



## Apollo 9: First Test of the Complete Apollo Spacecraft in Earth Orbit

In December of 1968, Apollo 8 orbited the Moon and returned to Earth in the Apollo Command and Service Module. While historic and successful, Apollo 8 did not include the Lunar Module, which was not yet ready for testing.

It fell to Apollo 9 to put the full Apollo spacecraft, including the Command and Service Module (CSM) and the Lunar Module (LM), through its paces in low Earth orbit.

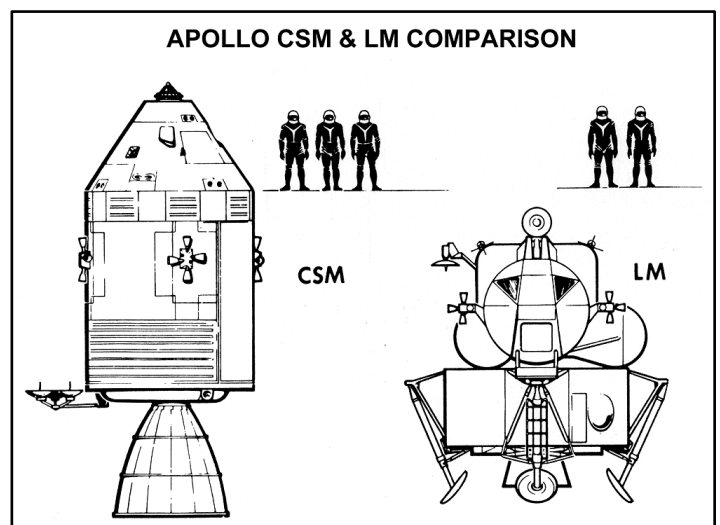
This 10-day mission was the most ambitious spaceflight of its time and paved the way for the Apollo 10 “rehearsal” and the following Apollo 11 mission to land humans on the Moon.



*All photos courtesy of NASA.*

## Major Mission Objectives:

- First crewed flight of the Lunar Module (LM), a spacecraft not capable of return to Earth
- First crewed flight of CSM and LM together
- Docking and undocking of the CSM and LM
- Testing the LM ascent and descent engines
- Re-docking the LM ascent stage with the CSM
- Multiple firings of the CSM main engine
- Testing of the Apollo spacesuit and backpack





*From left to right: McDivitt, Scott, Schweickart.*

## Launch and Flight

Apollo 9 launched on its 10-day mission on March 3, 1969, from Launch Complex 39A at Cape Kennedy (later renamed Cape Canaveral), Florida. About three hours after launch, the Command Module separated from the S-IVB third stage engine, turned around, and docked with the Lunar Module to extract it for testing.

During the mission, the crew tested the Lunar Module (call sign “Spider”). Tests included its descent engine, separation of the LM upper stage from the lower stage, its ascent engine and navigation systems.

The main engine of the Command and Service module (call sign “Gumdrop”) was also fired seven times to reach a variety of Earth orbits.

The crew also left the confines of both spacecraft to test the Apollo spacesuit and life support backpack to be used on the lunar surface. Apollo 9’s highly successful mission concluded with a splashdown in the North Atlantic Ocean on March 13, 1969. It was the last Apollo mission to land in the Atlantic.

## The Crew

The Apollo 9 crew included two veterans and one “rookie” astronaut. Commander James A. McDivitt and Command Module Pilot David R. Scott had flown on Gemini 4 and Gemini 8, respectively. Apollo 9 was the first flight for Lunar Module Pilot Russell L. (Rusty) Schweickart.

Apollo 9 would be the final missions for McDivitt and Schweickart. Scott would subsequently serve as the Commander of Apollo 15, the first mission to use the Lunar Roving Vehicle.







## Mission Highlights

- Ten-day mission was a technical success
- First crewed flight of the entire Apollo spacecraft (CSM and LM)
- Lunar Module (LM) performed as expected
- Main engine of the CSM performed well
- Successful docking, undocking and re-docking
- Apollo spacesuit and backpack performed well
- Some extravehicular activity (EVA) was shortened due to Schweickart's space sickness
- Navigation, communication and ground equipment met most test requirements
- Successfully practiced celestial navigation
- First humans to fly a spacecraft not capable of reentry into Earth's atmosphere
- Final five days of the mission had greater emphasis on Earth science and photography

## Mission Insights

Apollo 9 is one of the “unsung” missions of the Apollo Moon program. It served as the first crewed test of a spacecraft not capable of returning to Earth. The crew also performed the first integrated test of the entire Apollo spacecraft, including many of the key maneuvers that would be required to land humans on the Moon.

The success of Apollo 9 made the “dress rehearsal” Apollo 10 and Apollo 11 missions possible. Following the Apollo 1 disaster and several delays, John F. Kennedy's goal of landing humans on the Moon by the end of the decade was within reach.

