Low-Risk Aircraft Evaluation For Private and Commercial Enterprise Venture

A Data-Powered Approach to Aviation Risk Management

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1.0 Overview

- **1.1 Goal**

- The goal of this evaluation is to aid the company in making informed decisions on the suitable aircraft model to procure as it ventures into both commercial and private aviation enterprises. At the inception of this project, it is essential not only to assess the cost-benefit factors but also the operational risks in the aviation industry. Different incident and accident reports will be evaluated to determine the causes and risks of the aviation industry.

- **1.2 Objectives**

- This evaluation project will cover the following objectives:

i. To analyze data entailing aircraft models safety metrics and reliability indicators.

ii. To establish the lowest-risk aircraft model through comparative evaluation.

iii. To formulate realistic recommendations in line with the company’s interests.

2.0 Aviation Private and Commercial Enterprise Business

- **2. 1 Background information**

- The company is interested in diversifying its business venture through investing in the aviation sector, both commercial and private enterprises. The company's interests are detracted by limited expertise and knowledge on risks in the field of aviation. This has hindered expansion and diversification process compelling a low-risk analysis on different aircraft model to be conducted.

- **2.2 Rationale for the Data-driven Approach**

- The Data-driven analysis of the risks involved in venturing into the aviation industry is essential to ensure profitability and optimal returns to the company. Moreover, joining the aviation sector without prior assessment can result in safety and operational failure that can demean the company's reputation, create legal liabilities and precipitate financial losses. This approach will ensure that the entry into commercial and private aviation is sustainable and efficient.

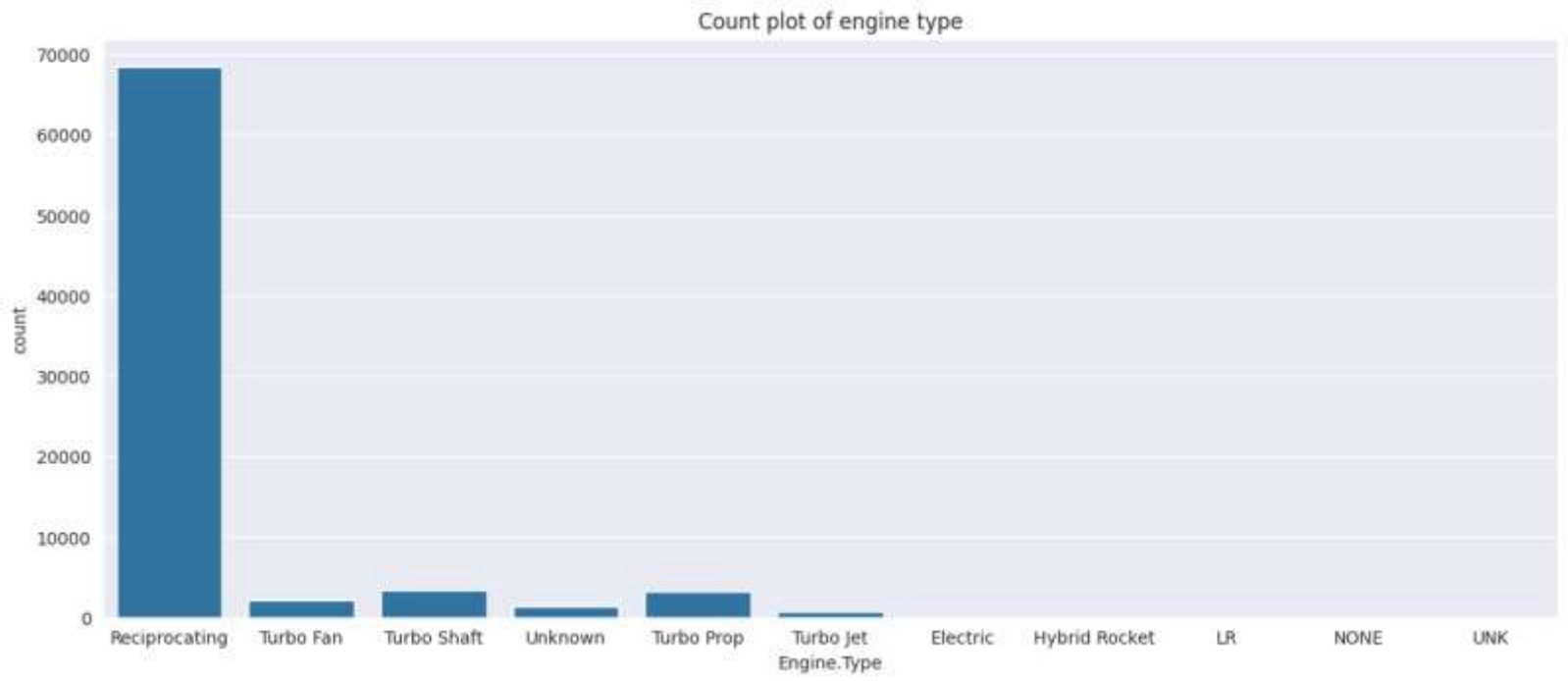
3.0 Data Presentation, Analysis and Discussion

