics by evening studies at the Chelsea Polytechnic. The pattern of his career was already shaped; an outstanding practical physicist backed by the rigorous application of mathematics and a ravenous appetite for hard work.

In the summer of 1939 he joined the Royal Aircraft Establishment at Farnborough as a vacation student and when the RAE's Air Defence Department was transferred to Exeter at the outbreak of war, he moved back to his old laboratory in the University. Test flying was conducted from Exeter airport in the company of RAF Hurricanes.

Back in Farnborough in 1943 Stratton continued to apply his practical, innovative ability to the design of proximity fuses which culminated in their widespread use in anti-aircraft artillery shells. In 1947 this achievement was recognized in the United States by the award of the medal of Freedom and in the United Kingdom by a substantial prize from the Royal Commission on Awards to Inventors.

A move within RAE presented new challenges and led in 1954 to his appointment as Superintendent of the Instrument and Inertial Navigation Division. He applied himself here to a theoretical analysis of the factors limiting the accuracy of an inertial system whilst supervising flight trials on early, experimental equipment. Successful trials on an

inertial platform, Doppler damping and associated airborne digital computer led to the bombing and navigation system planned for the ill-fated TSR2. His profound intellectual understanding of the system performance, together with his drive and enthusiasm, were an inspiration to all concerned.

In 1962 he moved to the RAE Weapons Department with responsibility for research on guided and unguided weapons and analytical studies on their effectiveness against air, land and sea targets. His mathematical mind now focused on the development of improved mathematical modelling techniques for a better indication of the extent to which added effectiveness was worth any increase in cost.

In 1966, on leave of absence from the Scientific Civil Service, he was appointed Professor and Head of the Department of Mathematics at the College of Aeronautics, Cranfield, where his recognized academic ability was matched by his less well known administrative skills. He designed the college computing centre which was opened in 1968 and to this day includes the 'Stratton Room'.

Stratton returned to the defence field in 1968 as Director of the Defence Operational Analysis Establishment, a post he held for the next 9 years. The defence budget was already under pressure over this period and he was tasked with major studies to provide independent advice on various options for front-line reductions. He conducted these extensive studies with rigorous analytical discipline, at times having to defend against criticism, the logic of his assumptions, methods and results with characteristic tenacity.

In 1977 he was seconded to ICI as a consultant, and on retirement from Government Service in 1978 became a Senior Consultant, advising on the safe use of new explosives in exploration activities. In 1980 he was appointed a part-time member of the Board of the Civil Aviation Authority and in 1981 Chairman of the Civil Aviation Research and Development Programme Board where his intellectual talent, technical knowledge of the navigation scene and creative ability were extremely valuable.

In 1983 he became Technical Director of Terrafix Ltd and with his customary zeal championed the potential of the very low frequency radio aid Omega as a worldwide ground-based navigation aid to complement a satellite system. Again he achieved international recognition as an acknowledged exponent of its merits.

Stratton always maintained a strong interest in scientific philosophy as applied to navigation. He lectured widely in this country and abroad with an array of published papers on various aspects of marine and air navigation. Perhaps his most distinguished presentation was the Institute of Electrical Engineers' Faraday Lecture in 1972/73. He was a President of the Royal Institute of Navigation from 1967 to 1970 and was a Gold Medallist and twice Bronze Medallist of the Institute.

Throughout his life he retained very close ties with Exeter University, being Chairman of Convocation for about 25 years. His tireless efforts and boundless energy were recognized by the award of an Honorary Doctorate of Science. His other interests ranged from painting to hill-walking where he organized and led walks in the Hindu Kush and Europe until a hip disability sadly curtailed these physical pursuits.

His wife, whom he married in 1949, died in 1987. He leaves a son and a daughter.  
Sir John Charnley.