Aviation Accident Risk Analysis

Makena Odongo

10/02/2025

What is the problem?

BlueJet Ltd is expanding into aviation, but need to understand aircraft safety risks before investing.

Why does it Matter?

- The impact of aviation accidents on **safety, costs, regulations, and reputation**.

Key Questions:

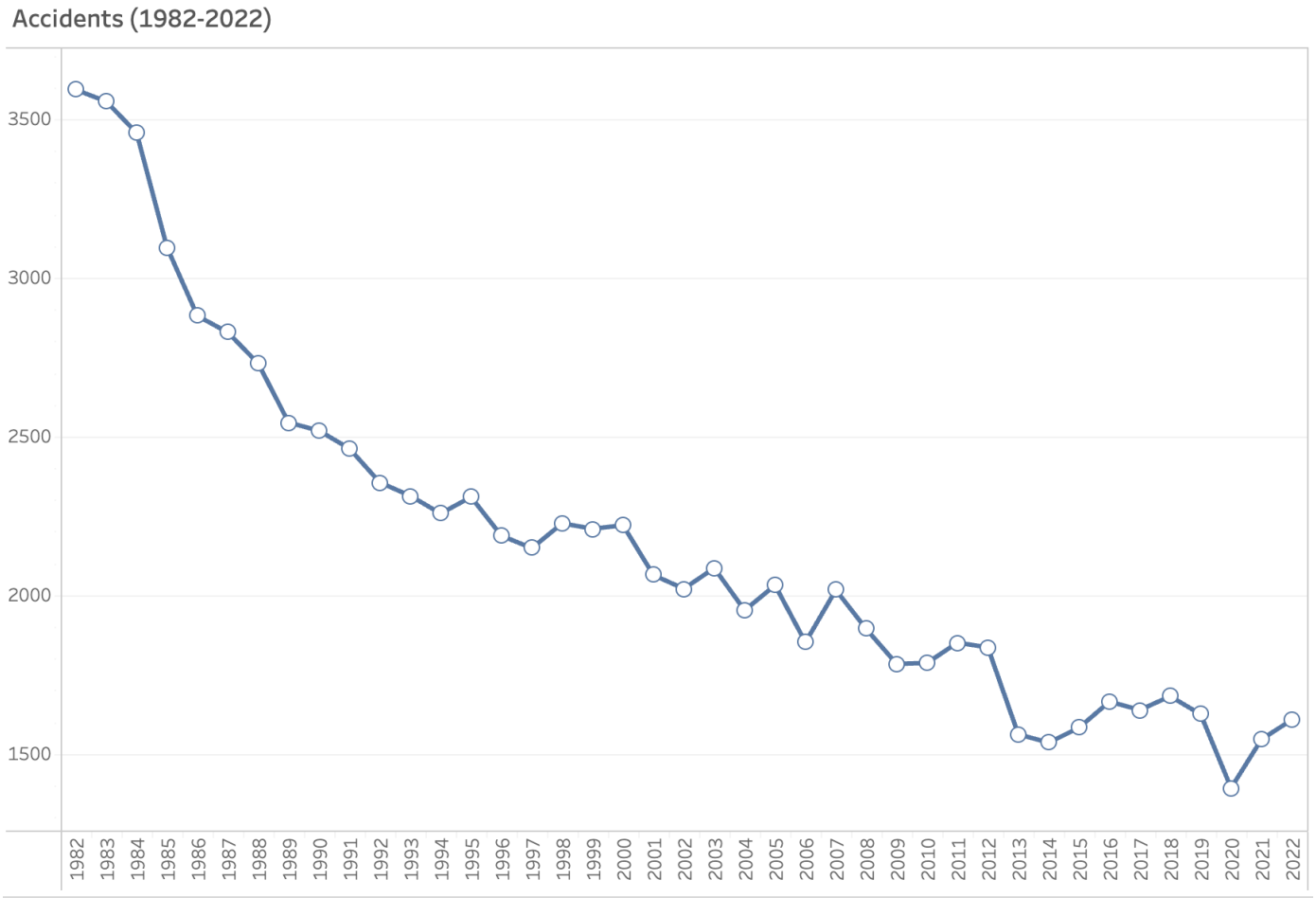
- Which aircrafts are the riskiest?
- What factors contribute to accidents?
- How can we mitigate these risks before investing?

