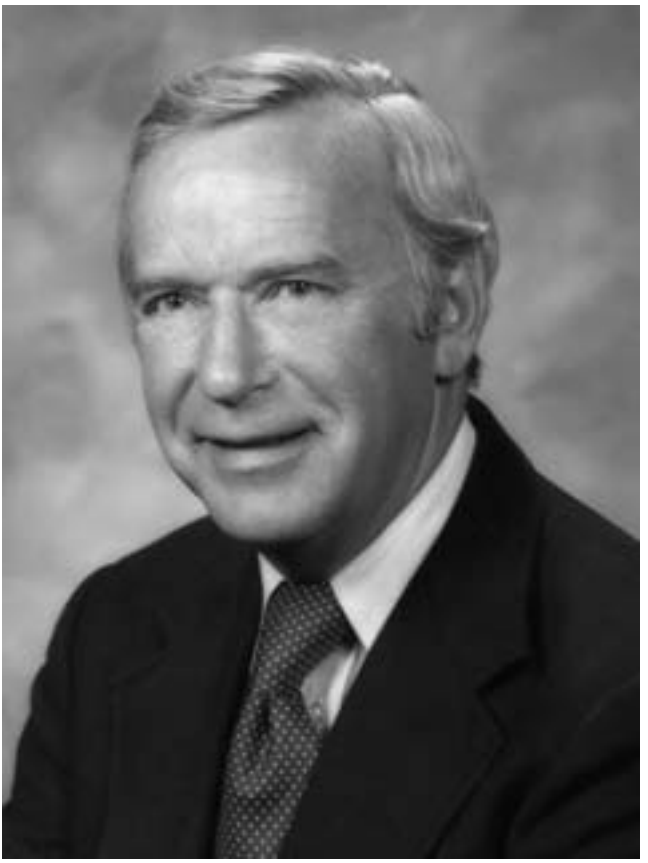

DAVID CLARENCE HOGG

1921–2009

Elected in 1978

"For contributions to the understanding of electromagnetic propagation at microwave frequencies through the atmosphere."

BY ED R. WESTWATER
SUBMITTED BY THE NAE HOME SECRETARY

DAVID C. HOGG, outstanding researcher and technical manager in the fields of antennas, radio propagation, and remote sensing, died on August 9, 2009, at the age of 87.

Dave was born in Vanguard, Saskatchewan, Canada, on September 5, 1921, and served in the Canadian Army from 1940 to 1945. It was during his five years of service overseas that he learned about radar systems, and that knowledge influenced his education and career. This career included distinguished research at two well-known organizations—Bell Telephone Laboratories in Holmdel, New Jersey, and the National Oceanic and Atmospheric Administration (NOAA) Wave Propagation Laboratory in Boulder, Colorado.

After his war service, Dave attended the University of Western Ontario (Ontario, Canada) and received his BSc. (radio physics) in 1949. He received his MSc. (physics) in 1951 and Ph.D. (physics) in 1953 from McGill University (Quebec, Canada). During his undergraduate studies, he also met his future wife, Jean MacMillan, and they married in 1947. In 1953, Bell Telephone Laboratories recruited him to Holmdel, New Jersey, and he stayed with the company until 1977.

During his career at Bell Laboratories, Dave was a member of the technical staff in the Radio Research Department from 1966 to 1977. From 1966 to 1973 he was head of atmospheric research and from 1973 to 1977 was head of antennas and propagation research. The scope of his research activities was exceedingly broad and included basic diffraction studies, microwave antenna design, tropospheric beyond-the-horizon propagation, and a plethora of studies that were fundamental in the development of satellite communication using Echo and Telstar satellites. He also performed some of the first experiments in visible and infrared propagation using lasers and was instrumental in the design of millimeter wave beacons on the COMSTAR satellites. During his distinguished career at Bell Laboratories, he was also closely associated with Nobel Prize–winning physicists Arno Penzias and Robert Wilson and was a contributing author to *Finding the Big Bang* (Peebles, Page, and Partridge, 2009). In this historical account of the discovery of the Big Bang, both Penzias and Wilson acknowledge Dave's important work.

He was elected to the National Academy of Engineering in 1978 for his activities at Bell Laboratories. In addition, he was a life fellow of the Institute of Electrical and Electronics Engineers (IEEE), a member of the American Association for the Advancement of Science, and a U.S. chairman of URSI (International Union of Radio Science) Commission F. He authored or coauthored some 80 publications in scientific journals, wrote chapters in four scientific books, and held eight patents.

