Sir SAMUEL CROWE CURRAN

DL, MA, BSc, PhD(Glas, Cantab), DSc(Glas), LLD, ScD, Funiv(Cantab), DEng, FEng, FRS

Samuel Crowe Curran was born in Ballymena on 23 May 1912 his mother having gone to her ancestral home so that Sam could be born in Northern Ireland. Soon afterwards she returned with him to her husband and family in Wishaw, Lanarkshire where Sam was to spend the remainder of his childhood and youth. He was essentially in speech and outlook a West of Scotland man.

He attended the local school, where he became dux, and in 1929, at the age of seventeen he entered Glasgow University, gaining a BSc and an MA with First Class Honours in Mathematics and Physics. He joined the Physics Department as a PhD research student in 1934 to work on the diffraction of beta rays of radium. He found however that little work with radioactive materials was being carried out in the Department and he had to modify and reconstruct Geiger counters that had long lain idle. Completing his thesis in 1937, he moved to Cambridge to study for a further PhD.

When he reported to Rutherford at the Cavendish laboratories, he found that although they had just brought into operation a new one-million-volt particle accelerator, no Geigers were working there either. Curran, building on his Glasgow experience, introduced his improved Geiger counters and pushed ahead rapidly with experiments on proton capture by light nuclei. One of his helpers was Joan Strothers, studying for her PhD, who was destined to become Curran's wife.

Their immediate supervisor, Philip Dee, proposed that his team should spend a month at the Royal Aircraft Establishment, Farnborough. They arrived on 1 September 1939 and, within two days, war was declared on Germany. They moved to Exeter where Curran and Strothers helped develop the proximity fuse which played its part in destroying enemy planes and was largely responsible for the destruction of over 90% of the V1 rockets that were sent over Southern England in 1944.

On 7 November 1940 Joan Strothers and Sam Curran were married and co-incidentally transferred to join Dee, Bernard Lovell, Alan Hodgkin and others in the development of centimetre radar, first at the Telecommunications Research Establishment (TRE) Swanage and then at Malvern. Very important research at Birmingham University had resulted in the invention of a completely new type of centimetre wave generator, the magnetron, opening up the way to centimetre radar. Curran's development of spark-plug modulators was critical to the success of magneton transmitters, particularly in airborne systems, and in time all bomber command aircraft were fitted with the system. It was also used by Coastal Command in combination with Leigh light as 'radar searchlights' to find the German U boats that were cutting off our lifeline – destroying our merchant shipping at an alarming rate (500,000 tons per month) – and was a vital element in our winning the Battle of the Atlantic.

Part of Curran's remit was to liaise with British firms such as Metro-Vicks, Dubilier, Ferranti, EMI and others in the development of the team's ideas. He later said that this period was the most exciting time of his life.

As work was proceeding on centimetre radar, Joan Curran, in an adjoining lab, was quietly cutting up strips of tinfoil and developing the idea which came to be known as 'Operation Window' – the scattering of these strips in the path of enemy bombers thus disrupting their radar. Perhaps Window's most spectacular success was its use, dropped with great precision by the Lancasters of 617 squadron, to synthesise a phantom invasion force of ships in the Strait of Dover on the night of June 5-6, 1944. This kept the Germans unsure of whether the brunt of Allied assault would fall on Normandy or in the Pas de Calais.

Early in 1944 Curran, accompanied by his wife and some twenty other scientists, was asked to go to the United States to work on the Manhattan Project – the development of the atomic bomb. The Currans' destination was the Radiation Laboratory, Berkeley, California, to work on the research and design of isotope electromagnetic separators. It was here that he invented the scintillation counter. It was stamped secret, he was not allowed to patent it and he made no money from it. It was all part of the war effort, although it was later to be used in almost every scientific laboratory in the world. With the dropping of the bombs on Hiroshima and Nagasaki, World War 2 and the Manhattan Project, were at an end.

