

TEST STATION—Intensities of broadcasts picked up from ten test stations in such distant places as England, Honolulu, Africa and Chile are continually recorded at the Sterling, Va., Radio Receiving Station of the National Bureau of Standards. These records are used to study the amount radio waves are absorbed by the ionosphere.

regions, where the air particles are spaced so far apart, stay perpetually ionized. The lower ones, ionized during the day, return to normal at night.

Geomagnetic and ionospheric storms, experts at Interservice Radio Propagation Laboratory of the National Bureau of Standards found, tend to recur 27 days later, this being the time the sun takes to make a complete rotation so that the disturbed surface is again facing the earth. It is easier, they found, to foretell what radio reception will be several days ahead when sunspot activity is at a minimum than when the sun's face is quite pock-marked.

Prolonged, moderate disturbances are frequent during sunspot minimum. Briefer, more erratic storms tend to occur during sunspot maximum. But as data for a complete sunspot cycle, about 11 years, are not yet available, further study is needed to work out these general trends.

When an ionospheric storm is in progress, a lower and lower frequency must be used as higher ones escape through the ionized layer. On the other hand, more and more of the lower frequencies are absorbed and fail to reach the receiving station. When the frequency band is so reduced at both ends that nothing gets through, radio broadcasts are completely blacked out.

A warning of approaching trouble in the ionosphere which will make the announcer's voice sound mushy or weak, or cut him off the air entirely, is now being broadcast for paths across the North Atlantic. If broadcasts from London, Berlin and Paris are likely not to get through, "W's" (dot, dash, dash in Morse code) follow the time announcement over WWV at 15 and 45 minutes past the hour. Sent out from Washington D. C., the warning may be received at 2.5, 5, 10 and 15 megacycles, audible at almost any place in the world. If conditions are quiet, "N's" (dash, dot in code) follow the time announcement over the shortwave broadcast.

Radio experts, developing new techniques as they perfect this new type of forecasting, have a pretty good batting average. Checking the warnings with actual radio reception, it is found that they have warned of seven out of ten storms.

These forecasts are being developed to the point that those listening to a world-wide hook-up will no longer be bothered by having a broadcast from London ruined by sputters or having Moscow fade out entirely. Instead of those tantalizing pauses after the announcer says "Come in Berlin," it will be known in advance whether broadcasts from such far-off places can get through.

Science News Letter, April 13, 1946

AERONAUTICS

Maximum Speed for P-80 To Be Determined

➤ A SERIES of power dive tests by a remote-controlled Lockheed P-80 to be conducted in May or June will show Army Air Forces experts just how fast the plane can fly and give them information to be used in designing high-speed aircraft of the future.

Maj. Gen. B. W. Chidlaw, deputy commanding general, engineering, Air Materiel Command, said that a "mother" plane will guide the test craft on its dangerous mission.

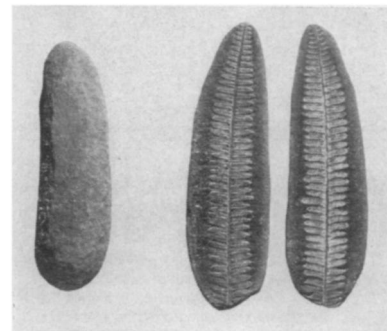
He reported that the planes for the test are now being fitted out at Bell Aircraft Corp., Niagara Falls, N. Y., and they are expected to be ready within two months.

A television camera in the test plane will give a constant picture of the control panel, while a ground control unit will direct landings and take-offs and inform the "mother" ship of the technical operation of the robot craft.

Tests are scheduled to begin with dives at an oblique angle and build up to a perpendicular dive from a high altitude.

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