Aviation Industry Analysis

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Overview

- **Company Expansion:** Exploring the aviation industry for commercial and private operations.

- **Challenge:** Limited knowledge of risks associated with aircraft.

- **Goal:** Identify aircraft with the lowest risk to help guide purchase decisions.

Business Understanding

- **Source:** National Transportation Safety Board aviation accident data (1962-2023).

- **Scope:** Civil aviation accidents and incidents in the U.S. and international waters.

- **Key Variables:** Aircraft make, total incidents, total injuries, and weather conditions.

Data Cleaning & Preparation

- Data from the United States and 1982 was used

- The **Aggregation** was achieved through the Grouped data to uncover actionable insights

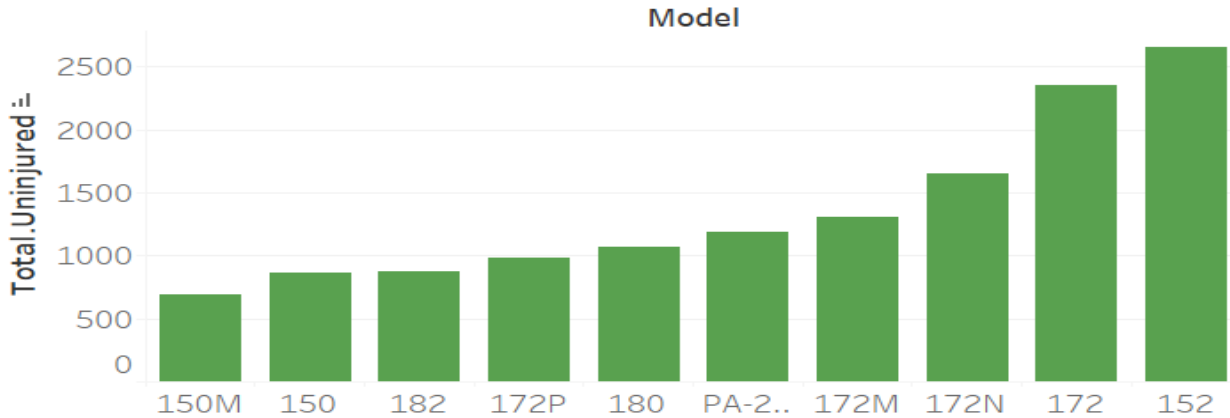- **Standardization** was critical for normalizing the makes for accurate aggregation.

Top 10 Makes with Highest Accident Count

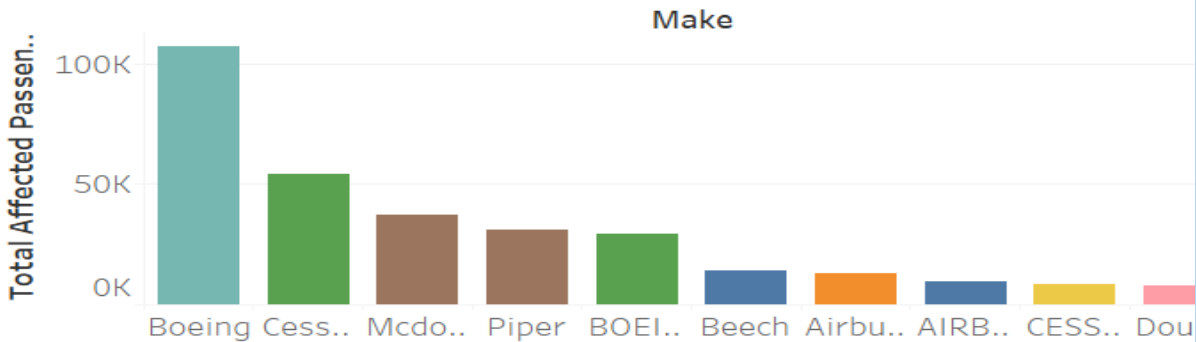| Make	Accident Count
Cessna	21563
Piper	11659
CESSNA	4279
Beech	4167
PIPER	2507
Bell	1881
Boeing	1156
Mooney	1074
Grumman	1073
BEECH	892

