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ISBN: 978-1-68405-828-0 21 22 23 24 4 3 2 1

TEXT BY SMITHSONIAN'S NATIONAL AIR & SPACE MUSEUM

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Special thanks to the team at The Smithsonian for all of their assistance and support.

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The Smithsonian's National Air and Space Museum maintains the world's largest and most significant collection of aviation and space artifacts, encompassing all aspects of human flight, as well as related works of art and archival materials. It operates two landmark facilities that, together, welcome more than eight million visitors a year, making it the most visited museum in the country. It also is home to the Center for Earth and Planetary Studies.

The publisher would like to thank The National Aeronautics and Space Administration, The National Oceanic and Atmospheric Administration, The New York Times, The Stafford Air & Space Museum, Spacefacts, Astronautix, Skyrocket, Cradle Of Aviation, The Coca-Cola Space Science Center, and Boeing for providing additional information.

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0	GODDARD 1935 A-SERIES ROCKET
	YEAR: 1935 INVENTOR/MANUFACTURER: Dr. Robert H. Goddard
0	COUNTRY OF ORIGIN: U.S.A. OVERALL DIMENSIONS: 15 ft 4 1/2 in. L x 1 ft W x 9 in. dia. (468.6 x 30.5 x 22.9 cm) WEIGHT: 85 lbs (39 kg)
	THRUST: 200 lbf (890 N) KEY ACCOMPLISHMENT(S): The liquid-fuel rocket Robert H. Goddard tried to launch in September
	1935 at his Roswell, New Mexico facility, attempting to demonstrate its capabilities to supporters Charles Lindbergh and Harry Guggenheim.
	The Guggenheim Foundation for the Promotion of Aeronautics funded Goddard's experiments in New Mexico. A technical problem prevented the flight, but because earlier A-series rocket launches had succeeded Lindborgh and Guggenheim felt Goddard was on the right track Lindborgh
0	thus persuaded Goddard to donate a complete A-series rocket to the Smithsonian, which he did in November 1935. This rocket became the first liquid-fuel rocket in the Smithsonian collections.
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WAC CORPORAL SOUNDING ROCKET

YEAR: 1945

INVENTOR/MANUFACTURER: Jet Propulsion Laboratory (JPL), California Institute of Technology **COUNTRY OF ORIGIN:** U.S.A.

overall dimensions: 3 ft W x 16 ft L x 1 ft dia. (91.4 x 487.7 x 30.5 cm)

weight: 292 lbs (132.5 kg)

THRUST: Tiny Tim booster 50,000 lbf (222,411 N); WAC Corporal sustainer 1,500 lbf (6,672.3 N)

KEY ACCOMPLISHMENT(S): The U.S.'s first successful sounding rocket, or research rocket, instrument-carrying rockets designed to take measurements and perform scientific experiments during sub-orbital flight.

The initials WAC have been variously said to stand for "Without Attitude Control" or "Women's Army Corps." Developed from 1944 onwards at the Jet Propulsion Laboratory, the WAC Corporal could lift 25 pounds of instruments to 20 miles with its nitric acid and aniline motor. The first rocket was launched in 1945. However, captured German V-2 rockets soon became available that could carry heavier payloads to higher altitudes. The WAC was thus little used. One was placed on top of a V-2, however, as part of the U.S.'s first experimental two-stage liquid propellant rocket series called Project Bumper.



VIKING SOUNDING ROCKET

YEAR: 1955

INVENTOR/MANUFACTURER: Martin Marietta Corp.

COUNTRY OF ORIGIN: U.S.A.

overall dimensions: 42 ft 15/16 in. H x 3 ft 9 in. dia. (1,282.54 x 114.3 cm) weight: 2,022 lbs (917 kg)

THRUST: 20,800 lbf (92,500 N)

KEY ACCOMPLISHMENT(S): Viking was part of a series of U.S. large-scale, liquidpropellant rockets from a program that began in 1946, designed specifically to replace the diminishing numbers of captured V-2 rockets used for upperatmospheric research after World War II.

The Viking rockets differed in their configurations and payload capabilities. Reaction Motors, Inc. developed the XLR-10 liquid-propellant rocket engine in Viking 12, launched from White Sands Proving Grounds, New Mexico in 1955, to a height of 144 miles.

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