



Robert Hickling, Fellow of the Acoustical Society of America (ASA), passed away peacefully in his home in Huntington Woods, MI, on October 16, 2017, shortly before his 86th birthday. Bob was a retired technical fellow from the General Motors Research Laboratory, Warren, MI; a retired professor

from the University of Mississippi, Oxford; and an independent acoustic consultant.

Born on October 28, 1931, in Bologna, Italy, Bob grew up in Scotland and graduated with a MA degree in pure and applied mathematics from the University of St. Andrews, Scotland, UK. He then worked as a scientific officer in the Royal Naval Scientific Service, Teddington, UK, and subsequently transferred to the Underwater Detection Establishment, Portland, Dorset, UK, where he worked on classified sonar targets. Later, he attended the California Institute of Technology, Pasadena, CA, where he graduated with a PhD in engineering science, specializing in computer analysis of problems in underwater acoustic scattering and cavitation bubble collapse and intensity using numerical simulation and experimental methods, resulting in numerous publications.

In 1965, Bob joined the General Motors Research Laboratory, where he initially worked on light scattering by liquid droplets, head injury criteria, and focused pulsed lasers as well as his favorite topics of underwater acoustic scattering and cavitation. In 1971, he formed an acoustic research group that produced many innovative techniques at General Motors such as the first automotive applications of the newly developed Fourier analyzers and experimental modal analysis; the two-microphone acoustic intensity and impedance-tube measurement techniques; air bag design, deployment, and noise; tire noise measurement; and numerical methods for acoustic radiation analysis. In 1981, Bob co-organized a symposium at the General Motors Research Laboratory on “Engine Noise: Excitation, Vibration, and Radiation” that included many well-known and distinguished experts. He also worked on the use of ultrasound in manufacturing, diagno-

sis, and applications and electromagnetic radiation to stimulate engine combustion that resulted in several US patents.

In late 1988, Bob took early retirement from the General Motors Research Laboratory and joined the National Center for Physical Acoustics (NCPA) at the University of Mississippi, where he became associate director for applied research and research professor of engineering. At the NCPA, Bob worked on underwater acoustics as well as insect acoustics to detect pests in agriculture and acoustic communication by ants, in which he measured ant sounds and developed a near-field theory of communication by ants and possibly by other insects. In 1996, Bob retired from the NCPA and continued to provide consulting on sound intensity measurement through his company, Sonometrics, Inc., including the 2016 publication of the book *Sound-Power Flow: A Practitioner's Handbook for Sound Intensity* that summarizes many of his accomplishments.

Bob was also a Fellow of the American Society of Mechanical Engineers, the Institute of Noise Control Engineering and the Society of Automotive Engineers. He is survived by his three children, Rebecca, Nathan, and David and will be truly missed by his close colleagues from General Motors and the NCPA.

Selected References by Robert Hickling

- Hickling, R. (1958). Frequency dependence of echoes from bodies of different shape. *The Journal of the Acoustical Society of America* 30(2), 137-139.
- Hickling, R. (1963). Effects of thermal conduction in sonoluminescence. *The Journal of the Acoustical Society of America* 35(7), 967-974.
- Hickling, R. (2016). *Sound-Power Flow: A Practitioner's Handbook for Sound Intensity*. Morgan and Claypool Publishers, San Rafael, CA.
- Hickling, R., and Brown, R. (2000). Analysis of acoustic communication by ants. *The Journal of the Acoustical Society of America* 108(4), 1920-1929.
- Hickling, R., and Kamal, M. M. (Eds.). (1982). *Engine Noise: Excitation, Vibration, and Radiation*. Plenum Press, New York.

Written by:

Shung H. (Sue) Sung

Email: SHSung@aol.com

Donald J. Nefske

Email: DNefske@aol.com

General Motors Research & Development Center,
Warren, MI
