AVIATION ACCIDENT ANALYSIS

UNDERSTANDING
ACCIDENTS
TRENDS

Overview

Air travel is considered one of the safest modes of transportation, yet accidents still occur. • This project aims to analyze aviation accident data to identify trends across the world among different plane makes and models.

The data set comprises of over 80,000 investigated aviation accidents and incidents starting from the 1940’s

Business Understanding

Business Problem: My company is expanding into the aviation industry but lacks insights into aircraft safety risks. This analysis identifies the lowest-risk aircraft models for commercial and private use.

Business Objectives

1.Which aircraft models have the highest fatality rates?

2.Try and find the leading cause of aviation accidents?

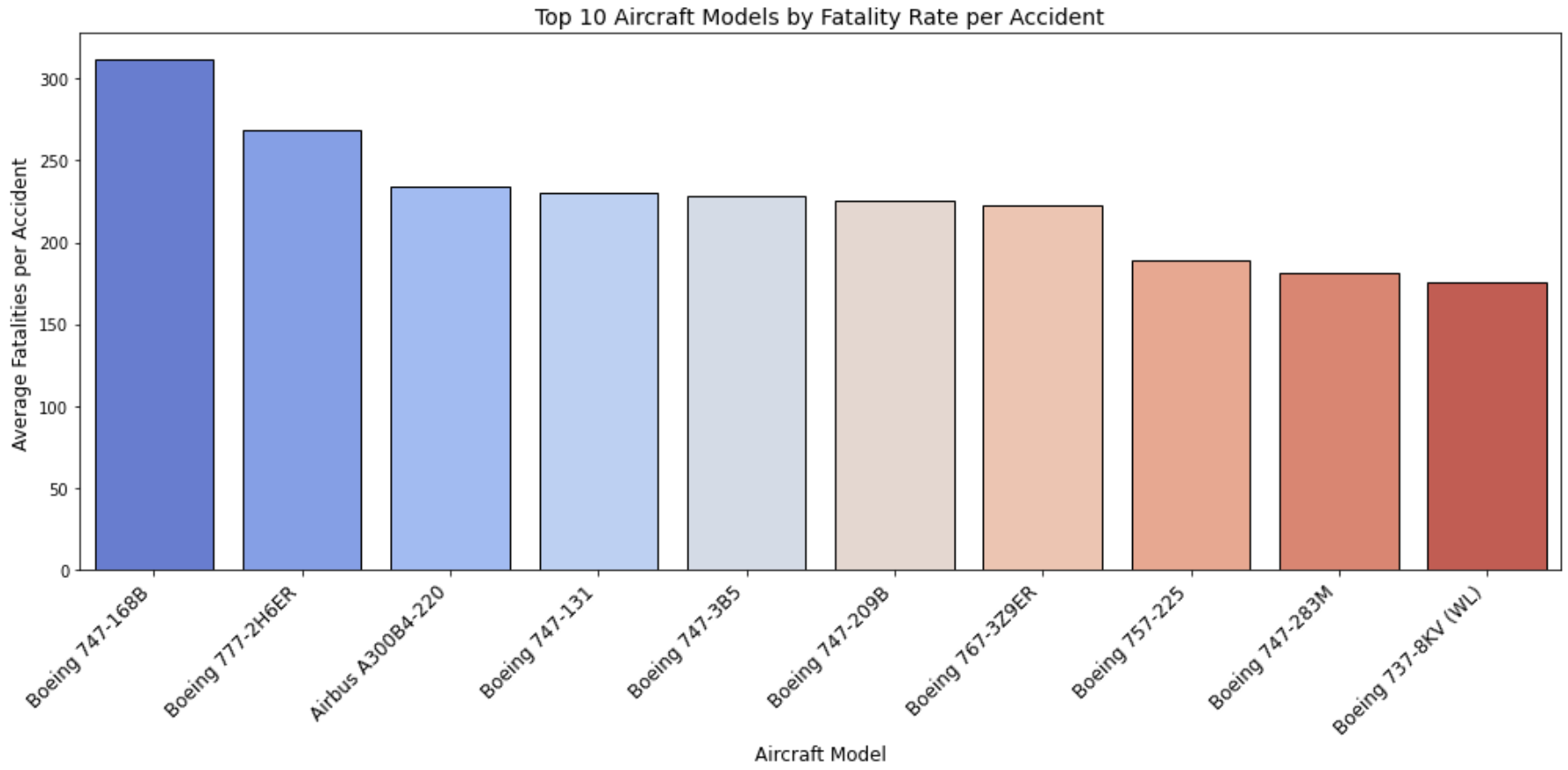
3.Trends in aviation fatalities over the years?

