Slide 1: AVIATION SAFETY ANALYSIS

Aviation Safety Analysis: Identifying Low-Risk Aircraft

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Slide 2: Overview

- Business Problem
- - Data Source
- - Analysis Approach
- - Key Findings
- - Recommendations

Slide 3: Business Understanding

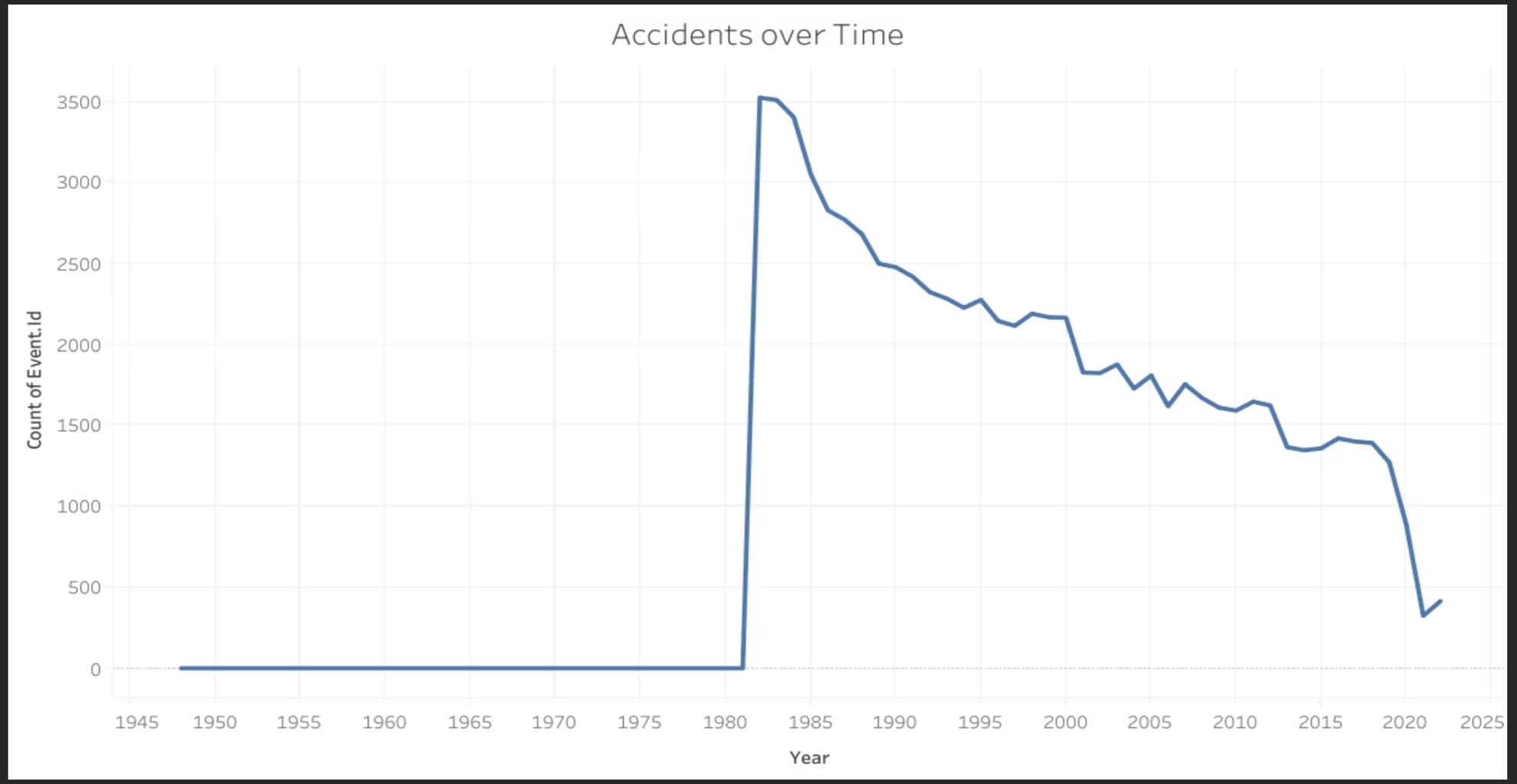
The company is expanding into the aviation industry but currently lacks clarity on risks across different aircraft types.This project analyzes aviation accident data to identify the safest options and guide purchasing decisions.

