

the cameras is equipped with a wide-angle lens for viewing clouds in an area about 800 miles on each side; the other employs a narrow-angle lens to scan cloud details in a smaller area. A miniature television magnetic tape recorder, designed for satellite use, is linked to each camera.

At the start of each orbit, the cameras can be electronically instructed to photograph a specified area — such as a typhoon center over the Pacific, or a hurricane in mid-Atlantic. The instructions, prepared at the NASA Computing Center in Washington in cooperation with the Weather Bureau, are sent to the ground stations. At the appropriate station, the program is sent in the form of radio signals to an “electronic clock” inside Tiros. The clock stores the instructions somewhat in the fashion of a remotely operated alarm clock, causing the cameras to start a sequence of operations at the specified time during the succeeding orbit as the satellite passes over the region of particular interest. As the satellite swings around the Earth and comes again within range of a ground station, a command signal is sent from the ground for transmission of the cloud pictures stored on the tape. At the ground station, the information is displayed on a television picture tube and recorded on another magnetic-tape system. The image on the picture tube also is photographed and stored for future reference by meteorologists.

The purpose of the Tiros system has been defined by Barton Kreuzer, Manager of Marketing for RCA Astro-Electronics

Products Division, as “visual observation of cloud formations over large parts of the Earth to produce new information about such weather phenomena as hurricanes, typhoons, and the movement of weather fronts.” And Sidney Sternberg, the Division’s Chief Engineer, described the satellite as “a major space system complex incorporating advanced concepts in space communications and the remote control of satellite functions.”

The radio-inertial command guidance for Tiros is the same system as that developed by Bell Telephone Laboratories and Western Electric Co. for the Air Force Ballistic Missile Division for use in the first squadrons of the Titan intercontinental ballistic missile.

It is interesting to note that only a week before Tiros was launched, a paper presented at the International Convention of the IRE in New York called attention to the “billions lost each year in storm damage” in the United States, and warned of grave consequences if weather research were neglected.

Admiral Luis de Florez, consulting engineer and former Assistant Chief of Naval Research, in addressing a Symposium on “Electronics — Out of the World,” called for more manpower and more funds to be devoted to vital research in weather forecasting and control. “Actually, it would be of greater immediate importance to this country to be the first to find the answer to the feasibility and practicability of weather control than to land a man on the Moon,” he said.



Warren Magnuson, Chairman of the Senate Committee on Interstate and Foreign Commerce, author of S. Con. Res. 75 (*Journal*, Sept. 1959, p. 638; and Oct. 1959, p. 706) has been a strong defender of research and scientific endeavor during his active political career extending over almost three decades. He was elected to the Washington State House of Representa-

tives in 1932; in 1937 he became a member of the U.S. House of Representatives and in 1944 he was elected to the Senate.

Among the many evidences of his interest in science is his sponsorship of legislation to create the National Science Foundation, and he is presently directing efforts toward broadening the scope of its research program. He is sponsor of legislation to get the Navy’s Tenoc program in Oceanographic Research funded and underway. The Senate Resolution, referred to above, expresses Senator Magnuson’s sincere interest in scientific advancement in general and recognition of the importance of the 5th High-Speed Congress in particular. The Resolution calls for active participation by Federal agencies and was passed unanimously by the Senate.

Education, Industry News

Rapid processing of film is the subject of a symposium of the Society of Photographic Scientists and Engineers will be held in Washington, D.C., October 14–15. It is planned in conjunction with the Fifth International Congress on High-Speed Photography, October 16–22. SPSE Papers Chairman is Fordyce M. Brown, c/o Photomechanisms, Inc., 6 West 18 St., Huntington Station, N. Y. The emphasis will be on compact, simplified photo-processing equipment with short process time. Primary interest will be in the special techniques associated with development and design, specialized photographic chemistry, and specific uses in science, industry and the military. Depending on time available, reports on design and construction of larger processing machines and on advances in processing methods and control systems may also be scheduled. An introductory paper, “The Revolution in Photographic Processing,” will be presented by George Eaton, SPSE President. A technical exhibit of equipment related to reports presented at the Symposium is being arranged.

The Society of Photographic Scientists and Engineers will hold its 1960 National Conference May 9–13, at the Miramar Hotel, Santa Monica, Calif. More than 60 technical papers are scheduled, among them reports on space photography and related instrumentation. A session on photographic engineering will include papers on a new technique for high-speed photography of cyclic events, use of magnesium-filled lamps in high-speed photography, and details of photographic support of research on jet engines. Photographic sessions on processing and apparatus will