In 1977, Dave moved to Boulder, Colorado, where he joined the NOAA Wave Propagation Laboratory and was chief of the Environmental Radiometry and Radio Meteorology Program Areas (1977–1986). During his tenure at NOAA, he was instrumental in developing wind profilers, radiometric profilers, and dual- and three-channel water vapor and cloud radiometers. His thrust was to develop unattended remote sensing instruments that would operate in near all-weather conditions. Many varieties of these instruments are now available commercially and are used routinely by scientists

and meteorologists throughout the world for remote sensing of the atmosphere. In a series of papers in the 1980s, he also demonstrated many of the applications of the instruments to aircraft icing detection, weather modification, meteorological forecasting, spectroscopy, and observing integrated water vapor and cloud liquid on subminute temporal scales. He was awarded the IEEE Geoscience and Remote Sensing Society's Distinguished Achievement Award in 1984 and received a U.S. Department of Commerce Silver Medal in 1983. He also contributed to two NATO institutes and several committees of the U.S. Army services. In 1985 he presented a series of lectures on remote sensing at institutes in Japan and the People's Republic of China. From 1983 to 1994, Dave was also an adjunct professor in the electrical and computer engineering department of the University of Colorado, Boulder.

How was Dave able to accomplish all of this? Of course, he had the technical knowledge and skills to lead a diverse group. But he had another remarkable talent: He made everyone in his group feel their mission was very important and that each one was important in its accomplishment. The NOAA group was composed of physicists, electrical engineers, mathematicians, meteorologists, electronic technicians, data clerks, and even an ex-truck driver. For each of them he provided clearly understood tasks, integrated the tasks into a coherent program, and made each person feel their contributions were important to the mission. Like a good coach, he made everyone a little better than they really were. In addition, group pride was clearly evident.

Dave also had a special interest in developing young students and minorities. He encouraged his senior staff to bring on students using a NOAA-university cooperative program, and he, himself, took the time to develop young scientists. Again, as with his professional staff, he made the students feel that they were contributing something important to group goals, and they responded. He was also instrumental in developing the careers of several of the midcareer scientists in the group. Perhaps, he just liked to develop things, whether they were instruments, concepts, or people. And for young (and not-so-young) scientists, Dave served as an excellent role model.

After retirement from NOAA and the University of Colorado, Dave turned to another of his lifelong passions: music. He had many pieces of his classical music published by the Voice of the Rockies. He was a vocal (solo and choral) composer and a composer for strings and piano. He participated in many public performances as a vocalist, pianist, and composer. He sang at Canadian Regina exhibitions, where he composed both music and lyrics. In 1992, Dave received a composer award from the Colorado Music Educators Association, and more recently he completed a large musical composition to the *Canterbury Tales*.

Dave is remembered by his colleagues as a highly articulate spokesman for science and technology, an innovative scientist and a compassionate manager, a role model for many to emulate, and, in the best sense of the word, a true gentleman.

He is survived by his wife, Jean; son, Randy; daughter, Rebecca; son-in-law, Richard; grandchildren, Stevie, Caitlin, and Ryan; and his sister, Margaret.

His daughter Rebecca wrote:

> "Dad was a great influence on his grandchildren's lives and always took a very active role as Papa, friend and teacher.
>
> His family remembers the fun side of him. My parents enjoyed hosting many dinners and parties through the years. At Christmas parties, it was traditional for him to entertain everyone by playing the piano with the expectation that, at some point, 'Oh Canada' would be heard. Dad also loved to tell stories and always enjoyed a good chuckle when sharing the tale about fireworks and cherry bombs in the fireplace!
>
> He also loved the outdoors and stayed active throughout his life. His dog, Brandy, loved taking Dad along for their morning and evening walks. In his younger days, he joined friends in golf leagues and, in later years, golfed with his grandchildren. He was an avid skier who enjoyed family outings and spent many

years in Colorado skiing with friends in the 'Over the Hill Gang.' He was still skiing with his grandchildren into his seventies! My parents spent many summers in British Columbia visiting lifelong friends where they stayed in 'Hogg Hollow.' One of his favorite pastimes was fishing with the Loons before sun up at Lake Tyax."