Slide 4: Data Understanding

- Source: NTSB Aviation Accident Data (1962–2023)
- - Coverage: Civil aviation accidents worldwide
- - Key Features: Year, Make, Model, Engine Type and Number of Engines
- - Data Cleaning: Missing values addressed, severity categories simplified, year extracted

Slide 5: Data Analysis (Accidents Over Time)

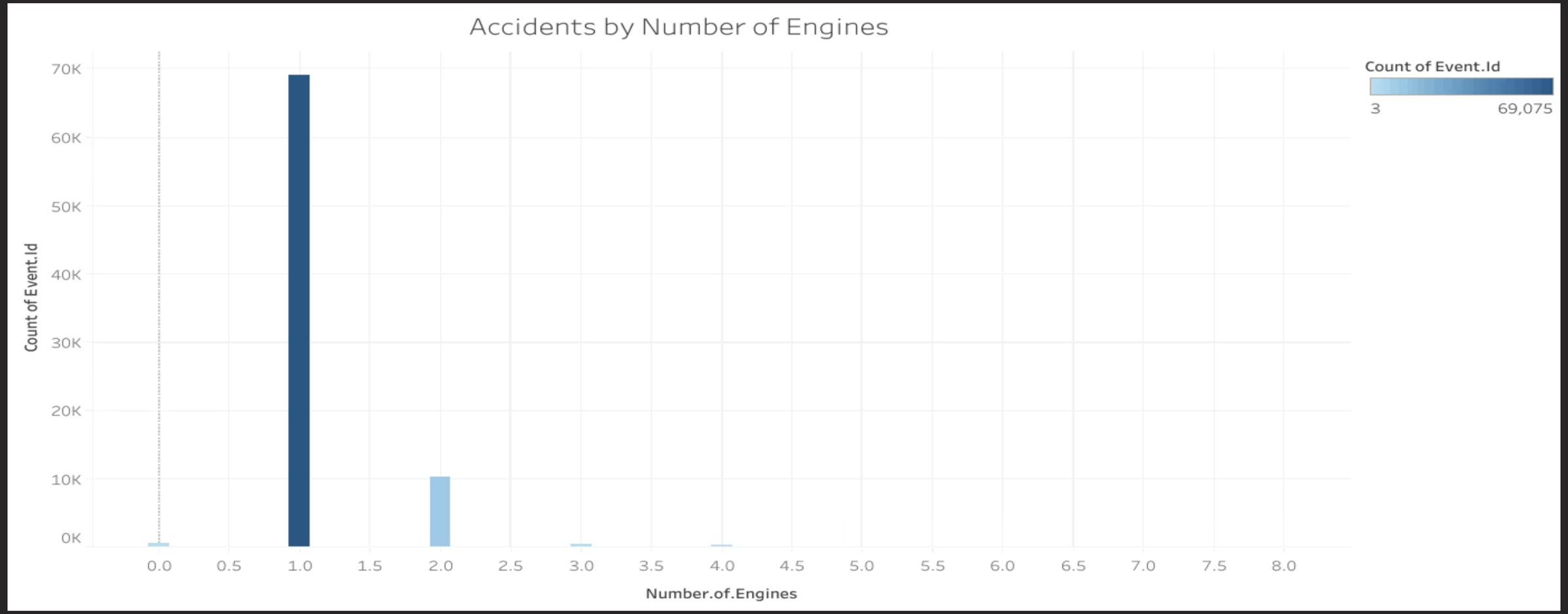
Aviation accidents have declined significantly since the 1980s. Reflects improved technology, stricter regulations, and better pilot training. Insight: The aviation industry has become progressively safer



Slide 6: Data Analysis (Accidents by Number of Engines)

Single-engine aircraft dominate accident counts.