4.Recomend actions to help mitigate/prevent aviation accidents and incidents ?

Data cleaning and processing

- Removing missing values and inconsistencies.
- Standardized column names for uniformity.
- Converted necessary data types (e.g., Date format).
- Number of aviation accidents has fluctuated over the years.
- Recent trends indicate improved safety measures.

Which aircraft models have the highest fatality rates?

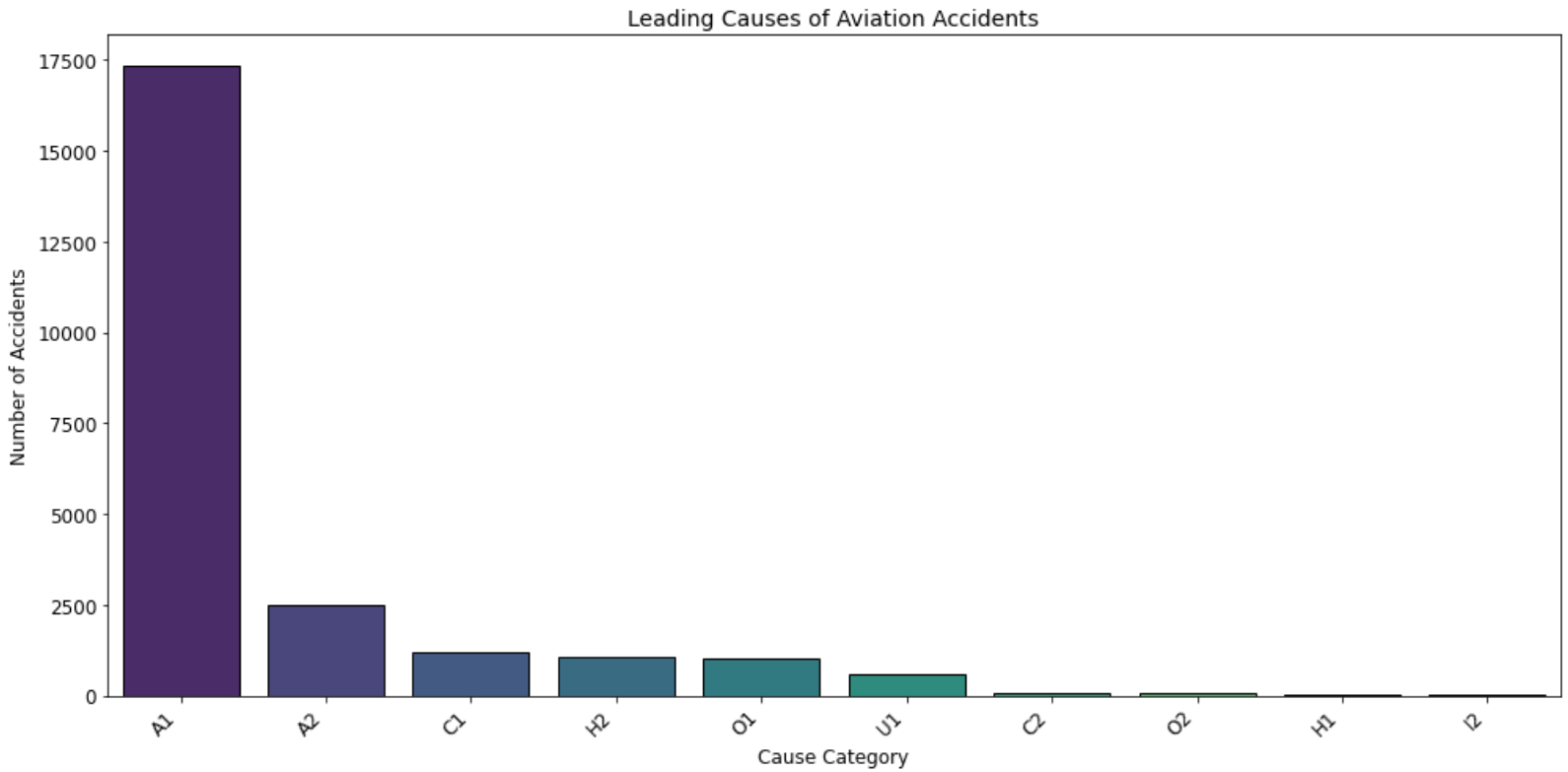


