

# AVIATION DATA ANALYSIS

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Goal: "Using Aviation Accident Data to guide Aircraft Purchase Decisions"

# Dataset Overview

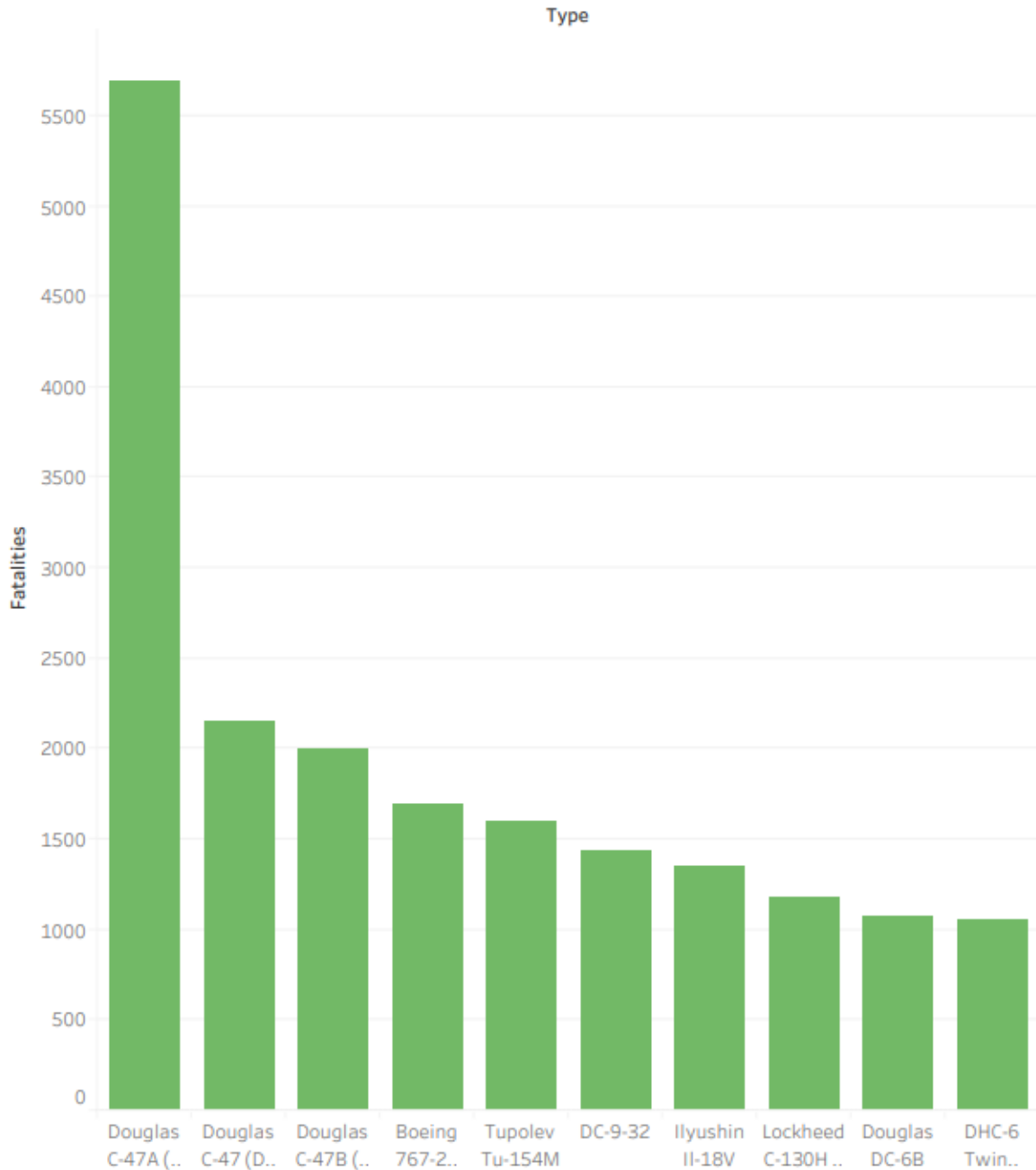
## Time span

- ▶ This project covers aviation accidents from 1919 - 2023

## Scope of Data

- ▶ After Data cleaning 18455 entries were admissible for analysis.
- ▶ Research was carried out in 230 countries

