GODDARD NEWS

March 10, 1969 Vol. 16, No. 12

DR. THOMAS O. PAINE

MR&D: Home of Materials for Space Research

The Materials Research and Development Branch (MR&D) has tested just about every substance used by Goddard's spacecraft projects. The Branch's laboratories located in Building 22 conduct a wide range of research including failure analysis of materials for individual satellites and the manufacturing and processing of such complex items as laser crystals for tracking systems.

Dr. Henry Frankel, Head of the Branch, says, "Our mission is the prevention and diagnosis of failures that result from incorrect choice of materials and materials processing. Much of our work is devoted to research and development of new materials and techniques for future use in experiments, spacecraft and launch vehicles."

The MR&D program dates back to 1960 when Dr. Frankel came to

(See Page 6.)

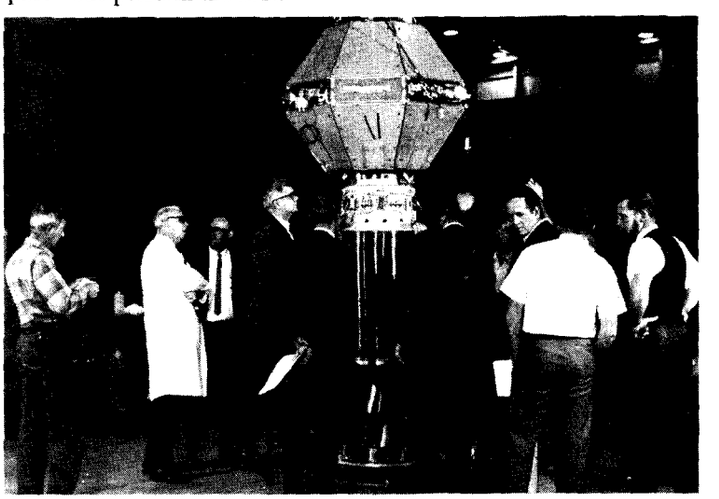
PEDRO SARMIENTO and Ernie Mielke operate the Electronic Material Section's Electron Microscope to determine the size of iron oxide particles.

Dr. Paine Named NASA Administrator

Last week, President Nixon announced that he had named Dr. Thomas O. Paine as the new NASA Administrator.

The President said that he had searched the whole country to find the best man to lead the space program, and, as sometimes happens, found him already in the National Aeronautics and Space Administration. Paine has been Acting Administrator since the retirement of James E. Webb last October.

Paine, 47, who had a long career in industry research, said he was "very pleased and very touched" by the President's confidence in him and said he believed "this country should be the pre-eminent nation in space-faring," and he promised to try to make the second decade in space "out perform the first."



THE ISIS spacecraft is mounted to the third stage of the Delta launch vehicle.

ISIS-A Successful In First Month of Orbit

Despite the rain and mud during the recent California flooding, the ISIS-A spacecraft was successfully launched January 30, 1969 aboard a Delta vehicle from the Western Test Range. Key to launching on schedule was the spirit of cooperation and participation by Canadians in the clean-up operation of not only the Spacecraft Ground Support Area but other WTR facilities as well.

ISIS (International Satellite for Ionospheric Studies) is a joint NASA and Canadian Defense Research Board (DRB) project managed for NASA by Goddard and for DRB by the Canadian Defense Research Telecommunications Establishment (DRTE). ISIS-A is the third of five satellites planned in the ISIS program. Program objectives are to develop a better understanding of the physics of the ionosphere through a series of measurements to be taken during a major portion of a solar cycle.

The 532 pound satellite carries ten experiments including sounders, a VLF receiver, and direct measurement detectors.

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ISIS ... From Page 1.

ISIS control area at WTR near the end of the clean-up operation and shortly before the launch. From left are Bob Cox of RCA Co., Ltd., Joe Swartz of WTR, and E. Dale Nelsen, Goddard's ISIS Project Manager. Mrs. James Middleton, wife of a member of the RCA Co., Ltd., spacecraft crew, uses an air jet to dry out ground support equipment, after the mud has been washed off. The water and mud in this area "crested" at about 18 inches above the floor.

DRTE's Jack Matsuchita and Jeffrey Else, and David Florida, Canadian ISIS Program Manager, use improvised sweeps to clean out the high bay service area at WTR.

Charles Gunn Honored

Charles Gunn (left) is congratulated by William Schindler, Delta Project Manager.

