

AIRCRAshES 1908-2023

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PROJECT OVERVIEW

This project analyzes global air crash data spanning over a century to uncover meaningful trends and patterns in aviation incidents. We focus on:

-  Temporal Trends : Tracking changes in crash frequency over time
 -  Aircraft & Operators: Identifying the most involved aircraft types and airline
 -  Geographic Patterns : Mapping crash locations worldwide
- The goal is to turn historical data into clear insights that support aviation safety and public understanding.

CLEANING SUMMARY

To prepare the air crash dataset for meaningful analysis, we carried out the following cleaning steps:

- Eliminated entries with incomplete or irrelevant data (e.g., missing location or operator).
- Transformed crash date fields into a readable datetime format.
- Addressed null values in essential columns like fatalities and aircraft type.
- Cleaned and standardized text fields by removing special characters and extra spaces.
- Verified and corrected data types to ensure consistency across numerical and categorical variables.

These steps improved data quality and allowed for accurate trend, geographic, and risk analysis.

ANALYSING VISUALS

Total Fatalities (Air)

111.9k

Unique Aircrafts

3510

Total Fatalities (Ground)

8.58k

Countries Involved

60

Total Crashes

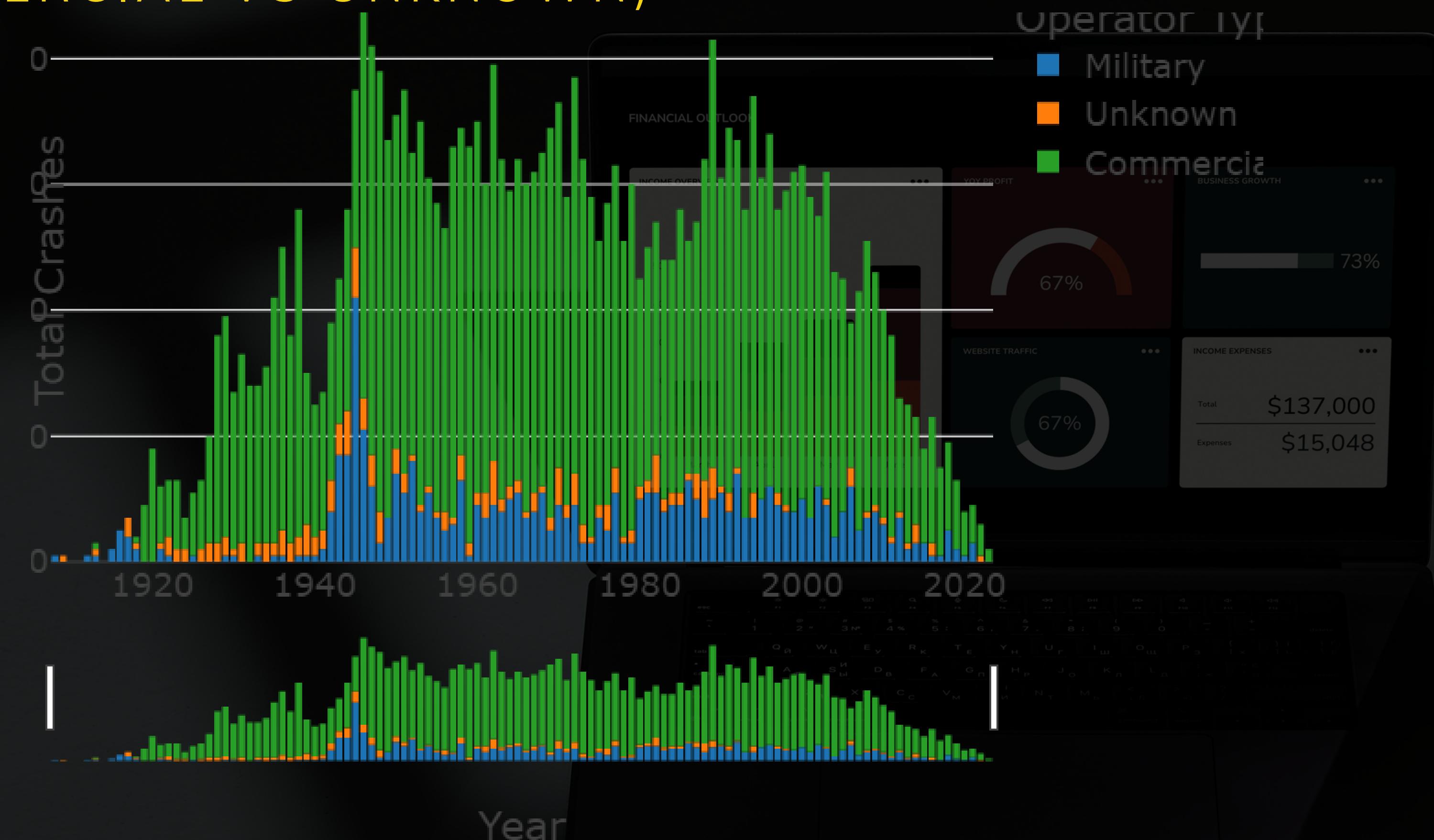
5030

Total Aboard

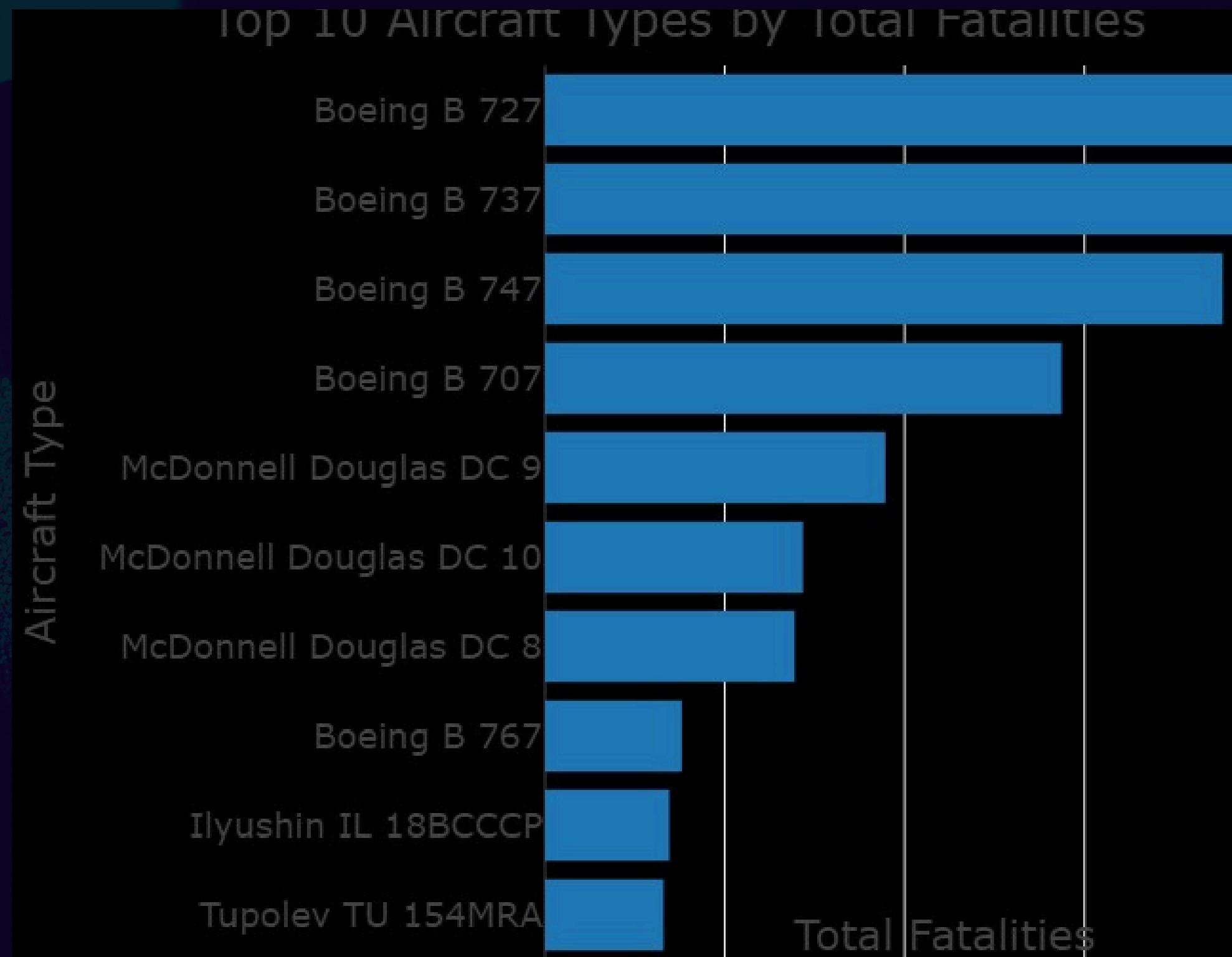
156k

This image summarizes key air crash statistics, revealing a significant human impact with over 111,000 in-air fatalities and over 8,500 ground fatalities. Across 5,030 total crashes, involving 3,510 unique aircraft and affecting 60 countries, a total of 156,000 people were onboard, highlighting the broad scope and global reach of these incidents.

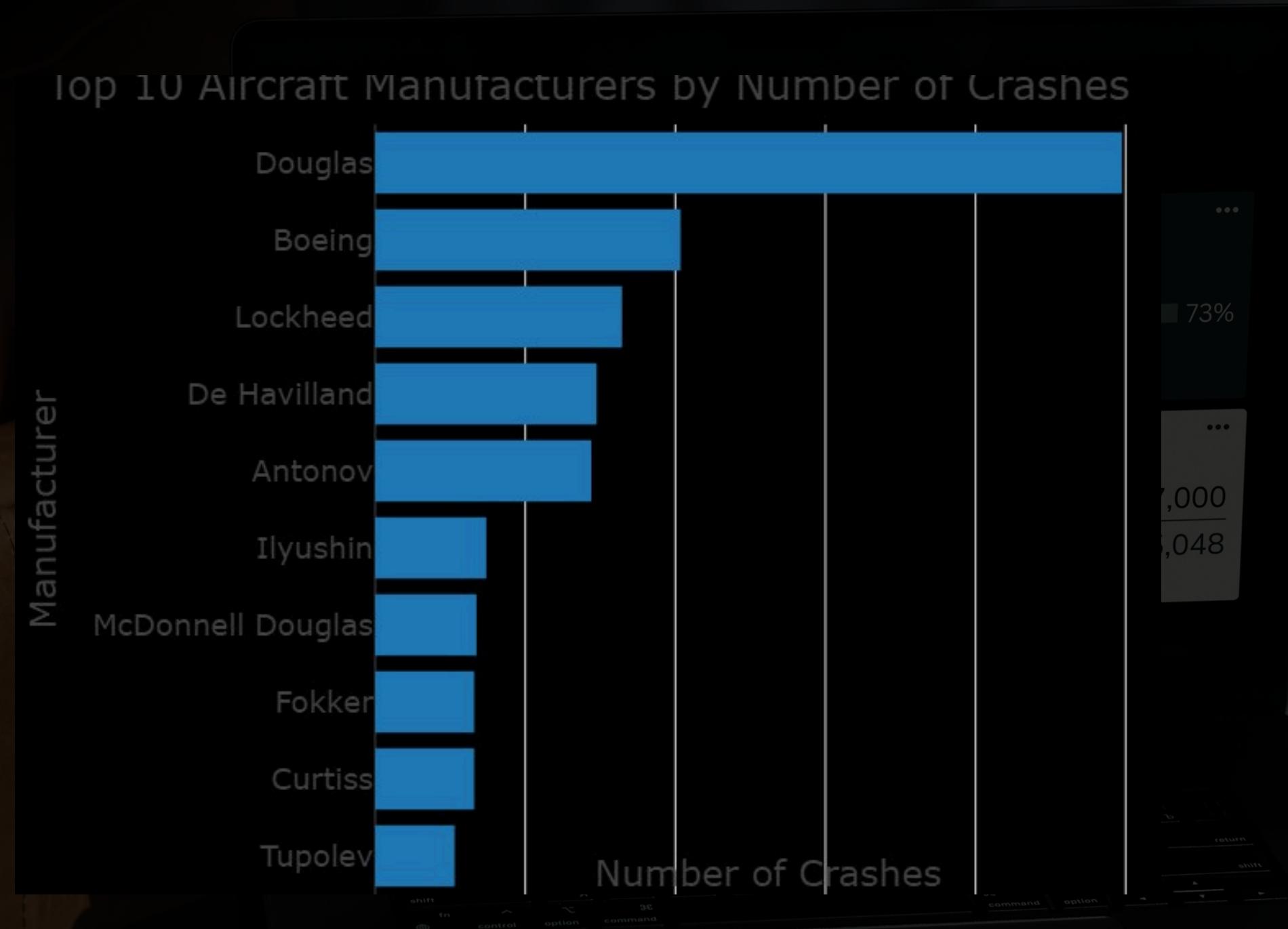
CRASHES OVER TIME BY OPERATOR TYPE (MILITARY VS COMMERCIAL VS UNKNOWN)