Key take aways

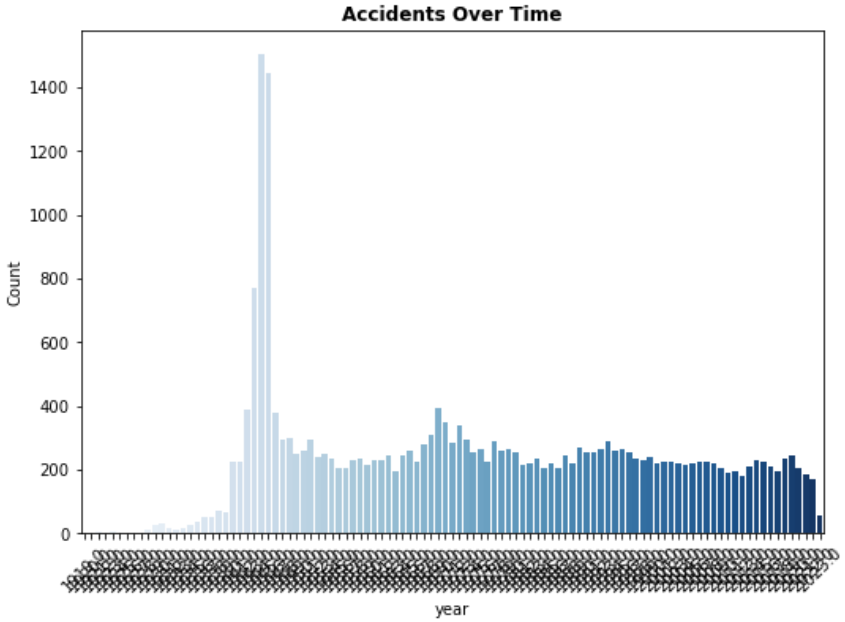
Boeing 747-168B has the highest fatalities (approximately 320 cases) -has the highest fatality per accident due to it's large size. Boeing 747-168B has one largest seating capacity amoung aircraft models.

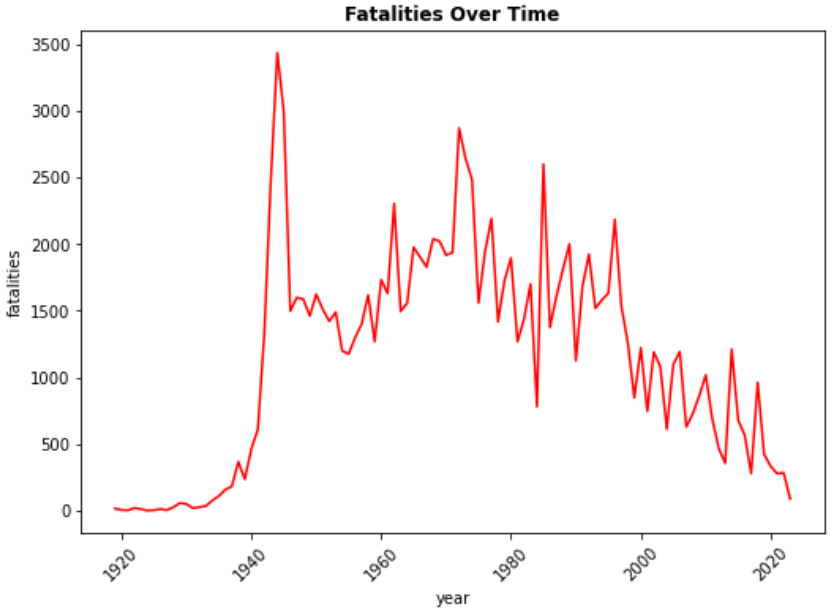
Douglas C47-A also has significant fatalities (is an older generation model tending to have higher accident rates due to outdated systems)

