

James Holcomb 1928–1971

James Holcomb, senior master sergeant in the U. S. Air Force, died of a heart attack this winter. A native of Memphis, Tenn., he had been a member of the Air Force since graduating from high school in 1947 and spent his entire career as an observer and forecaster at various posts both here and abroad. His longest tour of duty, from 1956 to 1960, was at the Dugway Proving Grounds in Utah, where he provided micrometeorological analysis and forecasting in support of the U. S. Army Chemical Corps testing program. He received a number of citations during his career, the latest being a posthumous Commendation Medal with First Oak Leaf Cluster. He joined the American Meteorological Society in 1962. He is survived by his wife.

Kenneth A. Nicolson 1902–1971

Kenneth A. Nicolson, meteorologist-in-charge of the Duluth, Minn., office of the National Weather Service for over two decades, died 23 March.

A native of North Dakota, he received the bachelor's degree in education from the University of North Dakota, Grand Forks, in 1923. In 1939 he switched careers and joined the Weather Bureau at Bismarck, N. Dak. In the following eight years he served in Winnemucca and Reno,

NeV., and Salt Lake City, Utah. From 1947 to 1949 he was a forecaster with the Irish Meteorological Service at Shannon Airport. He then was appointed to head the Duluth office of the Weather Bureau.

Mr. Nicolson joined the AMS in 1959. He is survived by his wife at 11 South 20th Avenue East, Duluth, Minn. 58812.

Frank Reid Shearouse 1930–1971

Frank R. Shearouse, immediate past chairman of the Asheville, North Carolina, Chapter of the American Meteorological Society, died 25 February 1971. Frank was born at Statesville, N. C., on 3 November 1930, earned an A.B. degree at Newberry College, N. C., and studied meteorology at the University of New Mexico. He served in the U. S. Air Force from July 1953 to June 1957 and was an Air Force weather officer in Japan from October 1955 until June 1957. Frank joined the Data Processing Division of the USAF Environmental Technical Applications Center at Asheville, N. C., in June 1957 and was serving as Chief of the Methods and Quality Section there at the time of his death.

He was a Professional Member of the American Meteorological Society, since 1957, and a charter member of the Asheville Chapter. He is survived by his wife Mary and three children who live at 27 Jarnaul Avenue, Asheville, N. C. 28804.—*Keith Butson*

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National Hail Research Experiment

The first full-scale field phase of the five-year National Hail Research Experiment began 1 June in a 40-km² area of northeastern Colorado known as "Hail Alley."

Participating in the \$1.5 million summer program are the National Center for Atmospheric Research, the Colorado State University, the National Oceanic and Atmospheric Administration, the South Dakota School of Mines and Technology, the University of Chicago, the Illinois State Water Survey, and the U. S. Army. Various of these groups have been partners in earlier hail research projects during the last three summers in the same area (BULLETIN, 49, 1096).

The National Hail Research Experiment, which is funded by the National Science Foundation and managed by NCAR, will investigate the dynamics and microphysics of hailstorms and test the feasibility of hail suppression. Dr. Guy G. Goyer of NCAR, senior scientist for NHRE, stated that project members hope eventually to design a system by which hail may be suppressed, thereby reducing the \$200 to \$300 million bill that hail inflicts on the United States in an average year.

The NHRE is bringing a variety of instruments to bear on the investigation of hailstorms. Because of the impossible expense of deploying as many as six aircraft and all the other equipment and manpower every day, the researchers rely on a hail forecast from the NCAR computer to tell them when to put the entire observing network into oper-

ation. As the hailstorm passes, 10 dropsondes are launched from a Sabreliner to probe the storm, while a variety of radar linked to a computer helps locate the hail source exactly, determine the diameter of the hailstones, and evaluate the results of any seeding that may have been done. Four hundred ground stations are taking data on rainfall and hailfall, and an airborne infrared radiometer is experimentally mapping hailswath.

Two different systems of seeding the storm are being tested this summer, one using aircraft rockets and the other using droppable charges. The experiments are based on the theory that smaller ice crystals can be induced by vastly increasing the number of nuclei competing for the supercooled water in the storm system. Smaller stones will either melt before reaching the ground or will cause less damage. This year's cloud seeding will not be primarily aimed at suppressing hail but rather will provide evidence about some of the mechanisms of hail production.

In addition to the team of physical scientists, the project this summer includes sociologist Dr. J. Eugene Haas of the University of Colorado and his team of opinion samplers. This group is gathering data on public attitudes during the summer to compare with an earlier survey before the full-scale project began.

Note: Canada begins its summer attack on Alberta hailstorms on 21 June. The July BULLETIN will carry a news story on Project Hailstop.

(More **news and notes** on page 476)