

GODDARD DIRECTOR RETIRES; DR. COOPER TAKES OVER

Dr. Robert S. Cooper, currently Deputy Director of the Center will become director of Goddard July 1, 1976. He will replace Dr. John F. Clark who is retiring after 10 years as director of Goddard.

As Deputy Director of Goddard, Dr. Cooper has served as general manager for the center's wide range of space science, applications and tracking programs. Before coming to Goddard in July 1975, he served for three years as Assistant Director for Research and Engineering, Space and Advanced Systems, in the Office of the Secretary of Defense.

As director of Pentagon Space Research activities, he managed the new precision navigation satellite system called NAVSTAR Global Positioning System now slated for full scale testing late this year. Dr. Cooper also acted as the Secretary of Defense's principal technical advisor on Space Shuttle and other

NASA-related activities. He received the Secretary of Defense Meritorious Civilian Service Award for his activities at DOD.

Dr. Cooper was awarded his B.S. degree in electrical engineering from the University of Iowa in 1954, an M.S. degree from Ohio State University in 1958 and a Sc.D. degree from MIT in 1963 and continued as a Ford Foundation post-doctoral fellow for two years. From 1963 to 1966 he served as Assistant Professor of Electrical Engineering at MIT. Following that, he joined MIT's Lincoln Laboratory where he performed research in a number of fields and later served as assistant head of the Optics Division of the Laboratory.

Dr. Cooper is a member of the American Association for the Advancement of Science and the American Physical Society.

Dr. Clark, an authority in atmospheric and space sciences

and applications, has served as director of Goddard since 1965. During his 10 years as director of Goddard, the center has been responsible for major advances in communications, weather and climate, Earth resources, space physics and space astronomy. He came to NASA in 1958. From 1963 to 1965 he served as Deputy Associate Administrator for Space Sciences and Applications. From 1962 to 1965 he also served as chairman of the Space Science Steering Committee.

Dr. Clark's professional awards include the 1974 Collier Trophy for leadership in development of the Landsat Program (co-recipient) and the NASA medals for Distinguished Service, Outstanding Leadership, and Exceptional Service. He is a fellow of the American Institute of Aeronautics and Astronautics, American Astronautical Society and the Institute of Electrical and Electronics Engineers.



The RCA-Satcom-II was successfully launched on board a Delta launch vehicle, March 26, 1976.

SECOND SATCOM LAUNCHED

The RCA Corporation's second commercial domestic communications satellite, RCA-Satcom-II, was successfully launched from Cape Canaveral on board a Delta launch vehicle, March 26, 1976 at 5:27 p.m. EST.

The RCA-Satcom system consists of two satellites placed in geostationary orbits to serve the contiguous United States and Alaska with television, voice channels and high-speed data transmissions. A third satellite is being held in reserve on the ground.

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Dr. John F. Clark



Dr. Robert S. Cooper

Goddard Appoints Privacy Officer

Robert A. Perry, Procurement Management Division, has been appointed Goddard Space Flight Center Privacy Officer. He will be responsible for coordinating GSFC Privacy Act matters and will serve as the Goddard contact point and liaison with the NASA Privacy Officer, J. Fuller.

The Privacy Act of 1974 became effective September 28, 1975. The purpose of the Act is to protect the individual, according to Perry, and it applies to all government employees. It serves to protect the rights of individuals that might be violated by request submitted under the Freedom of Information Act of 1967.

Until now, the Office of Chief Counsel has handled all actions arising under the Privacy Act. Some of Perry's new duties will include providing Dr. John F. Clark, Goddard Director, with support in the following areas:

- Avoiding the establishing of new systems of records or new routine uses of a system of records without first complying with the requirements of the Act.
- Ensuring that the policies and requirements of the

Privacy Act and implementing regulations are followed by all GSFC employees.

