



NASA'S JOHN H. GLENN RESEARCH CENTER NEIL ARMSTRONG TEST FACILITY

NASA's Neil Armstrong Test Facility is a remote test facility for NASA's Glenn Research Center in Cleveland. Located on 6,400 acres in Sandusky, Ohio, it is home to some of the world's largest and most capable space simulation test facilities, where ground tests are conducted for the U.S. and international space and aeronautics communities.

FACILITIES AND PROJECTS

The **Space Environments Complex** houses three of the world's largest and most powerful space environment simulation facilities, including a thermal vacuum chamber measuring 100 feet in diameter by 122 feet high, or roughly the size of the U.S. Capitol Rotunda. The Reverberant Acoustic Test Facility is the world's most powerful spacecraft acoustic test chamber, and it can simulate the noise of a spacecraft launch up to 163 decibels, or as loud as the thrust of 20 jet engines. The Mechanical Vibration Facility is the world's highest capacity and most powerful spacecraft shaker system, subjecting test articles to the rigorous conditions of launch. NASA is using the Space Environments Complex to test the Orion spacecraft, which will carry astronauts to the Moon and other destinations.

The **In-Space Propulsion Facility** is the world's only facility capable of testing full-scale, upper-stage launch vehicles and rocket engines under simulated space conditions. The engine or vehicle can be exposed for indefinite periods to low ambient pressures, low background temperatures, and dynamic solar heating to simulate the environment of orbital or interplanetary travel. SpaceX's Crew Dragon underwent tests in this facility.

The **Combined Effects Chamber** is designed to allow safe large-scale liquid hydrogen (LH₂) experiments and can simulate conditions found on the surface of the Moon and Mars.

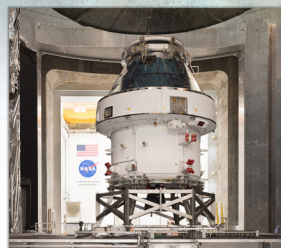
The **Hypersonic Test Facility** was originally designed to test nuclear thermal rocket nozzles. The facility was later converted to a high-velocity wind tunnel that can test engines and other aircraft systems at up to seven times the speed of sound. NASA is currently using it for the **NASA Electric Aircraft Testbed (NEAT)** to develop hybrid-electric propulsion for future commercial aircraft.



Space Environments Complex (SEC)



Reverberant Acoustic Test Facility



Thermal Vacuum Chamber in SEC



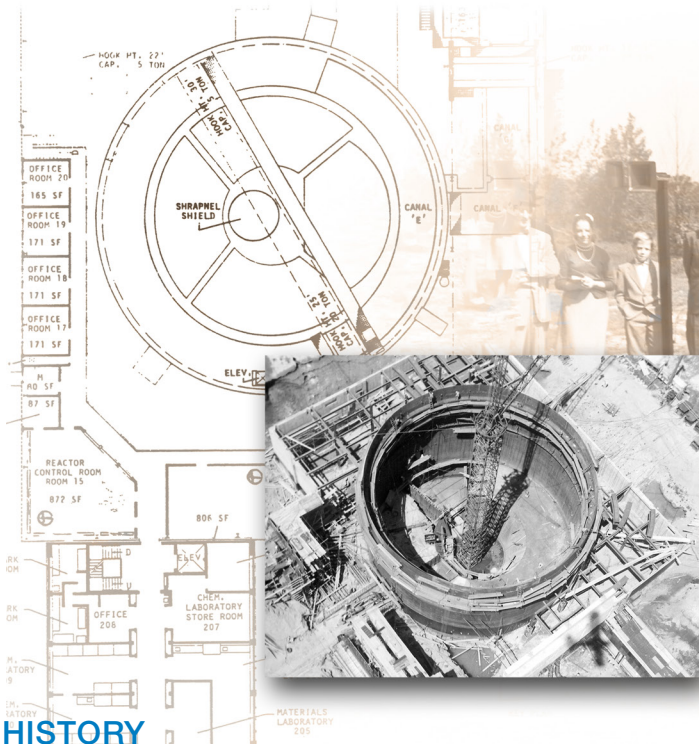
In-Space Propulsion Facility



Combined Effects Chamber



Hypersonic Test Facility



HISTORY

NASA's Neil Armstrong Test Facility, previously known as Plum Brook Station, was founded in 1941 when the War Department acquired roughly 9,000 acres of land to construct a munitions plant. The plant, then called the Plum Brook Ordnance Works, produced explosives, such as TNT, until the end of World War II. NASA acquired the land in 1963.

From 1963 to 1973, the facility was used to study the effects of radiation on materials used in spaceflight. It was shut down in 1973 and all the nuclear fuel was shipped offsite to a U.S. Department of Energy facility in Idaho for disposal or reuse. NASA completed decommissioning and demolition of the Plum Brook Reactor Facility in 2013, leaving the land where it was located safe for reuse.

Plum Brook Station reopened in 1987 and has since made significant contributions to the development of NASA and commercial space systems. In December 2020, the facility was officially named in honor of Neil Armstrong, native Ohioan and the first person to walk on the Moon.

ENVIRONMENT

The Armstrong Test Facility is home to many animals, including deer, coyotes, gray foxes, squirrels, woodchucks, raccoons, owls, red-tailed hawks, snakes, and amphibians. It is a stopping point for dozens of migratory bird species, some of which are quite rare. In fact, a nesting pair of bald eagles usually has a brood of two chicks each year, and it is quite common to see large vultures and wild turkeys. Because large exclusion zones prevent much of the land from being developed, many areas feel more like a nature preserve than a space center. Environmental scientists actively work to restore, preserve, and protect the wide range of natural environments, from oak savannahs to open prairies.



STAFF

A highly skilled workforce of more than 100 engineers, technicians, and administrative and support personnel comprise the team at NASA's Neil Armstrong Test Facility.

David L. Stringer is director of the test facility. A retired U.S. Air Force Brigadier General, Stringer joined NASA in 2007 after 32 years of active service.