

# 1985 Microwave Career Award

## Harold M. Barlow

*The Microwave Career Award* is presented to an individual "for a career of meritorious achievement and outstanding technical contribution in the field of microwave theory and techniques." The 1985 Microwave Career Award has been awarded to Dr. Harold M. Barlow.



Harold M. Barlow was born on November 15, 1899 in London, England. He received the BS (Engineering) degree in 1921 and the PhD (Science) in 1924 from London University. During the First World War, he served one and a half years with the British Navy working on long-wave radio in submarines. For his work he received from the Admiralty the citation "has performed valuable service in connection with the development of apparatus for naval communications." After graduating from London University, he joined his father in the family electrical contracting business, Barlow and Young Ltd. He began his long academic career in 1924, when his former professor Sir Ambrose Fleming offered him a post at the College of London as Assistant Lecturer in Design of Electrical Machines. His career at London University was broken only by service with the British Air Ministry during the six years of the Second World War. During World War II he worked on radio including microwaves and became Superintendent of the Radio Department at the Royal Aircraft Establishment, Farnborough, England.

The great developments in radar during World War II inspired him to concentrate his research on microwaves when he returned to University College London in 1946 as Professor of Electrical Engineering. It was a very difficult task to build up the resources for this new research school, particularly because the laboratories had been completely bombed out. "The effort was greatly helped by the splendid group of research workers who happily joined in the enterprise." He founded at University College the most important university center in microwaves in Great Britain. He exerted great influence there on the progress of microwaves, became very well recognized, and trained many students who later became prominent in their own right.

Dr. Barlow is now Professor Emeritus of University College London, having retired in 1967 after serving as Head of the Department of Electronic and Electrical Engineering for seventeen years. During his career he has participated in most of the varied activities of professional electrical engineers. He was a Director of Marconi Instruments Ltd., a consulting engineer with his own firm Barlow, Leslie, and Partners, and involved in a wide variety of academic pursuits. He published about fifty papers on microwave topics, including microwave measurements, surface waves, and oversized circular waveguides for telecommunications. His pioneering contributions, both theoretical and experimental, on surface waves were his most important. He wrote three books: **Microwaves and Waveguides**, 1950, **Microwave Measurements** (with A. L. Cullen), 1952, and **Radio Surface Waves** (with J. Brown), 1961. At the age of eighty-five, he is still contributing scientific papers, particularly on optical fibers.

Dr. Barlow has received numerous honors and awards. He has honorary Doctor of Science Degrees from Heriot Watt University, Edinburgh, and Sheffield University, England. He is an IEEE Fellow and a Fellow of the Royal Society (1961). The latter honor is particularly significant as Dr. Barlow was the first person in this field to be so elected, paving the way later for A. L. Cullen and E. A. Ash. He is recipient of the Faraday Medal (IEE), 1967, Dellinger Gold Medal (International Radio Union), 1969, Harold Hartley Medal, (Institute of Measurement and Control), 1973, Mervin J. Kelly Award (IEEE), 1975, and the Kelvin Premium, Fleming Premium, J. J. Thompson Premium, and the Oliver Lodge Premium, all IEE awards. Dr. Barlow is also a Honorary Member of the Japanese Institute of Electronics and Communications Engineers, a Foreign Associate of the US National Academy of Engineering, 1979, and Chairman British National Committee for Radio Science, 1968.

Dr. Barlow has served on many professional committees and was chairman and organizer of several symposia concerned with microwaves. For example, he was the general chairman of the first European Microwave Conference which was held in London in 1969. He also was general chairman of a symposium on "long-haul communications," mostly  $H_{01}$  mode in over-moded circular waveguide.

Because of his age and severe arthritis, it is not possible for Dr. Barlow to attend the symposium. The Microwave Career Award will be presented to him in a ceremony in England.