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Case Analysis: Aircraft Development

Name

Boeing 737 Max

Course

Semester and Year

Instructor's Name

Date

I. Summary

Boeing 737 max was developed to compete with the Airbus A320. Since the purpose of developing the Boeing 737 Max was to create the same product as Airbus as soon as possible, they rushed in the research and development process. The faults with the aircraft pitching upward in extreme movement were identified and solved using the Maneuvering Characteristics Augmentation System (MCAS) software.

II. Problem

The problem is with the aircraft's nose pitching upward, in particular, extreme movement. Ontiveros (2021) claimed that the engineers realized the issue during the research and development of the 737 max. During the testing of the plane, the airflow arriving at the speed of sound provided the engineers with a chance to assess the aircraft's aerodynamic in managing a variety of risky movements. The engineers concluded there was a problem that needed to be checked. Therefore, the use of the MCAS software was identified as the solution to solve the problem. Since the MCAS software was new in the development face of Boeing 787, the company did not evaluate its effectiveness and used 2.5 hours only to train pilots on using the iPad (Legget, 2021). The software would then pass the controlling regulator surface at the end to drive the aircraft's nose down (Travis, 2019).

III. Significance of the Problem

The problem is significant because it makes Boeing and other relevant agencies portrayed as lacking competency in their manufacturing procedure. Competency plays a vital role, especially for a company that manufactures aircraft, because it illustrates how it focuses on developing safe and quality planes. Ontiveros (2021) stated that the Federal Aviation Authority

(FAA) did not have the acquittances of the software. Also, they were reluctant to inform pilots of the existence of the software and control it for software. Therefore, this made them unable to offer a self-governing evaluation of the aptitude of the solutions Boeing proposed.

IV. Development of Alternative Actions

Boeing is given more control over the certification procedures, launching the aircraft before the development process is certified. Therefore, it will be essential for FAA to re-assess the certification procedures. Boeing released 737 Max to the market before the MCAS system was tested efficiently, and all faults were identified, resulting in the cause of all the accidents. Cruz & de Oliveira Dias (2020) emphasized that FAA is required to ensure the aircraft manufacturers attest to the parts they have developed and designed with limited regulation by them. Moreover, allowing FAA to perform their work independently will make the components safe and certified. On the other hand, the drawback of this action is on economic effects on the country. The country develops by allowing companies such as Boeing to compete with their competitors on plane designs. Moreover, challenging the certification procedures will delay the aircraft launch, allowing Airbus to attain more market share.

The development of the Boeing 737 Max was intended to compete with Airbus A320. Therefore, Boeing would need to create the safest aircraft with a state-of-the-art design, such as less fuel consumption. The benefit of this alternative would help Boeing develop better solutions to the aircraft industry and not focus on competition. Also, this would make the engineers use a better method of solving the problem of upward pitching movement in the best way possible rather than in the rush of using MCAS. The drawbacks are the delayed release of the Boeing 737 Max and reduced company market share because the competitors were already taking over at a higher rate.

V. Recommendation

FAA plays a vital role in the success of the safety design of aircraft; therefore, it is recommended that they tighten their certification procedures to ensure the creation of planes, engines, and situations of tests of airplanes does not interfere with flight safety. Also, the agency needs to perform its role independently without being affected by manufacturers, especially during the provision of certifications. Finally, Boeing needs to focus on its reputation when designing and developing its aircraft. One slight mistake can ruin their process resulting in increased losses and losing their market share.

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