HAIR-RAISING

This visitor at the New York Museum of Science and Industry is making her own hair stand on end, quite literally, by sending an electric charge of half a million volts through her body. The static electricity generated for this experiment is harmless.

AERONAUTICS

Indianapolis Landing System Selected As the "Standard"

Committee of National Academy of Sciences Selected CAA System for Extension to Other Airports in Nation

THE INSTRUMENT blind landing system, just selected as standard for the nation by a committee of the National Academy of Sciences, at the request of President Roosevelt, was described before the American Institute of Electrical Engineers at New York.

The new blind landing system, which has been recommended for installation at once at many of the nation's leading airports, was created to meet the rigid safety specifications of the Civil Aeronautics Authority in Washington. The trial installation, at the Indianapolis Municipal Airport, has used short wave radio beam signals.

In tests since last September more than 50 blind landings have been made in heavy rain, blinding snow, low ceiling and poor visibility which would ordinarily ground all planes and prevent landings. Transport and military pilots alike have been receiving training with the system.

The four-man research team of W. E. Jackson, C.A.A. expert, A. Alford and P. F. Byrne of the International Telephone Development Company, and H. B. Fischer of the Bell Telephone Laboratories, Inc., described the perfected system for the electrical engineers.

A committee of the National Academy of Sciences, headed by Dr. Vannevar Bush, president of Carnegie Institution of Washington, recommended to President Roosevelt that the Indianapolis-CAA system be extended to other airports in the nation, military and commercial, as the best blind landing system now developed.

The scientists' committee also urged that intensive research be undertaken for the perfection of another blind landing system using ultra-short micro radio waves. This system — employing waves only a few inches long—has been developed at Massachusetts Institute of Technology.

The MIT-CAA system was described at the electrical engineers meeting by five M.I.T. scientists, E. L. Bowles, W. L. Barrow, W. M. Hall, F. D. Lewis and D. E. Kerr.

Where the newly selected "standard" system at Indianapolis uses radio waves of from 75 to 112 megacycles frequency (2.6 to 4 meters wavelength) to create glide paths and marker points, the M.I.T. system employs "horn" types of radio transmitters because its microwaves have many of the properties of ordinary light and can be projected in given directions quite like a beam from a searchlight.

An advantage claimed for the M.I.T. system is that a straight glide path can be achieved which meets the ground at a small angle. The Indianapolis system, in contrast, comes down on a straight line glide but near the ground goes into a slight curve to create a less abrupt landing.

Although more research is needed on the microwave blind landing method, it is claimed for the system that its glide path is constant in pattern and in angle and is not distorted by the ground or surrounding objects. This means that the radio transmitters for the M.I.T. system can be truly portable and can be moved from one airport to another if needed.

The M.I.T. system uses 50 centimeter waves (less than two feet in length) but it should be possible to operate it on still shorter waves and obtain even sharper definition of the radio beam. The M.I.T. scientists report:

"Not many years ago it would have been improvident to predict that within one year a practical 50-centimeter landing system based on the experimental type described here could be installed for pilot training, and it would have been heresy to say that within two years a 10-centimeter system could be made available for this purpose, yet now such is our confidence that on the basis of contemporary developments in the industry and elsewhere these predictions may now be made with reasonable assurance of fruition."

Science News Letter, February 3, 1940

When automobiles were "young," one argument for thinking they would never amount to much was this: horses could see at night, but the horseless carriage couldn't.