

LC History Case Studies – The Space Race

Background



Throughout 1945—1961 Americans and Russians were concerned with competing rocket technologies and which of them would develop bigger and better weapons. The Moon Landing was the most spectacular aspect of this arms race.

Wernher von Braun



After the war, the Soviets and Americans competed to capture German Rocket scientists. The US got Wernher von Braun, head of the German research team.

Inter-Continental Ballistic Missile



The US did little about rocket technology until the Russians launched the first Inter-Continental Ballistic Missile (ICBM), and the first man-made earth satellite, Sputnik, in 1957.

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Atlas rocket



The first ICBM launched by Americans in 1957.

National Aeronautics and Space Administration



In 1958, Americans sent up their first earth satellite and Eisenhower established NASA to encourage space exploration.

Luna II



In 1960, the Soviets were still ahead of the Americans. Their Luna II rocket hit the moon and in 1961 their astronaut Yuri Gagarin became the first man in space.

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Moon landing – first steps



The Russian developments spurred President Kennedy to promise to put a man on the moon by the end of the 1960s. To do that, NASA first had to find out if they could survive in space and safely return to earth.

Mercury Programme 1959—1963



The programme flew six manned test flights, making John Glen the first American to orbit the Earth in 1962.

Gemini Project 1963—1966



The project tested ten space flights and improved ways of controlling craft in space and linking one space station to another (docking).

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Gemini 4



In 1965, Gemini 4 saw the first American 'space walk' when an astronaut left the craft and returned safely.

Gemini 7 & Gemini 8



In 1967, Gemini 7 spent two weeks in space showing that men could survive a long period of weightlessness and Gemini 8 successfully docked two space crafts.

The Apollo Programme



The Apollo Programme (1961—1972) was to carry out the Moon Landing. There were ten Apollo missions before the Moon Landing.

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Saturn V



The most powerful rocket ever built, used in the Apollo Programme, designed by Wernher von Braun. It carried a Command Module and a Lunar Module.

Columbia



The Command Module carried by the Saturn rocket where the astronauts lived. Designed to orbit the moon and return to earth, it was enclosed in special tiles which could withstand high temperatures on re-entry to the earth's atmosphere.

Eagle



The Lunar Module which was to break away from the Command Module and land on the moon. It had two stages. The lower contained exploration equipment and rockets to slow down the descent onto the moon. The upper would carry the astronauts back to the Command Module.

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Apollo 8



In December 1968, Apollo 8 carried three men into orbit around the moon and returned them safely to earth.

Apollo 10



In 1969, Apollo 10 took another three men to within nine miles of the moon's surface and returned safely.

Apollo 11



Apollo 11 lifted off from Kennedy Space Centre in Florida on 16 July 1969. It carried three astronauts, Neil Armstrong, Buzz Aldrin and Michael Collins. On 19 July, Columbia went to orbit 69 miles above the surface of the moon. It circled the moon every two hours.

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Moon Landing – 20 July 1969



Collins remained in Colombia, while Armstrong and Aldrin transferred to the Lunar Module which headed for the moon's surface. Armstrong guided the Module to a flat area in the Sea of Tranquillity. They planted an American flag, collected 60 pounds of moon rock, took pictures and set up a number of experiments.

Spectatorship



Armstrong recorded the moment on a TV camera. He said: 'That's one small step for man – one giant leap for humanity'. It was watched by an estimated 600 million people. Their return was watched by millions of viewers around the world. But the reports of this were not broadcast in USSR or China

Journey home



After returning to the Lunar Module, the astronauts left behind unnecessary equipment. After docking with Columbia, they abandoned the Lunar Module too. They reached earth on 24 July 1969.