



AIRCRAFT RISK ASSESSMENT

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OVERVIEW

Why this project matters:

- Our company is entering the aviation sector to expand and diversify
- Reducing financial, regulatory, and reputational risks requires an understanding of airplane safety.
- This analysis helps us avoid high-risk aircraft and invest in models with strong safety records.

BUSINESS UNDERSTANDING

Goal: Finding safe aircrafts

The company seeks to buy airplanes for both private and commercial use. However, there are risks in the aviation industry that need to be thoroughly understood.

Our analysis focuses on:

- Finding aircraft that pose less risk
- Avoiding high-fatality models
- Assisting in the making of well-informed decisions

This guarantees the safety, strategy, and compliance of our investment.

DATA UNDERSTANDING

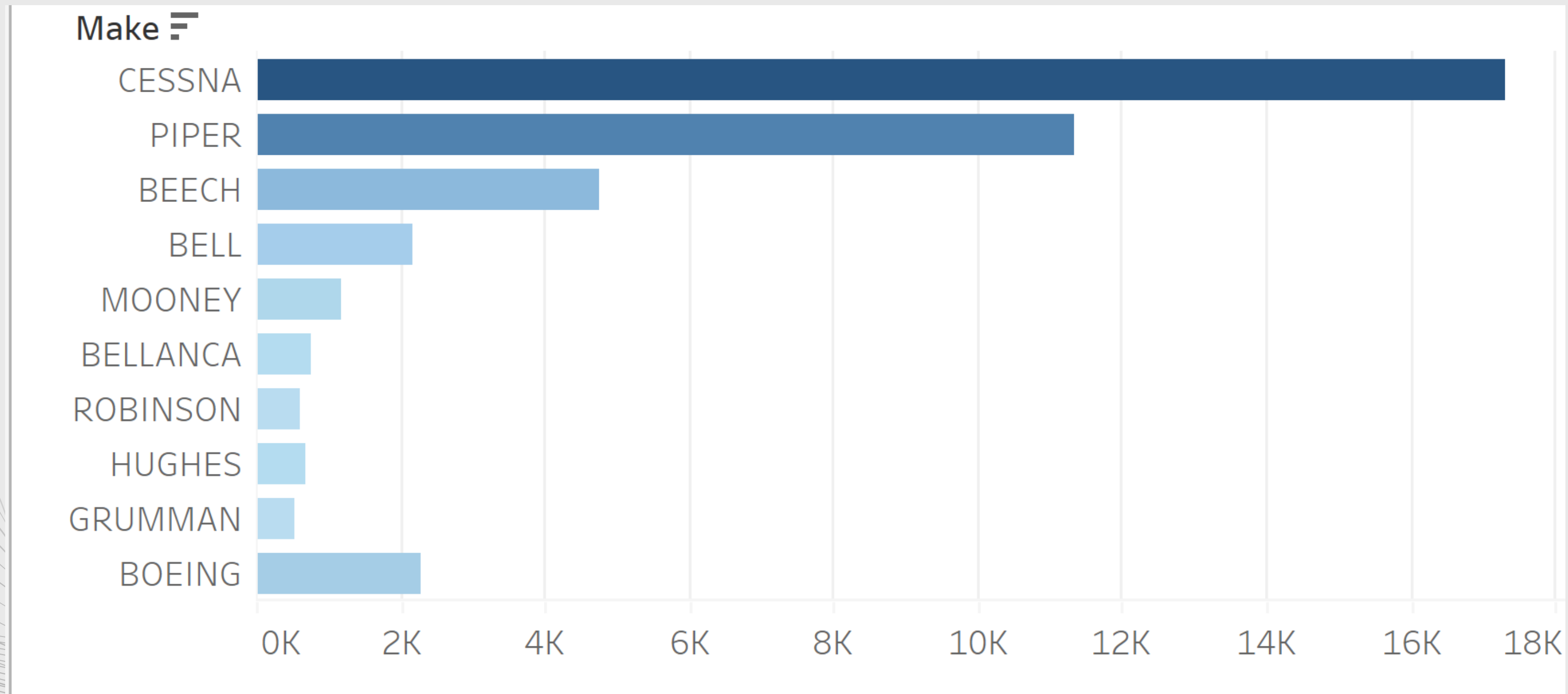
Source: National Transportation Safety Board
Analysis of over 88,000 reported events

Key variables:

- Model and Make of the Aircraft
- Number and severity of injuries
- Type of aircraft and weather