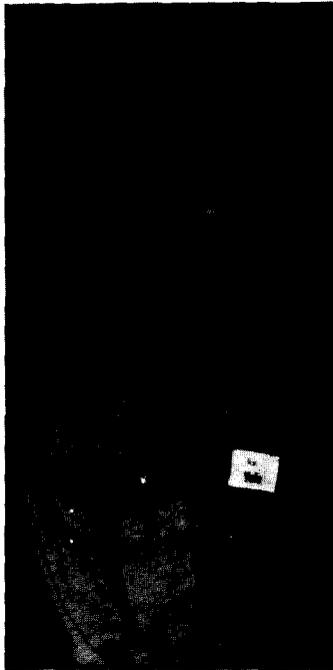
- Instructing each person involved in the design, development, operation or maintenance of a system of records, the requirements of the NASA regulations and possible penalties for noncompliance.



Robert A. Perry

- Preparing requests for submission to the Associate Deputy Administrator for the exemption of a system.

He will also be responsible for making reasonable efforts to serve notice on an individual when any record on such an individual is made available to any person under compulsory legal process when such process becomes a matter of Public Record, and making the initial determination on an individual's request to correct or amend his record in accordance with the law.



Ronald D. Vale



Diane Wooden

Two Washington trip winners in the 35th Annual Science Talent Search visited Goddard in March to consult with scientists at the Center.

Designed to discover and develop scientific and engineering ability among high school seniors, the Science Talent Search is conducted annually for the Westinghouse Science Scholarships and Awards by Science Service in Washington, D.C.

Forty students were invited to Washington, D.C., for an all-expense paid trip March 11-15, 1976, to attend the Science Talent Institute.

Diane Wooden of Rockville, Md. won a \$6,000 scholarship for her project. She used a 36-inch reflecting telescope at Goddard to take photographs of a dark cloud. She devised a method different from the conventional one for counting stars on the photographic plate, and was thus able to detect much of the higher density regions which might otherwise have been missed.

Ronald David Vale of Los Angeles, Ca. received a \$250 dollar award for his experiment investigating the effects of light, darkness and temperature in attempting to modify the biological rhythms of a type of bean plant.

BOWSER PARTICIPATES IN BEEP SERIES

Lloyd T. Bowser, Personnel Management Specialist at Goddard, was the seventh participant in the Black Executive Exchange Program's (BEEP) lecture series at Bishop College in Dallas, Texas.

Developed seven years ago



Lloyd T. Bowser

by the National Urban League, BEEP offers black college and university students a first-hand view of business and industry. To date, more than 40,000 students have been exposed to current and future business practices and patterns.

BEEP's Personnel Management lecture series which is co-sponsored by the Business Department at Bishop College uses black professionals chosen from 400 major corporations and government agencies.

BEEP courses are designed to demonstrate to students that theory and practical experience are equal survival essentials in the business world.

Bowser has been a Goddard employee for two years. Prior to that, he held positions with

AT&T, and Sinai Hospital in Baltimore. He graduated from Morgan State University where he earned a bachelor's

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Satcom . . . From Page 1

Originally, the launch was scheduled for Thursday, March 25. However, due to a problem with a gyro in the spacecraft, the launch had to be pushed back one day.

The first RCA Satcom was launched on a Delta last December. The satellite is currently in a geosynchronous orbit at 119 degrees W. Longitude (due south of Los Angeles) above the equator. The

RCA-Satcom-II is in a similar orbit at 128 degrees W. Longitude.

Goddard had responsibility for the Delta launch vehicle and the tracking network required to accurately place the RCA-Satcom-II in its initial transfer orbit.

All launch costs incurred by NASA, including the vehicle hardware and launch services, will be reimbursed by the RCA Corporation.

FLYERS FOCUS ON AVIATION FUNDAMENTALS

Goddard's Flying Club was created to provide employees with information and services relating to the aviation field. This includes training courses, lectures, meetings and materials necessary for developing and maintaining skills to exercise the privileges of a pilot's license.

The club activities are designed to fill every individual member's needs while he or she is seeking an FAA license or rating.

