Aviation safety chronicles

Safer skies and enjoyable flights for all.

INTRODUCTION

- This project explores patterns in aviation accidents to uncover actionable insights aimed at improving aviation safety and reducing risks. By analyzing historical data, we aim to empower airlines, regulators and passengers in the mission to make air travel faster.

PROJECT GOALS

❖Provide recommendations to enhance safety.

❖Highlight patterns across flight phases, weather conditions, aircraft models and accident locations.

DATA OVERVIEW

- Source NTSB Aviation data set.

- Size : Contains accident records and detailed information.

- Key Variables: Accident phase, Weather conditions(IMC vs VMC), Injuries, Aircraft Model.
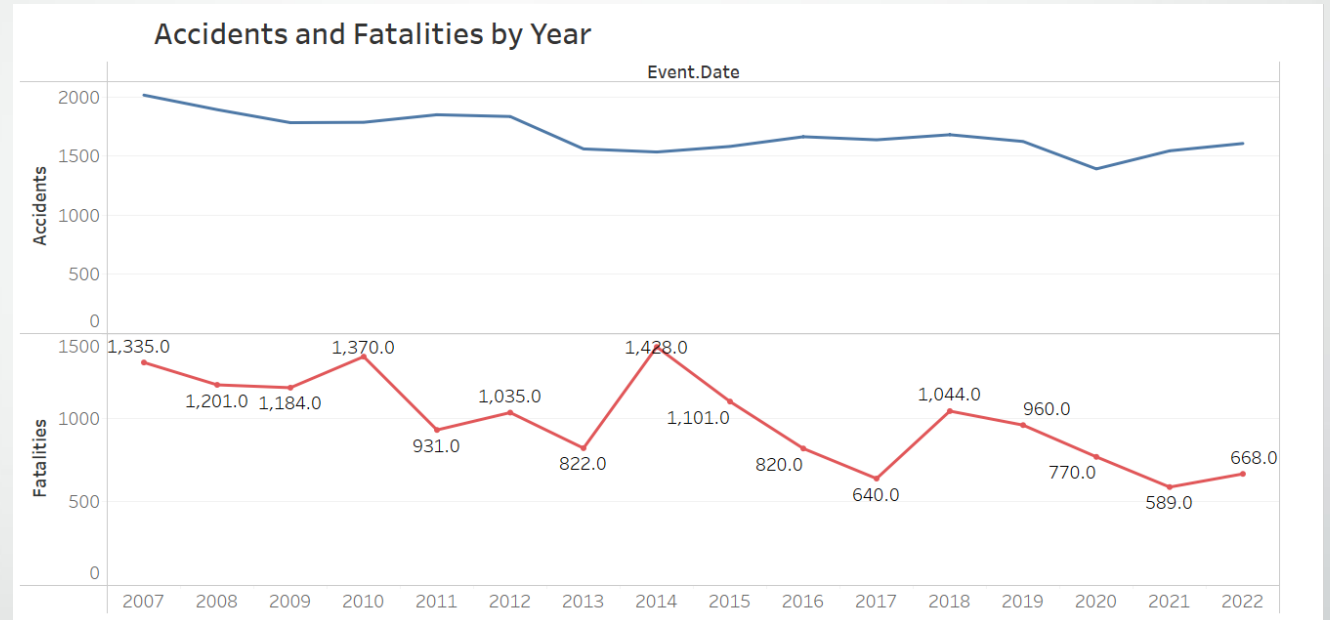
METHODS

