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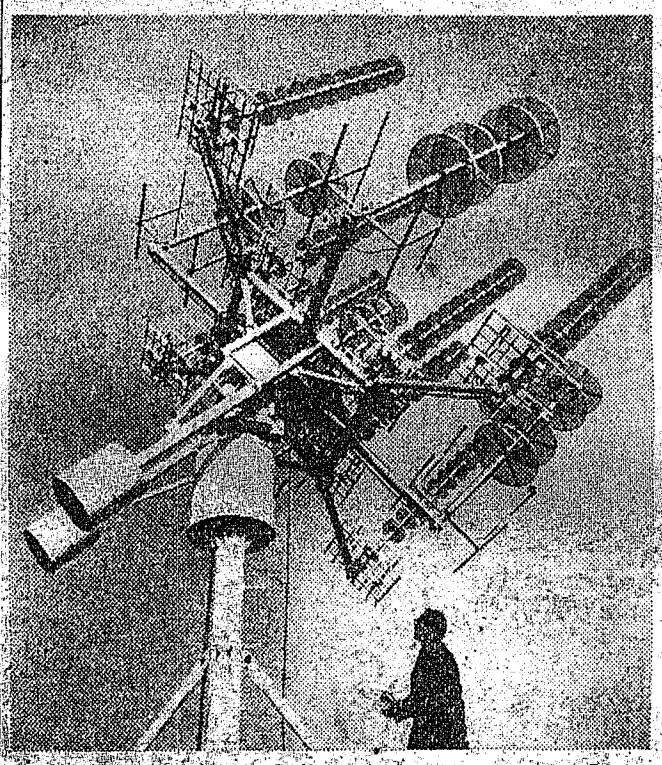
A New 'Ear' for Tiros I



A newly designed antenna used to track and receive signals from the recently orbited weather satellite, Tiros I. The antenna, called "End-Fire," developed by General Bronze Corp. for RCA Princeton's satellite program, differs from the usual multiple antenna systems in that it requires only the one antenna mounted on a single pedestal to perform tracking and telemetry functions.

Tiros' Eyes To Be 'Blind' For a Time

Weather Satellite Will Change Position

By Robert C. Toth

Space scientists said yesterday they expect Tiros I's weather eyes to be temporarily blinded in the next seven to ten days as the satellite's position changes in relation to the earth and sun.

Its television eyes will then cease to be looking down on earth areas that are illuminated by the sun. Without sunlight, the pictures cannot be taken, according to Dr. Abe Silverstein, chief of space flight programs of the National Aeronautics and Space Administration.

However, the situation will naturally correct itself as the earth and satellite move in space. Two or three weeks later, Tiros will get its eyes back, and the earth's cloud cover will again be televised back to weather experts.

Cycles To Be Repeated

The cycles will be repeated for about three months. After that, according to Sidney Sternberg, chief engineer of RCA's Astro Electronics Products Division which made the satellite's instruments, the eyes will again be lost, this time for six to nine months as Tiros I's orbit "precesses," or changes direction, in space. Instead of being pointed at earth, it will point into space.

The satellite might again be useful after this time if its instruments hold out, he said.

Dr. Silverstein, whose agency was responsible for launching Tiros I Friday, said the resolution of the TV cameras was probably not good enough to pick up the length of a jet runway, about two miles long. The cameras were designed to see clouds primarily, and it's doing this job "a little better than expected."

This suggests that little if any military information will be gained from the satellite.

Completes 33d Trip

Meanwhile the orbiting Tiros I completed its thirty-third trip around the world in its 450-mile-high path. Its signals continued to come in strong.

Scientists have radioed changes in its picture-taking schedule to compensate for changes in the sunlight pattern. For the next few days it will take pictures of the Western United States and Central America. These will be transmitted to a receiving station in Hawaii, whereas the photographs of Eastern North America up to now were received at Fort Monmouth, N. J.

The 270-pound satellite will never take pictures of the Southern Hemisphere, according to present plans.

"The "low resolution" camera aboard can see a patch of clouds 640,000 square miles in area, or 800 miles on each side. The "high resolution" camera is limited to a section 100 miles long and 100 miles wide, or 10,000 square miles in area.