- **3.1 Sources of Data**

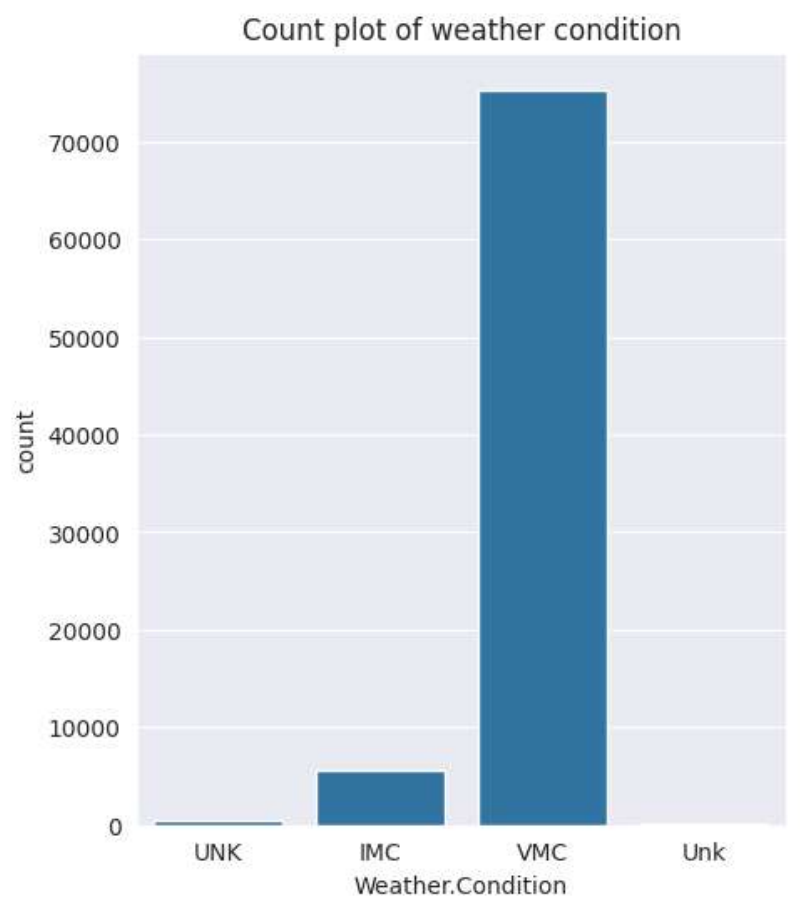
- In order to address the business questions above, secondary data was gathered from different sources including the safety records on aircraft accidents and incidents, manufacturers' manuals and various model manufacturer reports. The safety record and reports were obtained from the accidents and incidents databases of Federal Aviation Authority (FAA) and National Transport and Safety Board (NTSB).

Results

Planes with the reciprocating engine had the highest number of accidents.



