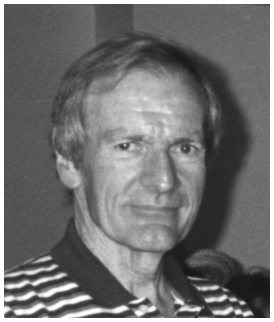
Obituary



Renfrey B. Potts
AO FAA FTSE
4/10/1925 – 9/8/2005

Prof. Renfrey Burnard (Ren) Potts, one of this country's most respected mathematicians, passed away in Adelaide on Tuesday 9th August 2005, after a brave fight against aplastic anaemia. Ren was born in Adelaide on 4th October 1925. He completed his school education at Prince Alfred College and then began in 1943 an accelerated engineering course at The University of Adelaide. However, in part because of the end of the war, and in part because of his discovery of the greater delights of mathematics (although he remained a friend of engineering for all of his career), he transferred to science, and obtained his First Class Honours in Mathematics in 1947, becoming the 1948 Rhodes Scholar. At Oxford, his interests turned to mathematical physics, and he completed his PhD there in 1951, on Ising models, with supervision by Cyril Domb. His early work in mathematical physics was of long-lasting significance, and the "Potts model" is still very widely quoted in that field. He also did post-doctoral mathematical physics work with Harry Messel on cosmic rays. Ren had held a junior lecturing position at Adelaide in 1948, and had already been noted as a brilliant lecturer. He returned to Adelaide as a Lecturer for some brief periods after his PhD. One of these periods in 1957 was long enough to inspire and set the course of the career of the present writer. He held a postdoctoral position at The University of Maryland in 1955-6 and an Associate Professorship at The University of Toronto in 1958-9. It was then that he developed a lifelong interest in applications of mathematics to real-world problems, and in particular in the relatively new discipline of Operations Research. While in Toronto, Ren acted as a consultant to General Motors in Detroit and worked on "car-following" models, in which a kind of microscopic dynamics of interactions between pairs of vehicles on a busy highway is studied, and then used as the basis for macroscopic traffic-engineering concepts like vehicle density and average speed. A highlight of this research was successful prediction of optimum speeds for dense traffic in New York's Holland tunnel, via experiments done with just two cars at the GM testing track in Detroit.

In June 1959, Ren Potts was appointed to a newly-established Chair in Applied Mathematics at The University of Adelaide, so commencing a long and successful academic career there, until his retirement in 1990. With his Pure Mathematics colleague and friend the late Prof. Eric Barnes, Potts created a vibrant department which was in the top 2 or 3 in the country by measures such as Honours and Postgraduate numbers (according to statistics published regularly in the *Gazette*) for 20 or 30 years. The original Mathematics Department had a friendly split into separate Pure and Applied Departments in the early 1970s, compensated for by formation of a new grouping of departments into a Faculty of Mathematical Sciences including also Statistics, Mathematical Physics and Computer Science, originally headed by Barnes, but also later by Potts. Potts was a leader in Australian mathematics, especially applied mathematics, during his whole career. He was a Foundation Member of the Australian Mathema-

tical Society, and served on its Council. He was instrumental in formation of the Division of Applied Mathematics of the Society (now ANZIAM), and its Chairman in 1978-9. He was active as an Associate and Assistant Editor of the Journal, Series B, now called the ANZIAM Journal. He was elected a Fellow of the Australian Academy of Science in 1975, and of the Australian Academy of Technological Sciences and Engineering in 1983. He became an Officer of the Order of Australia in 1991, and was the first recipient of the ANZIAM Medal in 1995. He also actively supported school mathematics, organising the fifth International Conference on Mathematics Education held in Adelaide in 1984, and the Mathematical Olympiad held in Canberra in 1988. Potts's work almost from the start involved computing. He and the writer attended together one of the first Fortran courses given in Australia in 1960, and although the hardware situation in Adelaide was not such that he could routinely program his research at that time, he was ready when the digital revolution really arrived a year or two later. In Australia, Ren played a large role in that revolution, starting the SA Branch of what was to become the Australian Computer Society, and overseeing the first computer purchases at The University of Adelaide. Ren was always an outstanding lecturer and communicator, who inevitably drew large audiences to any of his seminars or conference talks, the message having got around that one is entertained as well as educated at a Potts lecture. He published about 90 papers, and supervised 20 successful PhD. students and 4 M.Sc. students. Many of these former students are now in positions of importance in the mathematical and other communities. Operations Research is perhaps felt to be his most important research field, and he was largely responsible for the development of this field in Australia. He was active both in academic aspects of this topic including writing with Bob Oliver a well known book on networks, and also as a consultant to companies such as Pak Poy and Associates, now called PPK. However, his earlier mathematical physics work has already been mentioned and remains important, and later work on difference equations and robotics was also significant, the former being related to, and to a certain extent anticipating, the popular 1990s topic of chaos. Besides mathematics, Ren Potts had two great outside interests, sport and music, and played the piano and clarinet. In latter years he was a volunteer disc jockey at a local radio station. His early sporting activities included long distance and marathon running, hockey, tennis, squash and badminton, and in later years, he took up bushwalking and swimming. He loved watching all forms of sport, and was an ardent Adelaide Crows AFL supporter to the end. Ren was an unforgettable person, an honourable man of great dignity, with the highest standards of integrity. In the mathematical community he will be especially remembered as an inspiration to students and colleagues. In particular, he taught mathematics in an exciting way to thousands of undergraduates over his long career. Many Australian applied mathematicians including the present writer have credited him with inspiring them to pursue their careers. As a colleague he was an invaluable resource, full of ideas, and reliable as a source of background information. And there could be no better friend. Ren is survived by his wife, Barbara (Barbara Kidman), whom he married in Oxford in 1950, and by two daughters, Linda and Rebecca.

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