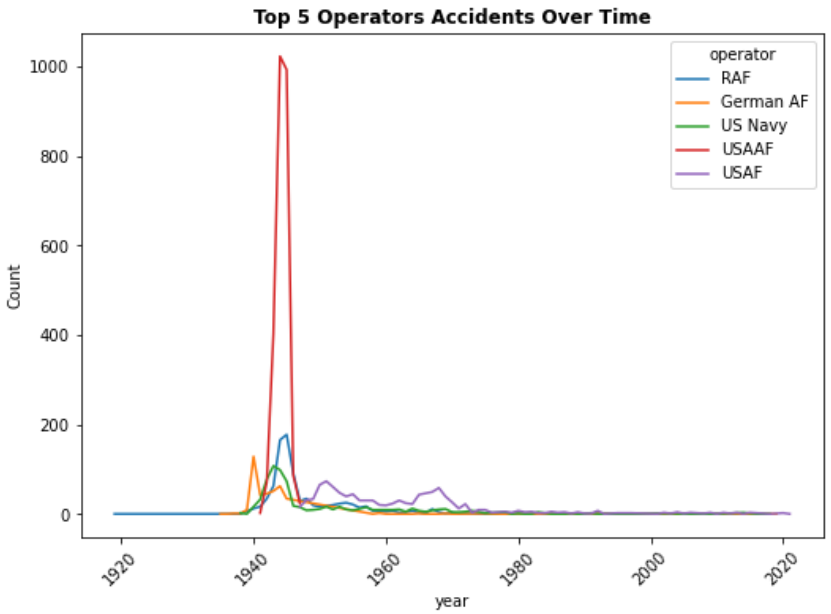
Try and find the leading cause of aviation accidents?

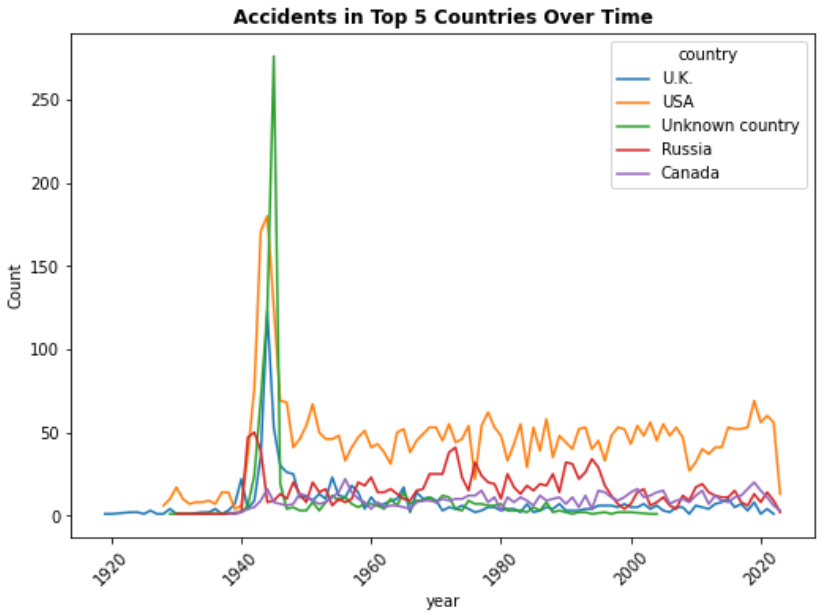


TRENDS OVER TIME









Key take away

The cat column in aviation accident datasets typically stands for category or cause category of the accident.