- The Mentioned make had the highest Accident count.
- These Airplane make should be avoided based on their higher number of accidents
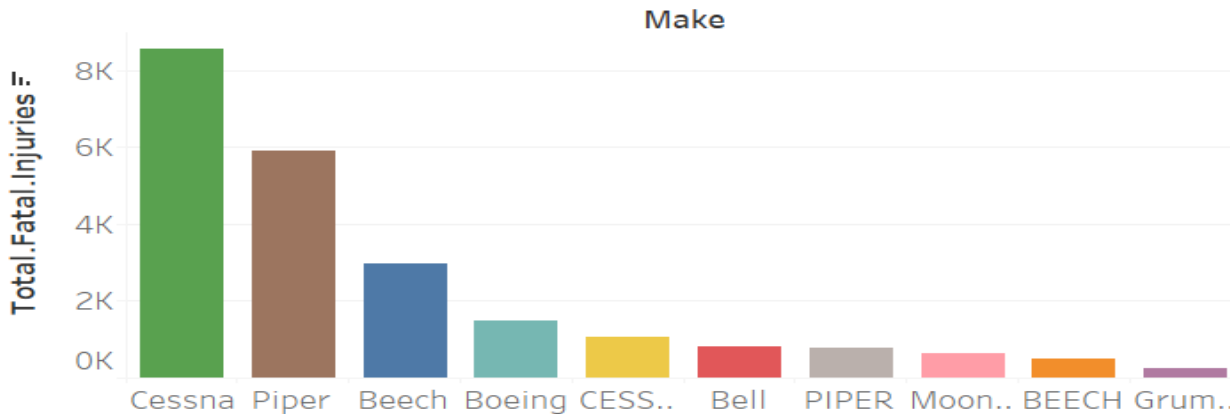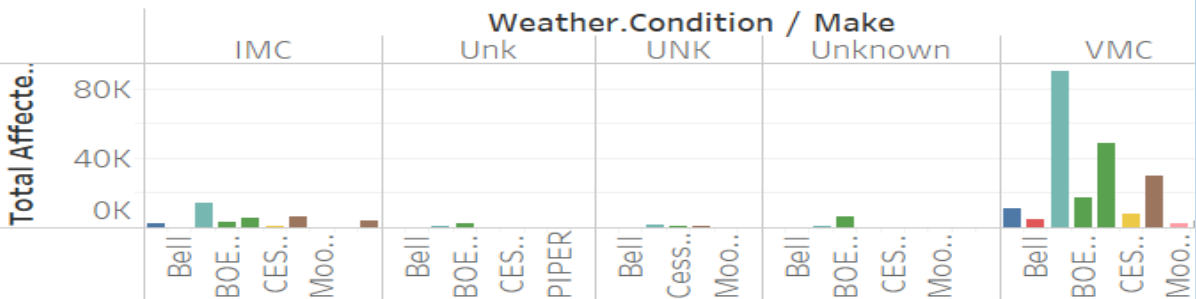
Data Visualization Summary