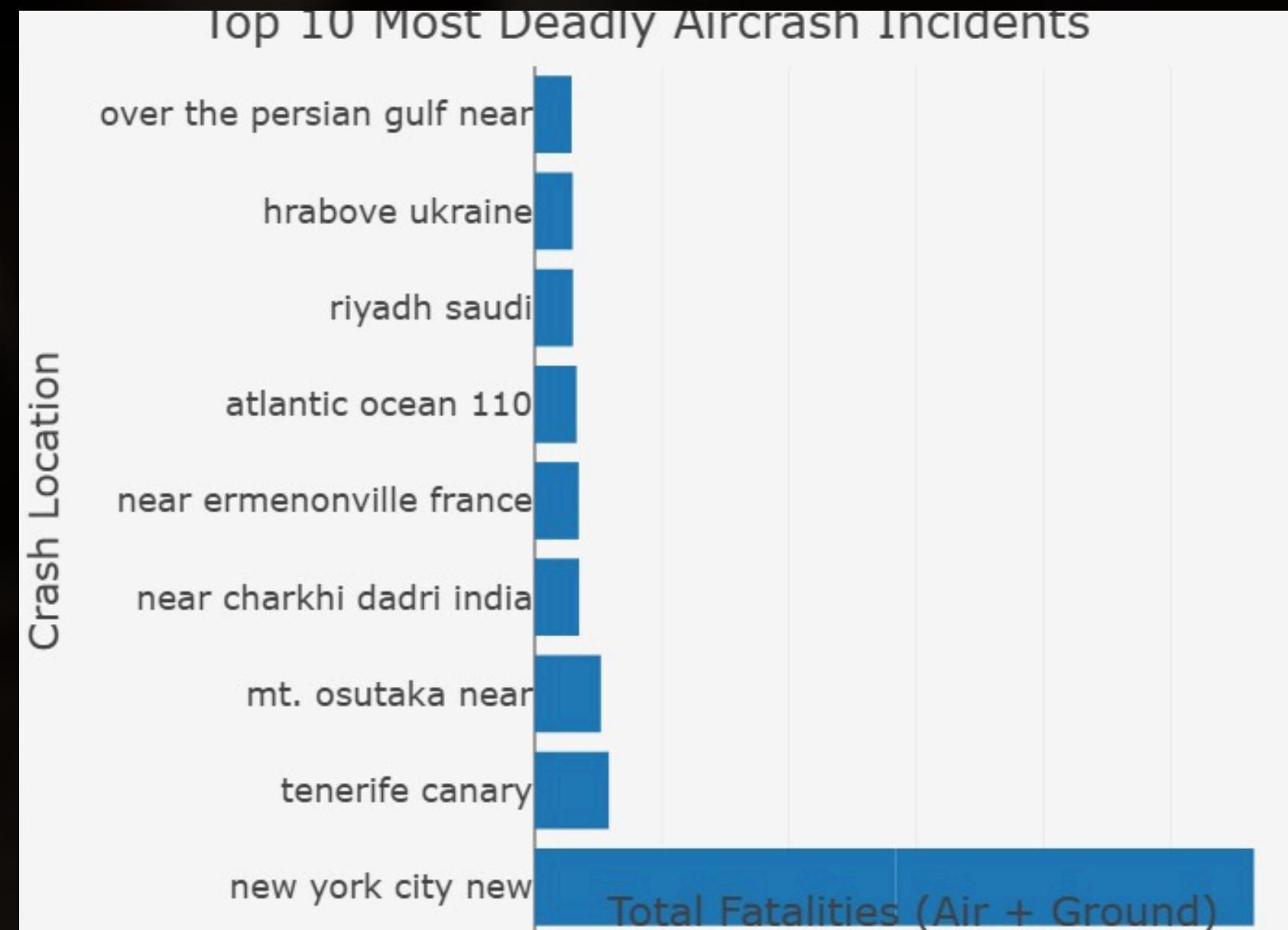
TOP AIRCRAFT TYPES INVOLVED IN CRASHES



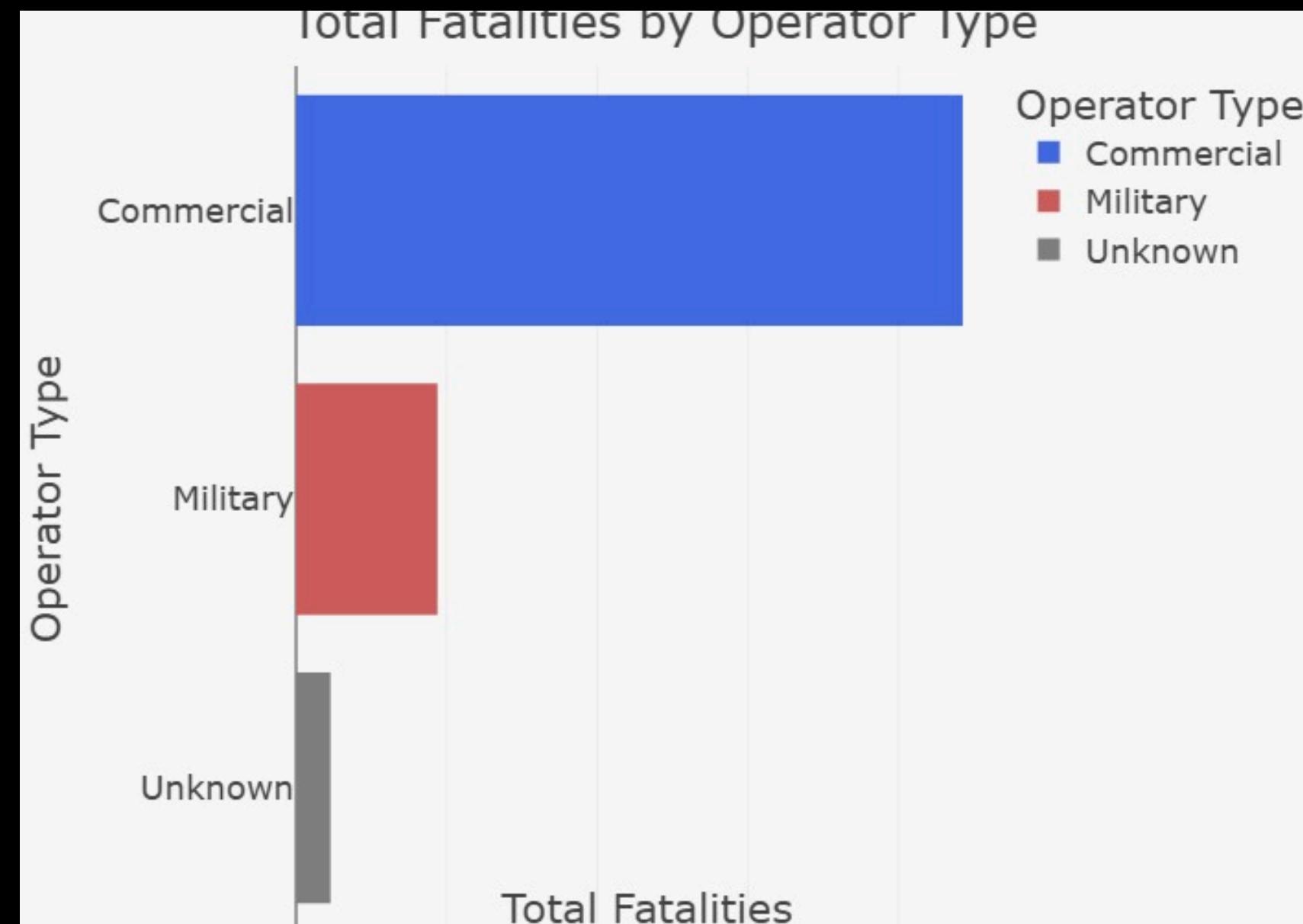
TOP 10 AIRCRAFT MANUFACTURERS BY NUMBER OF CRASHES



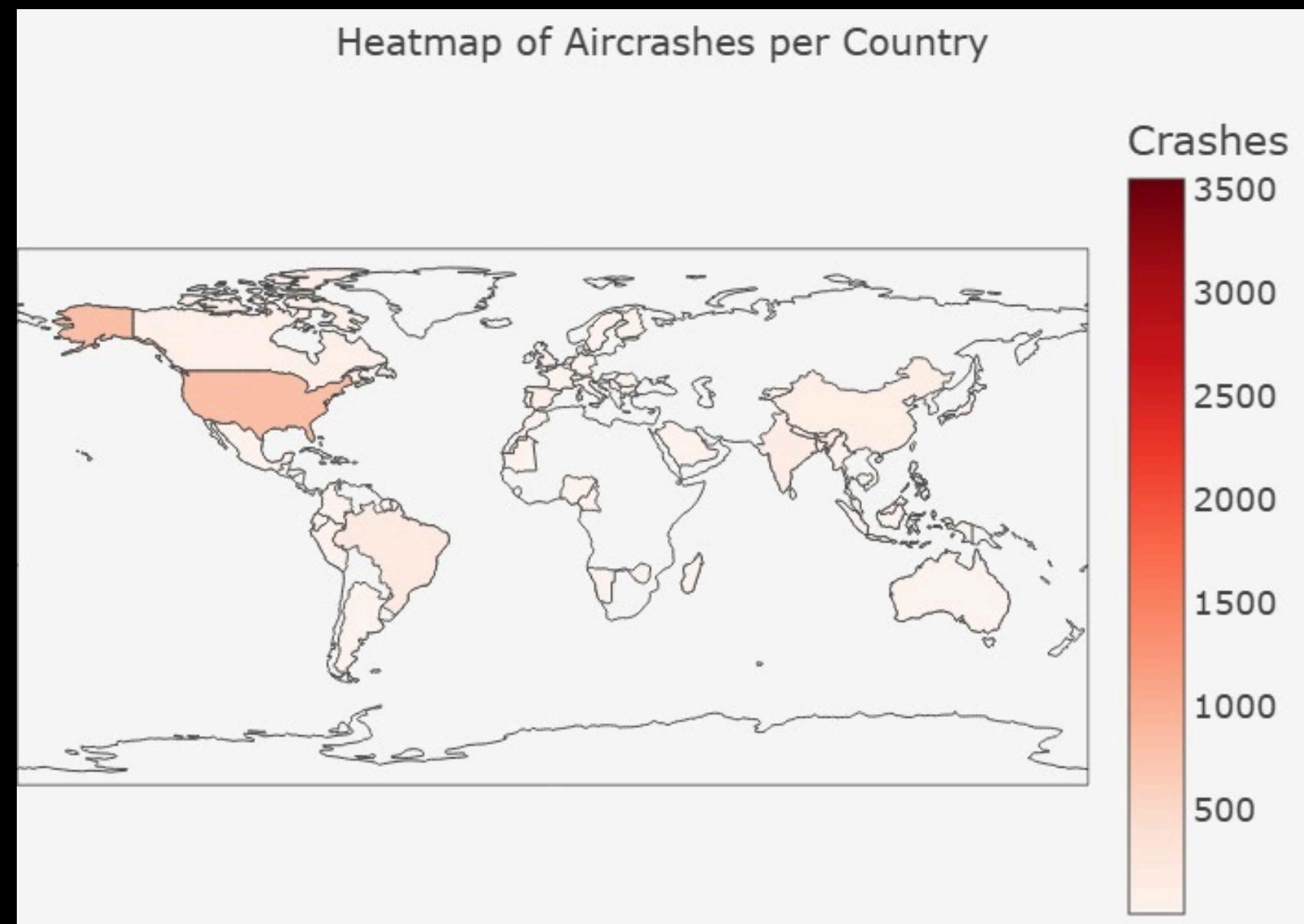