Depending on the dataset source, it might contain labels like:

Pilot Error → Mistakes by the flight crew

Mechanical Failure → Engine or system failures

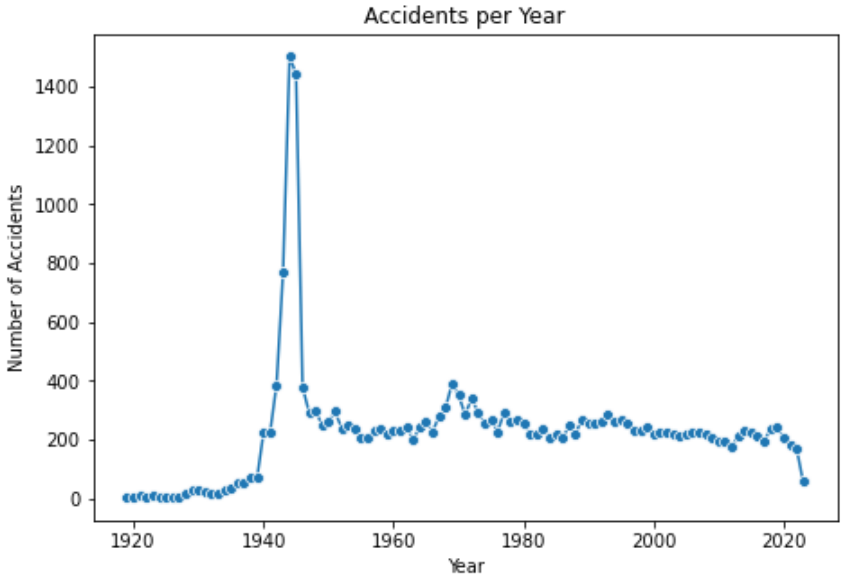
Weather → Storms, low visibility, turbulence