One activity that is fundamental in the "making of a pilot" is the Ground School. The flying club sponsor's ground school courses at Goddard for the private pilot, commercial and instrument ratings.

The club also sponsors speakers and seminars relating to air safety, technical and meteorological subjects, tailored to enhance the member's proficiency and understanding

of the pilot-in-command responsibility.

Club members can procure materials such as aeronautical charts, flight computers and many in-flight devices at a discount.

However, the club's activities don't always revolve around work and training. Members participate in fly-ins to nearby and out-of-state places for fun, food or sight-seeing. Some field trips are made to FAA tower and air-traffic control facilities to acquaint family and friends with those "unsung heroes" operating radar and tower equipment.

The club recently developed a decal, which was the result of a contest in which prizes were given for the insignia best representing the club's activities.

The club not only encourages all aspects of powered flight but has also looked into hang-gliding, scale-model flight and aspects of flight, from kites to boomerangs.



Flying Club members cluster around their rental aircraft.

Bowser . . . From Page 2

and master's degree in Business Administration. He also received a MED in Administration from Air University in Montgomery, Alabama.

Awarded a Senatorial Scholarship, and a Ford Motor Company Scholarship, Bowser authored several articles relating to health care, and is a member of the Board for the North Baltimore YMCA, North Central Youth Services Bureau and the Senatorial Scholarship Review Committee.

In commenting on the BEEP program, Bowser explained that Bishop has only seven full-time business administration professors. They need the professionals to come in to share their experiences.

He said that the students really turn out for these sessions. Their primary concern was what problems they would face when they were in managerial positions. Bowser feels that the BEEP program is a very effective one.

Speakers Satisfy Information-Seekers

Members of the Goddard Speakers Bureau stand up before groups, look them right in the eye, and tell them how it is.

Within the past couple of years the number of speakers has been expanded, training has been provided, new speeches, slide presentations, and speech blocks have been prepared.

There are approximately thirty members of the Speakers Bureau, covering a 12-state area from West Virginia to Maine.

Although speakers are available for presentations on numerous topics, most groups are interested in what NASA is doing now and future plans. Two topics that are becoming exceptionally popular are the Viking and Space Shuttle missions.

Closed circuit television and TV tape cassettes are being

PROTECT YOURSELF

Personal attacks and thefts of both personal and government property are two crimes which the Federal Protective Service believes can be reduced if employees follow certain precautions at work and at home.

Some suggestions on how to avoid attack at work are: use an

elevator whenever possible and don't risk attack in a poorly lighted stairwell; stand next to the elevator control panel and if threatened, push the alarm button; never leave keys in coat pockets; when working late notify the building security officer before leaving the office so he'll know when to expect you in the lobby; and be sure to report any suspicious persons or actions in your building.

If a federal employee is robbed at work, he should notify a Federal Protective Officer or the building security officer as soon as possible. In GSA controlled buildings, a GSA Form 182 will be provided to report the theft.

Use of common sense is the greatest deterrent against crime, the Federal Protective Service advises. People who take foolish chances such as taking short-cuts through dark alleys and believe that "it will never happen to me," are easy victims.

Goddard exceeded its Combined Federal Campaign goal for the fourth consecutive year in 1975. The center contributed \$167,047 to CFC national agencies, plus \$13,389 to the CFC of central Maryland. The GSFC goal was \$165,000. Center director John F. Clark chaired the successful campaign.

used as training devices. These permit speakers to prepare for a presentation and select their subject matter and visual aids by watching a presentation in progress.

One problem that plagues the Speakers Bureau is a lack of funds, according to Chairman Bill Watson. At the present time the group requesting the speaker must pay travel expenses. In 1975 the Bureau averaged about six speeches per month. Watson feels that this number would be greatly expanded if travel funds were made available.

The speakers are all Goddard employees from different areas of the Space Flight Center. Their reward is the satisfaction of a job well done.

