AERONAUTICS

# Prepare Air Safety Plan

**A five-part, multi-million dollar program has been drawn up by the Weather Bureau in an attempt to modernize its aviation weather services.**

➤ THE WEATHER Bureau is preparing to make air travel in the now imminent jet age as safe as possible weatherwise.

Detailed plans for a long-range modernization of its aviation weather services have been drawn up and will be presented to Congress, probably next year. In light of two recent mid-air crashes, some weathermen and Congressional leaders are expected to urge approval of the plans before that time.

The multi-million dollar program is designed to mesh with the modern air traffic control and airways system now being developed by the Civil Aeronautics Administration. It will bring a gradual but nevertheless revolutionary change to weather services not only for aviation but also to the general public through its greatly expanded weather reporting network.

The plan is flexible enough to adapt to changing requirements over a period of years, and will also provide the basic meteorological data required for national defense.

Five parts, each representing fields of specialized operation but all intimately related, make up the weather system planned for completion by mid-1962. They are observing and forecasting weather in the immediate vicinity of the airport and on runways, observing and forecasting weather en route, and the wholesale dissemination of weather information.

Serving in direct support of these five parts, and fundamental to their operation, are improvement of the present aviation weather network and considerably more emphasis on meteorological research and development.

The plan for modernization of surface weather observing in airport approach zones calls for installing automatically operated cloud height and runway visibility measuring equipment at all airports having instrument landing systems.

Complementing this program, all observing stations are scheduled to have completely automatic equipment that will record weather elements, automatically transmit the information on special weather circuits and record the data in punched card form.

Science News Letter, June 7, 1958

ELECTRONICS

# Moon Aids Phone Calls

➤ THE MOON may be used as a reflector for intercontinental telephone calls within a few years.

This peacetime applicaton was seen as one outcome of a still-secret Air Force study made by University of Michigan scientists.

They found very shortwave radar or radio signals can be used to bounce voice transmissions off the moon, without appreciable loss in quality, to a receiver halfway round the world.

This means the curvature of the earth need no longer limit communications distances if both transmitting and receiving equipment can "see" the moon. (A radar signal travels in a straight line.)

The research was conducted under contract to the Air Force's Rome Air Development Center by Prof. Keeve M. Siegel and Thomas B. A. Senior, research associates at the University of Michigan's Engineering Research Institute.

Voice communications, at long wavelengths, using the moon as a reflector, were shown feasible several years ago. The Michigan investigators found very short wavelengths of about one inch give such improvement in clarity it is now commercially feasible to set up a world-wide network of stations using the moon as a reflector.

Careful analysis and measurement of radar signals reflected from the moon also yield additional information on the composition of the moon's surface, which should help fill gaps in lunar knowledge.

Success in developing the reflection theory resulted when the scientists, checking reports by other researchers throughout the nation, found certain incorrect conclusions had been drawn. One of these was the assumption that, because of the jagged mountains and craters known to exist on the moon, the moon would appear rough to a radar signal. A shortwave signal is reflected from an area of only a few square feet.

The moon has such areas that are smooth so the radar signals are reflected without a loss in quality.

Science News Letter, June 7, 1958

NUMISMATICS

## Inflation a Problem In Early Christian Era

➤ INFLATION was already a problem in the early Christian era and the Roman rulers of that time tried to meet the problem of rising prices by manipulating the currency.

This is reported by Dr. Earle R. Caley, professor of chemistry at Ohio State University, in the *Centennial Volume*, published by the American Numismatic Society, New York.

After studying the tetradrachm, standard silver coin of Egypt, Dr. Caley found that the coins were debased during the first three centuries A.D. by reducing the silver content and replacing it with other metals, principally copper.

The tetradrachms, although they carry Greek inscriptions, were struck off at Alexander, Egypt, which was then Roman.

From the days of the Roman Emperor Tiberius, 14 to 37 A.D., to the reign of Diocletian from 294 to 305, the silver content of the tetradrachm declined from an average of nearly 44% to one-half of one percent. Some of the coins of Diocletian had no silver at all.

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