Charles R. Gunn, Technical Director of Goddard's Delta Program, received the Washington Academy of Science's Annual Award for Scientific Achievement in Engineering Sciences at an annual awards dinner February 20, 1969, at the Cosmos Club. Dr. John F. Clark, Goddard Director, gave the Presentation Speech, and Dr. Malcolm C. Henderson, President of the Washington Academy of Sciences presented the award to Mr. Gunn.

Mr. Gunn came to Goddard in September of 1960 from the Langley Research Center where he was an Aeronautical Research Engineer. As a member of the Delta Team, he has been instrumental in the program's outstanding launch record that now stands at 64 orbits out of 67 launches.

A graduate of the University of Michigan, Mr. Gunn received his B.S. degree in 1956 and his MS degree in 1957 in aeronautical engineering. He has completed half of his credits towards a Ph.D in physics at the Virginia Polytechnic Institute.

Mr. Gunn is a member of the American Rocket Society and a sports enthusiast when he has time.

He and his wife Meredith have five children: Charles, one; Barbara, five; Meredith, six; Patty, nine; and Kimberly, eleven.

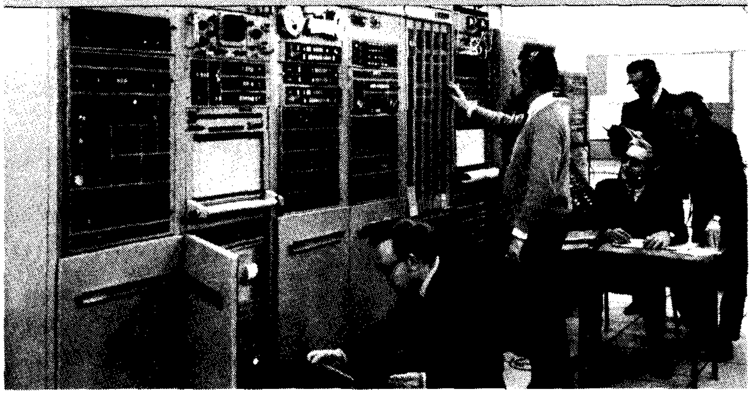
The family lives in Potomac, Maryland.

Borman 'Thanks' London NASCOM

AN ASTRONAUT's "thank you" went to Goddard's London Switching Center when Apollo 8 spacecraft commander Frank Borman (left) presented NASA's Group Achievement Award to Station Manager Jim W. McDowell (right) and staff. The award was presented while Col. Borman was on a recent tour of key European cities. It recognizes the outstanding performance of the Manned Space Flight Tracking Network and of the London Switching Center.

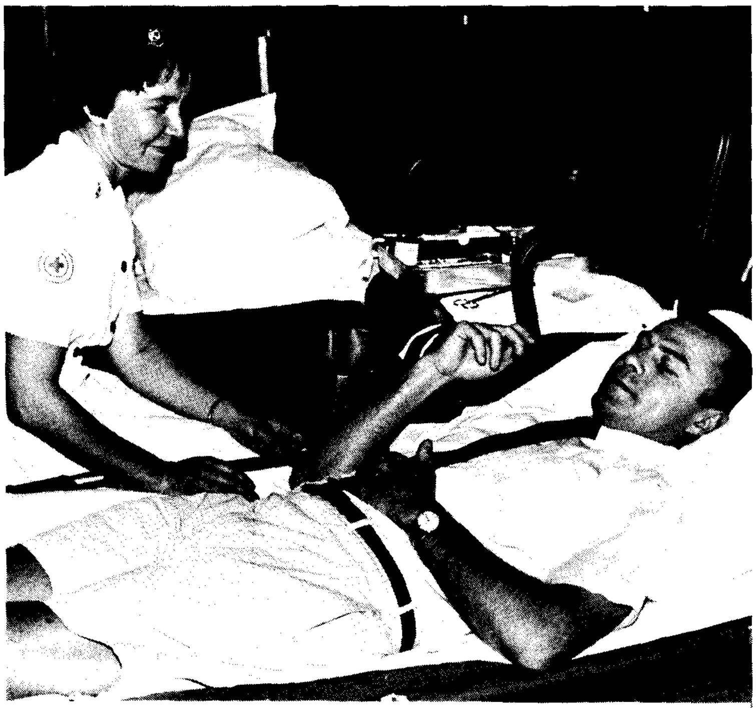
THE LONDON Switching Center team is R. Morris, Assistant Center Supervisor; H.F. Hynd, Center Supervisor; Astronaut F. Borman, J.W. McDowell, Station Manager; P.F. French, D.F. Wellington. Middle row: E.G. Welden, S. Elkin and A. Prior. Back row: T.H. Blake, R.A.J. Curry, T. Ebert, E.V. Neighbour, J.C. Dreezer, A. Heron, and W. Readman.

