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NASA HONORS ROGALLOS WITH LARGE CASH AWARD

Francis M. Rogallo and his wife, Gertrude S. Rogallo, whose innovations as kite-flying hobbyists sparked development of paragliders recently received the largest cash award ever made to inventors by the NASA.

Rogallo, who has been a scientist at the Langley Center since 1936 and is now Head of the 7-by-10-foot Tunnels Branch, Full-Scale Research Division, and his wife were presented \$35,000 by Dr. Hugh L. Dryden, Deputy Administrator of NASA, in ceremonies at NASA Headquarters on July 17.

Five other awards were made with ten people sharing in the amounts. All were recommended for the awards by NASA's Inventions and Contributions Board.

The Rogallos were selected for their two inventions covering the flexible-wing concept which contributed to the development of flexible wings that can be packaged and deployed.

The innovation has led to large-scale development work on paragliders by the NASA and the military services. It is estimated that NASA and the Army alone have more than a million dollars involved in these programs.

A version of the paraglider is being considered for use as the principal recovery system in later phases of the Gemini Program which will place two-man spacecraft in earth orbit for periods lasting up to two weeks.

The NASA Inventions Board explained that the Rogallos' award was based in considerable part on the Government's use of a privately-owned invention without any claim for royalties or a request for a license from the inventors. The Rogallos hold two patents, one issued March 20, 1951, and the other June 19, 1956.

Dr. Dryden, in his presentation statement, noted that the couple on their own initiative and expense "devised the vehicles, procured patent protection, reduced the invention to practice, and pursued continuous development to perfect the application of the principles involved."



In ceremonies held recently at Washington Headquarters Dr. Hugh L. Dryden, NASA Deputy Administrator, presented cash awards to NASA employees for their inventions and contributions. Left photograph - Dr. Dryden (left) presents checks totalling \$35,000 to Gertrude and Francis M. Rogallo whose innovations as kite-flying hobbyists sparked development of paragliders.

The Rogallos' ideas grew out of their hobby of kite flying. When they first approached Government agencies around 1950, they found no one interested. It was several years later that possible aeronautical and space applications were seriously considered.

Two Langley employees and a former employee shared a \$3,000 award for two separate inventions that together made possible the practical application of the variable sweep-wing configuration to supersonic aircraft, an important feature of the bi-service fighter-bomber TFX aircraft.

Receiving the award were William J. Alford Jr., Supersonic Transport Office, Full-Scale Research; Edward C. Polhamus, Assistant Head of 7-by-10-foot Tunnel Branch, and Thomas A. Toll, former Assistant Chief of Full-Scale Research Division at Langley and now Chief, Research Division, Flight Research Center, Edwards, California.

Robert V. Hess, Head of the Plasma Physics Section of the Aero-Physics Division, received \$1,200 for his invention of the "Hall-Current Plasma Accelerator," described as constituting "a pioneering advance in plasma and space technology." Plasma in this case refers to an ionized gas containing an equal number of negatively and positively charged particles.

Utilizing an electro-magnetic phenomena known as the "Hall Effect," the invention provides a continuous flow plasma acceleration with wide experimental and space flight applications.

An award of \$1,000 was made to Curt P. Herold, Deputy Chief Launch Equipment Branch, Launch Operations Center, Cape Canaveral, for invention of a "multiple quick disconnect." It is widely used just prior to firing a launch vehicle to switch all electrical systems from the ground supply to the vehicle's own power source.

A patent was issued to Herold on March 13, 1962, and the United States retains a royalty-free license to the invention for all governmental purposes.

A \$1,000 award went to Elden C. Whipple, a physicist at Goddard Space Flight Center, for an improved method and apparatus for determining the orientation of a space vehicle in flight. The system utilizes three vectors-- velocity, magnetic field intensity, and solar radiation. It represents a considerable advance over previous sensor systems which generally depend on the visibility of a light source. Extremely simple in design, the Whipple system does not rely on any single quantity or on the vehicle's position relative to the shadow of the earth.

Selected for \$5,000, to be divided equally, were Walter K. Victor and Dr. Eberhardt Rechtin of the Jet Propulsion Laboratory, Pasadena, California, for "translating theory into practice for a system of deep space communications."

The development has found application in numerous manned and unmanned space projects as well as in military systems. NASA officials consider that the successful Mariner II fly-by of Venus last year would not have been possible without the system.

Two non-NASA employees honored were Andrew J. Kubica and Noah S. Davis for the invention of a decomposition unit. They shared a \$1,500 award. At the time of the invention, they were employed by the Food Machinery and Chemical Corp., in subcontract work on the Mercury Program space capsule. They are now employed by the Rocketdyne Division of North American Aviation Inc., Canoga Park, Calif.

Their invention is used to decompose hydrogen peroxide to provide jet thrust. The pair is credited with contributing a "new concept in catalytic pack design" for use with thrust units which give "reliable starts that were impossible with older units."