Analysis of Aviation Accident Data: Trends, Causes, and Insights

Overview

This presentation is divided in different parts:

1. Objective
2. Methods
3. Data plots
4. Conclusions

Objectives

- To explore the relationship between weather conditions, flight purpose, and engine type with the severity of aviation accidents.
- To identify temporal trends in aviation accidents, including yearly and seasonal patterns.
- To analyze geographic distributions of accidents at the country and state levels.
- To determine which aircraft manufacturers are most frequently involved in accidents and visualize key findings.

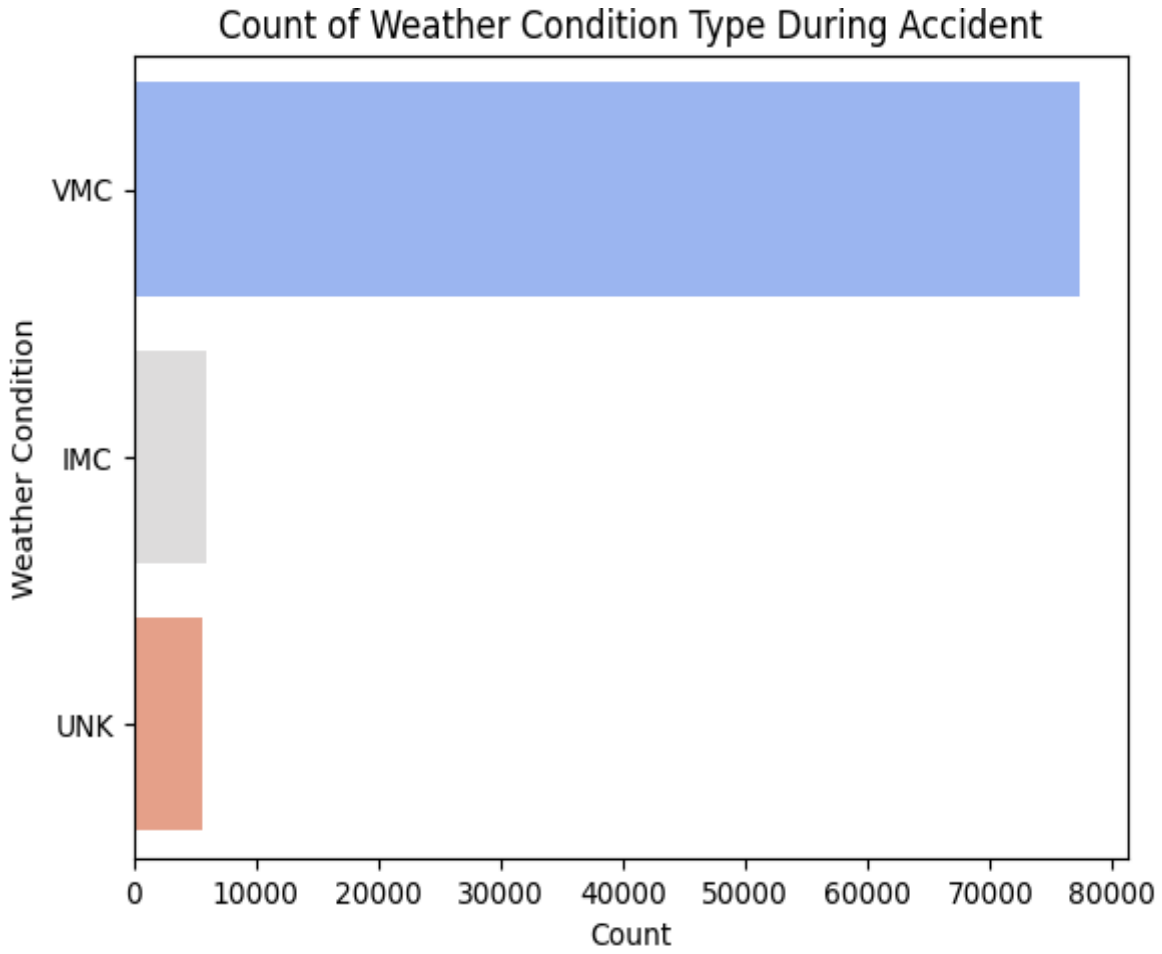
Methods

The methods used in the analysis are as follows:

1. Data understanding
2. Data cleaning
3. Handling of missing values
4. Data handling so that it appears in a cohesive way
5. Data visualization
6. Drawing of conclusions

