Aviation Risk Analysis

Identifying Low-Risk Aircraft for Investment

Using Aviation Accident Data

Project Goal

- Enter the aviation industry with minimal risk
- Identify low-risk aircraft for purchase
- Use historical aviation accident data
- Present insights clearly to decision-makers

Data Overview

Key variables used:

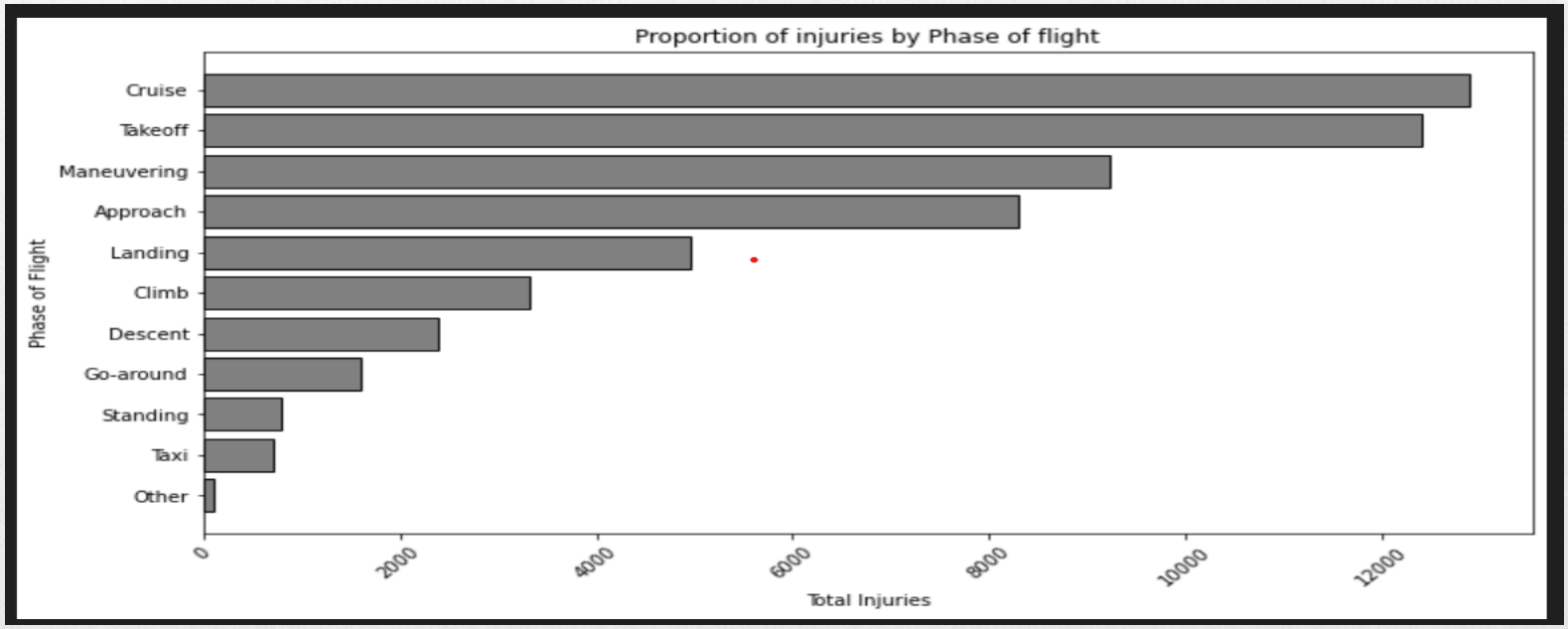
- Aircraft Make, Model, Engine Type
- Aircraft Damage
- Injury Severity & Fatalities
- Event Date, Location, Country
- Purpose of Flight

How Risk Was Defined

- Low-risk aircraft are identified by:
- Fewer reported accidents
- Lower fatal injury counts
- Lower fatality rates
- Consistent safety performance over time