Data & Analysis

- The source of the dataset is NTSB.
- Data structure: aircraft make, engine type, purpose of flight, weather conditions, casualties, etc.
- Analysis was done using Python and visualized on Tableau

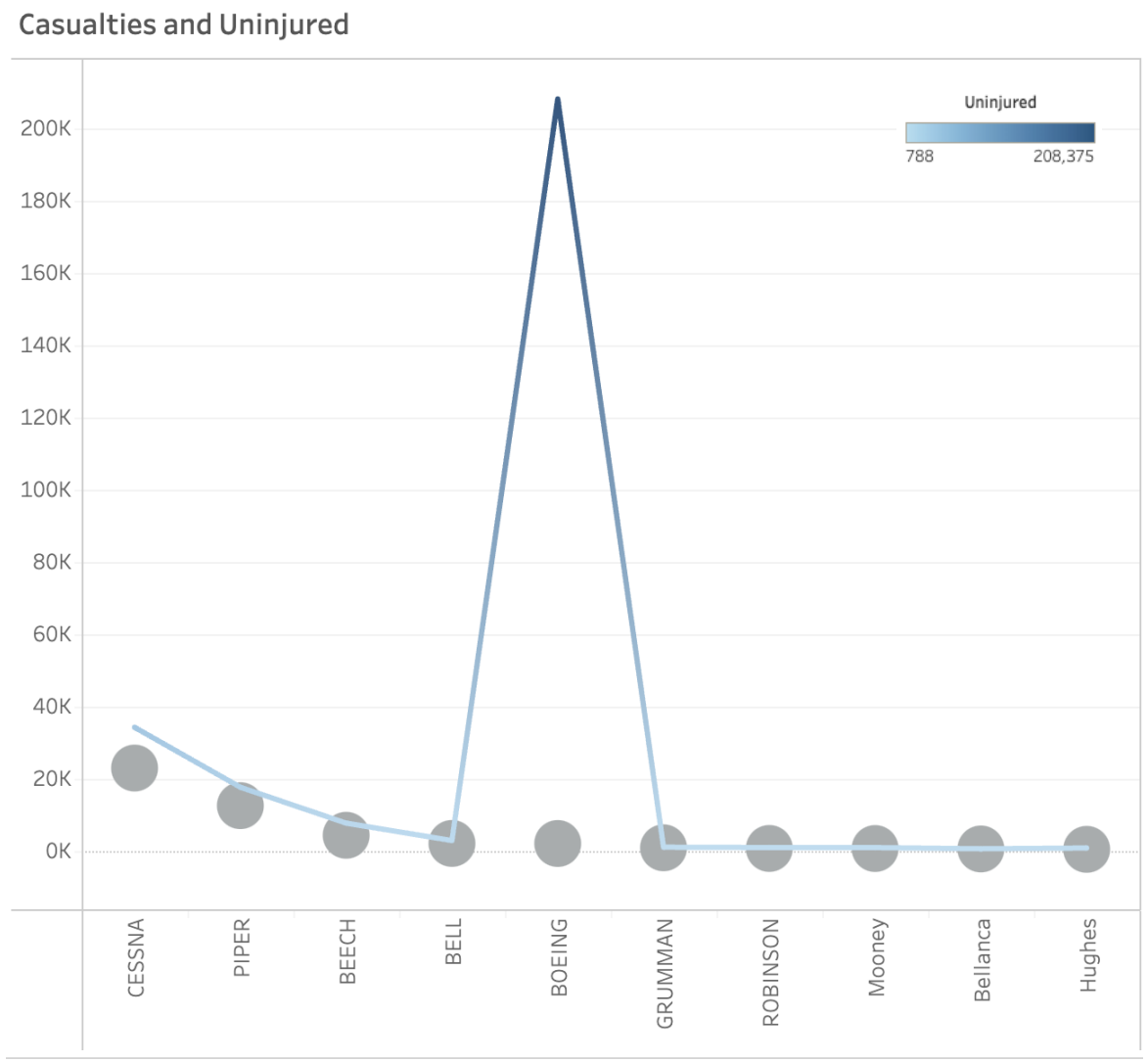
As per the analysis:

Total Accidents	High Risk Make
88,889	CESSNA



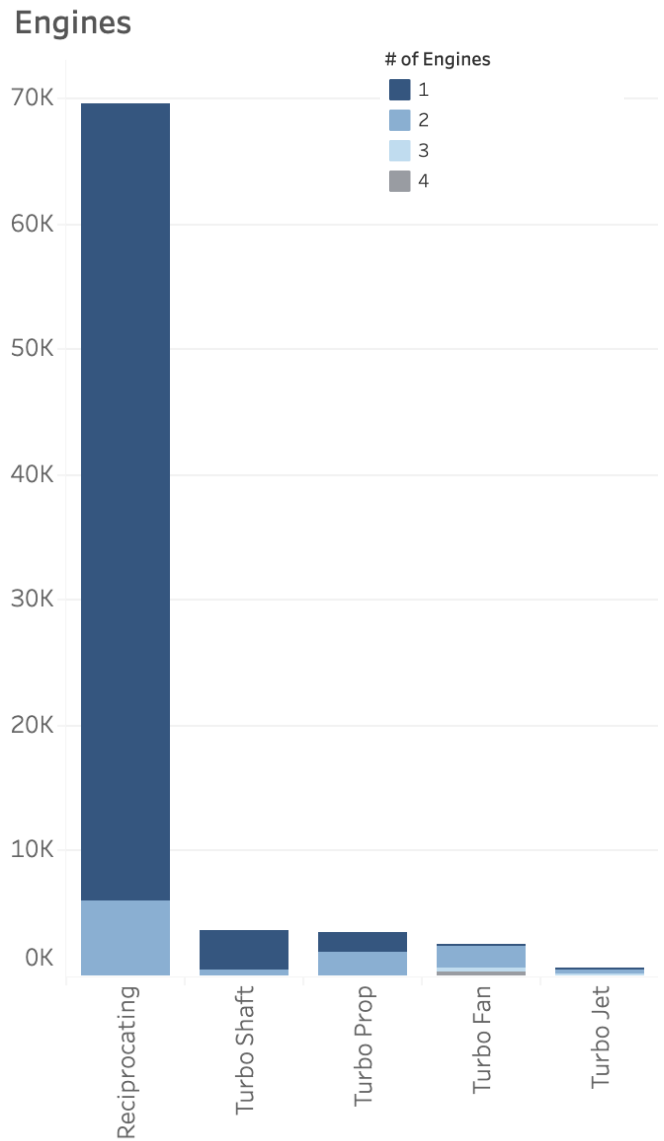
Over the years CESSNA have the highest accident rate—this should be a red flag for future investments.

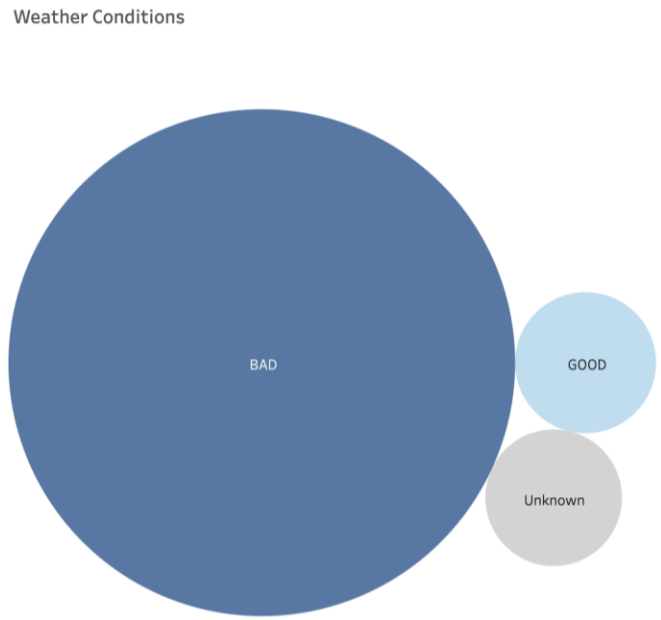
Across the different makes the degree of injury varies:



Some aircraft types have more survivable accidents than others, in this case, the make Boeing stands out. This could inform our insurance and fleet decisions.

When looking at the # of accidents other contributing factors include:





Fewer engines, notably the reciprocating engine, are more prone to accidents. That and the weather conditions are additional factors to consider.

Business Recommendations

- **Investment Strategy:** Avoid investing in aircraft makes and models with high accident rates.
- **Fleet Selection:** Prioritize aircraft with fewer casualties and better safety records.
- **Operational Considerations:** Avoid flying in high-risk weather conditions.

Next Steps

How do we proceed?

- Conduct **deeper analysis on accident causes**.
- Investigate **insurance costs and regulations**.
- Develop **a risk assessment framework for future investments**.

Thanks