

Airplane and Society - How one impacts the other?

Executive Summary

The purpose of this report is to study the societal, economic and cultural changes that occurred due to the invention of airplanes and vice versa. Aviation is undoubtedly the fastest and convenient form of transportation in today's world, expanding at a tremendous rate. The advent of airplanes has revolutionized the way humans travel and has enabled us with the power of global exploration. This world changing invention of airplanes was marked when the first controlled, sustained flight was made by Wright brothers on December 17, 1903. Since then airplanes have been used for all sorts of things including war, transportation etc. Today the airplane technology has progressed a lot from its starting stages especially with the invention of jet engine. They have their advantages and disadvantages and that is exactly what this report aims to address.

The scope of this project is to emphasize the socio-economic impacts of airplanes on modern society and discuss how aviation technology has changed cultures, positively and negatively, in the past. The invention of airplanes has opened new horizons for the world by facilitating faster travel and trade boom and has been evident throughout history where one can see the amazing transformational effect of aviation on society

Moreover, with the rapid development in the aviation industry and its expansion, this project aims to address the environmental problems caused by both commercial and as well as defense aviation industry while analyzing the critical measures taken by the international organizations to counter it. Lastly, the project will discuss how society led to changes in airplane technologies and how future technologies will cater to society's needs.

This project mainly focuses on the social and cultural impacts rather than the technicalities of the airplane technologies, as it would have been obsolete to review something which is already being studied by the majority of engineers and scientists given the context of the project. The study was conducted based on the impact of airplanes on society through:

- War
- Environment
- Transportation
- Business and economy
- Employment
- Technological Advancements due to Airplanes

The analysis of the mutual impact of airplane and society shows that while aviation is one of the greatest contributors towards the advancement of modern society, it has been a significant source of destruction in the past during the world wars which has changed the geopolitical scenario of the whole world. According to recent research, the aviation industry contributes 12% of all the pollution caused by the transportation industry and noise & emissions are the major way through which airplanes pollute the environment we live in. However, studies also shows that the air transportation industry carries over 3.8 billion passengers, thereby generating a revenue of 7.1 trillion revenue passenger kilometers (RPK) in 2014. This evidently shows that the airline industry has a significant economic impact, both through its own activities and from enabling by other industries too. Around 62.7 million jobs are created by the aviation industry globally involving direct, indirect, induced and tourism linked jobs. Overall the aviation industry supports 3.5 percent of the world's gross domestic product (GDP).

Lastly, while airplanes have important and noble usage like extinguishing forest fires, rescue operations, environmental patrolling and many other humanitarian things, there are also several negative consequences of airplanes on society since its inception such as global environmental problems like greenhouse gas emissions, over-use of fossil fuels for the production of aviation fuel and use of airplanes as weapons for mass destruction or warfare. The major conclusion from the report is that since the first aviation flight to current times, society and airplanes have been interdependent in times of war, industrial revolution, economic depression, boost of emerging economies and present machine age, signifying the essential fact that the future involving all the novel technologies developed for the betterment of humanity and our environment are equally dependent on how our present society wants them to be.