

SPACE EXPLORATION SYMPOSIUM (A3)
Moon Exploration – Part 2 (2B)

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THE MOON ROVER VEHICLE FROM PAST TO FUTURE MISSIONS

Abstract

The Lunar Roving Vehicle (LRV), popularly known by most as the moon buggy or “dune buggy”, was a battery-powered, 4-wheeled vehicle that was flown to the moon in an Apollo Lunar Module (LM) in the Apollo 15, 16 and 17 Missions during the time period from 1971 to 1972. In February 1964, the National Aeronautics and Space Administration (NASA) at Marshall Space Flight Center (MSFC), along with other companies like Bendix, Boeing, General Motors, Brown Engineering, Grumman, and Bell Aerospace started to design and build a vehicle that could transport astronauts and their supplies around the moon, as well as transport the experimental samples that were taken to and from the LM. The LRV’s first mission with Apollo 15 on July 31, 1971, increased the distance of space exploration for astronauts. After successfully completing three missions of the LRV to the moon, and only encountering minor problems, NASA and other space agencies are now working on a vehicle that could change the future of space missions. The three original LRV’s were disposable vehicles that were left behind after the short quests on the moon during the three Apollo missions. National as well as International Space Agencies are now researching the possibility for a long-term moon mission where astronauts would be exploring the moon for more than a couple of hours at a time. This would mean that the LRV would have to be updated to be able to handle various tasks during these longer periods of time. One example of a new LRV that NASA has designed is The Space Exploration Vehicle (SEV), which is a sophisticated vehicle that can transport astronauts around the moon for up to fourteen days at a time. The SEV would also allow the astronauts to travel on more rugged terrain, which the original LRV could not. This paper will describe information on the original LRV and how it has improved since its last Apollo moon mission as well as improvements that will need to be made so that the new vehicle can comply with future long-term exploration moon missions.