GODDARD AROUND THE WORLD

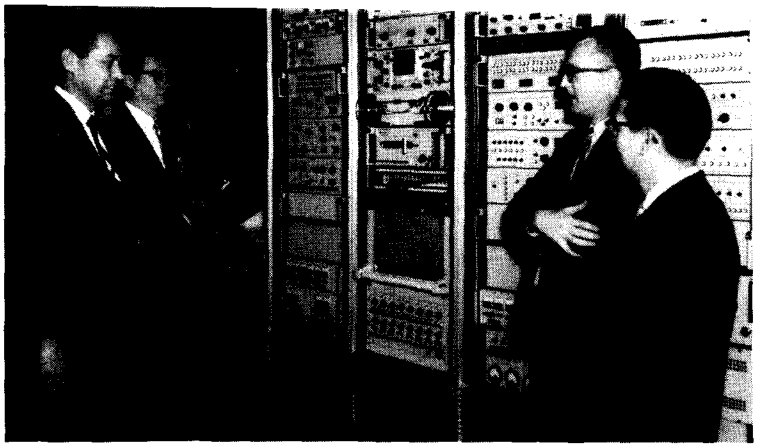


WINKFIELD, ENGLAND (STADAN). Early orbit data is read out during the launch phase of the ISIS spacecraft, January 30, 1969. From left are D. Collyer, Quality Control; M. Purvis, PCM Operator; J. McNally, RCA Victor spacecraft Evaluator; J.R.E. Kenyon, Operations Supervisor; and K. C. Bevan, Deputy STADIR.

MOJAVE, CALIFORNIA (STADAN). David Anderson, Bendix Station Manager, receives the Bendix Plaque for outstanding station operational efficiency from J. Len Helms, Bendix Vice President and Group manager for the Aerospace Systems Group. Robert Schaffer, Vice President of the Bendix Field Engineering Corporation; and Richard Waetjen, NASA Station Director; look on. The award recognizes Mojave for outstanding operation for the final quarter of 1968. This is the first time the station received the award.



BERMUDA (MSFN). Keith Hall, Assistant M&O, donates blood to the Bermuda Branch of the British Red Cross Society. A mobile unit visited the station, set up in the conference room, and processed thirty donors from the staff. This was the third annual visit to the station. Station Director is Fred A. Healy.



NEW PCM Data Handling System is shown at Goddard as it undergoes acceptance tests with the DDP-516 computer. From left (foregound) are Gilbert Becklin, Henry Franks, Head of the Data Handling Section and Technical Officer for the Project; Bill Adams, Dynatronics Project Engineer; and Gus Alicea. With the computer at back are Morton Frank (standing) and Don Eckel.

New STADAN Data Handling System

The Data Handling and Display Branch is working on a new Pulse Code Modulation-Data Handling System (PCM-DHS) that will be the first fully integrated circuit system in the STADAN. The PCM system was built for Goddard by Dynatronics and is being shipped along with a Honeywell DDP-516 computer to the Santiago, Chile tracking station in time for the launch of the Ames Research Center's Biosatellite-D (BIOS-D) early in May.

The new automated system has the capability of providing all the real time display for all existing PCM spacecraft presently supported by STADAN and all future spacecraft for which requirements exist at this time. This system is also used with existing Data Transmission Systems, and can accommodate spacecraft whose rates fall within the bandwidth of the communications links to Goddard. It can also strip out high speed data for transmission back to Goddard.

This system together with a similar system being implemented at the Quito, Ecuador STADAN station will permit BIOS project personnel at Goddard to monitor either the spacecraft housekeeping data or, by means of a sense switch option, to monitor the well-being of the primate aboard the spacecraft. The above data is stripped out of the 22.4 kilobit spacecraft data stream and transmitted to Goddard over a 2.4 kilobit communications link.

ATS Apollo 9 Support

Goddard's versatile ATS satellites will truly live up to their nickname "triple threat" spacecraft during the Apollo 9 mission.

ATS-I and ATS-III will provide meteorological, communications and scientific support for the earth orbital flight.

The support is as follows: Meteorological pictures from both ATS-I and III; "Live" video and audio of splashdown in the Atlantic (ATS III); and Emergency VHF voice communications (ATS I and III) for the Apollo tracking ships and the prime recovery aircraft carrier, USS Guadalcanal.

GODDARD NEWS is published monthly by the Public Affairs Office of the Goddard Space Flight Center, National Aeronautics and Space Administration, Greenbelt, Md. 20771.

