

APS1018 - Team Project Executive Summary

The Apollo Program

The Social, Political, & Technological Impact of the Man on the Moon

The Apollo Program was an exceptional engineering, scientific and technological undertaking by the United States during the 1960's. The goal was to ---push the boundaries of space exploration, and the project resulted in the first man being landed on the moon. There were many driving forces for the project, including scientific and social/economic reasons; however, the Apollo Program was most notably driven by the Cold War between the United States and Soviet Union, who each had the goal to become superior in the field of space exploration. Prior to Apollo, the Soviet Union launched Sputnik 1 into space, which was the first artificial Earth satellite. This prompted U.S. to start the civilian space agency NASA to achieve their space exploration goals.

Humans have always had a fascination with space, and the prospect of exploring the unknown added additional motivation to the project. The importance of the Apollo Program in engineering and scientific development is evident; it is the first and only series of manned exploration on the moon in the history of science. The Apollo Program also brought public attention to science, engineering and technology, and paved the way for new technologies to develop future space exploration. The Apollo Program was innovative and revolutionary for the United States; however, it could not remain the primary focus of the country due to changing priorities for the nation, as the economy is not as strong as it was in the 1960's.

A systematic approach was taken in this report to understand the social, political and technological impact of the Apollo Program. Firstly, the various driving forces behind the program were explored along with the motivation behind space exploration. This also involved researching the history of space exploration before Apollo, and the various milestones achieved by United States and Soviet Union during the Cold War. Secondly, some of the accomplishments by the Apollo Program were examined, not only in the science, engineering and technology fields, but also its influence in terms of political and cultural impact, both within US and around the world.

The legacy of the Apollo program is shown by how presidents after John F. Kennedy leveraged space exploration, and how the importance of the NASA program correlates to the American economy. Under Nixon, NASA began the Space Shuttle program in the 1970s, which became NASA's workhorse space vehicle for over 30 years, with 135 missions between 1981 and 2011. The Shuttle launched the Hubble Space Telescope, and was critical in creating and servicing the International Space Station. Carter and Reagan used space exploration for national survival, satellites, and military space policy. All of these programs were able to take advantage of the research and development obtained through the Apollo Program. Recently, there has been a push to privatize the operational activities of space exploration, and have

NASA look after the riskier fact-finding missions. The American government is not as focused on the space program as it was under Kennedy, as the country's economy isn't as strong and their priorities have shifted to internal and international programs.

The role of science, engineering & technology was additionally focused on, where it was recognized that along with Apollo's social, economic, and political impact, its technological prowess cannot be denied, as it marked the turning point between the space race of USA and USSR. Without a sound technological basis, Apollo would not have the same level of impact. The report also briefly covers the widely popular Conspiracy Theories around the Apollo Program.

The Apollo Program was a true triumph of the engineering profession. Engineers reading the report will feel empowered and inspired from learning about the engineering achievements. The main take away from this report would be to realize that a project of this magnitude is as much of a success for engineering as that which is attributed to science. While the limelight has primarily been focused on the astronauts setting foot on the moon, the engineers who made the entire project possible throughout the lifecycle should be recognized as well. The report will also make audiences aware of how a large scale engineering project like the Apollo Program has helped to change the world and shape humanity.