

IN MEMORIAM

Mark Morton

National Reconnaissance Pioneer

National Reconnaissance Pioneer Mark Morton died on April 12, 2005, in West Brandywine, Pennsylvania at the age of 92. The National Reconnaissance Office (NRO) honored Dr. Morton because of his pioneering work that developed the satellite recovery vehicle (SRV) for Corona, the first photoreconnaissance satellite. Corona's SRV and other follow-on film recovery satellite systems provided overhead reconnaissance imagery that was vital to U.S. national security during the Cold War.

As General Manager for the Reentry Systems Department at General Electric (GE), Dr. Morton supervised engineering teams that designed, fabricated, and tested the reentry vehicle. The revolutionary idea of returning film images taken from satellites in a reentry capsule might never have been realized without the design that Dr. Morton and his General Electric (GE) team devised. Prior to their work, no satellite recovery vehicle (SRV) had previously been recovered from space.

The Corona SRV needed to gather the exposed film and eject with its own rocket system, maneuvering into a predictable recovery trajectory. The SRV also needed to be able to withstand tremendous heat and deceleration forces upon reentry into earth's atmosphere. After reentry, the SRV would deploy a parachute, controlling its descent enough to allow mid-air

recovery by a specially-modified aircraft. This recovery solution demonstrated its viability on Discoverer XIII. This mission successfully returned from space an American flag in the SRV reentry capsule. Following a similar sequence, recovery crews retrieved from mid-air more than 140 capsules with film during Corona's operational lifespan, 1960-1972. The CIA also recognized Dr. Morton for this important contribution to intelligence during a ceremony at CIA in 1985 (Morton, 2000).

Dr. Morton's national reconnaissance work commenced after he joined GE in 1956. He rapidly advanced through the corporate hierarchy, attaining the position of General Manager of the Reentry Systems Department in 1962, Vice President of GE and head of Missile and Space Division in 1968, and Senior Vice President of GE and head of GE's Aerospace Business in 1969. Over this time period, he supervised teams responsible for developing reentry systems for Air Force Ballistic Missile Programs, National Aeronautics and Space Administration satellites, and satellite recovery systems such as the Biosatellite and Earth Resources Satellite.

From 1958 until his retirement from GE in 1978, he worked on a variety of other projects, including global radar systems, avionics systems, environmental and oceans technology systems, and manned space systems such as Apollo and Skylab.

Dr. Morton was present at the command center, Cape Kennedy, in 1968 when Apollo VIII launched to the moon. In 1969, NASA presented him with a Public Service Group Achievement Award in connection with Apollo XI, the first mission to land men on the moon (Philadelphia Inquirer, 2005). Presidents Nixon and Carter both gave Morton commendations separately, in 1970 and 1977 (CSNR files).

Dr. Morton was born 1 January 1913 in Atlantic City, New Jersey. He earned a bachelor's degree in mechanical engineering from the Guggenheim College of Aeronautics at New York University. He received his doctorate in aeronautical engineering from Rose-Hulman Institute of Technology in Terre Haute, Indiana (Philadelphia Inquirer, 2005).

From the late 1930s through the Korean War, Dr. Morton developed pilotless aircraft, guided missiles, and special classified projects as an engineer with the Naval Air Development Center. He received many US Navy commendations for outstanding service during World War II (Philadelphia Inquirer, 2005).

Throughout his career, Dr. Morton lectured about the importance of science programs in public school education. He received many awards for his community activism, including, in 1973, the Opportunities Industrial Center's Pathfinder Award for his work on behalf of minorities and the disadvantaged (Philadelphia Inquirer, 2005). His championing of educational programs never abated.

A year after being honored as a pioneer, Dr. Morton donated to the NRO the

bottom portion of a Corona film return bucket. This artifact, which is on display in the Visitor's Center at the NRO Westfield's complex, stands as further testimony to the dedicated career of this national reconnaissance pioneer.

References

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- Morton, Mark. (2000). The Struggle to Recover Corona Film. In Robert McDonald (Ed.), (2002), *Beyond Expectations—Building an American National Reconnaissance Capability: Recollections of the Pioneers and Founders of National Reconnaissance* (pp. 139-145). Bethesda, MD: American Society for Photogrammetry and Remote Sensing.