The Speakers Bureau is always looking for new members to join their ranks. Anyone interested should contact the Office of Public Affairs.

SPACE TECHNOLOGY AIDS COMMUNITY WATER MONITORING SYSTEMS

Techniques developed by NASA to detect microorganisms in water systems on manned spacecraft are now prepared to spot harmful bacteria in the treated water of American cities.

The new processes are to be incorporated in a system NASA is developing to electronically monitor water quality. It is one of several space-related technological advances that will help maintain a constant watch on water pollutants.

Johnson Space Center, with its contractor, the Boeing Company, is building a trailer-mounted Automated Water Monitoring System to be evaluated beginning in June. The year long experiment will be conducted initially in cooperation with the Gulf Coast Waste Disposal Authority, which is responsible for sewage treatment in three Southeast Texas counties—Harris, Galveston and Chambers.

During its first application, the electronic system will be used to monitor the quality of treated water for such ingredients as dissolved oxygen, total oxygen demand, total organic carbon, bacteria, chlorides, residual chlorine, ammonia, nitrate, total nitrogen, sodium, water temperature, turbidity, conductivity, hardness and acidity or alkalinity. The Automated Monitoring System can be adopted to process data from as many as 40 individual water sensors. In the initial evaluation, 20 commercially available sensors and

four NASA developed sensors will be used.

At present, cities monitor a smaller number of elements representing water quality by taking samples at regular intervals and sending them to a laboratory for analysis. In some cases, such as the measurement of biological activity, results are not obtained until days later.

Biological sensing now is considered to be the weakest element in water quality monitoring. NASA field centers also are developing sensors designed to rapidly detect and identify living organisms in water.

By adding chemicals which cause bacteria to radiate light, researchers at Goddard Space Flight Center and Johnson Space Center have developed a sensor to give total bacteria count directly. The purpose of this bio-sensor is to detect and quantify bacteria cells, both living and dead, in a continuous flow water sample streams.

Total automated water monitoring also includes a method to detect fecal coliform bacteria, currently the accepted indicator of bacterial contamination in water. Scientists at Langley Research Center developed a device able to detect human and non-human fecal coliform bacteria in a few hours rather than days. The electronic sensor, developed as a byproduct of early Skylab environmental control systems technology, when operated as part of the computerized monitoring sys-

tem would permit health authorities to act promptly in the event large quantities of disease-producing bacteria are introduced into the water supply.

The new water monitoring system eventually will include an instrument designed to rapidly and automatically detect organic chemicals known to produce cancer in laboratory animals. The Environmental Protection Agency (EPA) found one such chemical, chloroform, in the drinking water of all 80 cities included in a recent survey. Ten of the cities also had carbon tetrachloride, a strong solvent used in cleaning, in their drinking water.

Chloroform and a number of other potential cancer producers found in water supplies are believed to be byproducts of chlorine, which is added to city water to prevent typhoid, cholera, dysentery and other water-borne diseases. EPA now is seeking to determine the health risk produced by these small quantities of chemicals in city water.

Meanwhile, Ames Research Center is assembling a new gas chromatograph technique—originally developed to extract minute quantities of organic materials from the atmospheres of other planets—to concentrate these chemicals for analysis. Although this can be done by other means in a laboratory, the NASA technique will permit rapid on-the-spot chemical analysis as part of the automated water monitoring system.

Ames Center also is conducting research on another technique, designed as a method of detecting life in space, which might be applied to the detection of viruses in water. In this process, fluorescent dyes are attached to bacteria so that electronic sensors can automatically detect and record their presence. Work is now underway to determine whether dyes may also be attached to the much smaller viruses so they may be rapidly and inexpensively detected in water.

'SECOND GENERATION'



Goddard Deputy Director Dr. Robert S. Cooper, and numerous employees participated in the making of the Goddard Space Flight Center Bicentennial film, "Second Generation." The film will highlight Goddard's role in the national space program, especially in science, applications, and the worldwide tracking network.

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