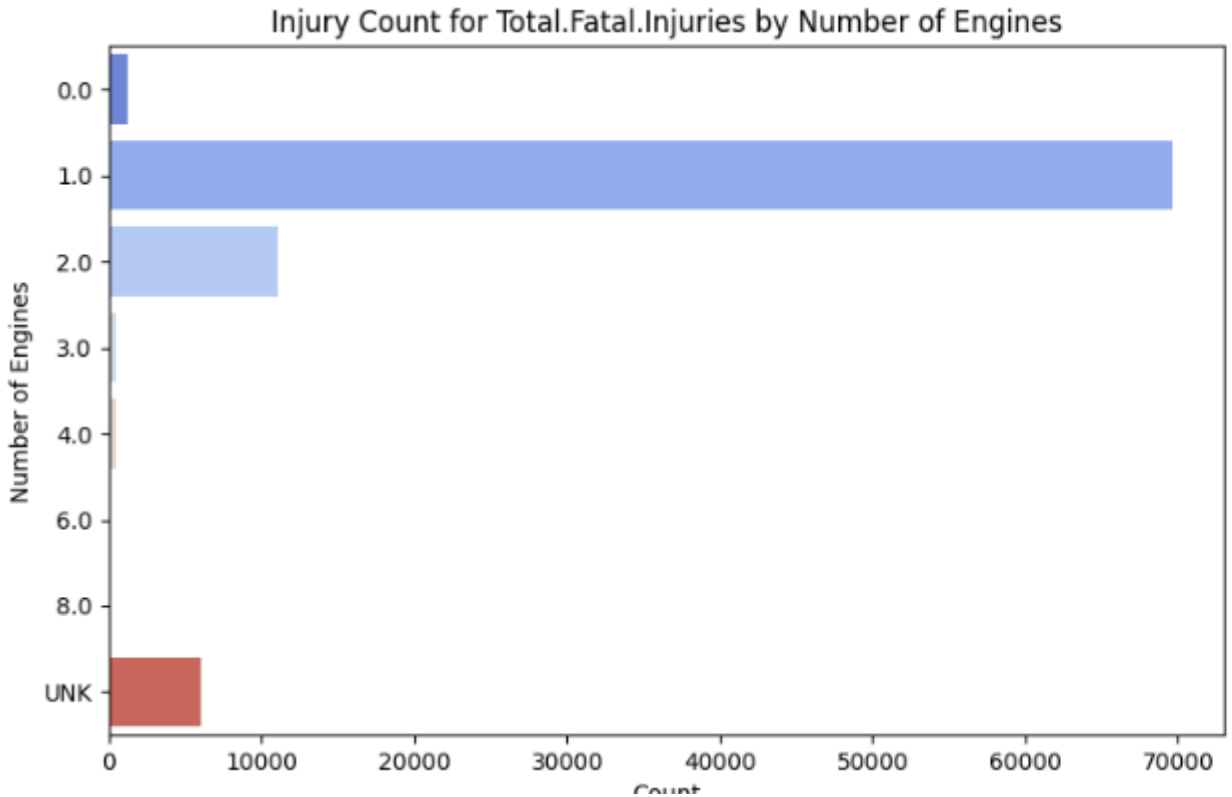
Data visualization

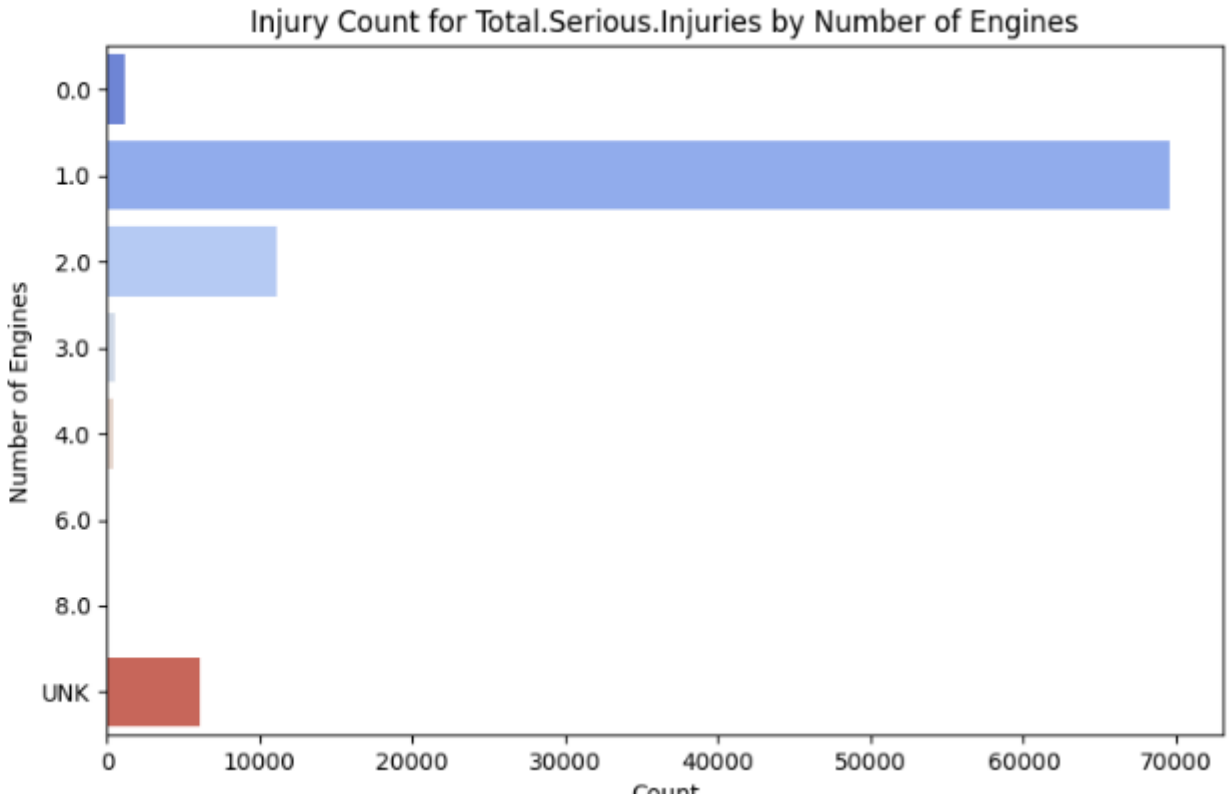
Weather condition of occurrence of accidents



Conclusion: The weather that predominantly occur is VMC which mean it is good visibility so weather may not be a cause of accident.

