Phase 1 Data Science Project: Aviation Accident Analysis

Business Recommendations for Aircraft Purchases

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Project Overview

Objective:

- **Purpose:** Provide a business-focused analysis to guide the selection of aircraft for commercial and private enterprises.

- **Goal:** Use aviation accident data to identify trends and recommend aircraft models that align with safety and reliability considerations

Overview

- **Data Source**: (NTSB) Aviation Accident Data
- **Key Variables**: Aircraft Damage, Make, Injury Severity, Total number of Injured, Year of events, Weather conditions, Broad phase of flights, etc
- **Approach:** Data cleaning, Exploritory Data Ananlysis, Trend Visualizations, to guide recommendations

Business Understanding

- Our goal is to select aircraft models based on safety data and historical trends.
- We are to provide actionable insights to improve safety and reliability in aircraft purchases

Data Understanding

- **Cleaning:** Address missing, and null values, standardize data entries, and any inconsistencies in the data
- **Exploration and Preparation:** Explore, simplify, and extract data categories for analysis
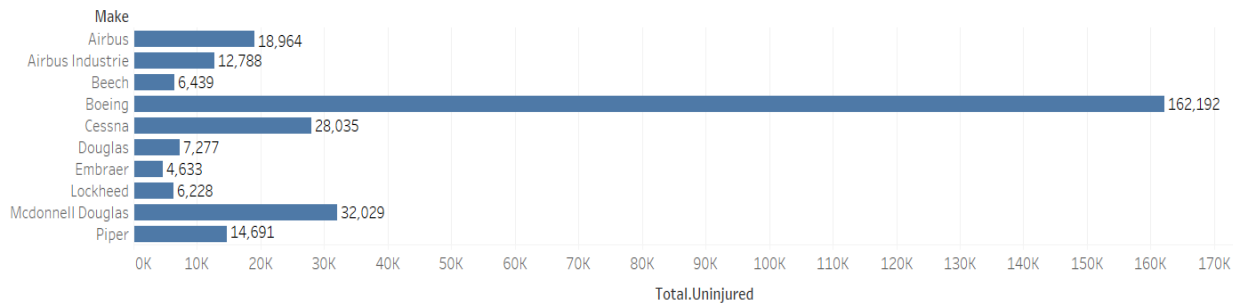
Data Analysis

- **EDA(Exploratory Data Analysis):** Assess distribution and relationships between data columns
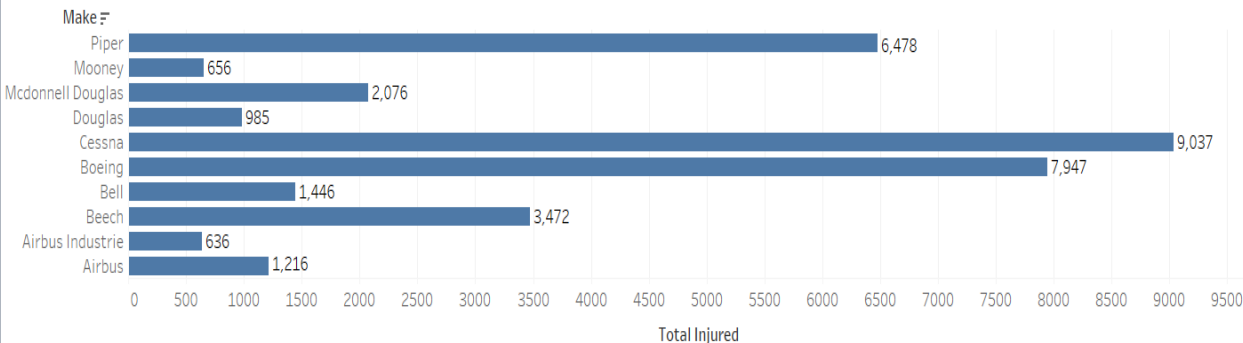- Identify trends and analyze yearly changes in these Aircraft events

Recommendations

Total Uninjured Against Aircraft Makes

Make

Make	Total Uninjured
Airbus	18,964
Airbus Industrie	12,788
Beech	6,439
Boeing	162,192
Cessna	28,035
Douglas	7,277
Embraer	4,633
Lockheed	6,228
Mcdonnell Douglas	32,029
Piper	14,691

