

# Sample essay on project mercury

[Engineering](#), [Aviation](#)



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The United States and Soviet Union have always seen themselves together in the same sentence because they have always tried to one up the other. This scenario is one that is very real with regards the conquest of outer space. For some reason America seemed to be playing catch up as she was a step behind with regards exploring outer space and putting a man in space. Project Mercury is a program by NASA with an aim to launching the first Americans into space. During the duration of Project Mercury six flights were made by astronauts. Of that six, two came right back down after going into space while the other four was able to circle the earth. These six flights happened between 1961 when the first flight happened and 1963 for the last flight.

Project Mercury used a small spacecraft called the capsule and this could only hold one person who had to remain in his seat. This project gets its name from a Roman god who is known for his speed. When NASA selected the seven astronauts for Project Mercury they were still a very young organization of six months old.

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In 1958, the industry and the government had studied and researched to the point that they felt it was feasible to have a manned space flight. An implementation was then put in place to accomplish this project that would go on to be called Project Mercury. In over four and a half years of the lifespan of Project Mercury, science had been learning and understanding the capabilities of man in such a space environment. As with all human endeavours there are signs that point to the success or failure of any project and the Mercury Project was not any different.

Project Mercury had flight tests that were full scale and these tests were reviewed in a bid to check things like individual mission objectives, results from each individual mission and schedules. Internal and external interfaces of the various segments of NASA will be explained in a bid to see if Project Mercury can indeed be called a successful project, a somewhat successful project or a failure.

## **Guidelines and Objectives of Project Mercury**

Project Mercury was set up in a bid to accomplish some certain objectives.

- Have a spacecraft that is manned to orbit around the earth
- That the man and machine be safely recovered at the end of the flight

Once these objectives had been put in place, some guidelines had to be set up in order to ensure that these objectives were achieved in the safest and most expedient ways. These guidelines were

- That available technology should be used as long as it was practical
- Approaches should be reliable and simple
- The launch vehicle that would be used to place the spacecraft in orbit will be one that is already in existence

- Test programs will be logical and progressive

While there were other more definitive guidelines these were the most basic of the guidelines needed to ensure that the objectives of Project Mercury will be fulfilled.

There were many obstacles along the way to making Project Mercury a success story and the most complex of these issues was redundancy. This came about because the spacecraft had to first be qualified for flight in space without any man on board because at this point in time it was not clear what capabilities a man would have in such a space environment. To make this operation reliable then automatic systems had to be backed up by redundant automatic systems. The third guideline also saw the use of Atlas, an existing missile as a launch vehicle for Mercury. Modifications had to be made to Atlas to enable it automatically sense an impending catastrophic failure of this launch vehicle.

## **The Human Factor**

With strides in nuclear science man saw the possibility of developing liquid-fuelled rockets and with this came the dream that indeed it would be possible in the nearest future to have a man spacecraft orbit the earth and into space. In the 1950s the two world powers with regards nuclear science had seen their rockets fired into space and falling back earthward. These nations were U. S. S. R and U. S. A and they both believed that they should be the first to accomplish such a great feat. This led to a series of experiments taking place with different forms of living organisms been carried in these rockets. When data was gathered back from these rockets that have carried these various organisms to space there was no telling how

long or if at all they were able to live in space. These inconsistencies made scientists hesitant to categorically confirm that man could indeed survive outside of his regular atmosphere.

This therefore meant that although space flight had become theoretically practicable, it still remained an enigma psychologically. Efforts were been increased in the 50s between both countries to have their space researchers find a way around their human obstacle. These engineers with time were confident that man could indeed survive in this hostile environment. These engineers from Project Mercury made use of studies and findings that have been amassed over a hundred of years with regards man and how he could factor in space flight.

## **Astronaut Selection**

When it had been finalized and agreed that man can indeed go on these space journeys Project Mercury began to enjoy the participation of the whole nation. On the 9th of April, 1959, the NASA administrator introduced to the world the seven men that had been chosen to represent their nation as the first men in space. Taking a cue from the Argonauts who had to sail into a new and uncharted ocean, these men were called astronauts as the nation looked on and hoped that they would in fact be more successful than the people they got their names from. These pilots were introduced in civilian clothing and made even more personable by the fact that they were mature Americans and family men. The public forgot for a while that these were military officers and volunteer subjects and that is how NASA wanted it to be. The names of these men that seemed so normal to the public eye were Carpenter, Cooper, Glenn, Grissom, Schirra, Shepard and Slayton.