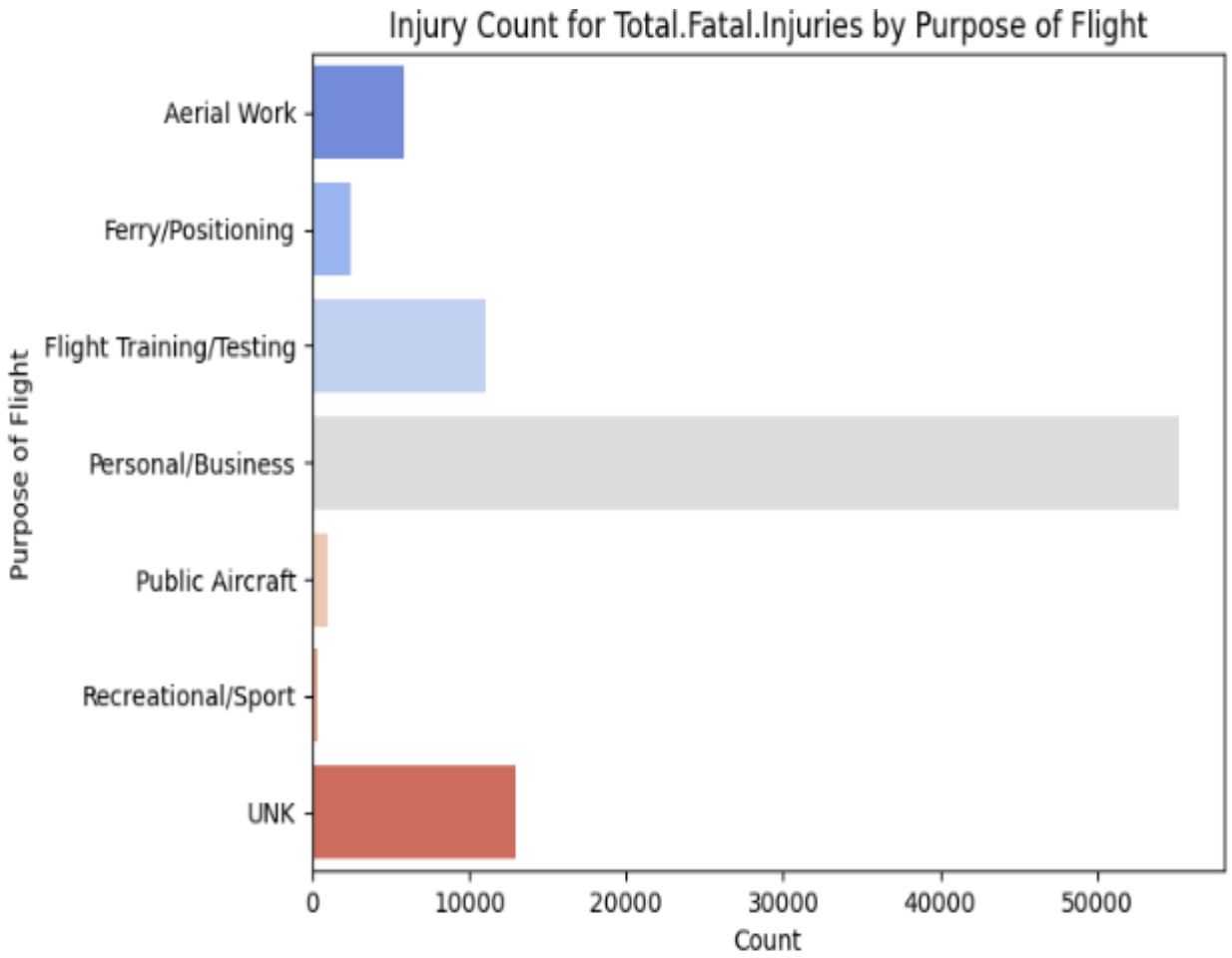
Engine type in relation to the occurrence of accidents

