Aviation Safety Risk Analysis

Flatiron Phase 1 Project

Patricia Louissaint

Date: July 2025

Contact: inkedin.com/in/patricia-louissaint-831666a5/

Project Overview

Business Goal: Recommend low-risk aircraft for investment
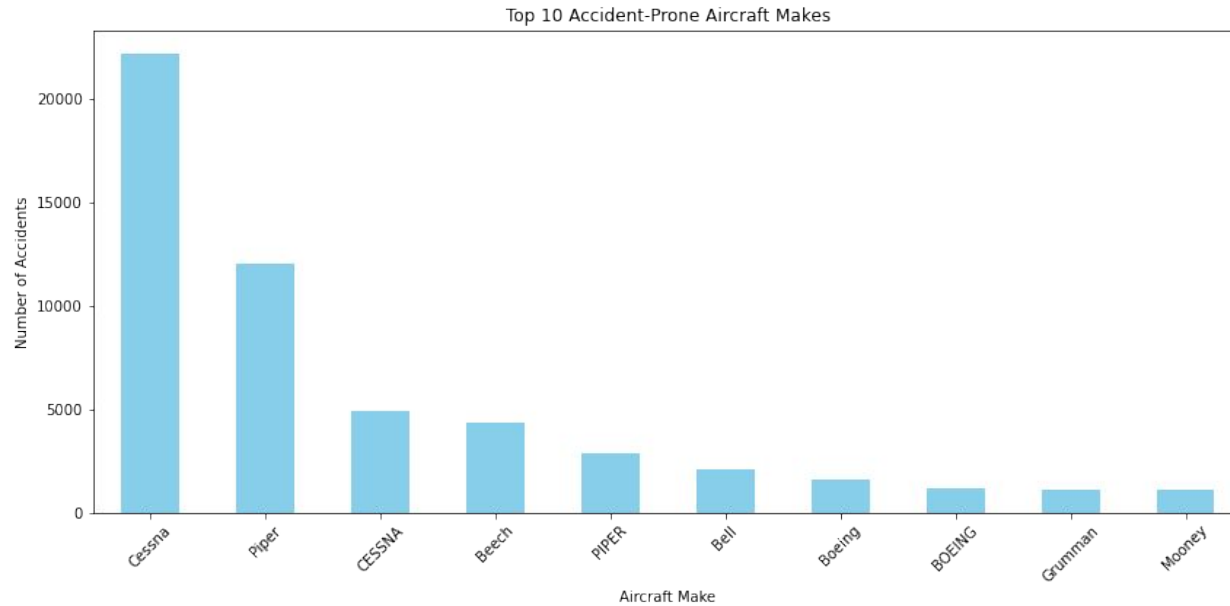
Data Source: NTSB accident records (1962–2023)
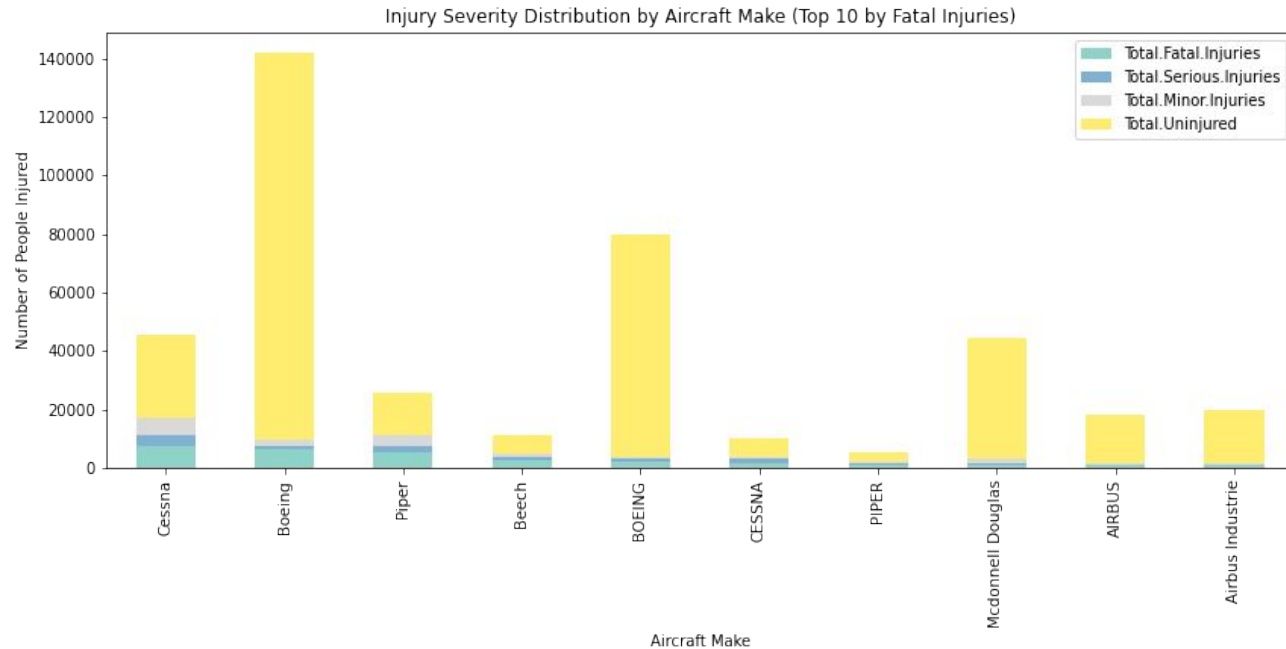
Tools: Python, pandas, matplotlib, Tableau

