

Nasa- america's failing space program assignment



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NASA When you think of NASA you might think of bright lit hangers, laboratories, and the worlds brightest scientist, but over the better part of the last 30 years NASA has struggled to struggled to maintain certain obligations. The National Aeronautics and Space Administration, better known as NASA was started as a scientific program for the United States government. For the last 52 years NASA has been the leader in innovation and exploration in not only astrological areas but making many scientific discoveries that benefit people all around the world.

However in recent years NASA has fallen in prestige due to monetary issues, outdated laboratories, and the risk is just too high for the results being yielded. Several reports completed by NASA have proven the various faults in the government run space program, and different ways they could have been avoided. One of the largest problems with the space program is the fact that it is fiscally draining the already low budgeted American economy. It is a direct result of this sunken economy that exploratory government programs like NASA are at risk of being shut down.

Although it only cost the taxpayers around 15 cents a day to cover NASA's budget, the problem is that people are beginning to feel like in these times money could be better spent elsewhere. NASA has tried and failed continuously for the better part of the last 30 years to make their money work more effectively. NASA's current budget is limiting because of the reoccurring failures and sluggish nature within NASA's leadership. " This budget demonstrates the administration's commitment to maintaining NASA's leadership role in space," Deputy Administrator Lori Garver said. It puts us on a path to out-innovate, out-educate and out-build the rest of the

world. " Though NASA feels cutting funds is highly detrimental to the status of the United States and to the education of its youth, it may be too little too late. The question is not whether the government has to make cuts to NASA's budget, it is just how much they will cut and when. Since 1958, in real dollars (not adjusted for inflation), NASA has been budgeted over 400 billion dollars.

When adjusted for inflation, the number is over 600 billion dollars. These numbers were reached by taking NASA's annual budget beginning in 1958 and ending in 2008 then adding them together to sum up the total amount of money spent over a 40 year span. The reason for the recent NASA slowdown is a mixture of many reasons. In conjunction with the fact that it is extremely expensive to maintain, another reason is the fact that shooting shuttles into space loaded with jet fuel is like sending NASA pilots on missile rides.

Adding to the danger of space exploration is the fact that space contains no oxygen and the temperature varies from subzero to the high hundreds of degrees Fahrenheit. This puts tremendous stress on the fuselage of the shuttle and is the cause of many in flight errors. Errors that cost NASA not only time and money, but the safety of the crew. This is from NASA having to make corrections each time mistakes are made, or else disasters can occur. The crash of the Challenger was a harsh reminder that although all the technological advances we have witnessed over the past century, the human element cannot be ignored.

And although the crash of the Challenger was technically due to mechanical failure caused by both miscalculated O-ring tolerances and subnormal Florida temperatures, the crash was actually the unnecessary result of several organizational issues within NASA. In fact, the shuttle program itself was on a collision course long before the Challenger lifted off due to an organizational structure that failed to keep pace with NASA's unclear and ever-changing mission. This ultimately led to a flaw in NASA's group decision-making process.

The mission of NASA's space program had evolved dramatically from the time it was established in 1958 to the Apollo 11 moon landing in 1969 and the Challenger's crash in 1986. The Agency's mission was initially scientifically motivated to demonstrate the United States' technological superiority over the Soviet Union by being the first to put a man on the moon. The United States was determined to win and was willing to pay any price. Whether it be ignoring safety codes and moving from assembly to launch with such little testing period that little room was left for error.

Once the space race was won, NASA's primary mission was transformed to military, commercial and scientific purposes in a number of political compromises. The shuttle program's budget was substantially reduced and the program was mandated to pay for itself, therefore hindering the programs performance. As a result, NASA increasingly had to serve the needs of the private industry to maintain funding. Fourteen years of development and over 30 billion dollars invested produced only 25 flights between 1981 and 1986 whereas financial sponsors were promised 30-60 profit-generating flights annually.

This caused senior managers to be under considerable pressure to keep scheduled flights active by disregarding risk warnings. Conflicts of interest caused by political or economic considerations overruled logical or scientific safety considerations and prevented flight safety concerns from being properly communicated to all decision makers. For example, NASA's top management either was unaware of the "no-go" recommendation made by engineers and other managers (The National Academies Press).

According to the article "Surprising but true: Half the decisions in organizations fail", by Paul Nutt, decision failures can often be traced to managers who impose solutions, limit the search for alternatives and use power to implement their plans. This was clearly the situation at NASA. For example, the management team at the Marshall Center did not accept the Thiokol engineer's doubts about the O-ring and forced the group to make a yes or no decision on the launch. When the Director of Solid Rocket (MacDonald) strongly argued for a launch delay, Reinhartz and Mulloy at the Marshall Center told him it's not his decision to make.

Finally, Reinhartz stated he would pass on MacDonald's concerns, but he never did. There clearly existed a conflict of interest between those who were genuinely concerned for the flight's safety and those who were willing to take a risk because they felt pressured to stay on schedule and deliver results. Decisions were being made further and further away from the engineering levels where they were directly impacted. Finally, budget constraints forced many NASA employees to heavy work loads with long hours that increased the likelihood of human error.

Errors like the crash of the Challenger shuttle, "... both the performance of the Failure Modes and Effects Analysis (FMEA) and the identification of critical items are intended to be carried out under the aegis under the reliability function. In principle, the FMEA should be able both a design tool to provide an impetus for design change, and a tool for the evaluation of the final configuration in order to define the necessary control points on the hardware" (The National Academies Press). The labs at NASA have barely been updated since the seventies.

This leaves little room for scientists to explore new methods of space travel or design. " Without adequate resources, laboratories can deteriorate very quickly and will not be easily reconstituted" (NASA Pressroom). NASA was once the heart of scientific thought and discovery, but because of the lack of resources it almost ceased to provide America with new ideas and information about the planets and our solar system. It is hard to argue the fact that NASA's facilities are outdated because it has been proven by various tests. Over 80 percent of NASA facilities are more than 40 years old and need significant maintenance and upgrades to preserve the safety and continuity of operations for critical missions" (NASA Pressroom). The panelists found a pattern of researchers " expending inordinate amounts of time writing proposals seeking funding to maintain their laboratory capabilities," then looking for money elsewhere (NASA Publication). A group of panelists also found that NASA researchers spent the majority of their time thinking and not doing, which would explain why NASA has been struggling with fiscal issues.

The future for NASA looks bleak at best, right now shuttles are not being launched from the United States but rather astronauts are tagging along with other countries who still have operational shuttle programs. After over 50 years in operation NASA has been the foundation of not only United States scientific research, but has also been a major frontrunner in technological advances through out the world. However, in the 30 years NASA has struggled to maintain efficiency as a program due to issues with NASA's budget, using outdated laboratories, and the risk is just too high for the results that are being achieved.

Works Cited Wilson, Jim, ed. NASA - Home. Publication. Jim Wilson, 5 Apr. 2011. Web. 22 Sept. 2011. . Weaver, Jim S. NASA. NASA Pressroom. NASA - NASA Announces Fiscal Year 2012 Budget. NASA - Home. David S. Weaver, 14 Feb. 2011. Web. 22 Sept. 2011. . The National Academies Press. National Space Transportation System Risk Assessment and Risk Management. Post-Challenger Evaluation of Space Shuttle Risk Assessment and Management. The National Academies Press. Aeronautics and Space Engineering Board, Jan. 1988. Web. 29 Sept. 2011. .