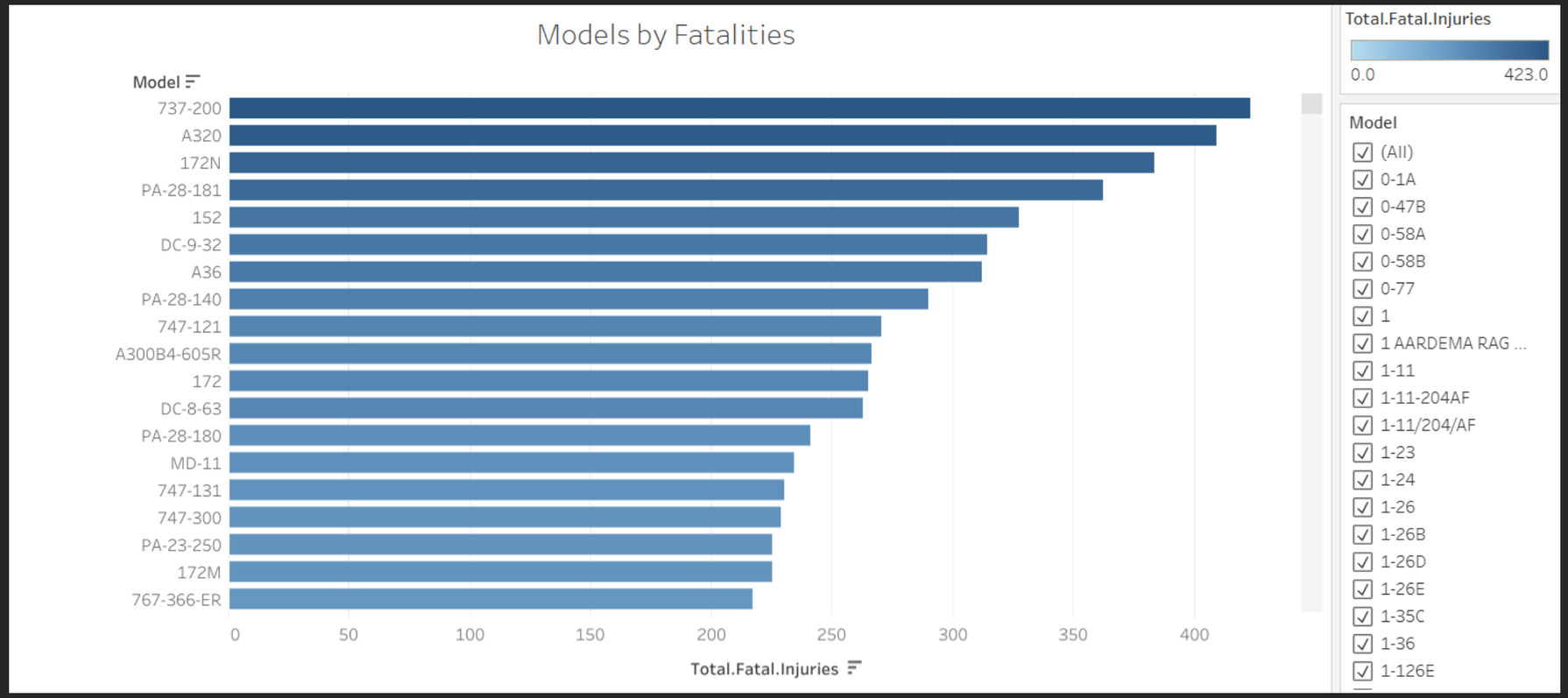
Multi-engine planes show far fewer accidents.Insight: Engine redundancy improves safety and reduces operational risk.



Slide 7: Data Analysis (Accidents by Model)

Popular general aviation models such as 737-200, A320, 172N appear among the highest in total fatalities.

