

FINAL YEAR PROJECT

Human factors vs automation in aviation

Submitted TO,

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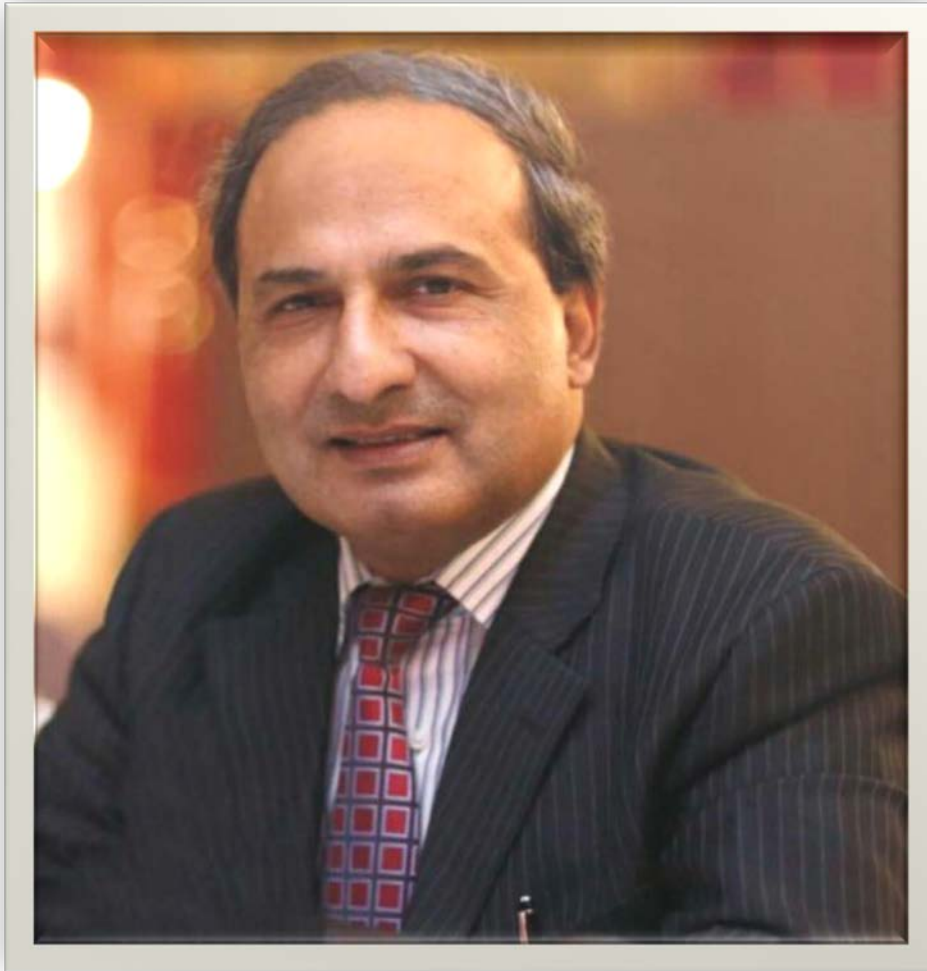
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Executive Summary

The topic of my project is human factors vs automation in aviation. Human factors and automation plays a vital role in aviation safety therefor, I have divided my research in two parts first part includes the basic concept of human factors in which I have discussed how human body reacts in different conditions, main functional systems of human body and their contents. After that I have discussed the smoking pilots and consumption of alcohol while flying an aircraft or before flightand their side effects which can risk passengers life's. Further I have briefly discussed the basic information system and the steps involved in this process and motor programs. A pilot or aviation staff should have basic information about reflexes, attention, arousaltypes and atmospheric perspective in order to improve their skills, knowledge and safety therefore I have given a brief idea of these terms and their types. All of the factors that I have discussed above are related to human body and its reaction but I have tried to give an idea of whole picture of human factors by explaining pears model which stand for people, environment, actions and resources.Pear model covers each and every aspect of human factors and divides it in four categories which helps people to easily understand the basic concept of human factors in aviation and at the end of human factors I have discussed and explained human errors its kinds, types and 12 most common human errors in aviation. On the other hand in the second part I have explained automation in aviation. There are a lot of things which come under the umbrella of automation in aviation but I have focused on the facts, research related to aircraft and its operation because aircraft is the basic mean of transportation in aviation and the safety precaution are taken to run the operations smoothly and safely there for the safety of passenger's come first. Automation is the introduction of computers/machine in order to have more improvement in the system. Alteration to automation may also be done. But in spite of that accidents may occur because of number of reasons like: environmental disturbances (i.e. High Altitude Turbulence, Low Level Micro Bursts), Tiredness, Fatigue, Non-alertness, less trust on equipment, more trust on equipment, etc. Errors are of two types: Latent error (designers, manufacturers and senior management is responsible) and active failures (dedicated at human system interface). NASA is playing a much important role in Aviation. Many new tools have been introduced now in order to facilitate more. Tools are being made for DA, FAST and TMA and other instruments or parts of an aircraft.

Human Factors in Aviation

❖ [What Are Human Factors and Their Roll In Aviation:](#)

◆ **Introduction:**

The process of understanding human behavior as well as human performance is known as human factors. When we talk about human factors in aviation we come to know that when human factors are applied in aviation operations they optimize the flexibility in between the people or staff and the organization for the improvement of safety and the performance.