TOP 10 MOST DEADLY AIRCRASH INCIDENTS



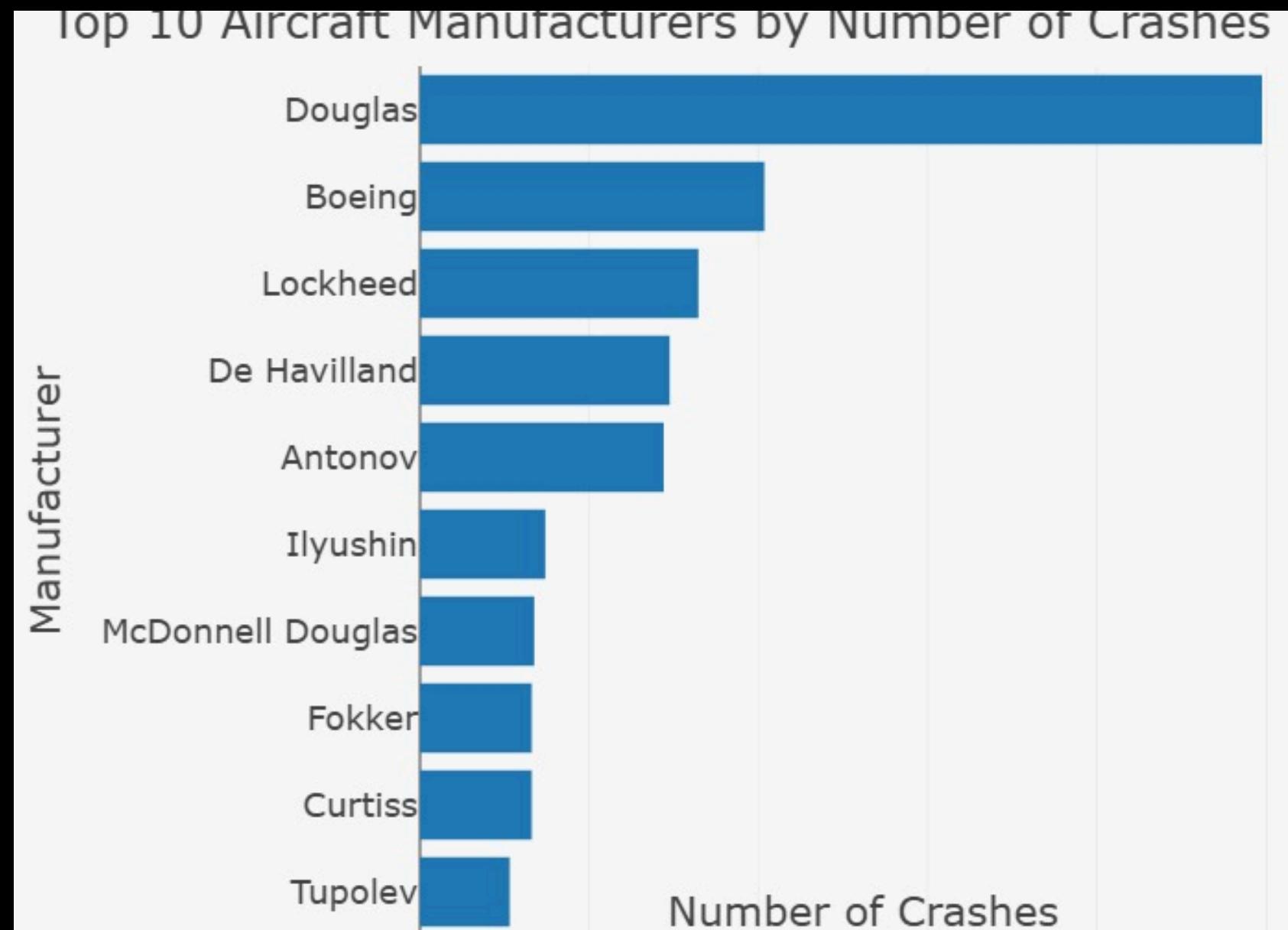
TOTAL FATALITIES BY OPERATOR TYPE



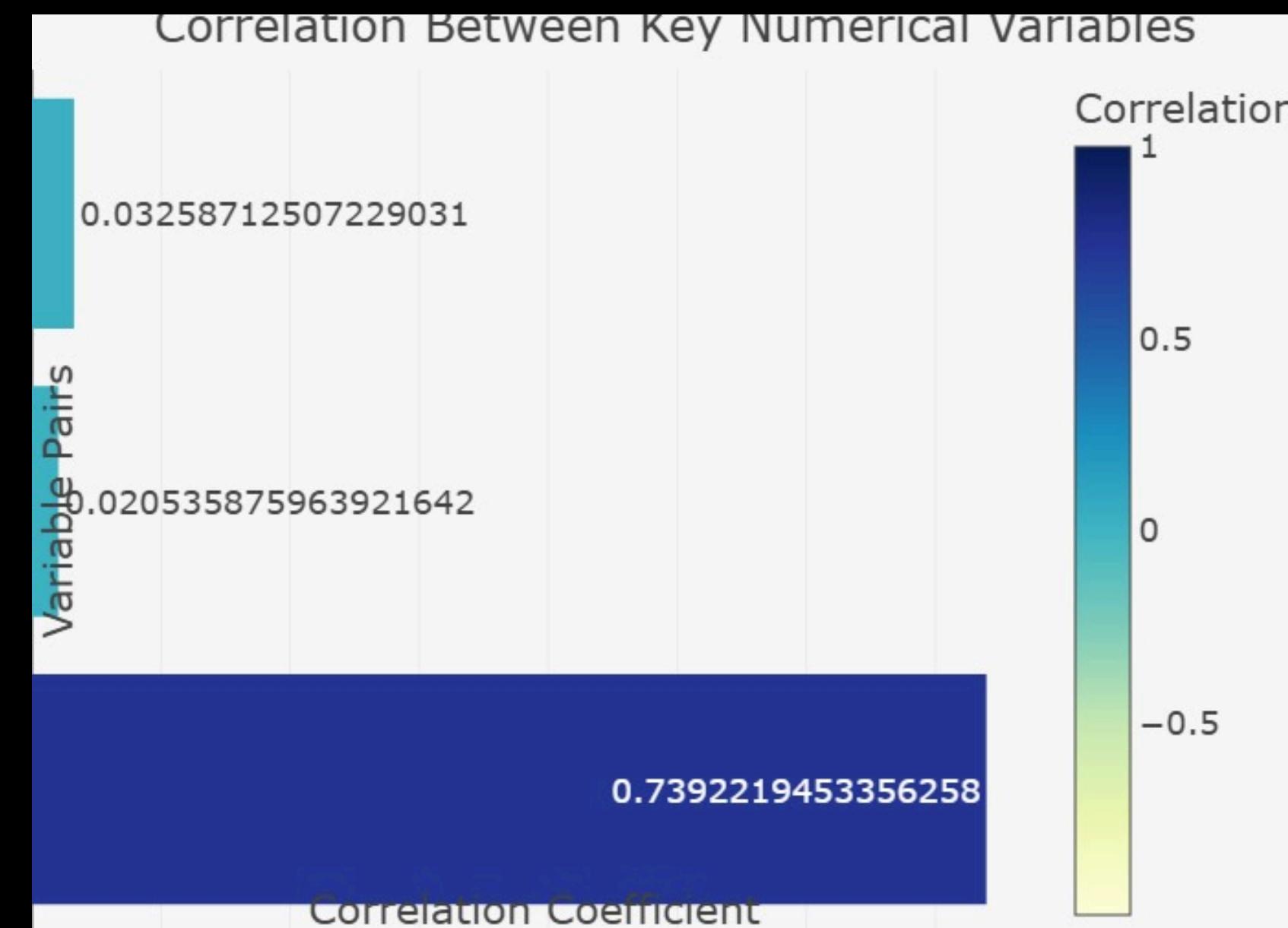
AIRCRAshES BY COUNTRY



TOP 10 AIRCRAFT MANUFACTURES BY NUMBER OF CRASHES



CORRELATION BETWEEN KEY NUMERICAL VARIABLES



RECOMMENDATIONS

1. Improve Safety During High-Fatality Months (e.g., July & August)

- Conduct more inspections and maintenance before peak travel seasons.
- Increase emergency preparedness efforts in the summer.
- Raise awareness among passengers and crew about seasonal risks.

2. Monitor Aircraft Types with Frequent Crashes

- Reevaluate certification for older or high-incident aircraft.
- Enforce stricter regulations on these models.
- Provide specialized training for pilots flying these aircraft.

GROUND

THE INDUSTRY'S HISTORY

THANK YOU

