

## Tiros Parts Reliability Held Good for Only Three Months

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WASHINGTON — Reliability of the electronic components contained in the Tiros I experimental satellite launched Friday is not great enough to give the satellite a useful lifetime of more than three months, Dr. Abe Silverstein, director of the National Aeronautics and Space Administration space flight programs, believes.

The 270-pound experiment will remain in its near-circular, 400-mile-high orbit for a period of "tens of years," he said, but telemetry signals will probably not be received after an estimated three months.

A joint effort, the payload and Thor-Able launching vehicle efforts involved NASA, the Army Signal Corps and Air Force, and several private contractors. The Radio Corp. of America's Astro-Electronic Products division, Princeton, N. J., developed the payload.

Tiros is the shaft form of television and infra-red observation satellite.

### Payload

Here is what the payload contained: Two television cameras to take pictures of the earth's cloud cover (one wide-angle and one narrow-angle, both using a one-half-inch vidicon tube); a magnetic-tape recorder capable of storing 32 photographs; two 2-watt FM transmitters operating on 235 MC to relay stored information, on command from the ground; about 9,200 solar cells for charging the

satellite's nickel-cadmium batteries; nine solar cells for measuring the position of the sun relative to the satellite for use in interpreting pictures; and two 30 MW beacon transmitters, for tracking by mini-track stations, which operate on 108 MC and 108.03 MC.

The beacon transmitters can be modulated to get information on the satellite's attitude, environment, and equipment operation.

Four transmitting antennas are located on the base plate of the bird in circular arrangement, and a single receiving antenna is located on the top. The entire package looks like a large hat box, 42 inches in diameter and 19 inches tall.

Eventually, operational weather satellites will be put into polar orbits, but the experimental Tiros models, another of which will be ready for launching this year, will work in East-West orbits.

Among contractors, besides RCA, were Douglas Aircraft Co., Santa Monica, Cal., first stage electrical and instrumentation systems; Space Technology Laboratories, Los Angeles, second stage electrical and instrumentation systems; Barnes Engineering Co., Stamford Conn., an infrared horizon scanner; General Time Central Research Laboratory, New York, electronic clock systems for command functions; and Bell Telephone Laboratories, New York, the missile command guidance system.