



Eugene E Covert

EUGENE E. COVERT

1926–2015

Elected in 1980

*“Contributions to aerodynamics, aeronautics, education
of engineers, and the national security.”*

BY EDWARD M. GREITZER,
WILLIAM T.G. LITANT, AND
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EUGENE EDZARDS COVERT, a renowned aerodynamicist, aerospace engineer, and engineering educator, passed away January 15, 2015, at age 88. His career spanned research, teaching, and public service. He is credited with developing the world’s first practical wind tunnel magnetic suspension system, he served on the commission that investigated the destruction of the Space Shuttle *Challenger*, and he received the Daniel Guggenheim Medal, one of the most prestigious awards in aviation.

Gene was born February 6, 1926, in Rapid City, South Dakota, to Perry and Eda (née Edzards) Covert. He received his bachelor of aeronautical engineering at age 20 from the University of Minnesota and immediately went to work for the Naval Air Development Center, Pilotless Aircraft Division, on projects that resulted in the Sparrow, the West’s primary air-to-air missile from the 1950s to the 1990s. In 1948 he completed his master’s degree, also in aeronautical engineering at the University of Minnesota.

In 1952 he joined the Department of Aeronautics and Astronautics (AeroAstro) at the Massachusetts Institute of Technology as a research engineer in MIT’s Naval Supersonic Laboratory. He also enrolled in the department’s graduate program and earned an ScD in 1958.

Throughout the 1950s he conducted experiments on numerous aircraft, including the F-4 Phantom. His interest in the problems of supporting models during these supersonic wind tunnel tests led him to develop the first practical wind tunnel magnetic suspension system, allowing enhanced fidelity in the simulation of free-flight conditions. In 1963 he became an associate professor and in 1968 a full professor in the AeroAstro Department.

In 1972–73 he served as chief scientist of the US Air Force, a three-star-equivalent civilian position, advising the Air Force secretary and chief of staff on science and technology issues. In 1978–79 he was technical director of the European Office of Aerospace Research and Development, based in London, before taking a position as director of the MIT Gas Turbine Laboratory (1979–84) and later the MIT Center for Aerodynamic studies. He was head of the AeroAstro Department (1985–90) and director of the MIT Wright Brothers Wind Tunnel after that. He became the T. Wilson Professor of Aeronautics in 1993 and professor emeritus in June 1996.

Gene's career included exceptional public service. He served on many NAS/NAE committees dealing with issues of aeronautics and space, and on the National Research Council's Aeronautics and Space Engineering Board, including a term as vice chair. He was also a member of the Air Force Scientific Advisory Board for a decade and a half, serving as its chair (1982–86) and leading its summer retreat activities in the mid-1990s. He was a member of the NASA Aeronautics Advisory Committee and the Office of Science and Technology Policy Review Committee. Other service included (this is by no means a complete list) membership, and then chairmanship, of NATO's Advisory Group for Aerospace Research and Development (AGARD) Power and Energetics Panel, and long association (over a decade) as a member of the American Institute of Aeronautics and Astronautics (AIAA) *Aerospace America* magazine advisory committee.

Of particular note was his appointment to the commission that investigated the January 28, 1986, Space Shuttle *Challenger* accident, when it disintegrated 73 seconds into its flight,

killing all seven crew members. Created by President Ronald Reagan, the commission was chaired by former Secretary of State William P. Rogers and its 14 members included Gene, Neil Armstrong, Richard Feynman, and Chuck Yeager. Its work resulted in a substantial redesign of the shuttle's boosters and the creation of a new NASA safety office.

One reason Gene's counsel was held in high regard in both industry and government was that he could not only integrate the facts into a coherent picture but see beyond them to the implications and thus suggest insightful ways to deal with potential issues. His contributions in public service were recognized by the 1992 AIAA Durand Lectureship in Public Service.

He was an honorary fellow of the AIAA and a fellow of the Royal Aeronautical Society and American Association for the Advancement of Science. He was a registered professional engineer in Massachusetts and a chartered engineer in the United Kingdom. He also served as a director for Allied Signal Corporation, Physical Sciences Inc., Rohr Inc., Research Support Instruments Inc., and the AIAA.

Among Gene's many honors were the AIAA's Reed Aeronautics Award (2010), Wright Brothers' Lectureship in Aeronautics (1997), and Ground Testing Award (1990), and the AGARD von Kármán Medal (1990). Additional honors included an Exceptional Civilian Service Award from the US Air Force (1973), University Educator of the Year from the Engineering Science Division of the American Society of Aerospace Education (1980), and a NASA Public Service Award (1981). He also received an Outstanding Achievement Award from the University of Minnesota in 2007.

At MIT Gene took a great deal of pride in his teaching, especially his interpretation of the material so that it was accessible to students. He was thus very pleased to receive the (MIT-wide) University Educator of the Year Award. This was for an aerodynamics subject that Gene viewed as important but that was, at the time, poorly attended. He took on the teaching of the subject, revamped the content and delivery of the material, and turned it into a success.

Gene identified a high point of his career as his selection for the Daniel Guggenheim Medal in 2005. Jointly sponsored by the American Society of Mechanical Engineering, AIAA, American Helicopter Society, and Society of Automotive Engineers, the medal recognizes those who have made profound contributions to advancing aeronautics. The committee cited his “exemplary leadership in aeronautics teaching and research, development of significant state-of-the-art aerodynamic testing techniques, and outstanding contributions to public service.”

In an interview after receiving the Guggenheim award, Gene reflected on his career and his philosophy of trying different things: “It was like being in a batting cage. I missed a fair fraction, but I took a swing at everything.” He went on: “My career was a set of building blocks. I learned something every step along the way.” He said that many of the steps “broadened,” and some were “broken,” but he gained in knowledge from every one.

Known as much for his dry wit as his technical abilities, he added, “In the course of my career, I have had the opportunity to visit many places in the United States and throughout the world, including the South Pole, where I have met many very friendly, intelligent, and interesting people. The exception was the North Pole, where we had to bring our own people.”

In a characteristic comment, when Gene learned that the AeroAstro Department was preparing a tribute to him in its annual magazine, he insisted it include a salute to his wife and family. “I could only have accomplished what I did by having a supportive wife and family. Their contribution [to my success] was as great as any. It’s important that that gets in.”

Gene’s wife of 67 years, Mary (Rutford) Covert, predeceased him by a year. They are survived by their children David H. Covert and daughter-in-law Rhoda (Arlington, MA); Christine J. Covert and son-in-law Gray Parrot (Hancock, ME); Pamela C. Spicer and son-in-law Richard Spicer (Franklin, MA); and Steven P. Covert and daughter-in-law Diane (Belmont, MA); four grandchildren; and three great-grandchildren.