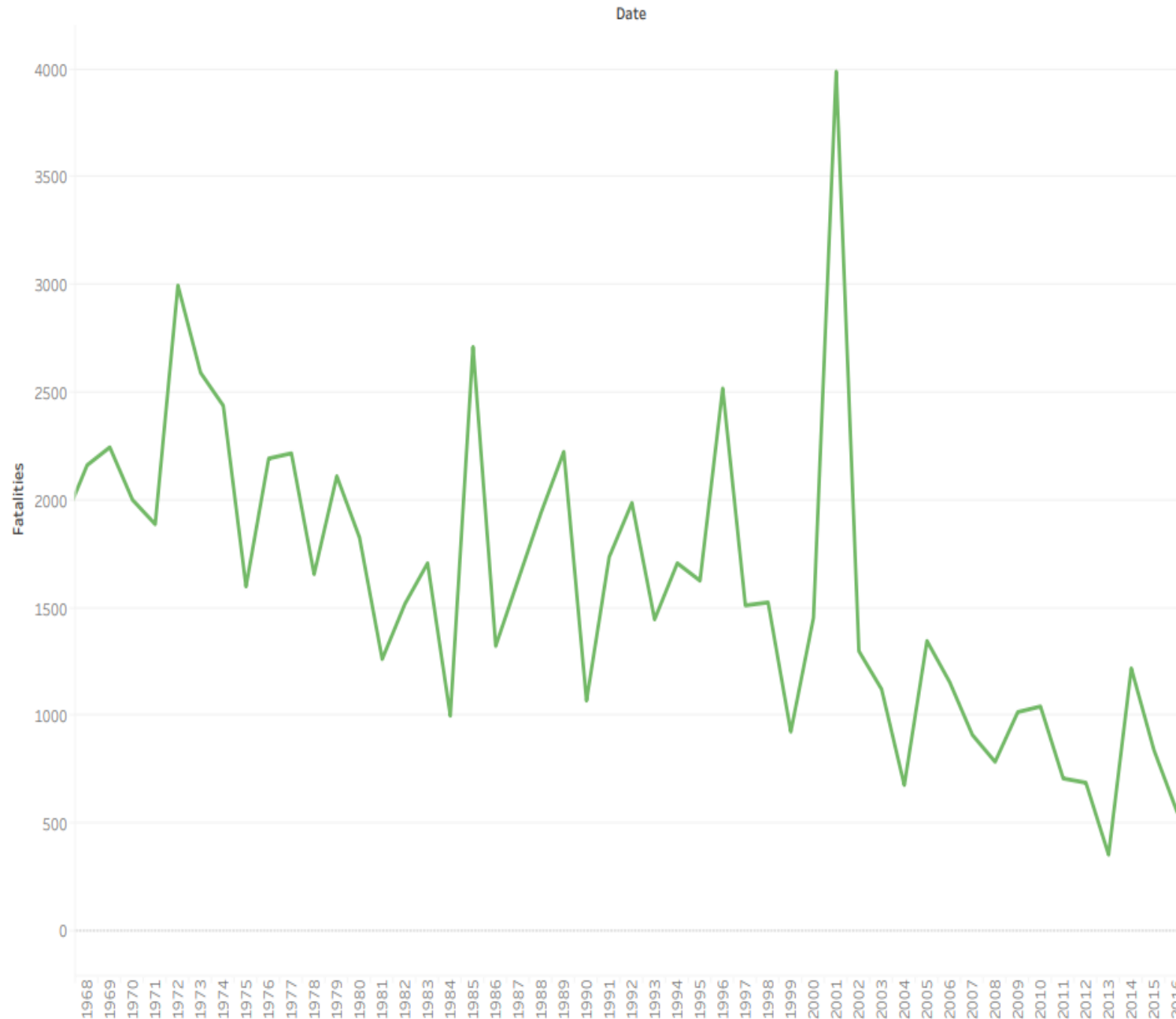
## Deaths in type of aeroplanes



## Safety by type of aero planes

- Shown by the bar chart on the left, it shows the number of fatalities for each make of planes.
- Makes such as Douglas can be easily noticed with high number of fatalities.