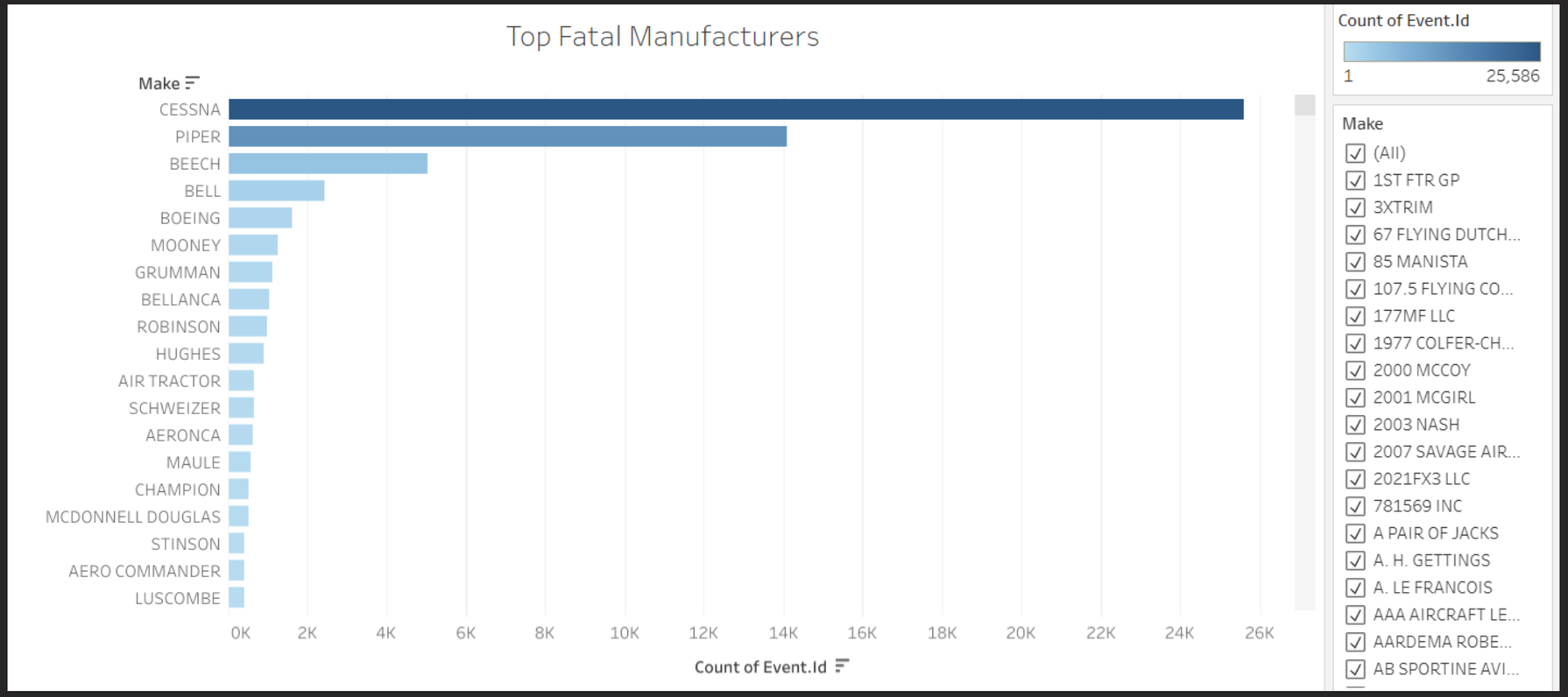
Insight: High fatality counts are driven by widespread use of these aircraft, not necessarily poor design risk should be assessed relative to fleet size and usage.



Slide 7: Data Analysis (Accidents by Manufacturers)

Cessna, Piper, and Beech dominate the accident records, while Boeing and other large manufacturers appear less frequently.

Accident frequency often reflects the size of the active fleet; smaller GA aircraft are used far more, so they naturally show higher accident counts.



Slide 8: Recommendations

1. Prioritize multi-engine aircraft → safer for commercial operations.
2. Invest in modern models → newer designs benefit from advanced safety features.
3. Avoid high-fatality models initially → begin with lower-risk categories.

Slide 9: Next Steps

- Monitor aviation safety continuously using Tableau dashboard
- - Incorporate cost, maintenance, and insurance data into evaluation
- - Begin with a pilot program using a small, safe fleet before scaling operations

Slide 10: Thank You

Thank you for your attention!

Any Questions?