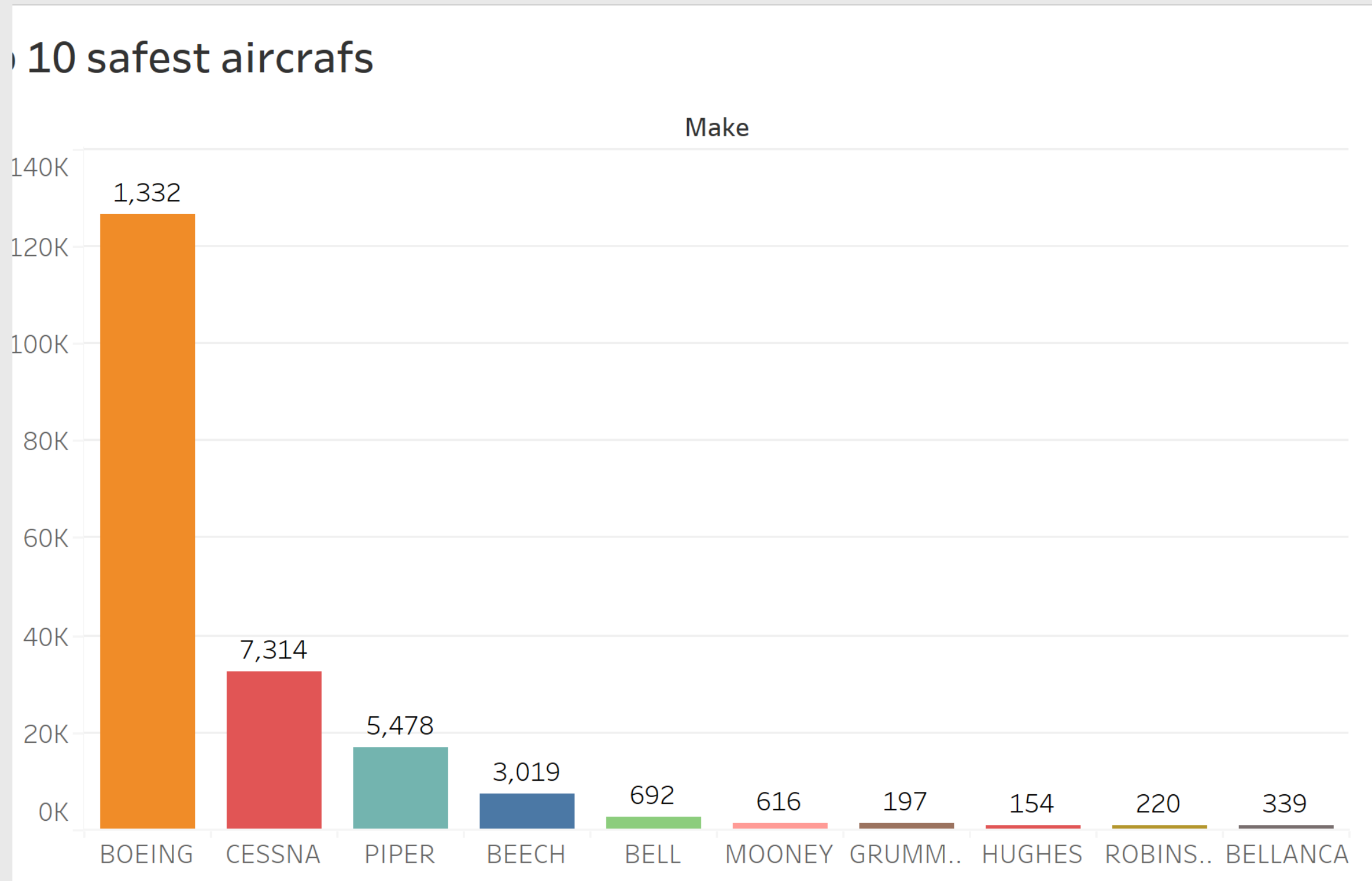
AIRCRAFT WITH THE HIGHEST TOTAL FATALITIES

- Some large aircraft had more fatalities but fewer incidents.
- These include Airbus and Boeing models with rare but high-impact accidents.



LOW RISK AIRCRAFTS

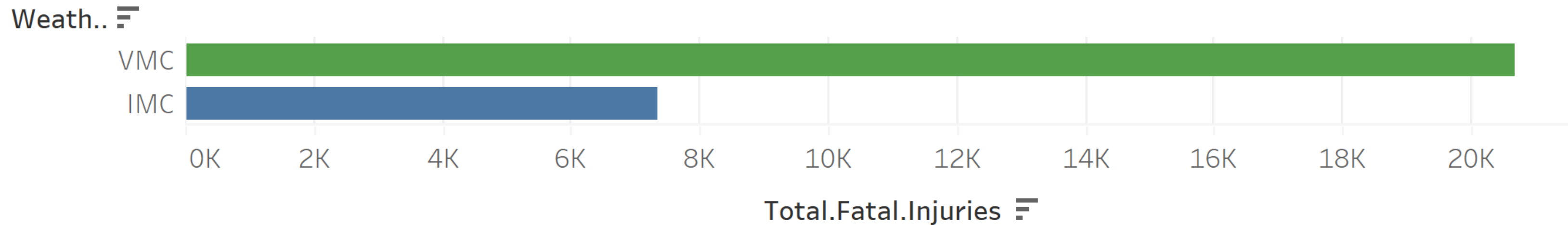
- Some large aircraft had more fatalities but fewer incidents.
- These include Airbus and Boeing models with rare but high-impact accidents.
- Cessna 172 and Piper PA-28 had many incidents but very low fatalities.
- These are safer options for training and light commercial use.



MOST ACCIDENTS HAPPEN IN GOOD WEATHER

- Accidents occur mostly in clear weather – not storms.
- Suggests pilot error or mechanical failure are the bigger risks.
- Most incidents occurred during Visual Weather Conditions, suggesting accidents are more likely due to human error or equipment failure – not just storms or poor visibility.

Incidents by weather conditions



RECOMMENDATIONS

- Start with trusted aircraft: **Cessna 172, Piper PA-28, and Beechcraft Bonanza**
- Avoid high-risk models, models with high fatalities per incident: Like the **Piper PA-46** or **Beechcraft 58**
- Do not use amateur-built aircraft, they have higher injury and death rates
- Invest in safety: Pilot training, inspections, and reliable manufacturers which reduces human error risks

NEXT STEPS

- Shortlist low-risk aircraft for procurement
- Exclude high-risk models from supplier review
- Enhance pre-flight checks and pilot education
- Explore further safety metrics (e.g. maintenance history, flight hours)



THANK YOU