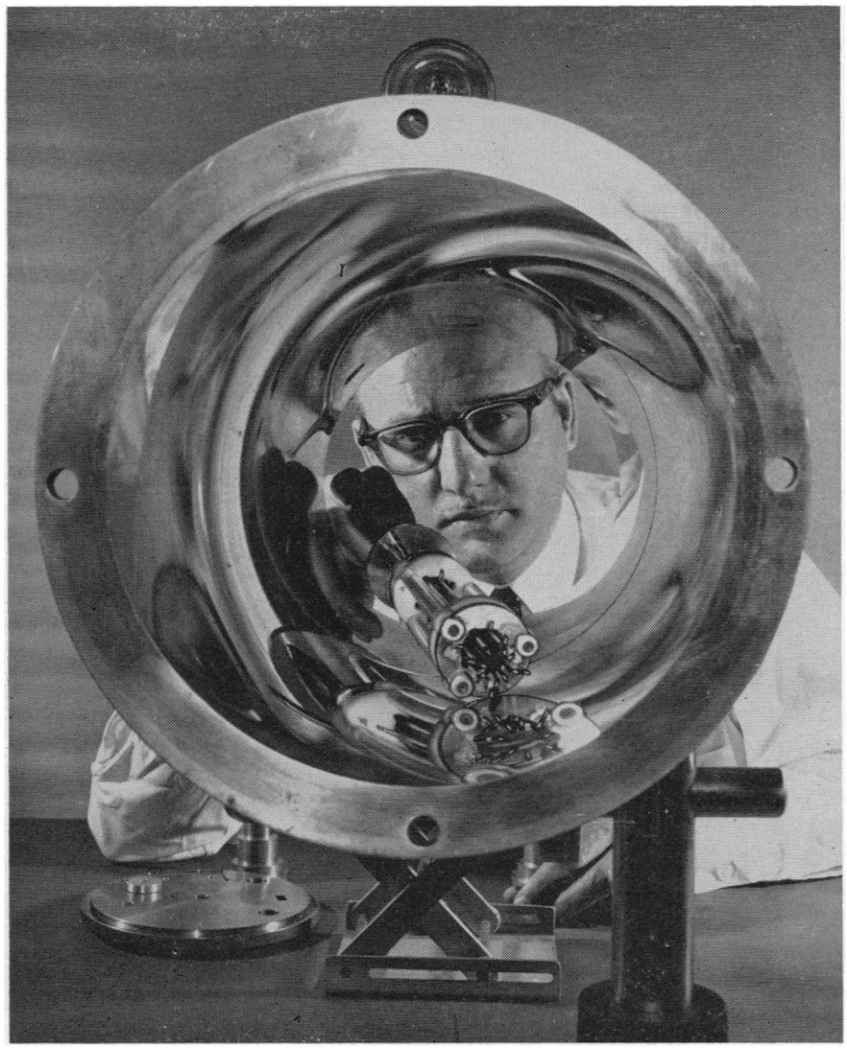
because the House and Senate appropriations will have to be reconciled by compromise. It is unlikely that the House will reverse itself and finally allow the full amount in this compromise. Most usually the final appropriation figure falls between the upper and lower limits set by each chamber.

Atomic Clock To Orbit

A 30-pound atomic clock to be carried in an orbiting satellite is being developed, to give Einstein's general theory of relativity "the most searching check of its 43 years." The prototype of the clock is now under construction at the Hughes Aircraft Company's research laboratories at Culver City, Calif., under a $200,000 development contract from the National Aeronautics and Space Administration. The clock will be accurate to within 3 seconds in 100 billion; this means an error of no more than 3 seconds in 3171 years. NASA has given similar contracts to the National Bureau of Standards and to Massachusetts Institute of Technology for other types of very precise clocks. Any actual satellite-clock launching is probably several years away, NASA said.