Data Summary

- 94,000+ records

- Key features: Make, injuries, weather, state

- Handled missing injury data with `fillna(0)`
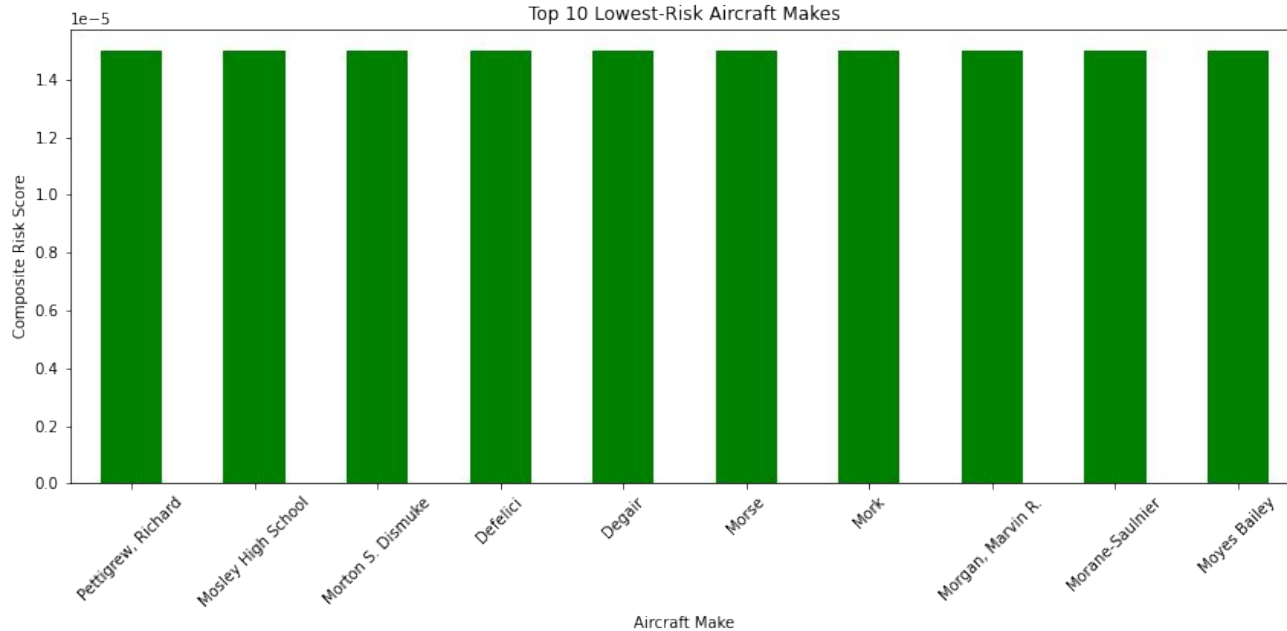
Accident Frequency

Top 10 Accident-Prone Aircraft Makes

💡 **nsight:** High accident counts correlate with popular aircraft manufacturers such as Cessna and Piper.

Injury Severity

Injury Severity Distribution by Aircraft Make (Top 10 by Fatal Injuries)

💡 **Insight:** Some aircraft have disproportionately high fatalities

Composite Risk Score

Top 10 Lowest-Risk Aircraft Makes

💡 **Insight:** Top 10 safest aircraft based on accidents + severity

Recommendations

1. **Buy low-risk makes** such as those at the top of the risk ranking

2. **Avoid high-risk makes** with high fatality rates

3. **Focus maintenance on single-engine aircraft**, which show greater risk frequency

Next Steps

- Aircraft model-level analysis

- Accident mapping by weather/location

- Integrate FAA maintenance history

Thank You

Patricia Louissaint
patlouis87@gmail.com
linkedin.com/in/patricia-louissaint-831666a5/

Questions welcome!