Total.Uninjured

Based on this graph, Boeing has the highest number of uninjured people

Total Fatal Injured Against Aircraft Makes

Make

| Make	Total Injured
Piper	6,478
Mooney	656
Mcdonnell Douglas	2,076
Douglas	985
Cessna	9,037
Boeing	7,947
Bell	1,446
Beech	3,472
Airbus Industrie	636
Airbus	1,216

Total Injured

Based on this graph, Cessna has the highest number of fatal injuries, compared to the rest

Looking at the two graphs, it's safe to say that despite Boeing being 2nd in place in the most fatally injured people, it's number here, compared to the number it has under total uninjured people, Boeing still takes the lead in Aircraft safety

Recommendations

Total Injured (Fatal) Against Every Year
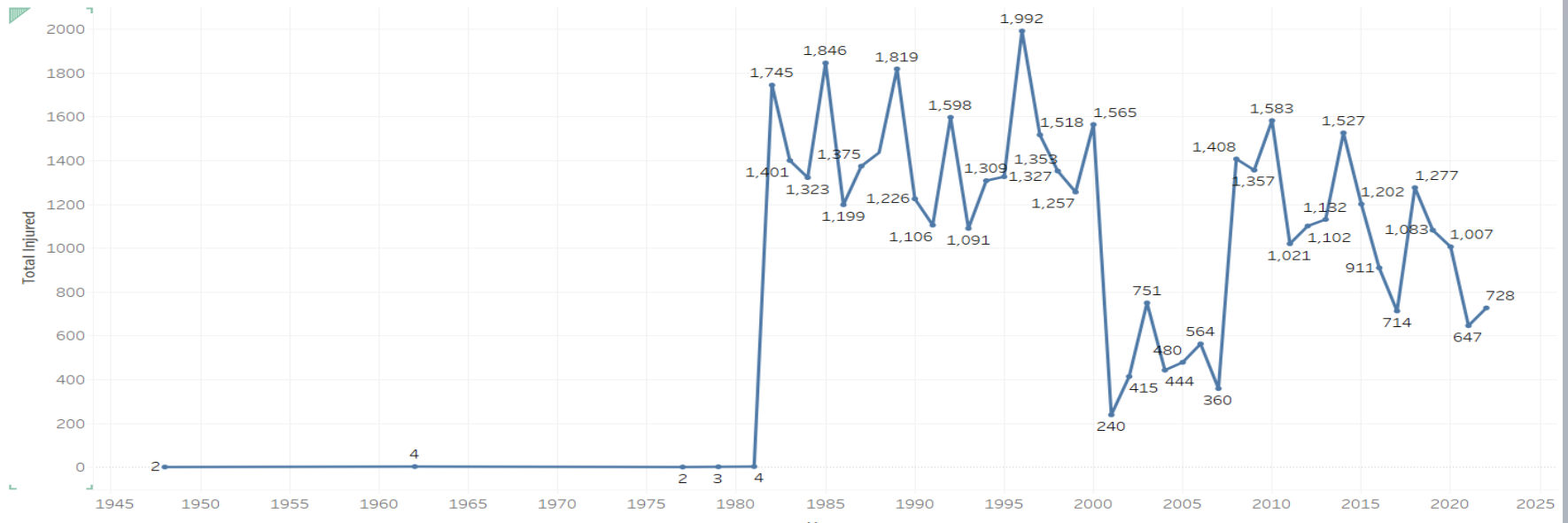
Due to the rise in air travel since the mid 90's, it's understandable that the number of injuries increased, after 1980. However, as technology and safety measures are being improved, the number of injuries has drastically reduced in the last 15 years, and the trend seems to continue on the downtrend.

This makes investment in air travel less risky as people have more faith in travelling by air.

Next steps

- Integrate the recommendations from this analysis into the procurement strategy.

- Conduct deeper analysis to explore other factors that may influence aircraft safety.

- Gather feedback on the recommendations and the analysis to identify areas that need to be improved**.**

Thank you!

Thank you for your time and attention. Contact me if you have any questions or need further clarification

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