UNITED STATES DEPARTMENT OF COMMERCE
WEATHER BUREAU

PROGRESS REPORT ON DEVELOPMENT OF AN ELECTRONIC ANEMOMETER

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The electronic anemometer was designed to provide a direct reading instrument that would not impose an undue load on the revolving cup system, and at the same time make possible the employment of multiple indicators and a recording device, if desired. The instrument is capable of activating one recorder and as many as ten indicators.

The anemometer in general consists of a transmitter, receiver, and power supply; a complement of indicators and a recorder. The instrument may also be equipped with a counting system, so that in addition to multiple indication, it is possible to control the customary wind indicating devices, such as damps, buzzers, etc.

The transmitter is driven by a set of conventional anemometer cups mounted on a shaft to which is attached to the lower end a serrated disc which rotates between the coils of a high frequency oscillator, interrupting the oscillations. Changes in the average plate current between non-oscillating and oscillating state produce pulses which are counted by means of an electronic integrator known as a frequency meter. In this way wind speed is obtained in terms of electric current, the current being employed to actuate the recorder and indicators. The microammeters are calibrated in miles per hour of wind speed, with scales graduated from 0 to 100 miles per hour.

The advantages of this device are: no appreciable energy is required to control the oscillator, and therefore, the anemometer cups can be made both light and small, thus making it possible to measure quick changes in wind speed, or gusts, as well as steady winds; additional indicators may be added without recalibration of existing equipment.

Ten of these instruments are now being completed for the Weather Bureau for trial to determine operating and maintenance problems.

National Oceanic and Atmospheric Administration

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