Results



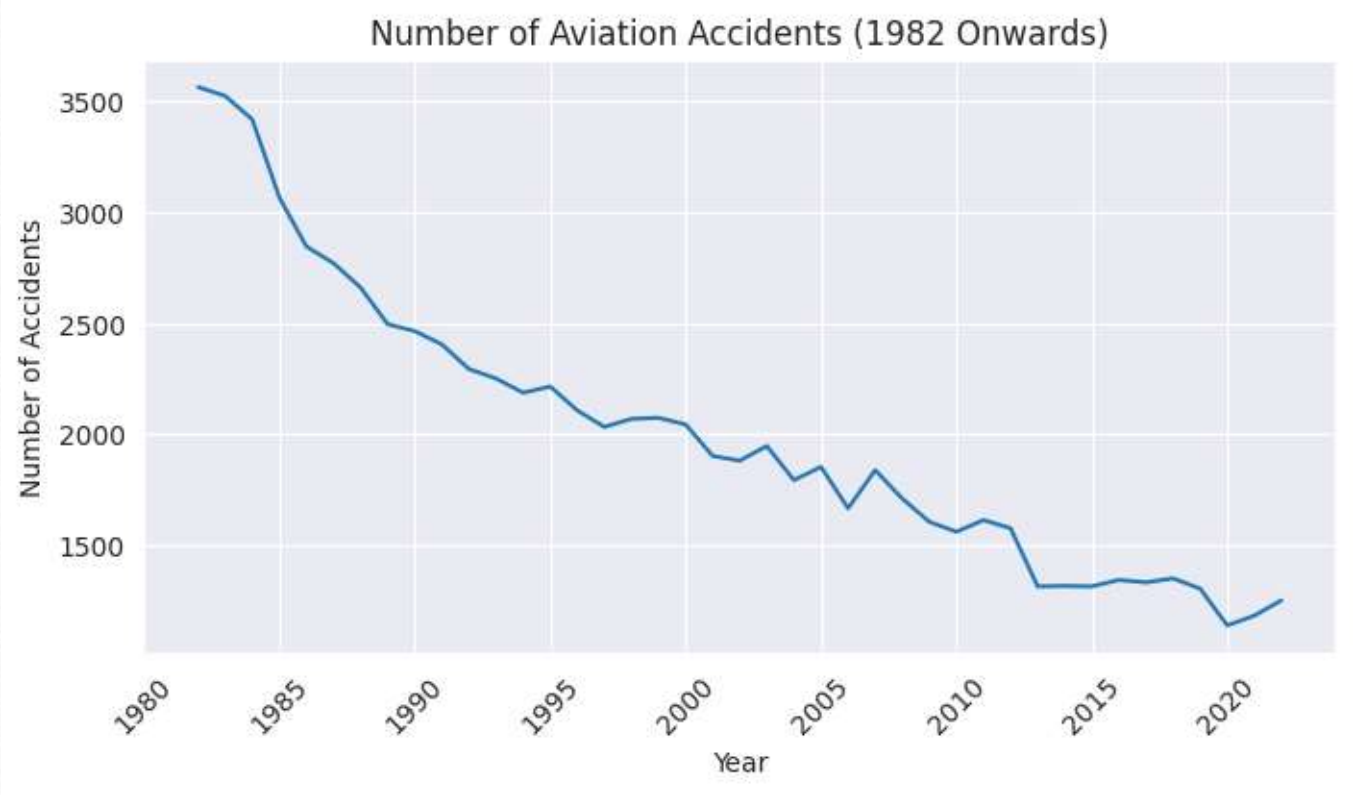
IMC-Instrument Metrological Conditions (weather conditions are bad and visibility is low)

VMC-Visual Metrological Conditions (visibility is okay and instruments are not required)

UNK- Unknown

Most accidents occurred when the weather was good and visibility was okay.

Results



Number of accidents have reduced through the years meaning that safety in the aviation industry are improved.

Conclusion

- Aircrafts with reciprocating engines had the highest number of accidents.
- Most accidents occurred when the weather was good and visibility was clear.
- There has been a steady decrease of the number of accidents over the years which indicates improvements in safety in the aviation industry.

Next Steps

- **Investigate Accidents with Reciprocating Engines**:
- Conduct in-depth studies to understand why reciprocating engine aircraft have the highest accident rates.
- Explore potential technical or operational upgrades for such aircraft.
- **Analyze Accidents in Good Weather**:
- Examine factors contributing to accidents during good weather conditions, such as human error, operational practices, or equipment failures.
- Implement focused training programs for pilots to reduce errors under seemingly safe conditions.
- **Enhance Safety Standards**:
- Build on the improvements already made by identifying key interventions that led to the decrease in accident rates.
- Continue refining aviation safety protocols and monitoring systems to sustain and enhance this trend.

Thank you

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