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TELEVISION BROADCASTING FROM AIRPLANES

TELEVISION broadcasting from stations in the sky six miles above the earth, in airplanes slowly cruising in circles, will be tested as soon as permits and equipment can be obtained, has been announced by the Westinghouse Electric Corporation. Initial flight tests of the system, known as Westinghouse Stratovision, are expected to be made this fall.

The system would employ a low-powered ground transmitter to send television, and frequency modulation broadcast waves, to a specially designed high-altitude plane encircling overhead. The plane would be equipped with receivers and transmitters for re-broadcasting the programs back to the earth.

The advantages to be gained by this television broadcasting from the stratosphere are wide coverage and relatively low cost over other systems proposed. Television and FM waves travel in a straight line and for all practical purposes, according to Walter Evans of Westinghouse, stop at the horizon. This means, he says, that television broadcasts from the highest practical tower erected on the ground can not be received much more than 50 miles away.

"The Stratovision system," he explains, "simply puts the antenna and transmitter in an airplane flying in lazy circles 30,000 feet above the earth, out of sight of human eyes. The shortwaves sent out from this airborne antenna would blanket the earth's surface like a great inverted ice cream cone, covering an area 422 miles across or equal to the combined area of New York, Pennsylvania and New Jersey."

Eight such stratovision planes properly positioned would give television and FM coverage from coast to coast. Mr. Evans states that to provide comparable service by ground installations would require approximately 100 costly relay towers and hundreds of transmitters; or a coast-to-coast coaxial cable network which is estimated to cost at least $100,000,000. The addition of six more planes in the right places would provide Stratovision coverage for 51 per cent. of the nation's area and 78 per cent. of its population.

A special slow-speed plane, almost as large as the B–29, has been designed for the stratovision system by the Glenn L. Martin Company of Baltimore. Present plans call for a conventional all-metal, low-wing monoplane with automatic pilots, turbochargers and supercharged cabins.

ITEMS

THE term electron-volt, once used principally by physicists doing research with the atom, is now a commonplace in newspaper pages. It is a measure of energy. The energy of a moving automobile—the force with which it might hit another object—depends on both the weight of the car and the push or the force with which it is impelled. In the same way, the electric energy of an atomic particle depends upon its mass and the potential or the push which impels it. In the case of the automobile the energy is measured in foot-pounds. In the case of the atomic particle, the unit is the electron-volt and is that which is given to a single electron by an electrical push amounting to one volt. The push that lights your electric light is usually 110 volts. Millions of volts are used in artificial lighting and atom research.

SMALL airplanes may be easier to fly as a result of the development of a new controllable-wing plane now undergoing exhaustive tests at Stout Research Division in Dearborn, Mich. This experimental plane is built so that the position of the wings in relation to the fusilage may be changed at will by the pilot. Advantages of the controllable wing appear to be that it will result in greater safety and easier handling of personal aircraft. The controllable wing eliminates the necessity for ailerons, elevators and rudders. Several years may be required to develop the wing before it can replace the conventional type, reports I. M. Laddon, vice-president in charge of engineering of Consolidated Vultee Aircraft Corporation, parent company of the Stout laboratories. The controllable-wing plane was developed by George Spratt, who piled up 100 hours of secret flying with his new plane before friends knew he could fly.

HORSESHOEING will be the postwar work of some expert electric arc welders now building ships if a modern method of shoe repairing followed by a veteran blacksmith becomes a general practice. The welding blacksmith repairs shoes while still on the horse's hoof, building them up or adding spurs to prevent slipping, by arc-welding strips of metal or caulks on them. Most horses do not object to the new procedure. Old shoes can be built up this way a couple of times, Charles H. Chism, Coshocton blacksmith, has found through tests. The heat of the arc or of the heated shoe does not affect the animal. In fact, the shoe during the welding process is not as hot as the shoe in the ordinary fitting process which is placed while almost red hot against the hoof to burn it enough to get a good fit. When the welding is completed, shoe and hoof are cooled with water. Some horses are disturbed by the flash of the arc but are not troubled if a blanket is thrown over their heads.

THAT alumina, the common oxide of aluminum, which is used as an essential ingredient of super-duty spark plug insulators, high-temperature refractories and insulators, in the field of electronics, has a lower melting point than previously supposed, has now been determined by the National Bureau of Standards. As a result of recent measurements made by R. F. Geller and P. J. Yavorsky, of the bureau staff, the melting point of alumina has been determined as lying within the range 3,630 to 3,690 degrees Fahrenheit. This is lower than the value usually quoted, 3,720 degrees. A reasonably accurate knowledge of the melting point of this material is important because of its wide industrial uses.