ROBERT L. SACKHEIM
1937–2013
Elected in 2000
“For contributions to space and missile propulsion technology and programs.”

SUBMITTED BY THE AMERICAN INSTITUTE OF AERONAUTICS AND ASTRONAUTICS, HOUSTON SECTION

ROBERT LEWIS SACKHEIM, former assistant director and chief engineer for space propulsion at NASA’s Marshall Space Flight Center in Huntsville, Alabama, died December 22, 2013, at age 76. He was born May 16, 1937, in Brooklyn, New York.

He earned a bachelor’s degree from the University of Virginia and a master’s degree from Columbia University, both in chemical engineering. He completed his doctoral coursework at the University of California, Los Angeles.

In the US Air Force (1960–64), he attained the rank of captain and was propulsion chief for the Titan II Development Launch Crew, responsible for the development, testing, and launch of the Titan II missile system.

Before joining NASA in 1999, Mr. Sackheim spent 35 years in a series of technical management positions at TRW Space and Electronics Group, then an operating unit of Cleveland-based TRW Inc. His first TRW job (1964–69) was as project manager for the Mariner Mars Propulsion Subsystem, a technology used for midcourse correction, trajectory control, and maneuvering on NASA’s Mariner 6 and 7 spacecraft. He then became project manager (1969–72) for the Intelsat IV Propulsion Positioning

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and Orientation System with COMSAT Corporation in Los Angeles.

From 1972 to 1986 he served in various engineering management roles at TRW Inc., including section head of spacecraft propulsion, assistant manager of the Hardware Engineering Department, and deputy manager of the Fluid and Combustion Systems Laboratory. In 1983 he was recognized for leading the propulsion team responsible for enabling the rescue of NASA’s Tracking and Data Relay Satellite (TDRS), Flight No. 1, a communication signal relay system that transmits to and receives data from spacecraft in low Earth orbit, including the Space Shuttle. TDRS was nearly lost in space in 1983 when its upper stage failed.

As TRW’s project manager for the Orbital Maneuvering Vehicle Propulsion Modules Project (1986–88), he oversaw its design, development, and operations planning. He was then deputy director of the Propulsion and Fluid Mechanics Center (1988–90), responsible for new propulsion, energy, high-energy laser, and fluid systems for space and defense applications.

From 1990 to 1999 he managed the TRW Propulsion and Combustion Center in Redondo Beach, California, and was responsible for the design, development, and testing of all new propulsion, combustion, and fluid systems products. In 1996–99 he led the TRW team responsible for the design, development, and flight qualification of the Chandra Integral Propulsion System, which successfully placed NASA’s Chandra X-ray Observatory—the world’s most powerful X-ray telescope—into its final operational orbit in 1999.

At NASA Mr. Sackheim served on the director’s executive staff and provided technical review in the areas of space propulsion and space transportation. He was a chief advisor for the Center on Propulsion Activities, including advanced technologies and space transportation for exploration, from 1999 until his retirement in 2006. At the time of his passing, he was a consultant to several aerospace contracting and government organizations.

In addition to his NAE membership, Mr. Sackheim was elected a fellow of the American Institute of Aeronautics and
Astronautics (AIAA; 1996) and a member of the International Academy of Astronautics (1997). He was also a member of Sigma Xi.

He was recognized with numerous awards and honors. At TRW, he was selected for three annual Chairman’s Awards for outstanding technical contributions to the corporation, and a TRW Patent of the Year Award in 1992. His other honors include the AIAA’s 1992 James Wyld Award, for outstanding technical contributions to the field of rocket propulsion, and, in 2000, both the Martin Schilling Award for outstanding service to the AIAA Alabama/Mississippi Section and the AIAA Sustained Service Award for outstanding contributions to the institute. He received 12 NASA Group Achievement Awards and, in 2001, the NASA Medal for Outstanding Technical Leadership in space propulsion. In 2002 the AIAA Alabama/Mississippi Section presented him with the Hermann Oberth Award, its most prestigious honor, for his outstanding scientific achievement in astronautics and space sciences. In 2003 he received the Marshall Center Director’s Commendation for outstanding service; the Presidential Rank Award for Meritorious Executive Service, presented to top government executives for their contributions in leading vital federal programs; and the AIAA Holger Toftoy Award for outstanding technical leadership in space systems. He also was recognized by l’Association Aéronautique et Astronautique de France (3AF) for “high quality contributions to the propulsion field.”

He served on numerous boards and councils. He chaired the AIAA Los Angeles Section (1996–98) and Alabama/Mississippi Section (2000–01), was appointed to the AIAA Journal of Propulsion and Power Editorial Advisory Board in 2001, and chaired the AIAA Liquid Propulsion Technical Committee in 2003.

He was also active with the National Research Council, as a member of the Committee for the Reusable Booster System: Review and Assessment (2012), the committees on Air Force/Department of Defense Aerospace Propulsion (2005–06), Space Shuttle Upgrades (1998–99), and Advanced Space Technology (1994–98), and in 1995–2005 he was appointed

At NASA he served on the Shuttle Independent Assessment Team, commissioned to review Space Shuttle systems and maintenance practices, and on the Mars Climate Orbiter Mishap Investigation Board, established in 1999 to determine the cause or contributing factors resulting in the loss of the orbiter, launched in 1998 to serve as a weather satellite and provide a communications relay for the Mars Polar Lander. He also served on the Mars Polar Lander Mishap Board, which investigated the loss of the spacecraft during its attempted landing on the Red Planet in 1999, as well as the Post-Columbia Accident Chief Engineer’s Team (2002) and Agency-wide Exploration Core/Blue/Red Architecture process teams.

From 1988 to 1999 Mr. Sackheim taught in the Engineering Extension School at UCLA. He became an instructor of short courses at the University of Alabama in Huntsville in 2003 and subsequently an adjunct professor of mechanical engineering.

He authored more than 250 technical papers and authored or coauthored chapters on rocket propulsion for four books on space propulsion, launch vehicles, and missiles. He held eight patents in spacecraft, launch vehicle propulsion, and control systems technology, including one NASA patent.

Robert Sackheim is survived by his wife, the former Babette Freund of New York City, now living in Madison, Alabama; their children Karen (Gary) and Andrew (Lindsey); and grandchildren Adam, Madison, and Benett.