Trend of Deaths through time



## Trends over Time

From the line graph displayed on the left it can be asked:

1. Are accidents decreasing in overall?
2. Are some types of aging badly?

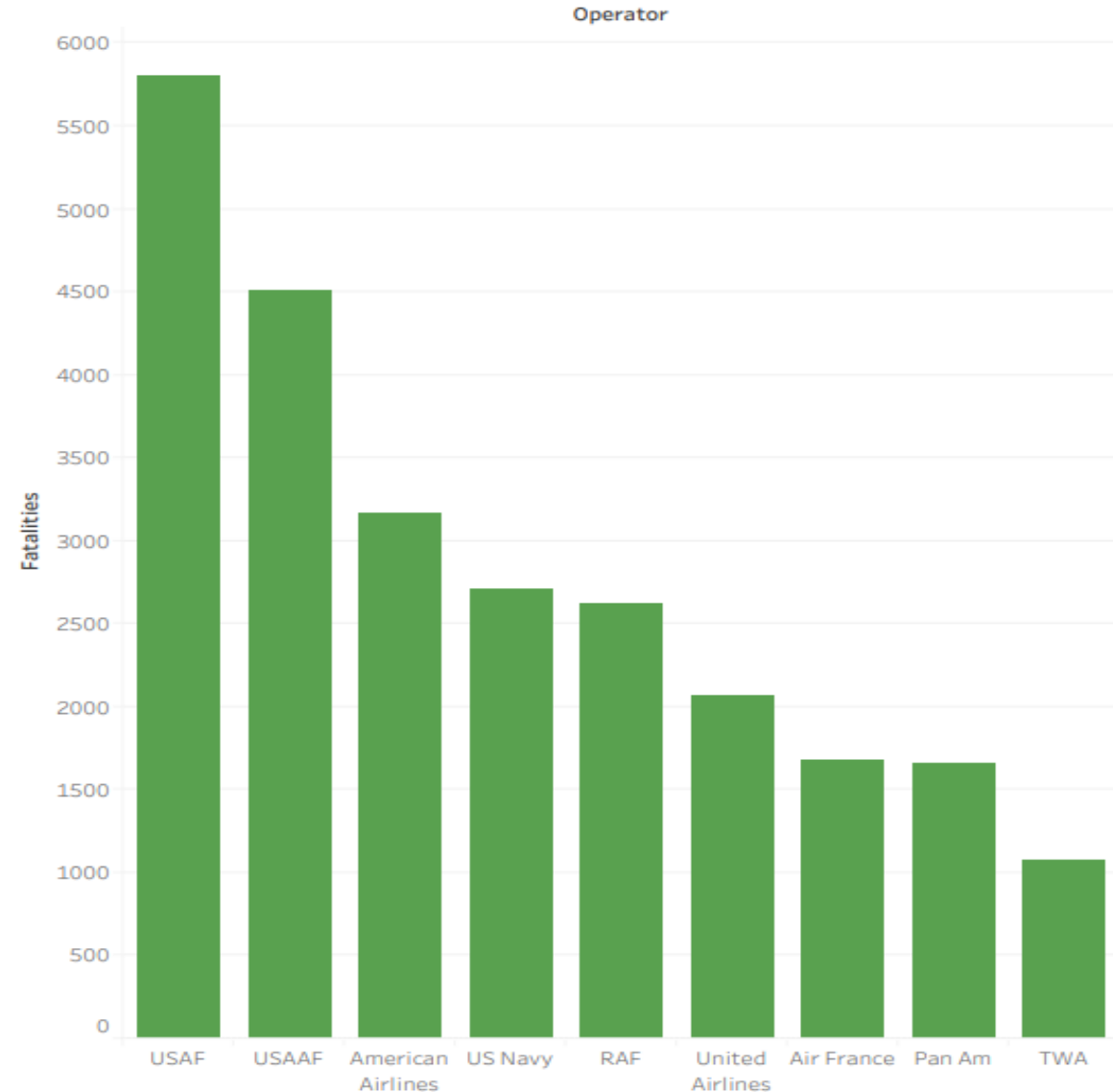
Invest in modern, efficient, safer models since older models appear risky.

# OPERATOR RISKS

Safety culture differs by operators.