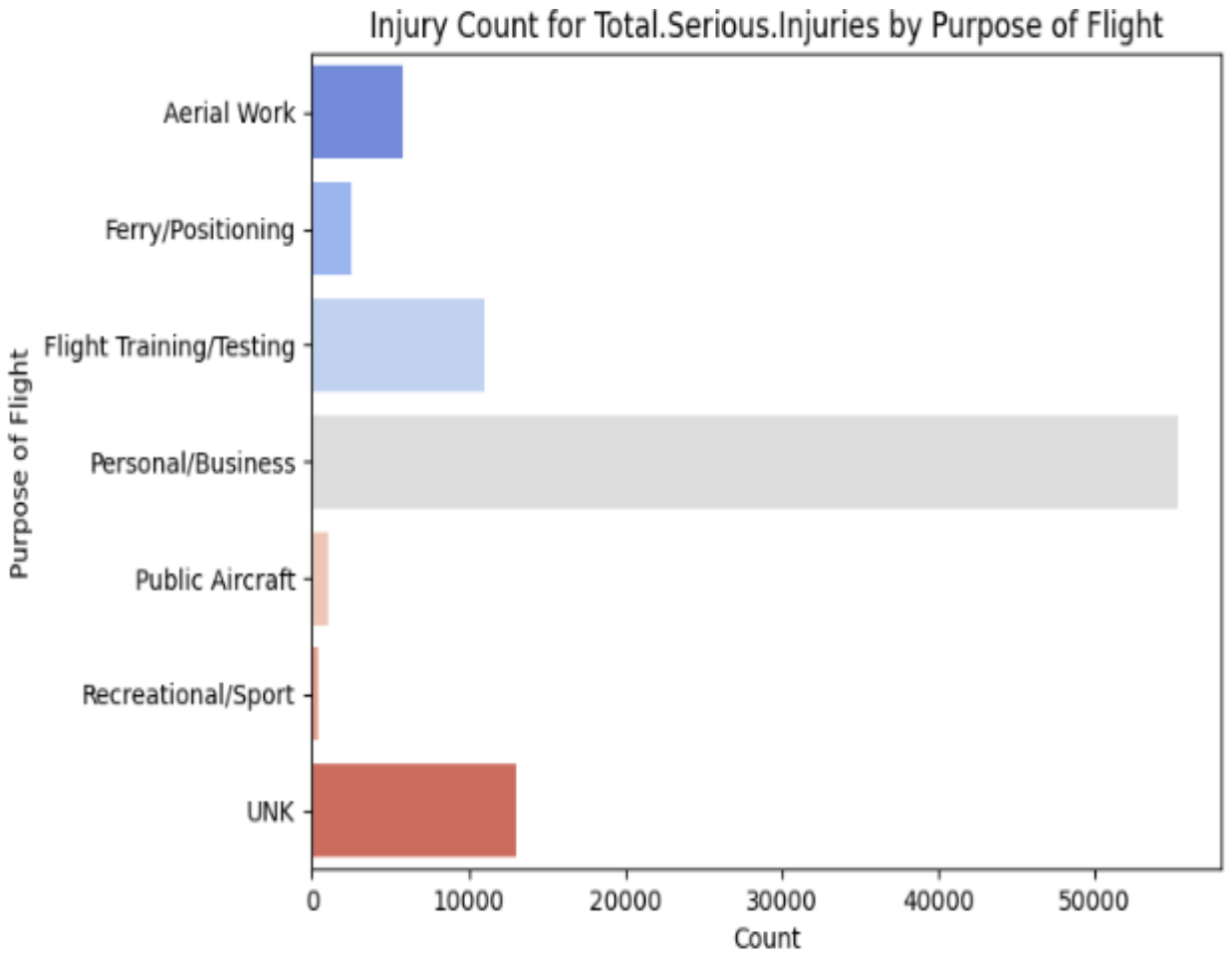




Conclusion: The engine 1 corresponds to the occurrence of many accidents

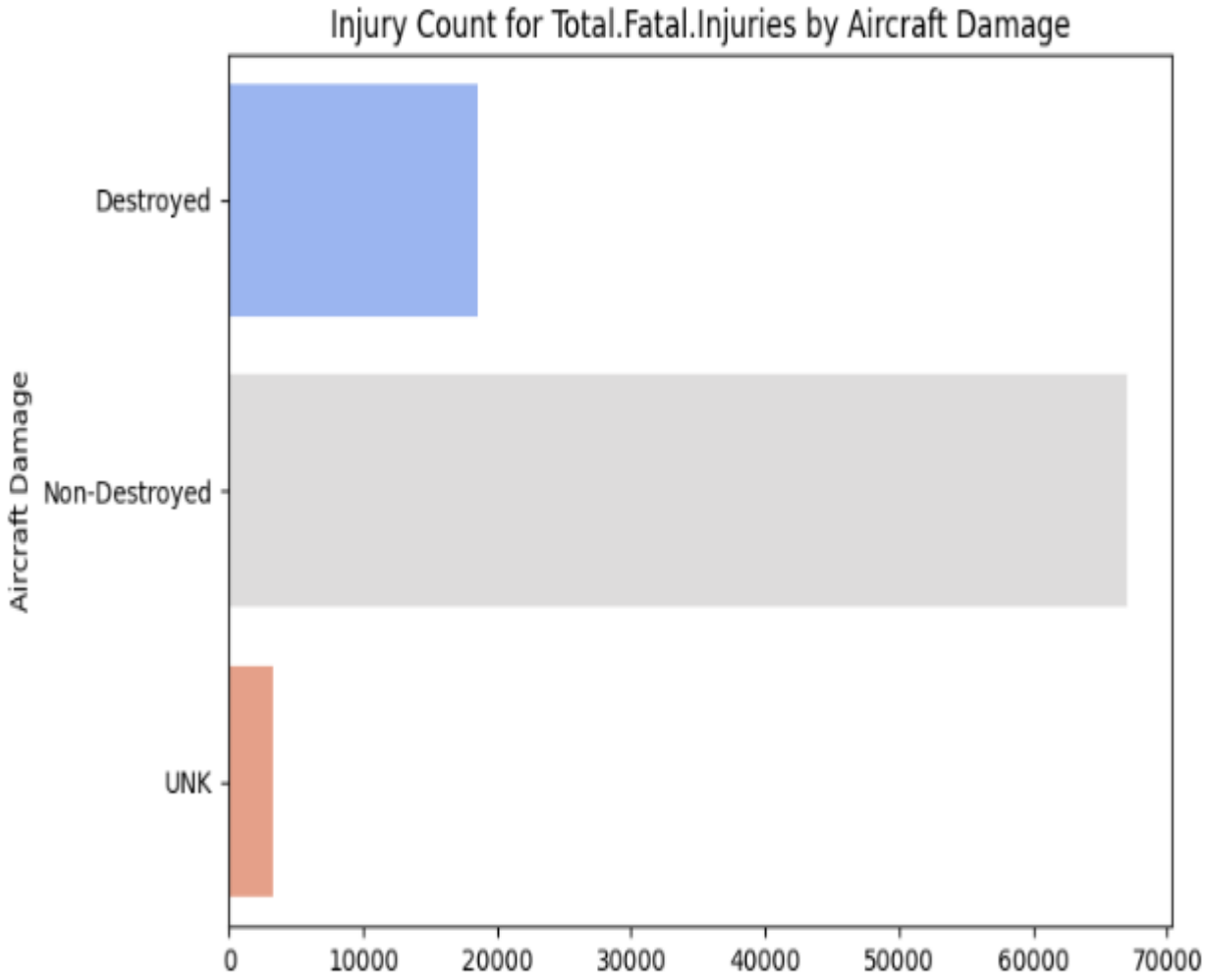
Purpose of flight relation to the occurrence of accidents