- Data Cleaning

- Data Analysis

- Visualization by use of Tableau

KEY FINDINGS

1. Accidents and fatalities by year.

We all agree accidents have been there. They have reduced as time goes as its evident on the graph.
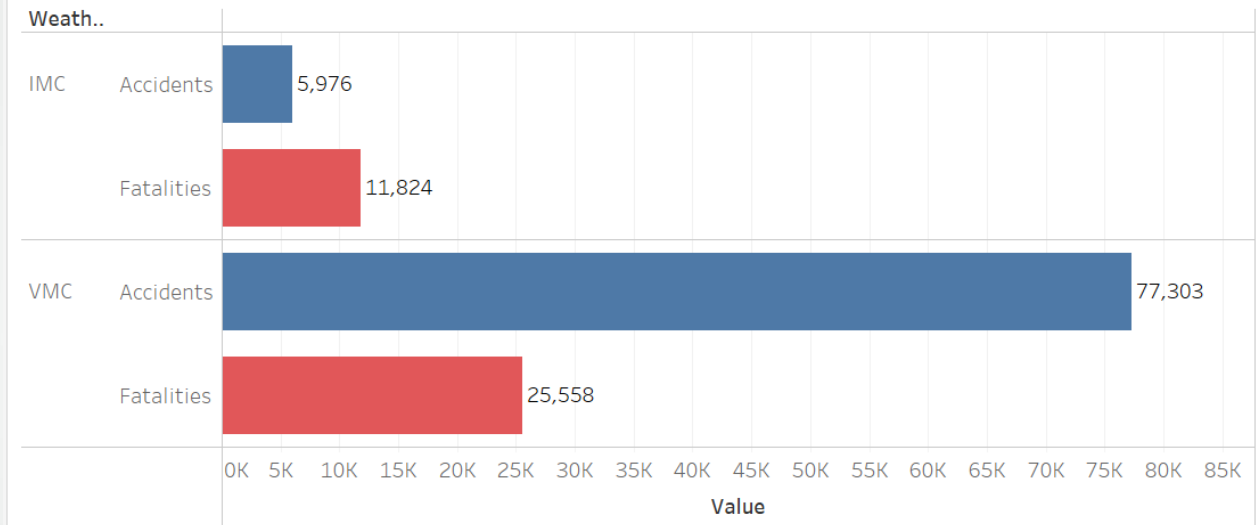

Accidents and Fatalities by Year

KEY FINDINGS

2. Weather

Weather is one factor that led to accidents. Its advisable to pilots and crew to be considerate of weather conditions before taking a flight, this will help reduce accidents by a bigger percentage. Accidents are more frequent under IMC (Instrument Metrological Conditions compare to VMC (Visual Metrological Condition
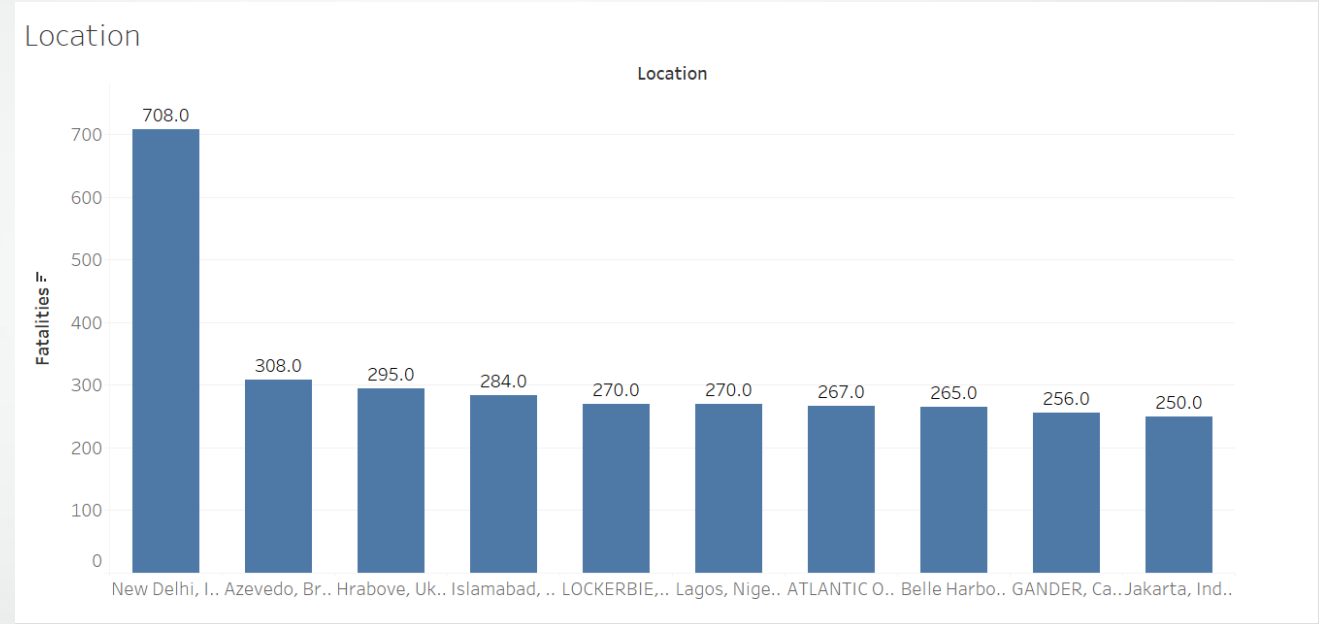

Weather

KEY FINDINGS

3. Location

Most of the accidents took place in New Delhi followed by Azevedo. Its crucial if the accident-prone areas can have more safety measures to curb and reduce the number of accidents.