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Dr. Ness Receives Flemming Award

DR. NORMAN F. NESS (left) receives the Arthur S. Flemming Award from Thurgood Marshal, Associate Justice of the United States Supreme Court.

Dr. Norman F. Ness, Head of Goddard's Extraterrestrial Physics Branch (LSS), was among ten outstanding American men who received the Arthur S. Flemming Award at a special luncheon held February 13, 1969, at the Mayflower Hotel.

The awards are presented yearly by the District of Columbia Junior Chamber of Commerce to honor outstanding young men in the Federal Government and to recognize exceptionally meritorious work. At the luncheon, the award winners were introduced by Dan Rather, CBS White House Correspondent; the Welcoming Address was given by Theodore S. Chaconas, President of the Downtown Jaycees of the District of Columbia Junior Chamber of Commerce; the Address was given by Robert H. Finch, Secretary of Health Education and Welfare; and Thurgood Marshall, Associate Justice of the U.S. Supreme Court, presented the awards.

Dr. Ness, a member of Goddard's staff since 1961, was honored for: "His significant contributions to the description and understanding of the interplanetary medium and the interaction of this medium with the earth and other large bodies, which has been accomplished through his work on a program involving a series of Explorer class satellites."

At Goddard, Dr. Ness is noted for his work on such satellite projects as the Interplanetary Monitoring Platforms (IMP's). He is Project Scientist for Explorers XXXIII, XXXV, and IMP's H and J as well as Principal Investigator for magnetic field experiments on numerous Explorer and Pioneer spacecraft.

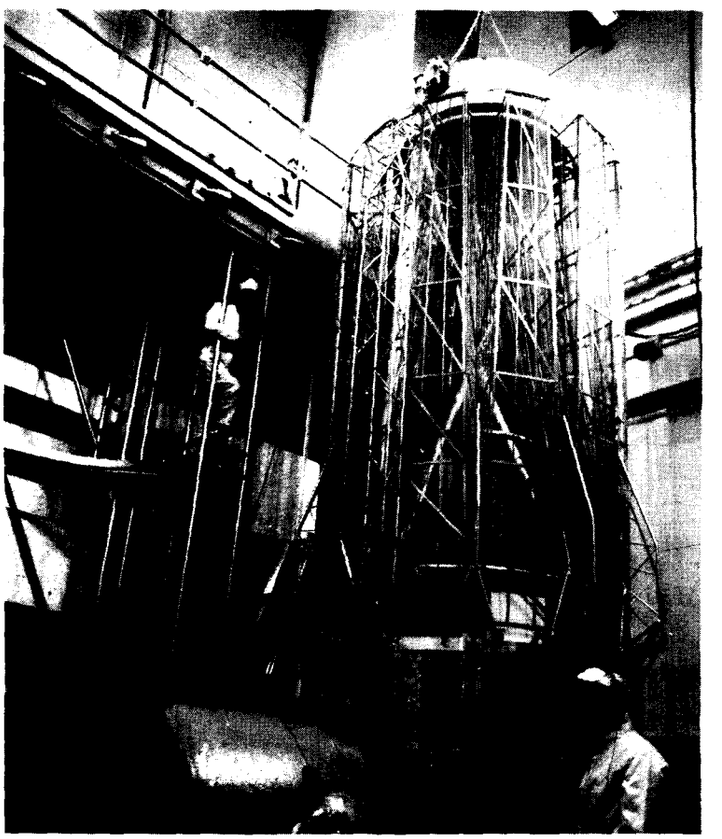
Among his scientific contributions are: His work which established experimentally the existance and shape of the magnetohydrodynamic shock wave and transition region surrounding the earth; his work which established the existance of the earth's magnetic tail with its neutral sheeth.

Dr. Ness received his Ph.D. in geophysics from Massachusetts Institute of Technology in Cambridge.

He and his wife Amelia have two children: Elizabeth Ann, 10; and Stephen Andrew, 8. He lives in Silver Spring, Maryland.

THE FLEMMING AWARD is displayed by Dr. Ness and his wife Amelia.

ATS F Tested Here



FUTURE SATELLITE. The structural model of an advanced Applications Technology Satellite (ATS F) is shown following two weeks of vibration testing at the T&E facilities in Building 7. T&E Program Engineer Frederick J. Lindner is right and Jim Gibson is left. ATS F, set for launch in 1972, and ATS G, set for 1973, are the first of a new generation of ATS that will carry a variety of scientific, technical, meteorological, and communications experiments. The satellites dish antenna shown folded here, will extend to a diameter of 30 feet when fully deployed. Harry L. Gerwin is ATS F and G Project Manager.