Aviation Accidents Analysis

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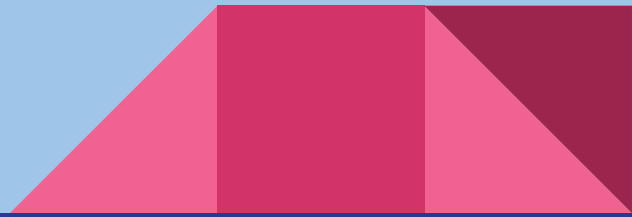
Summary

Descriptive analysis reveals criteria for selecting best suited Aircraft Models for the Company:

- Airplane Models with lowest Accident Occurrence
- Low accident prone models by Flight Phase
- Models with lowest accident severity numbers

Outline

- Business Problem
- Data
- Methods
- Results
- Conclusions



Business Problem

- Selecting lowest risk airplane models
- Safety Assurance
- Operations Reliability and Efficiency

Data

- Pulled from the National Transportation Safety Board
- Aviation accidents data for over 80,000 accident events from 1948 to 2022
- Includes accident events details e.g date, severity, aircraft categories, models e.t.c.

Methods

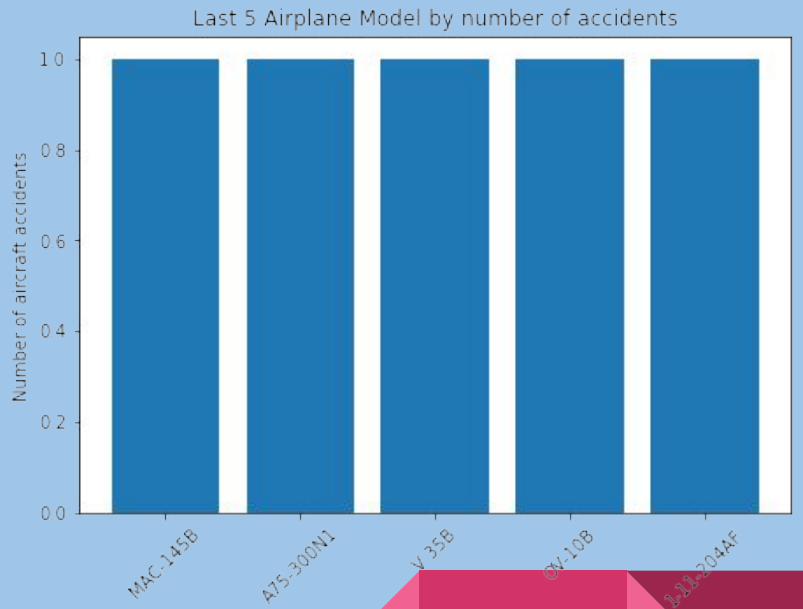
- Data missing values handled by dropping and replacing them
- Data analyzed by:
  - Frequency of accidents per model
  - Accident frequency by Flight Phase per model
  - Accident Severity per model
- Use of barcharts to visualize occurrence per aircraft model

Results 1

Top 5 Airplane models with lowest accident occurrence and best suitable for purchase and operations are:

- MAC-145B
- A75-300N1
- V35B
- OV-10B
- 1-11-204AF

Provides better safety assurance and operations reliability



Results 2

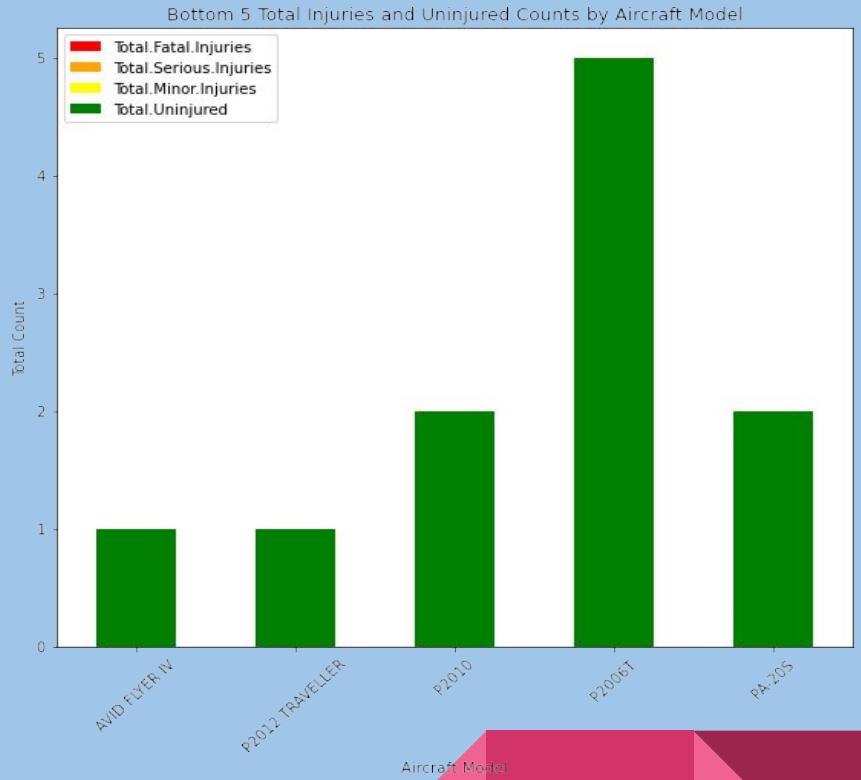
Accident Severity by Model

Best choice:

- Models with least to no injuries
- Models with highest uninjured

They include:

- AVID FLYER IV
- P2012 TRAVELLER
- P2010
- P2006T
- PA-205



Results

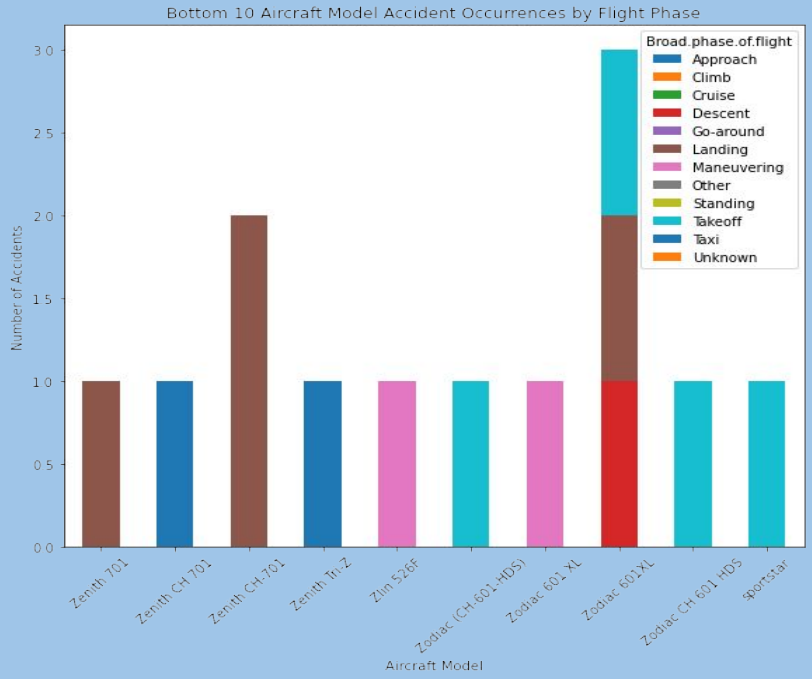
Accident by Flight Phase per Model

Best choice:

➢ Models with lowest count per Flight Phase

They are:

- Zenith 701
- Zenith Tri-Z
- Zin 526F
- Zodiac(CH-601-HDS)
- Zodiac 601 XL
- Sportstar



Conclusions

Recommendations

- Aircraft Models with lowest Accident occurrence
- Low accident prone models by Flight Phase
- Aircraft models with lowest accident severity numbers

Further analysis

- Accident occurrence based on Weather conditions
- Location influence on Aircraft accidents
- Aircraft maintenance influence on accident frequency

Thank You!

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