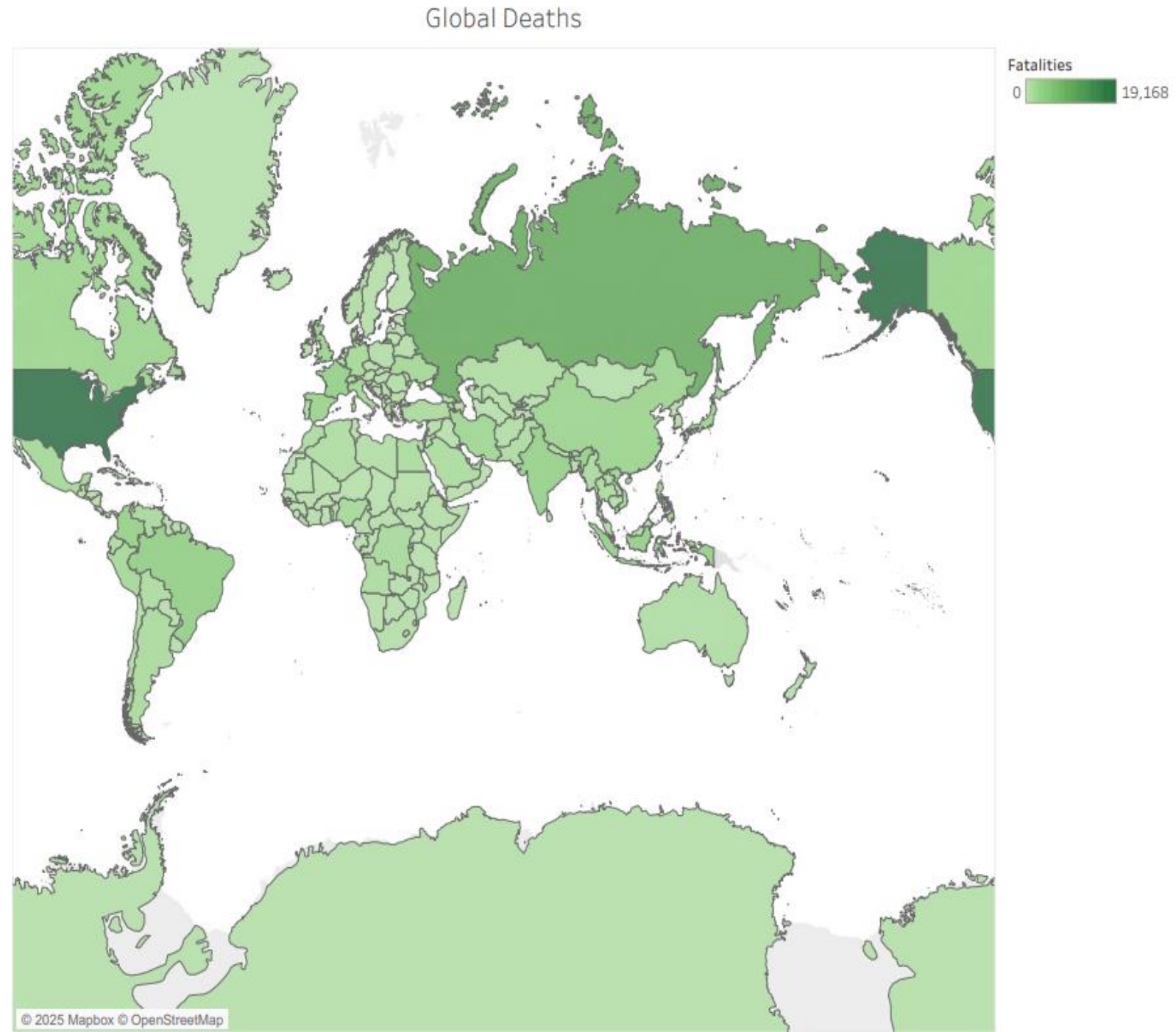
- ▶ It all depends on how the planes are being used for example USAF(United States Air Force), USAAF(United States Army Air Forces) and US Navy are used in combat but American Airlines having competing numbers with combat operators shows the "Safety" by the Airlines.

Deaths at Operators



## REGIONAL RISKS

- On the right it is noticeable that countries such as America and in continents such as Europe are high risky in aviation accidents caused by frequent use of Air Transport



# Business Recommendations

1. **Select aircraft with proven safety records**
  - ▶ Based on the data, aircrafts such as Douglas are high-risk and should be avoided.
  - ▶ Aircrafts such as A.W and Airbuses have few accidents.
2. **Invest in newer, modern and upgraded aircrafts**
  - ▶ Fatalities are decreasing with time showing that accidents are occurring less frequently compared to the past.
3. **Avoid high-risk operators/regions**
  - ▶ Avoid high-risk operators/regions for purchases or leasing due to the data showing consistent safety problems.

# Conclusion

- ▶ The analysis shows that aircraft safety is highly dependent on Operational efficiency and aircraft safety records.
- ▶ The safer the aircraft: **Lower liability, high passenger trust and few disruptions.**
- ▶ Efficient aircrafts lead to **reduced fuel costs, lower maintenance and higher availability.**

Together these factors directly influence profitability and competitive advantage for the aviation division.