Before the launching, the atomic clock would be synchronized with another clock on the ground. The satellite would then orbit, at an altitude, for example, of 8000 miles, traveling about 18,000 miles an hour. The orbiting clock would generate a highly stable current with a frequency of 24,000 megacycles per second. By means of electronic circuits the rate of these oscillations would be reduced to a rate at which precise laboratory measurements could be conveniently made. The "ticks" would be transmitted by radio for comparison with data from the clock on the ground.



Harold Lyons, inventor of the first atomic clock, examines the tubular core of another model which is to be put into orbit around the earth to check Einstein's general theory of relativity.

Administration Reaffirms Stand on Nuclear Plane

The Administration has rejected proposals for early construction of a flying model of a nuclear-powered aircraft. The proposals, which had been examined in the past, were brought up for review at the insistence of members of the Joint Congressional Committee on Atomic Energy, who cited the propaganda advantages of building such a plane before the Soviet Union does. In rejecting the "fly early" proposals the Administration indicated that efforts would be concentrated on development of more advanced reactor fuel elements for the reactor-jet-engine combination that will eventually power the craft.

The decision reflects the Adminstration's belief that more research is needed before an adequately performing power plant can be developed for the plane. This point has recently been stressed by White House science advisers and Pentagon officials. In his last speech before leaving office, James Killian, chairman of the President's Science Advisory Committee, spoke of the need for careful preliminary work before continuing the nuclear plane project. Herbert York, research chief of the Department of Defense, said in testimony before a House committee that he believed the over-all cost of developing such a plane would be at least $10 billion. It has been estimated that approximately $1 billion has been spent on the project over the past 13 years.

Members of the Joint Congressional Committee on Atomic Energy described the Administration's move as a "backward step" that will postpone the first flight of a nuclear airplane by at least 2 years. Representative Melvin Price (D-Ill.), chairman of the Atomic Energy Research subcommittee, announced that public hearings would be held next month on the Administration's "lack of decision" on the controversial project.

Scientists in the News

WARREN WEAVER, vice president for the natural and medical sciences of the Rockefeller Foundation, will retire on 1 August. At that time he will become vice president of the Alfred P. Sloan Foundation. He will continue his activities on the National Science Board, on the National Advisory Cancer Council, on the Council for Library Resources, as vice chairman of the Health Research Council of the City of New

York, and as vice president and chairman of the committee on scientific policy of the Sloan-Kettering Institute for Cancer Research. After 1 July he will make his home in New Milford, Conn.

KENNETH STREET, deputy director of the University of California's Lawrence Radiation Laboratory, Livermore, has been appointed professor of chemistry on the Berkeley campus.

CHARLES G. OVERBERGER, head of the chemistry department at the Polytechnic Institute of Brooklyn, has been elected chairman of the New York section of the American Chemical Society.

CLARENCE ZENER, director of the Westinghouse Research Laboratories, Pittsburgh, Pa., will receive the John Price Wetherill Medal from the Franklin Institute on 21 October.

VERNON CHEADLE, chairman of the department of botany at the University of California, Davis, recently left for Australia, where he will spend 9 months on sabbatical leave with the Division of Forest Products, Commonwealth Scientific and Industrial Research Organization, Melbourne.

PETER H. NASH, associate professor of city and regional planning and research associate in the Institute for Research in Social Science at the University of North Carolina, has been appointed head of the University of Cincinnati's new department of geography, effective 1 September. The university's department of geology and geography will be broken down into two separate departments at that time.

JOHN H. HAMMOND, JR., president of the Hammond Research Corporation and a director of the Radio Corporation of America, will be awarded the Elliott Cresson Medal by the Franklin Institute, Philadelphia, Pa., on 21 October.

MORRIS SCHAEFFER, director of the Virus and Rickettsia Laboratories of the U.S. Public Health Service's Communicable Disease Center, has been appointed director of the Bureau of Laboratories for the City of New York Department of Health. He will also serve as a member of the Public Health Research Institute in New York City and as professor of medicine, New York University–Bellevue Medical Center.

