

METEOROLOGY

Improved Storm Forecasts

The nation's weather experts predict that current meteorological research may result in better forecasting of impending storms and greater savings in life and property.

► **IMPROVED FORECASTS** of tornadoes and destructive windstorms, with a consequent "further saving of lives and property," is expected by the nation's top group of weathermen.

The American Meteorological Society's governing council so concluded in an official statement on the "detection, tracking and warning of tornadoes." The council foresees that research now underway will result in more accurate pinpointing of where severe local storms will occur than is possible at present. Today's tornado forecasts, the statement noted, prove correct about 50% of the time for six to 12 hours in advance. The region covered by such predictions, however, usually has an area of 30,000 square miles or more, while the area of destruction from a single tornado rarely exceeds ten square miles.

The council said the main problem, once the severe local storm prediction has been issued, is to determine "which particular thunderstorm cell within a given area will be the one that produces a tornado or a destructive windstorm."

Three main tools are now available to the tornado forecaster:

1. The report of an actual sighting of the tornado or other severe weather conditions. From such reports, the storm's future path can be predicted and communities alerted.

2. The use of weather radar. Under some conditions, tornadoes can be tracked by radar, with consequent improved predictions of their expected paths.

3. The detection of the electrical discharge accompanying each thunderstorm, a method known as "sferics." The approximate location of the storm can be found by sferics readings taken at three or more stations.

"The results of current research with electronic equipment hold considerable promise of potential improvements in facilities for alerting the public to the probability of impending storms and a further saving of lives and property is to be expected," the Society's council concluded.

Long Forecasts Mislead

► **YEAR-LONG** weather forecasts, unless they are described clearly as experimental and of unproved value, mislead the public, the nation's top group of meteorologists has charged.

In an official statement, the American Meteorological Society's governing council presented its views on the reliability of weather forecasts. The Society, composed of nearly 6,500 meteorologists from private industry, universities and the Government, is the professional scientific organization representing weathermen in the Americas.

The present state of weather prediction, the Society's council concluded, "does not permit a forecaster to specify day-by-day variations in the weather any more than one week in advance." Forecasts for periods more than a month in advance, even though phrased in such general terms as "the next season will have abnormally high temperature or precipitation," are experimental and their success has not yet been demonstrated.

The statement was issued because of the "potential value of weather forecasts to the economy of the nation."

Detailed weather predictions are possible for two or three days in advance, it says, but their reliability falls off progressively after the first 24 hours.

Forecasts of expected weather three to seven days in the future must be issued in less specific terms than short-range predictions, and are ordinarily restricted to a statement that the temperature will be higher or lower than normal for that time of year and that predominantly dry or wet weather will prevail.

For periods of one week to one month in advance, the average temperature and total precipitation expected for the period can be compared with the normal temperature and precipitation for that same period with some skill.

Science News Letter, July 20, 1957

PHYSIOLOGY

Chickens Are Having Heart Beats Studied

► **CHICKENS** at the University of Georgia have time off from egg-laying to have electrocardiograms taken, Dr. Till Houston of the University has reported.

The electrocardiograms are being taken with the same kind of machine used on humans except that the electrodes, attachments usually placed on a person's arms, have been replaced with needles from hypodermic syringes.

The study is designed to find out about the fever chickens have in the summertime when the air temperature is more than 90 degrees. If they were not running the fever, they might be laying more eggs during the hot months.

The normal body temperature of a chicken is 107 degrees and during the hot weather the bird can not keep itself cool. Its temperature shoots up a few degrees above the normal 107.

The questions Dr. Houston hopes to answer are whether or not the fever affects the heartbeat and the heartbeat in turn affects egg laying and growth. If it does, the poultry industry would be interested in knowing what could be done about it.

Science News Letter, July 20, 1957



HIGHEST SPEED—The high-flying Lockheed X-17 blasts off on its journey into the ionosphere as spin rockets on its side, which will drop off after the launching, give it a stabilizing twirl. The Department of Defense reports the X-17, developed by Lockheed Missile Systems division in Van Nuys, Calif., has reached the highest speed ever achieved by an instrumented vehicle. The three-stage missile is described as the biggest and most powerful in existence using all solid propellants.

AERONAUTICS

Balloon Lifts Two Tons 104,000 Feet

► **THE WORLD'S** largest balloon has lifted almost two tons of military equipment and instruments to an altitude of more than 104,000 feet.

This is the heaviest load ever carried by a balloon, the Air Force Air Research and Development Command, Baltimore, Md., reported. The helium-filled balloon, 200 feet in diameter, weighed 1,500 pounds, with a volume of 3,750,000 cubic feet.

The June 28 launching was part of a series of tests to learn about the atmosphere 20 miles and more above the earth's surface.

Dr. Morton Alperin, director of Advanced Studies, Pasadena, Calif., is in charge of the project.

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