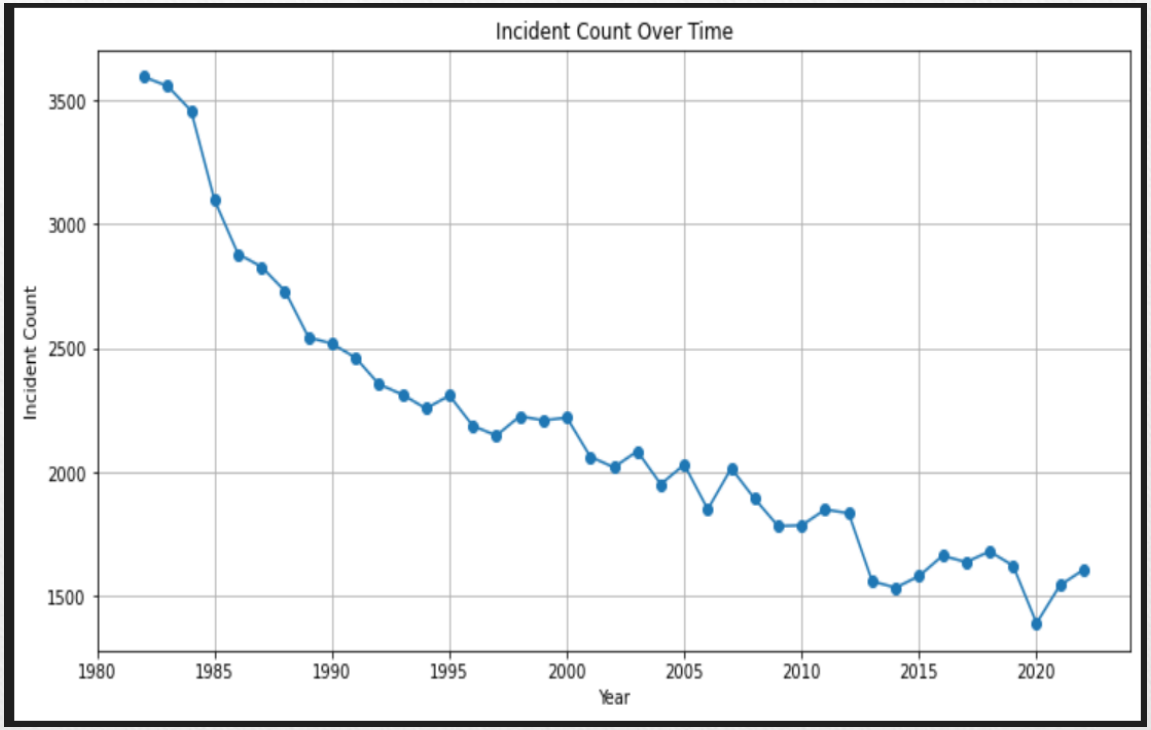
Analysis

- The analysis to understand the relation between phase of flight and total injuries reveals that most passenger injuries occur during the cruise and take-off phases. A fairly large portion of injuries also occur in the maneuvering and approach phases.



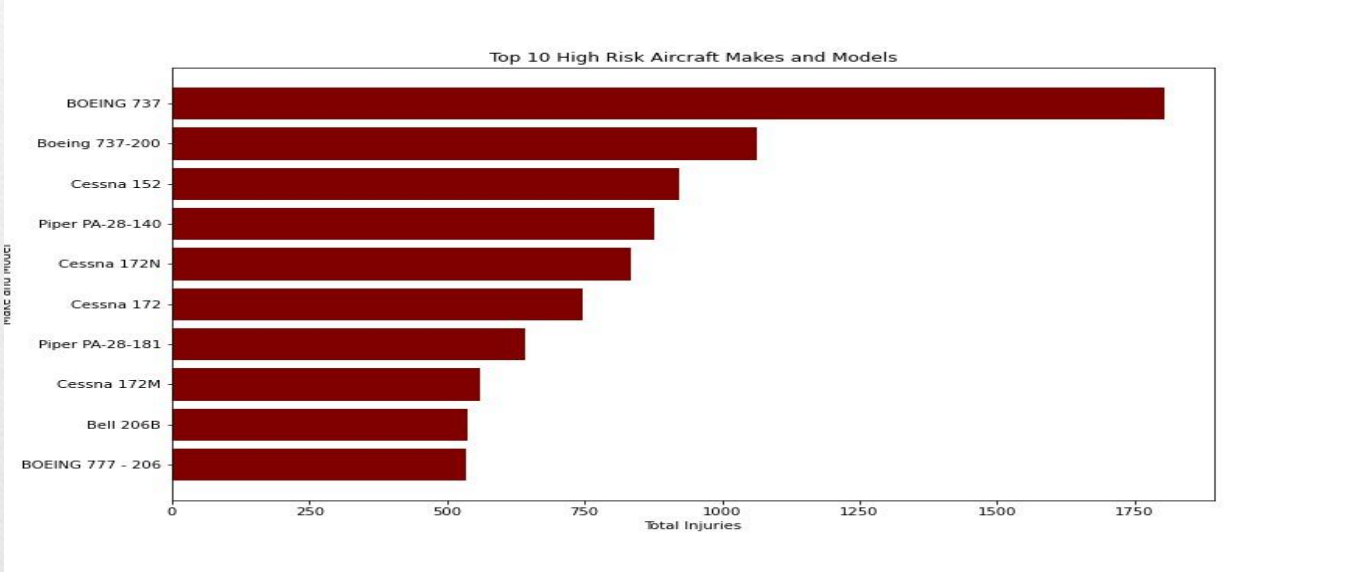
Analysis

The trend analysis shows that airplane incidents have been on a gradual decline over the years



Analysis

This analysis shows that various models of the Cessna and Piper makes are high risk, in that they have caused the most number of injuries.



Recommendations

- Prioritize aircraft models with low accident and fatality rates
- Consider engine type safety performance before purchase
- Avoid aircraft linked to high-risk flight purposes
- Use data-driven dashboards for ongoing risk monitoring

Conclusion

- Data-driven analysis reduces investment risk
- This approach supports safer aircraft acquisition decisions