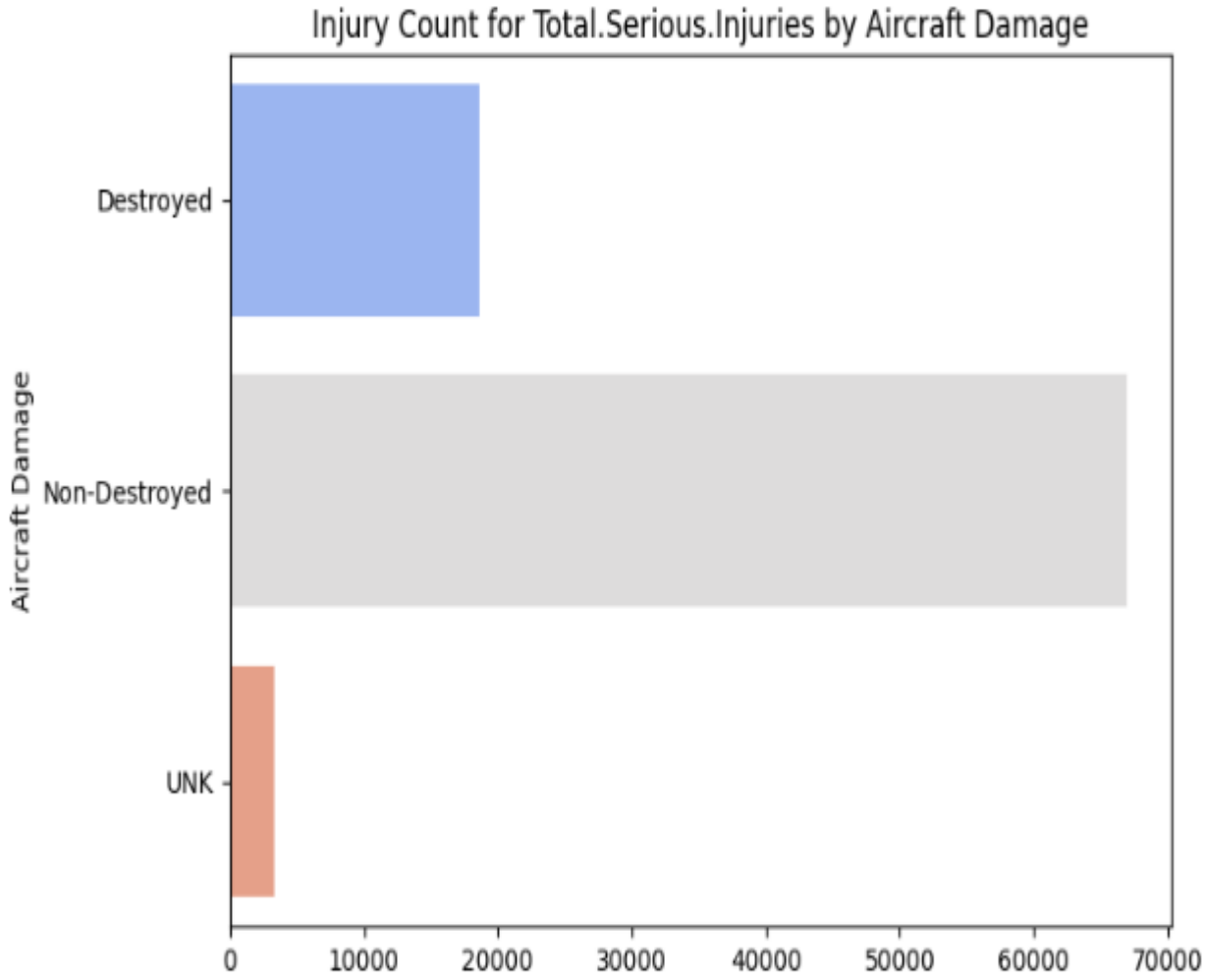




Conclusion: many causality occurred when people travelled for business or personal purpose.

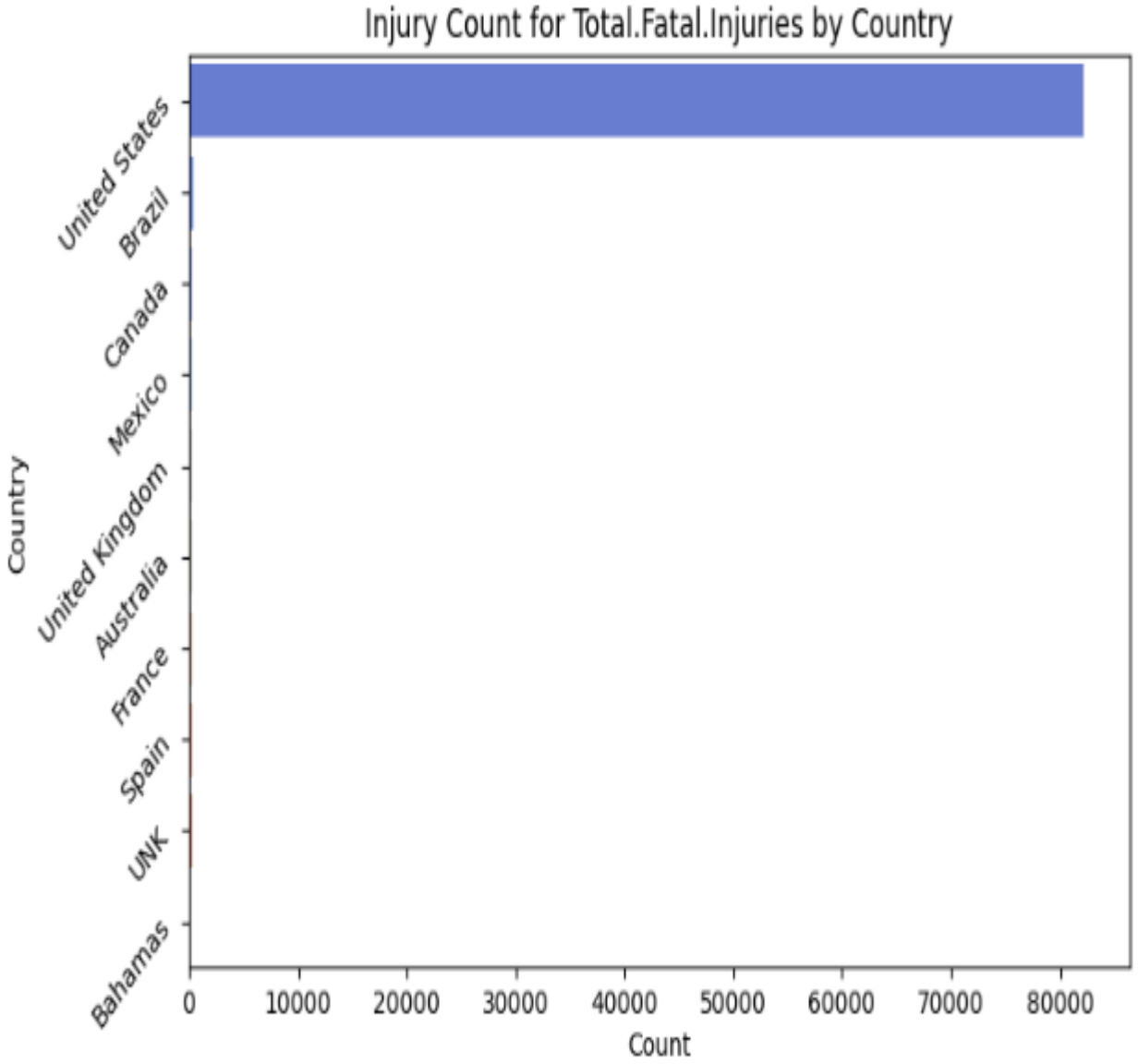
Aircraft condition in relation to injuries caused to people