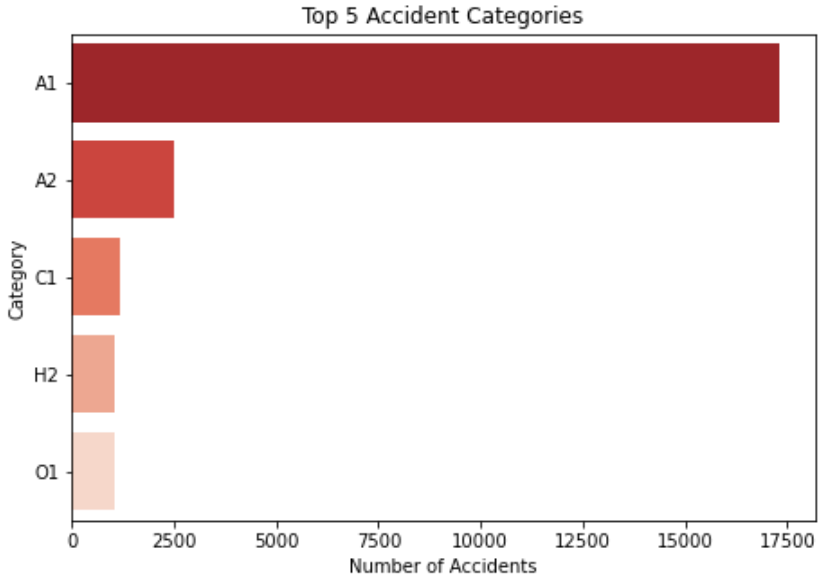
Sabotage → Hijackings or terrorism

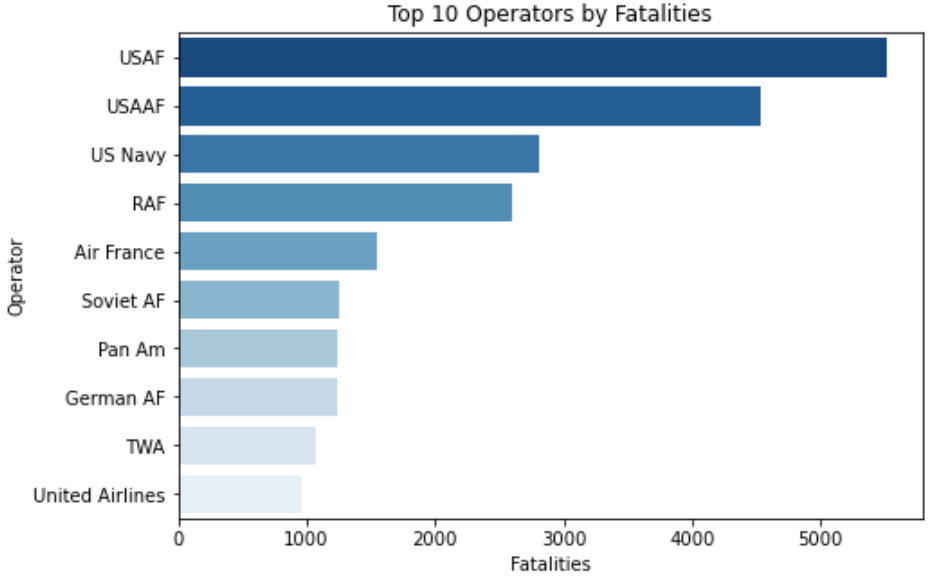
Other → Anything else not covered above

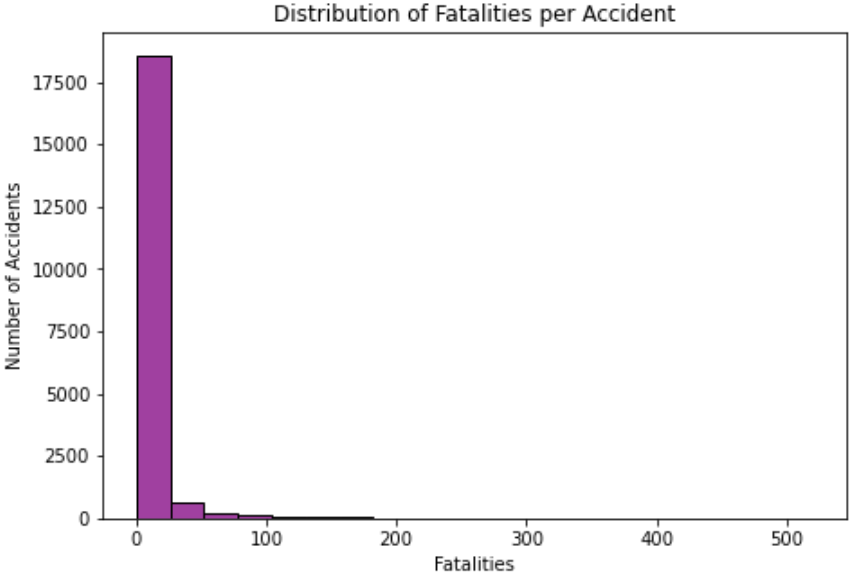
In conclusion the data shows most aviation accidence happen as a result of damaged air crafts

Aviation Accident Insights









Recommendations

Our data illuminates the average trend fetal aero plane accidences occurred in the early adoption years. As technology got better over the years accidence happened less often.

Aviation accidents and incidents usually result from a chain of factors rather than a single cause. Effective prevention and mitigation require actions across people, technology, procedures, and culture.

An improved aircraft safety measure, Enhanced pilot training and increased awareness can contribute to aviation safety.

This analysis will ensure a successful expansion into the aviation industry.

Thank you

Benardndei14@gmail.com

Link