

Obituary

Tony Frederick Wallace Embleton, 1929–2020



Tony Frederick Wallace Embleton died on November 13, 2020, in Woodbridge, ON, Canada. He was a leader in acoustics in the United States and Canada and also became known internationally. Tony

attracted a steady stream of postdoctoral fellows and sabbatical visitors from India, Japan, Europe, and the United States.

Tony was born in Hornchurch, Essex, United Kingdom, on October 1, 1929. He earned a PhD in physics in 1952 from the Imperial College London, United Kingdom, under R. W. B. Stephens. A one-year postdoctoral fellowship at the National Research Council (NRC) in Ottawa, ON, Canada, turned into a four-decade career where he attained the rank of principal research officer. He was section head from 1985 until his retirement in 1990.

Tony's research addressed many significant and practical concerns. In the early 1950s, the intense noise generated by large suction rolls in the production of paper was a serious industrial concern. Together with George Thiessen, then head of the Acoustics Section at the NRC, Tony demonstrated a considerable noise reduction by substituting the simple patterns of holes in the cylinders with more complex patterns.

In the early 1960s, Tony's research included noise reduction in centrifugal blowers, axial-flow compressors, and stator blading for noise reduction in turbomachinery. The latter research increased efficiency in jet engines while quieting them and was eagerly adopted around the world. His work on mufflers for percussive pneumatic machines not only quietened pneumatic drills but led to higher drilling speeds, less icing in the muffler, and less vibration. While this work was in progress, he undertook to provide the laboratory with the absolute measurement of sound pressure by developing a reciprocity system for the calibration of microphones.

In the 1970s, Tony turned his interest to sound propagation outdoors. This led to a series of theoretical and

experimental studies of sound propagation outdoors with NRC colleagues that addressed (1) the effect of the ground on near-horizontal sound propagation; (2) the measurement of ground impedance and acoustic characteristics of actual ground surfaces (e.g., asphalt, gravel, grass, snow); (3) the phase and amplitude fluctuations due to turbulence; and (4) the refraction due to wind and temperature.

Tony's main professional home was the Acoustical Society of America (ASA). He served as vice president; president; standards director; technical chair for the meetings in Ottawa and Honolulu, Hawai'i; and general chair of the 1981 meeting in Ottawa. He was a recipient of the R. Bruce Lindsay Award, a Silver Medal in Noise, and the ASA Gold Medal. Tony was also active in the Canadian Acoustical Association (CAA), the Institute of Noise Control Engineering (INCE), and the International INCE.

Tony's research was significant and of the highest quality; his service to societies was diligent, efficient, and cooperative. He was always willing to help, whether you were a society president or a student new to acoustics. At meetings, he was often surrounded by people, young and old, wanting to access his vast store of knowledge.

Tony was preceded in death by his wife, Eileen, in 2016. They are survived by their daughter Sheila and granddaughter Anne.

Selected Publications by Tony Frederick Wallace Embleton

- Embleton, T. F. W. (1971). Mufflers. In Beranek, L. L. (Ed.), *Noise and Vibration Control*. McGraw-Hill, New York, NY, pp. 362-405.
- Embleton, T. F. W., and Daigle, G. A. (1991), Atmospheric propagation, In Hubbard, H. H. (Ed.), *Aeroacoustics of Flight Vehicles, Theory and Practice. Vol. 2: Noise Control*. Reference Publication 1258, NASA Langley Research Center, Hampton, VA, pp. 53-99. Reprinted by the Acoustical Society of America, 1994.
- Embleton, T. F. W., and Thiessen, G. J. (1958). Efficiency of a linear array of point sources with periodic phase variation. *The Journal of the Acoustical Society of America* 30, 1124-1127.
- Embleton, T. F. W., Piercy, J. E., and Olson, N. (1976). Outdoor propagation over ground of finite impedance. *The Journal of the Acoustical Society of America* 59, 267-277.

Written by:

Gilles A. Daigle gilles_daigle@sympatico.ca

Michael R. Stinson mikestinson42@gmail.com

National Research Council, Ottawa, ON, Canada