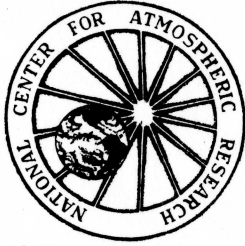


NCAR



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Information Release

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For Immediate Release

1976 Hail Research Begins

Grover, Colorado---Scientists of the National Hail Research Experiment began their 1976 field research program this week here in the heart of "Hail Alley"--the region of highest hailstorm frequency in the United States, centered about where the states of Colorado, Nebraska, and Wyoming join.

In the United States alone, hail destroys more than \$600 million worth of crops each year, and worldwide hail damage is estimated at more than one billion dollars annually. The National Hail Research Experiment (NHRE) is designed to gain an improved understanding of the severe thunderstorms that produce hail and the processes of hailstone formation within the storm and to use this knowledge to test the feasibility of using cloud seeding to reduce hail damage to crops and property. The experiment is supported by the National Science Foundation and is managed by the National Center for Atmospheric Research (NCAR) in Boulder, Colorado.

According to Dr. Donald Veal, NHRE director, this summer's hail research will not be focused on actual cloud seeding. If any cloud seeding is done, it will consist of a few small experiments late in July. The NHRE field program started on June 1 and is scheduled to end on July 31.

"The results of the cloud-seeding experiments that we did during the summers of 1972-74 indicate that the approach that we were testing then does not appear to be effective in reducing hail from thunderstorms in this region," Veal says. "Now we want to design new seeding techniques that we will test in future field experiments. This summer, we will be studying the structure and behavior of hailstorms very carefully, using our instrumented aircraft, radar, and other research tools. By doing this, we should be able to identify a promising approach to seeding for hail suppression that we can test in future hail seasons."

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Hailstorms that develop in the research area where the Colorado, Nebraska, and Wyoming state lines intersect will be probed, measured, and analyzed in fine detail with a great variety of instruments and techniques. The research aircraft that will fly around and even through the storms include:

- A single-engine, propeller-driven T-28 from the South Dakota School of Mines and Technology that is armored with heavy-gauge metal to permit it to penetrate hailstorm clouds and take measurements within the violent interior of the storm.

- Three twin-engine propeller-driven Beech Queen Airs, two from NCAR and one from the University of Wyoming, equipped with special research instrumentation, that will investigate the so-called "feeder clouds" that occur on the edges of growing hailstorms.

- A sailplane, or glider, that will be towed aloft by a single-engine light aircraft and released to soar around and into clouds to collect data. If any cloud seeding is done, the towplane will also be used for that purpose.

- A twin-jet Sabreliner from NCAR that will fly over cloud towers at the edges of storms to study the feasibility of seeding them from above. No actual seeding will be done by this aircraft.

A network of radar systems will also probe storms that pass across the research area. The primary radar facility is at NHRE field headquarters, near Grover, Colorado, where a dual-wavelength research radar and data acquisition and display system, developed for the hail experiment, will operate during the field program. Also at the Grover site is a radar system operated by the Desert Research Institute of the University of Nevada. Four Doppler radar systems, which can measure air movements, are located in a rectangle around the area--two in Colorado, one in Nebraska, and one in Wyoming. Two of the Doppler systems are from NCAR and two from the Environmental Research Laboratories of the National Oceanic and Atmospheric Administration (NOAA) also in Boulder.

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An extensive network of ground-based instruments, for measuring precipitation, temperature, wind, and other atmospheric factors, is spread across an area of several hundred square miles stretching eastward from Grover toward Sterling, Colorado, and Kimball, Nebraska. Some of these weather stations transmit their data directly to Grover by telemetry, while others are serviced by field crews who collect recorded data from them periodically. Mobile units operated by crews from NCAR and the University of Wyoming will follow hailstorms to collect data and precipitation samples.

By the end of July, the hail researchers should have a great deal of new data on high plains hailstorms. Detailed analysis and study of the data should provide a basis for new and promising approaches to the problem of modifying hailstorms to reduce their potential for destruction.

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Henry Lansford
Information Officer
National Center for Atmospheric Research
Post Office Box 3000
Boulder, Colorado 80303

(303) 494-5151, extension 261