Location

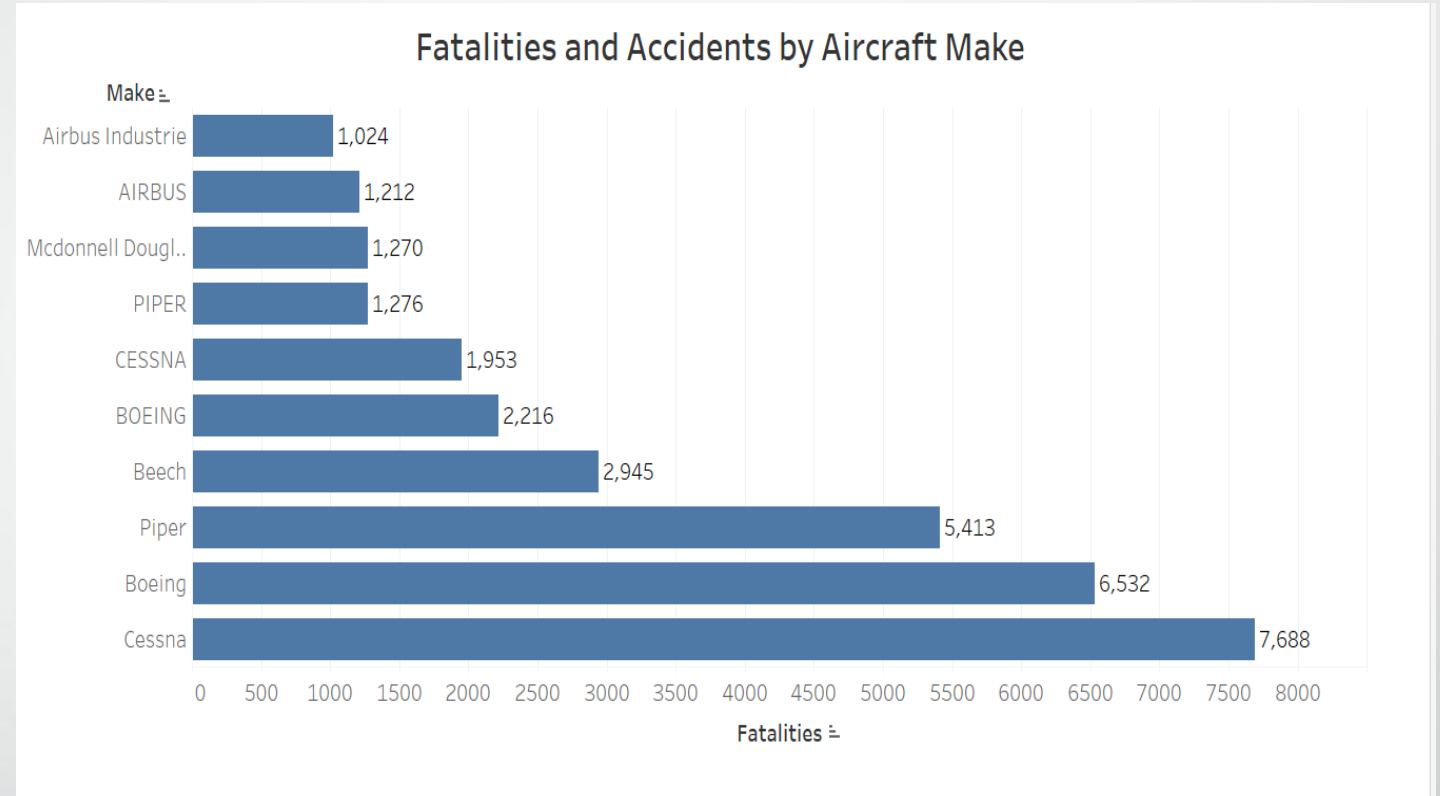| Location	Fatalities
New Delhi, I..	708.0
Azevedo, Br..	308.0
Hrabove, Uk..	295.0
Islamabad, ..	284.0
LOCKERBIE,..	270.0
Lagos, Nige..	270.0
ATLANTIC O..	267.0
Belle Harbo..	265.0
GANDER, Ca..	256.0
Jakarta, Ind..	250.0

KEY FINDINGS

4. Common aircrafts in accidents.

Certain aircraft models such as Cessna, appear frequently in accident reports.

