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National Aeronautics and Space Administration • Ames Research Center, Moffett Field, California

Charles Hall-Golden Plate Award

Ames Research Center's Charles Hall was recently awarded the prestigious "Golden Plate" for outstanding achievement. Hall was among fifty persons selected nationally by the Academy of Achievement, a non-profit organization which seeks to bring American youth into contact with adults who have made significant contributions in their fields. Recipients included such celebrities as Colonel Sanders, Willie Mays, Jim Nabors, and Werner Von Braun.

Mr. Hall, an Ames employee since 1942, was nominated by NASA's Dr. Fletcher for his work as Project Manager of Pioneers 10 and 11. The Pioneer spacecrafts have provided scientists with basic information about the environment of Jupiter, including the first close-up photos to have been taken of the planet. Pioneer 10, which determined the severity of radiation in Jupiter's environment, receiving about 50 times the lethal dose for human beings, will be tracked until 1980, when it will disappear from our solar system. The spacecraft will be approximately two billion light years from earth before contact is lost! Pioneer 11 is heading for Saturn, and is expected to arrive in 1979.

"It's an exciting job," says Mr. Hall about his work as Pioneer Project Manager. "There's never a dull moment and there's always a new challenge every day." Trained in engineering at U.C. Berkeley, Hall was involved in aerodynamic research before becoming interested in the solar probe project in 1960. The solar probe evolved into an interplanetary monitoring project and Hall has taken an active part in the Pioneers ever since. "It's always satisfying to work towards a single objective for several years and then have it realized," he says. Though Hall has never attended a Pioneer launching personally, "I'd have to be a corpse not to be excited."

Being Pioneer Project Manager has included several hair-raising moments. One of these moments occurred when a Radio Isotope Thermoelectric Generator failed to deploy on Pioneer 11 because of an unexpected mechanical malfunction. Commands had to be sent to shake the spacecraft loose from a bent rod. Another threat to Pioneer 11 was an unexpected strike called by the workers on an Australian station vital to the project. Hall and his colleagues had only thirty minutes notice in which to re-plan the mission so it could continue. Perhaps the worst moment in Pioneer history was the fate of Pioneer 5, which turned 1-3/4 times in the air during the second stage of launching and proceeded to head for Brazil. Part of the spacecraft had to be blown up two minutes after launching and now rests in the Atlantic Ocean. "That kind of thing takes a lot out of you," Hall comments.

How does he keep calm when faced with such awesome responsibility? "The important thing is to figure out the problem and to get a solution as quickly as possible – though sometimes it gets awfully frustrating. You hope for the best and prepare for the worst."

Wind Tunnel Accident

An accident at Ames Tuesday evening, August 5, resulted in extensive damage to one of the major wind-tunnel facilities.

At approximately 9:40 p.m., during a routine test in the center's three-and-one-half-foot hypersonic wind tunnel, a steel flange apparently failed, resulting in an explosion-like release of high pressure air. The blast of air scattered hundreds of 3/4-inch aluminum oxide pebbles heated to 1600° F over a wide area, starting several fires.

The fires caused only minor damage, but the blast itself caused major damage to the facility. Injuries were limited to a scratched nose suffered by a workman as he dived under a desk.

The 3-1/2 foot hypersonic wind tunnel is of the closed circuit, blow down type. Test air at 1800 psi (pounds per square inch) is heated by a storage heater which consists of a bed of aluminum oxide pebbles which are heated in turn by a natural gas heater. The tunnel normally operates at test velocities of up to Mach 14 (14 times the speed of sound) and will accept models of up to approximately 3-1/2 feet in cross section.

Extent of the damage and the length of time the facility will be out of service have not been determined.

An investigation board has been formed. The board will review the events leading to the incident, determine the most probable cause and make recommendations to guard against a recurrence.

NASA/ISRO transmit programs to India

A one-year experiment began August 1 by the Indian Space Research Organization (ISRO) and NASA in use of a space satellite to transmit instructional television programs to thousands of isolated villages throughout India.

The spacecraft is NASA's Applications Technology Satellite-6 (ATS-6), the largest and most powerful communications satellite ever developed. It is positioned 35,900 kilometers (22,300 miles) over east Africa and controlled from Goddard Space Flight Center, through a ground station in Spain.

The programs, produced by India, stress improved agricultural techniques, family planning and hygiene, school instruction and teacher education and occupational skills. Some four hours of broadcasts a day are scheduled.

About half the 5,000 villages in the experiments are equipped with TV sets augmented by converters and small antennas to receive the signal directly from ATS-6. The others receive the signal after it is rebroadcast from a ground terminal in the area.

NASA responsibilities in the Satellite Instructional Television Experiment (SITE) include provision of operating time on the ATS-6 communications system as well as positioning and pointing of the spacecraft.

All other aspects of the experiments, including the design, development and maintenance of the ground transmitting and receiving stations and all programming, are the responsibility of India. ISRO is producing all the hardware, while All India Radio (AIR) of the India Ministry of Information and Broadcasting has prime responsibility for the programming.

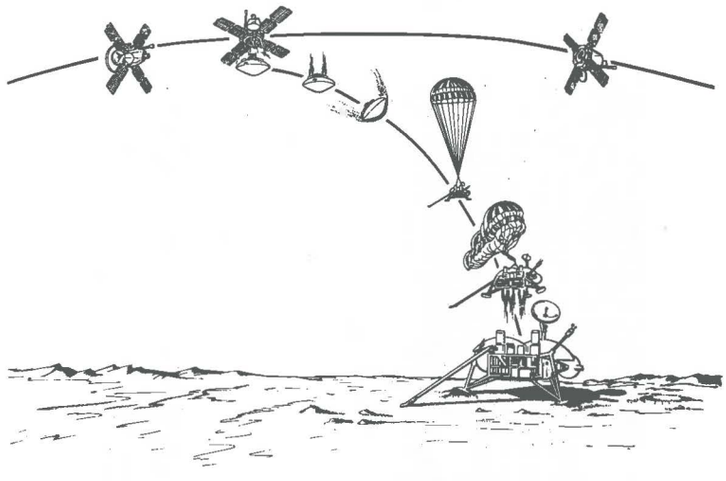
The primary Indian ground station for transmission is located at Ahmedabad and a secondary station is in Delhi.

During SITE, a number of experiments initiated during ATS-6's first year of operation in range of the United States will be continued. These include aeronautical and maritime communications, studies of atmospheric effects on radio transmissions and scientific investigations.

Also during the first year, following its launch in May 1974, the satellite carried out pioneering demonstrations of medical and educational TV transmissions, sponsored by the Department of Health, Education and Welfare and the Veterans Administration, to remote communities in Alaska, the Rocky Mountains and Appalachia.

After its year over Africa, ATS-6 will be repositioned over the Western Hemisphere for a third year of similar experiments.

Viking's approach to Mars



This artist's concept shows the sequence of events as the Viking spacecraft approaches the planet Mars in July, 1976. When it reaches the planet, each spacecraft divides into an Orbiter and Lander. Shown, left to right: Bioshield separation, Lander capsule separation, the descent, parachute deployment, terminal propulsion and entry to landing as the Orbiter circles the planet. Two Viking spacecraft were launched from Cape Canaveral – the first on August 11 and the second will go up on August 21.