GEORGE L. HAGEN, Jane Coffin Childs fellow in the department of botany at Harvard University, has been appointed research associate of the Institute for Cancer Research, Philadelphia, Pa. JOHN G. TORREY, associate professor of botany at the University of California, Berkeley, will be a visiting associate member of the institute for 6 months, beginning in July. JAKOB REINERT, lecturer at the Botanisches Institut der Universität, Tübingen, Germany, will also spend 6 months at the Institute for Cancer Research, beginning in September or October.

ELIAS J. COREY, professor of chemistry at the University of Illinois, has been appointed professor of chemistry at Harvard University.

HARRY SOBOTKA, chemist-in-chief at Mount Sinai Hospital, New York, will lecture during August in Brazil, at the Instituto Oswaldo Cruz in Rio de Janeiro and at other institutions in Brazil, Uruguay, and Chile.

EMERSON W. CONLON has taken leave of absence as director of research at Drexel Institute of Technology to accept appointment as assistant director of aeronautical and space research with the National Aeronautics and Space Administration, as of 6 July. He succeeds ADDISON ROTHROCK, who is now scientist for propulsion in the National Aeronautics and Space Administration's Office of Program Planning and Evaluation.

Brigadier General JOHN K. CULLEN, director of plans and hospitalization, Office of the Surgeon General, U.S. Air Force, has been appointed deputy surgeon general of the Air Force, effective 1 August. He succeeds Major General OLIN F. McILNAY, who will retire.

HENRY A. BOORSE, chairman of the Barnard College physics department, has been appointed dean of the faculty at Barnard. He succeeds THOMAS P. PEARDON, who is resuming full-time teaching in the department of government in addition to taking on new duties as editor-in-chief of the *Political Science Quarterly*.

HENRY W. HICOCK, head of the department of forestry at the Connecticut Agricultural Experiment Station, New Haven, since 1946, will retire after 42 years' affiliation with the station.

Recent Deaths

JACOB E. FINESINGER, Baltimore, Md.; 57; head of the Psychiatric Institute and founder and head of the psychiatric department at the University of Maryland; had taught at Harvard University and studied in the Soviet Union under Pavlov; 19 June.

Sir IAN C. ROSS, Melbourne, Australia; 60; chairman of the Commonwealth Scientific and Industrial Research Organization since 1949; formerly professor of veterinary science at Sydney University; director of scientific personnel with the Commonwealth Directorate of Manpower and adviser on pastoral industry to the Department of War Organization of Industry, 1942–45; 20 June.

GRACE M. SICKLES, Troy, N.Y.; 61; associate research scientist in the Division of Laboratories and Research of the New York State Department of Health and a member of the department since 1918; codiscoverer of the Coxsackie virus, identified during a study of outbreaks of poliomyelitis in New York State; performed extensive research on various antibacterial serums; 29 June.

ALBERT N. STEWARD, Corvallis, Ore.; 62; professor of botany and curator of the herbarium at Oregon State College, since 1951; previously head of the botany department at the University of Nanking, China, for 30 years; 19 June.

ABRAHAM STONE, New York; 68; urologist; associate clinical professor of preventive medicine at the New York University–Bellevue College of Medicine, and a faculty member of the New School for Social Research; director of the Margaret Sanger Research Center since 1941; founder and president of the American Association of Marriage Counselors and vice president of the Planned Parenthood Federation; special consultant on family planning to the World Health Organization; coauthor of *Planned Parenthood*; 3 July.

JOHN G. TAPPERT, Philadelphia, Pa.; 53; physicist with the U.S. Army Ordnance's Frankford Arsenal, Philadelphia, Pa., where he had been employed since 1935; inventor of instruments for the control of artillery fire, including automatic computers for antiaircraft guns; 12 June.

PHILIP J. ZLATCHIN, New York; 46; professor of psychology at New York University's Graduate School of Arts and Science and professor of education at the university's School of Education; 3 July.