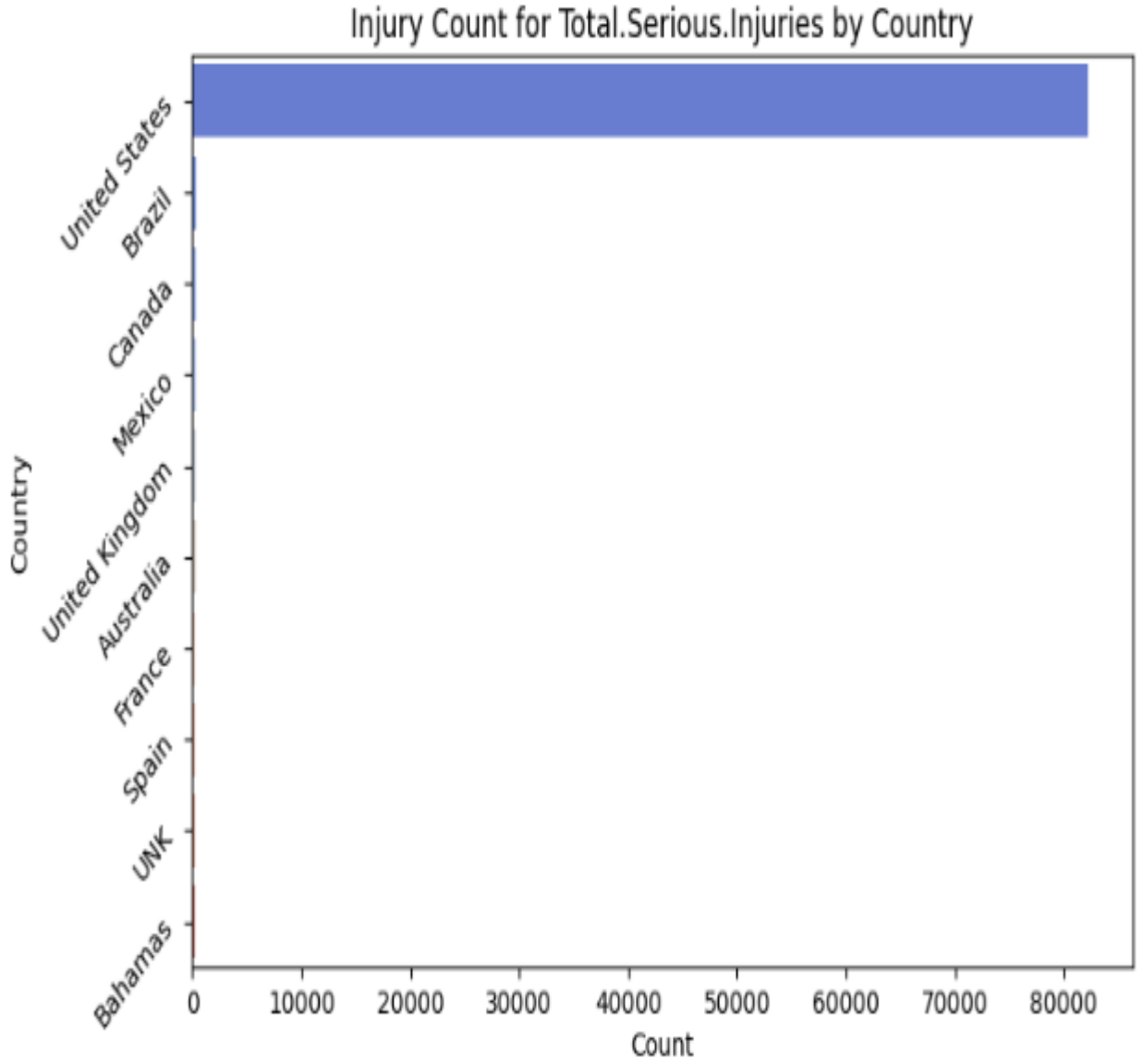




Conclusion: in the occurrence of different accidents the aircraft was not destroyed predominantly.