These men were viewed as rock stars and in no time at all their fame began to spread and NASA were not so happy with that. Although these men looked just like any other middle aged American of the time, they had gone through strenuous checks and balances before they were chosen. These chosen men spent a week at Albuquerque having medical evaluations under different schedules to ensure that their bodies were in perfectly good shape to undergo what they were about to embark on. These medical examinations and research was very thorough and they went through them in different phases.

Once these astronauts lost their privacy and saw their private lives go up in smoke, the Mercury Project found its first great public notice. Powers was taken up as an eighth man and his major role was to create an interface between the public and the astronauts. He became the mouth piece of not just only the 7 men that were going to space but also the Mercury Project. these first American astronauts were an admirable group of men who through their selection became a team of personalities. Way before they even got on the rockets headed for space they were already seen as heroes. Alan Shepard was the first American in space as his rocket spent fifteen minutes on a trip to space and back. It should also be noted that he also walked on the moon during the Apollo 14 mission.

## **The Mercury Capsule**

Mercury-Atlas today is viewed as a failure in many sectors of society. One thing that came out of this project is the fact that the abort system of the Mercury space craft was seen to possess excellent emergency flight conditions. As America's first manned spaceflight Project Mercury had some

kinks that needed to be ironed out in order to make for a better flight trip. In 1960 the Mercury-Atlas embarked on a suborbital flight. This trip failed and in 1961 the men would get ready to try again and this time their objectives were met and things seemed to go much better. Now that this had been done, NASA decided to try again and see if Mercury could make a single orbit. This time around a simulator was taken along in place of a man and it was programmed to inhale and exhale like a man would normally do.

On the 25th of April, 1961 another try was had and this flight was cancelled after 43 seconds because the range safety officer could see that the craft was veering off the intended trajectory. The autopilot failed due to the failure of the launch vehicle. It was however stated that had an astronaut been in that craft he would have been able to have survived even though his booster may have been destroyed. While Yuri Gagarin is said to be the first human in space it should be noted that NASA flew an unmanned flight craft into space that was only left unmanned because the people were being overly cautious.

The second Project Mercury flight landed badly in the Atlantic Ocean and almost killed Gus Grissom when the explosive bolts on his hatch accidentally fired. Although he was rescued from sea, the space craft was not seen again till thirty eight years later. NASA also had 20 Mercury spacecraft commissioned although only 6 of them were used for manned flights as nine were used for unmanned flying and five never actually flying. Although early prototypes of Mercury were made without windows, the astronauts required windows in the flights they manned. This addition would prove very helpful when the last mission suffered an instrument failure that needed visual

orientation.

NASA had to ensure that these flights were safe for the astronauts before they were to embark on their journey to space. They therefore had ten flights prior without any human on in a bid to try to find and fix any problem without endangering any life. For a young organization NASA learnt a lot of things from Project Mercury that would help make American space endeavours so much better. They learnt from their tries and retries how to put people in orbit and also get those people to be able to work and live in space. This may not have happened as it has today without the successes and failures of Project Mercury. Project Mercury gave rise to Project Gemini and the lessons learned from this new project also helped NASA with regards the Apollo program.

## **Conclusion**

In 1961 America succeeded in sending Alan Shepard to space on Freedom 7 - an aptly named rocket. The significance and importance of this feat should not be overlooked irrespective of whether he was the first man in the world or not to go to space. What this meant was that man has conquered another part of his world and he could use the knowledge gained through the success and failures to achieve more. And that was what America did. In 4 and two thirds of a year America had space flight project that was successfully manned into space. Seven men were selected to make this first trip but more than 2 million people were involved in some way in making this project a reality.

In September of 1962, John F. Kennedy spoke the following stirring words, "We set sail on this new sea because there is new knowledge to be gained,



and new rights to be won, and they must be won and used for the progress of all people. For space science, like nuclear science and all technology has no conscience of its own. Whether it will become a force of good or ill depends on man, and only if the United States occupies a position of pre-eminence can we help decide whether this new ocean will be a sea of peace or a new, terrifying theatre of war (JFK, Rice University Stadium).

Today we look at the world we live in and we hear people talk about space as though they were just travelling to another country. Space travels today, while still a great feat is not going to be as great as the first space travel was. The reason for this is because Americans did succeed to go into space and through that virgin voyage they have been able to make strides in the right direction. Just like with any exploit or invention it will be hard to accomplish something great at your first try without seeing some obstacles and hitting some road blocks. This was the same with Project Mercury. Did they have failures along the way? Absolutely yes, but would I consider them a failure? If anything I will consider Project Mercury to be a very successful project and not just because it got men into space. But because through it, we have been able to accomplish so many other even greater feats.

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