



Aviation Accident Database Analysis for Risk Assessment

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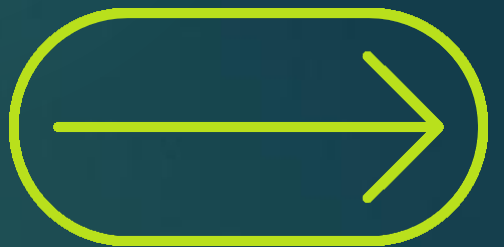
INTRODUCTION



To analyze aviation accident data to determine the lowest-risk aircraft for a new aviation business venture.



which aircraft make causes most accidents?



which type of aircraft should the company invest in?



DATA SOURCE



Aviation Accident Database Synopses (Kaggle)

Link: Aviation Accident Database
on Kaggle

This dataset contains records of aviation accidents and incidents including details like event date, aircraft make, injury severity, and more.

Data Overview

*Number of
Records: 88889
accidents*

Relevant Columns:

Event Date, Location, Country

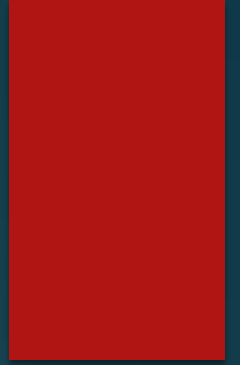
Aircraft Make, Model, Injury Severity

Total Injuries (Fatal, Serious, Minor, Uninjured)

Weather Condition, Purpose of Flight.Amateur Built ,

Number Of Engines ,Engine Type

Data Cleaning and Preparation



▶ Steps Taken:

- ▶ Standardizing the column names
Removed missing and irrelevant data
- ▶ Imputed missing values where necessary (e.g., Total fatal accidents)
- ▶ Converted date and numerical columns to correct data types
- ▶ Tools Used: Python (Pandas), Jupyter Notebook

Data Analysis Approach

Key Analyses Performed:

- Accident count by aircraft make
- Severity analysis by injury type (fatal, serious, minor)
- Correlation between weather conditions and accident outcomes
- Trend analysis by year and purpose of flight

**Visualizations: Bar charts
and line graphs for key
insights**

Key Findings

Aircraft Makes with Lowest Accidents Risks]:

[hughes and boeing]

Aircraft Makes with Highest Accident Risks:

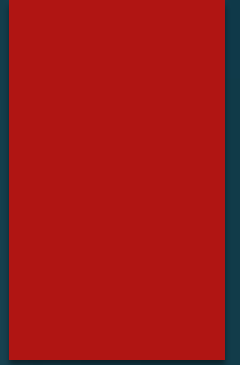
[cessna and piper]

Key Factors Contributing to Accidents:

Weather (e.g., adverse conditions)

Purpose of flight (e.g., personal flights had higher risk)

Visualizations



Business Implications



Recommendation: Based on the analysis, it is suggested that the company focus on Boeing Aircraft due to their lower accident rates.

Risk Factors:

Consider aircraft makes associated with higher risks and how operational safety procedures can mitigate potential issues.

Weather-related accidents and their impact on aviation operations.

Conclusion

Summary of Insights:

Aircraft make and model are significant indicators of accident risk.
Weather conditions and flight purpose play critical roles in accidents outcome

*Next Steps:
Further data collection
and monitoring as the
business expands into
the aviation industry.*

Implementing safety protocols for identified
high-risk areas.

Thanks