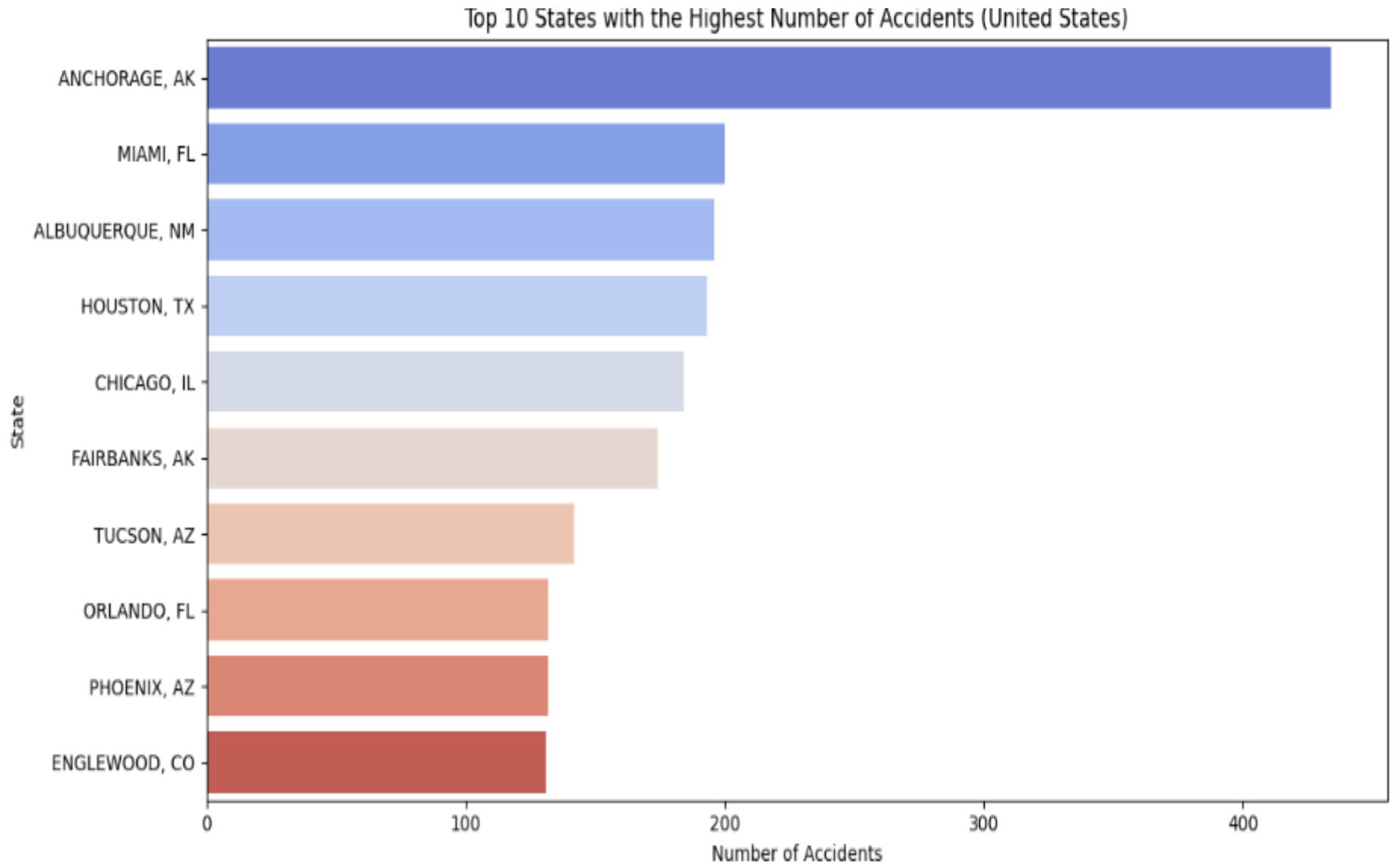
Relationship between country and type of injury





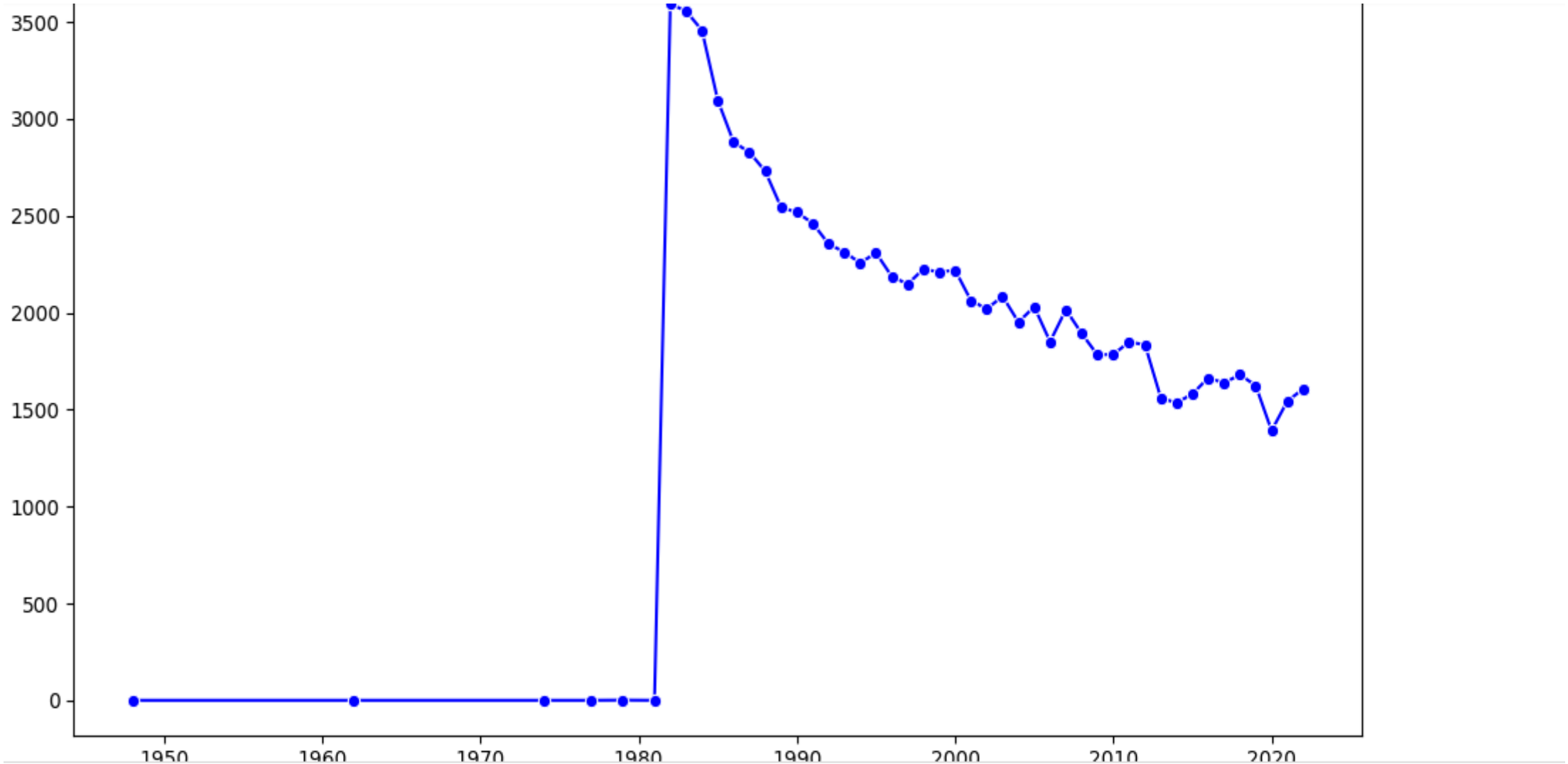
Conclusion: USA has the highest number of accidents