Curran returned to Glasgow University in 1946 where his old Cambridge and war-time boss Philip Dee had been appointed Professor of Natural Philosophy. With the information on the synchrotron concept that he had gathered in the USA he was able to assist Dee and Dr Walter MacFarlane in the installation of a 300 Mev Synchrotron although Curran's research interests did not lie in that direction. During his Glasgow period, Curran invented the modern gas-filled proportional counter to measure the energy of various types of radiation. He was elected a Fellow of the Royal Society of Edinburgh in 1947, and of the Royal Society of London in 1953 and was recognised as a world leader in his field. Realising however that there were no opportunities for advancement in Glasgow, he joined Sir William (later Lord) Penney, in March 1955 at the Atomic Weapons Research Establishment, Aldermaston, to help develop Britain's own hydrogen bomb.

Five years later in 1959, at the age of 47, he took over the Principalship of the very prestigious Royal College of Science and Technology (RCST) in Glasgow with a view to steering it through to university status. It was not all plain sailing. Sir Keith Murray, Secretary of the powerful University Grants Committee, was wary of creating a new university, and in particular a technological university. The discussions, sometimes 'heated', extended over 12 months but in the Spring of 1961 Sir Keith informed Curran that his Committee had reached the unanimous conclusion that they should recommend to Government that the RCST should link up with the adjoining Scottish College of Commerce and be created a university. This was announced in the House of Commons in March 1962, but those involved were asked to proceed at a moderate pace because the Robbins Committee on Higher Education had yet to report and might recommend the establishment of more universities and how such new universities should grow and proceed with structural changes. Nevertheless the officers of the Royal College were asked to prepare the Charter and Statutes of the new university and present them for approval to the Privy Council.

In due course the Robbins Committee reported, and the University of Strathclyde - the first new university in Scotland for 381 years and the first technological university in Britain - was in being. Lord Todd, Nobel Prizewinner, was appointed Chancellor.

Written into the Charter was student participation in the management of the affairs of the University. This was later to play an important part in avoiding any major student unrest in the uprisings experienced by many universities in the late 1960s. Also the fact that the Principal's door was open to students and their grievances listened to and, where appropriate, acted upon, meant that difficulties could be resolved before they erupted. There was always, among the students, the feeling that 'he is one of us'.

Curran set in train co-operation with Industry at a time when it was not fashionable for universities to do so. He actively encouraged Departments to appoint Visiting Professors from Industry and he appointed top industrialists to the University Court. He built a 'Centre for Industrial Innovation' (the forerunner of Science Parks) where academics and industrialists could co-operate in fruitful research on the campus; he encouraged members of staff to accept consultancies in Industry. He encouraged departments to appoint promising members of staff to Personal Professorships. He appointed an information officer to help the media with university news, an office that was much criticised by other universities at the time. All of these things are commonplace now; but they were not when Curran hit the university scene.

He could also be outward-looking and in 1966 he established a close academic link between Strathclyde and the Technical University of Lodz, Poland. It was (and is) enormously successful leading to a two-way exchange of students and staff, to shared degrees and to friendships that are close and lasting. The Poles called it their 'window on the west'.

Two things angered him very much. One was the very low salaries paid to academic scientists compared to those paid to businessmen ("someday we will pay a terrible price"); and secondly, the lack of recognition of the part that science and technology played in winning World War II. There were no scientists in the parades to mark the 50th anniversaries of VE and VJ days, yet it was the discoveries and developments by scientists and engineers that made victory possible.

He served on innumerable government, public and private bodies influencing science policy throughout the country. He had many honours at home and overseas bestowed on him including many honorary degrees; freedom of the city of Glasgow and of the town of Motherwell; Knight Bachelor; Officers Cross of the Order of Polonia Restituta; Commander of the Royal Order of St Olav.

Sam's recreations were clockmaking (he had a number of patents) and golf. Well into his eighties he could still be found doing his twelve holes twice a week at Buchanan Castle Golf Club.

The Currans' first child, Sheena, born in 1945, was unfortunately severely mentally handicapped. This was a great sadness to them but they threw themselves into work for the disabled and have done so ever since, forming a Scottish Society, ENABLE, for parents and other concerned people, which now has more than eighty branches with 5000 members. Sam served as President for 37 years and the Glasgow branch named their office and leisure facilities 'Curran House' in his honour. He died on 25 February 1998, a few days after a prostate operation, and is survived by his wife Joan, his daughter Sheena, three sons (all PhDs) and three grandsons.

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BILL FLETCHER