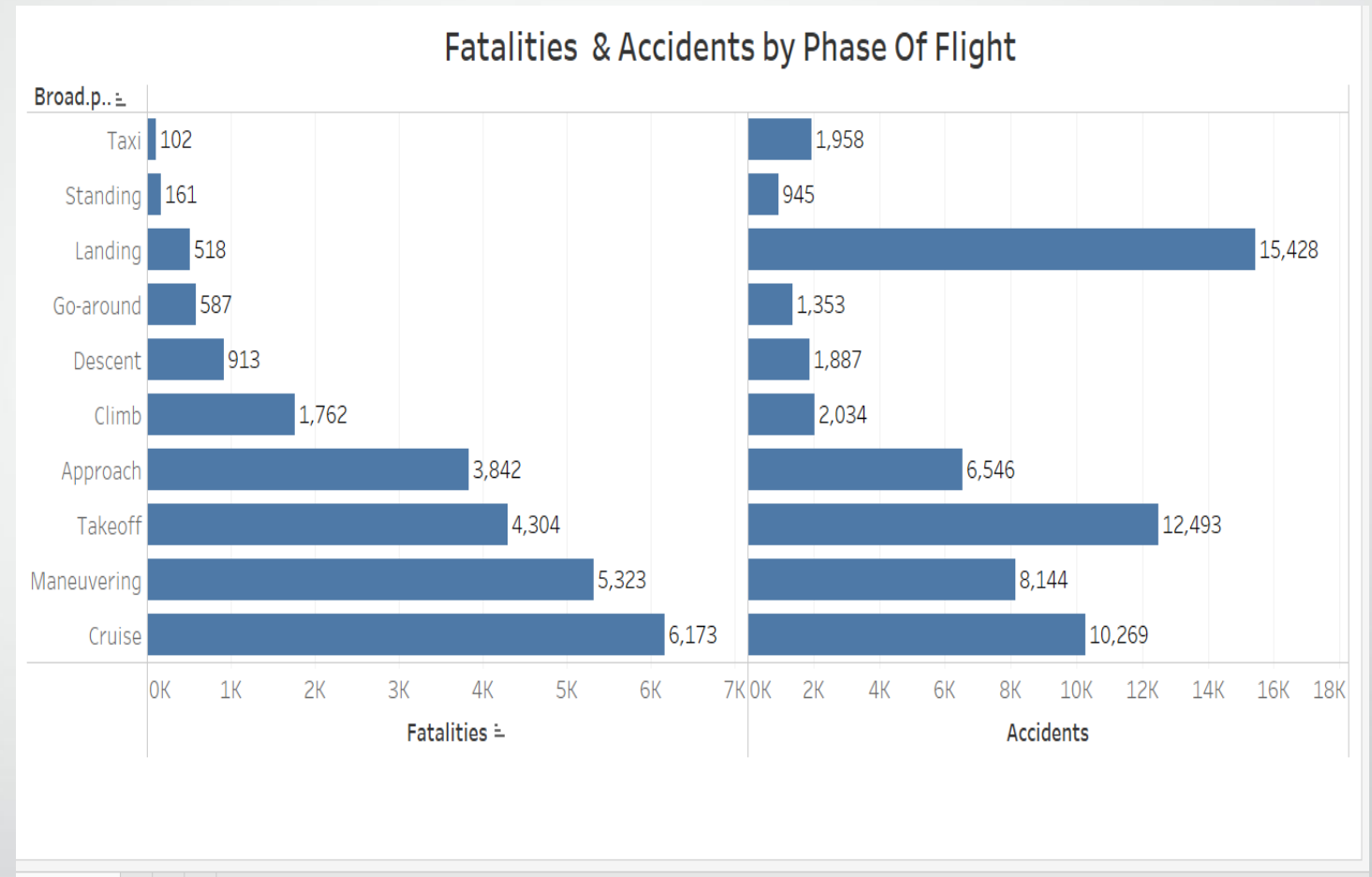## Fatalities and Accidents by Aircraft Make

Make	Fatalities
Airbus Industrie	1,024
AIRBUS	1,212
Mcdonnell Dougl..	1,270
PIPER	1,276
CESSNA	1,953
BOEING	2,216
Beech	2,945
Piper	5,413
Boeing	6,532
Cessna	7,688

KEY FINDINGS

5. Occurrence by Phase of Flight.

Most accidents occur during critical phases.

Cruise (highest count 6173)

Fatalities & Accidents by Phase Of Flight

CONNECTING INSIGHTS TO STAKEHOLDER NEEDS

- For airlines Train pilots for adverse weather scenarios and prioritize the maintenance of high risk aircraft models.

- For regulators Implement stricter safety protocols during the landing and take off phases.

- For passengers Highlight how these measures reduce risks, ensuring peace of mind during travel.

CHALLENGES AND LESSON LEARNT.

- Challenges

Missing data created inconsistencies in initial analyses

Tableau performance issues for large data sets.

- Lesson learnt

Data cleaning is vital for actionable insights.

Visualizations tailored to stakeholder needs drive engagement and value.

THANK YOU

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