USA states that have highest number of accidents



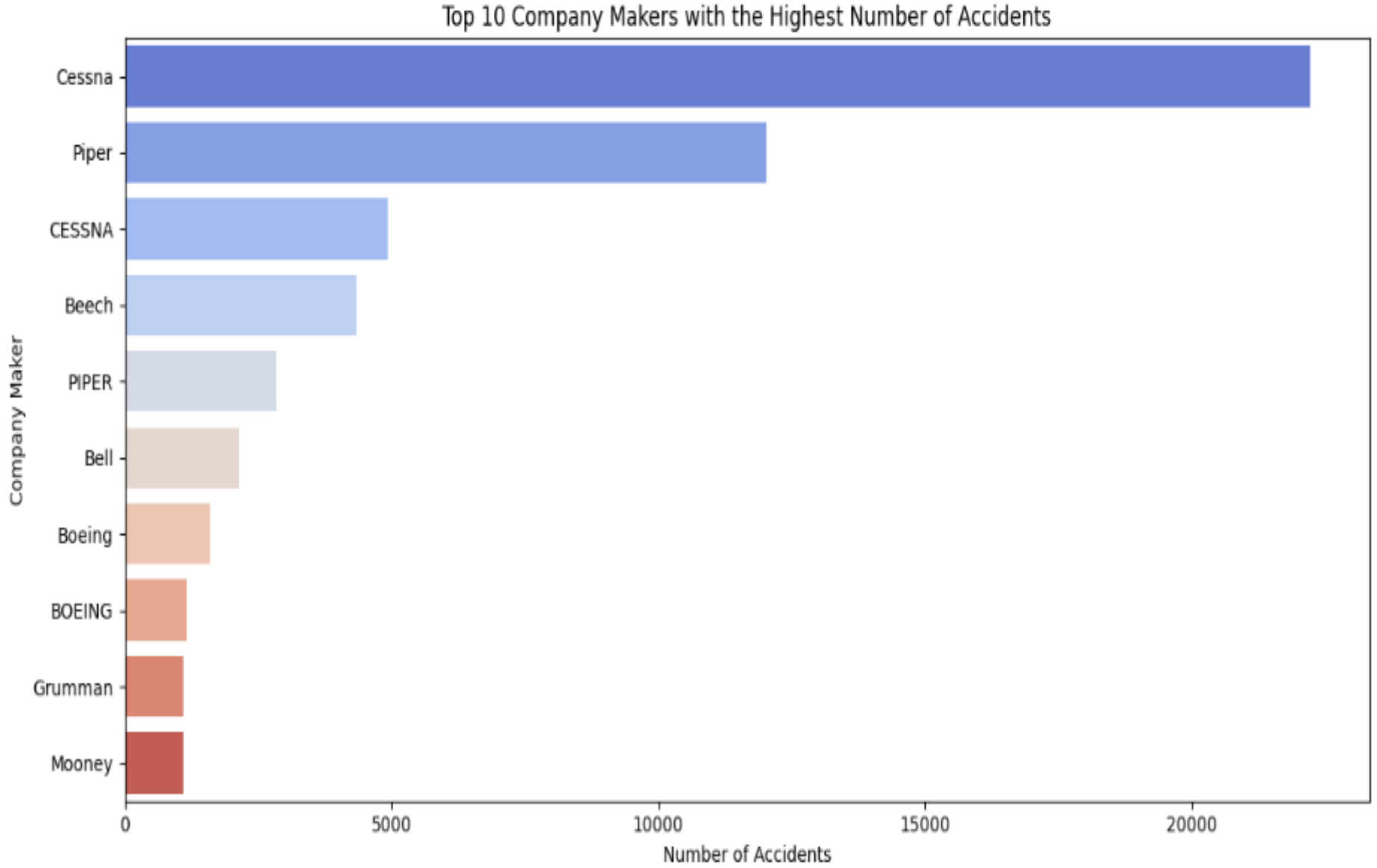
Conclusion: Anchorage has the highest number of accidents

Accidents occurrence trend over the years



Conclusion: From 1980 onward accidents occurred but with a decreasing trend

Accidents occurrence in relation to aircraft maker



Conclusion: aircraft produced by Cessna has the highest number of accidents