Make by Injuries/Number of Accidents
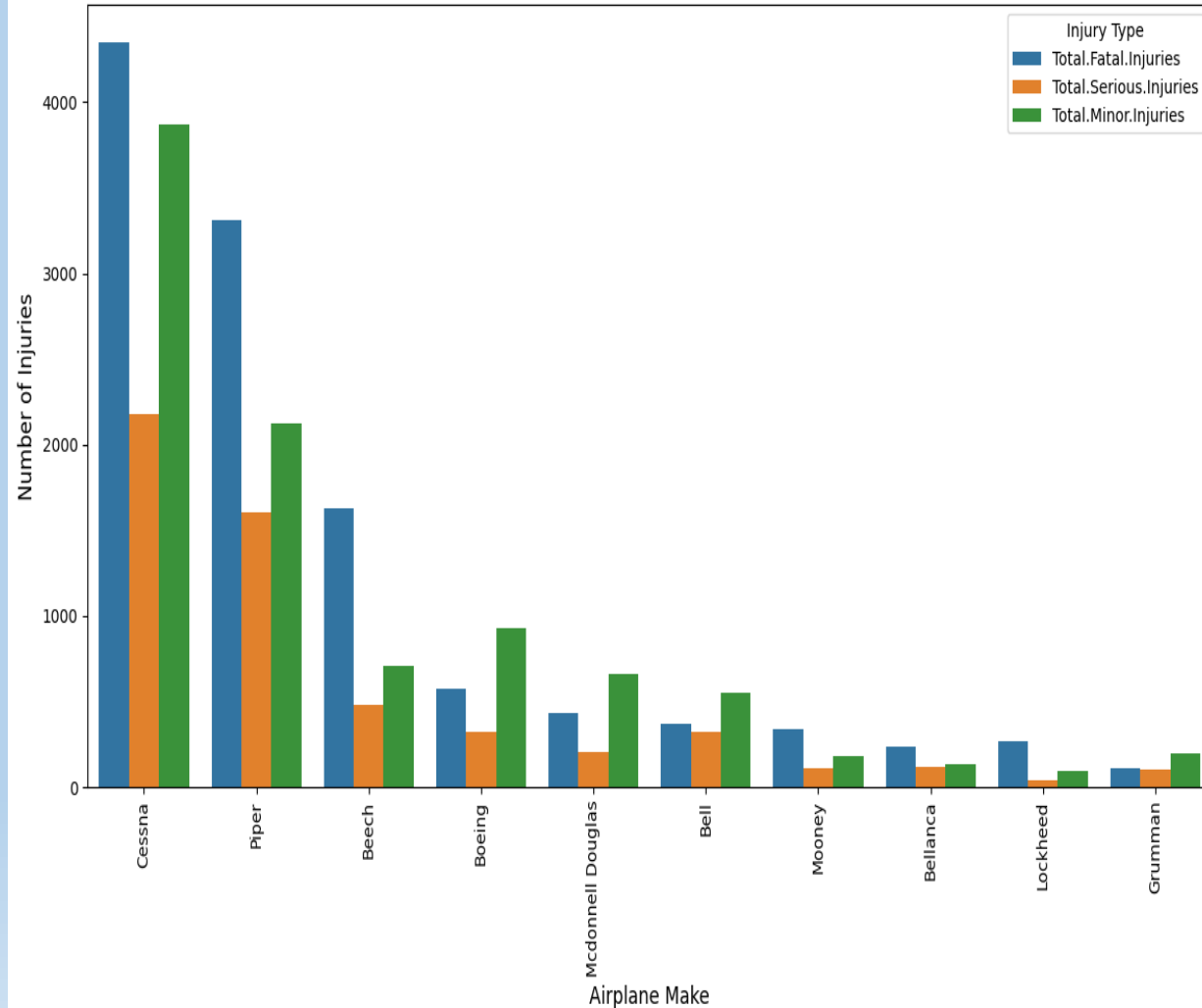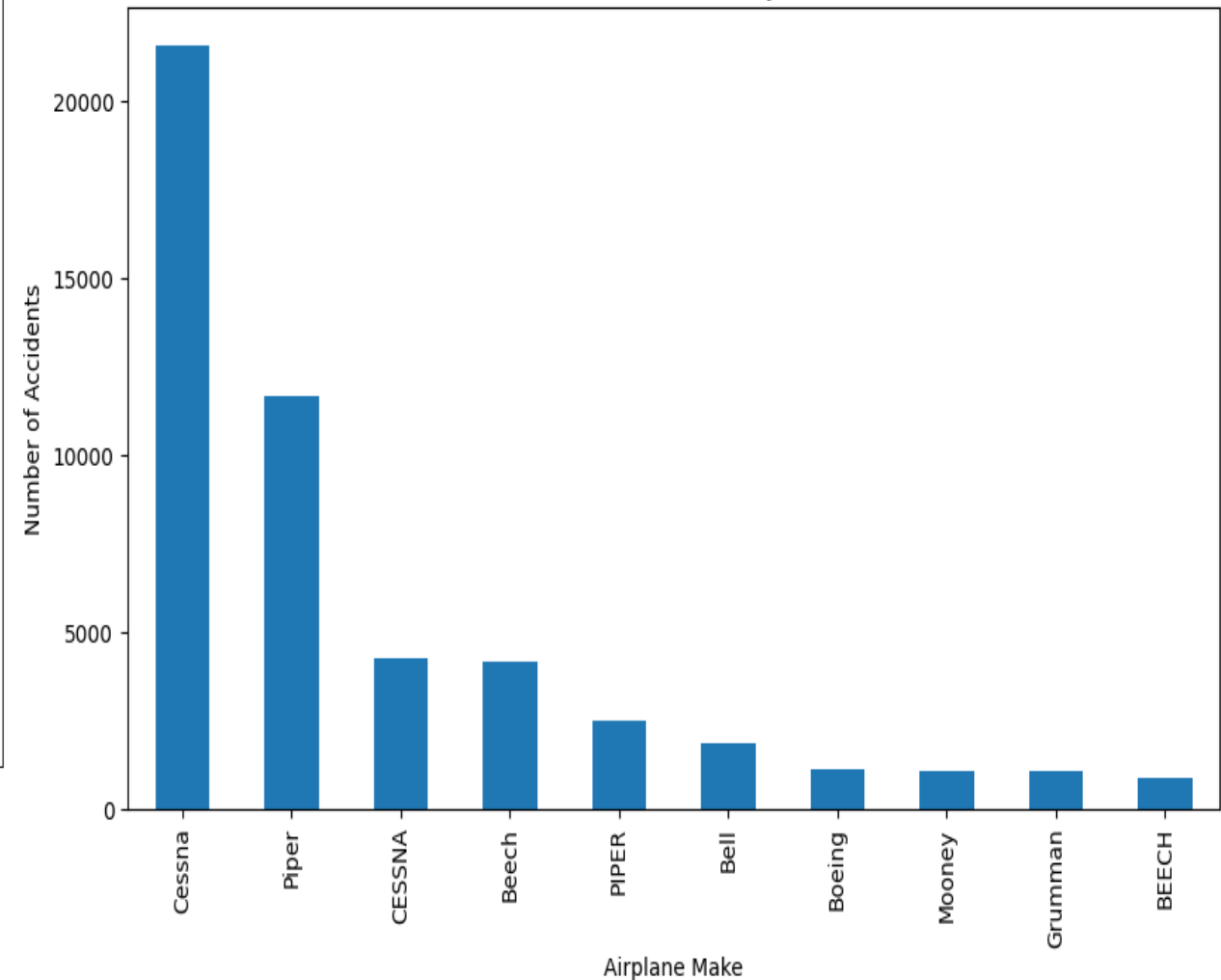
Data Summary

- Airplane Make with highest Number of Accidents/Injuries:

- **Cessna, Piper, Beech, Boeing, Bell, Mooney, Bellanca, Lockheed,** and **Grumman.**

- Weather conditions associated with highest accidents include; VMC and IMC

- Small private aircraft were associated with most accidents

Key Recommendations

- **Focus on Low-Risk Makes:** Prioritize makes with fewer accidents and affected passengers.

- **Monitor Weather Impact:** Consider weather-related risks when assessing aircraft.

- **Boeing** is recommended but invest in a **high-quality maintenance team**

Thank You