

Risk Assessment: Analysis for best Aircraft Acquisition.

Presented By Haender Michael Jean Louis .

Overview and Goal

Dataset

“Aviation Accident Database & Synopses, up to 2023.” From kaggle

Provenance

National Transportation Safety Board (NTSB)

About Dataset

It contains Information about:

- Aircraft Makes and Models
- Event date/location
- injury severity
- Aircraft damage
- Weather conditions
- More

i.

Goal

Our goal is to analyze :

- accident patterns
- aircraft reliability,
- evolution of accident frequency
- generate data-driven insights.

Exploratory Data Analysis

the different steps of our Analysis.



DATA CLEANING



DATA UNDERSTANDING



DATA ANALYSIS



RECOMMENDATIONS



SUMMARY

Data Cleaning

- 1 Create a copy of the DataFrame**
- 2 Drop columns**
- 3 modify data type**
- 4 Fill rows with missing values.**

Data Understanding

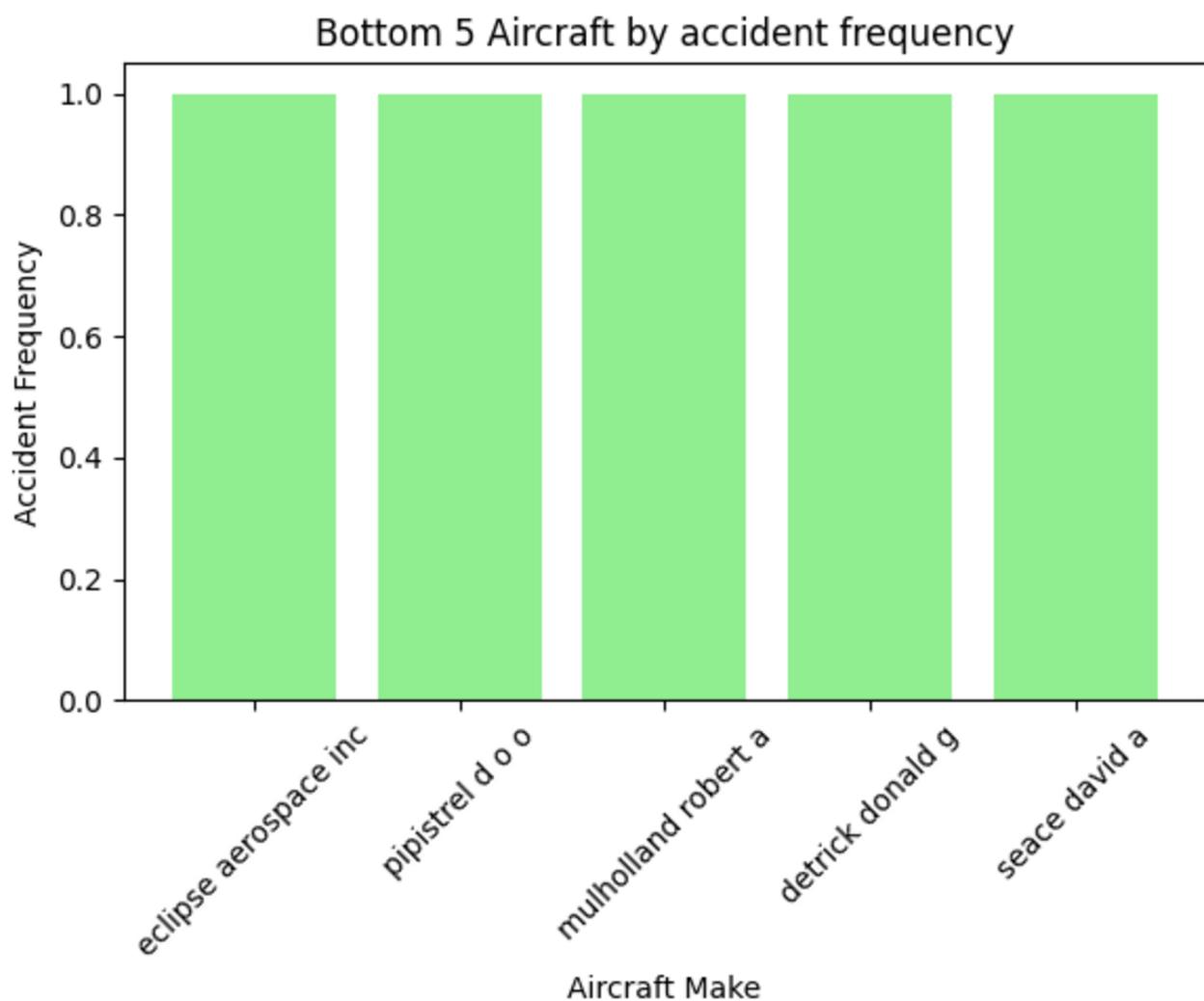
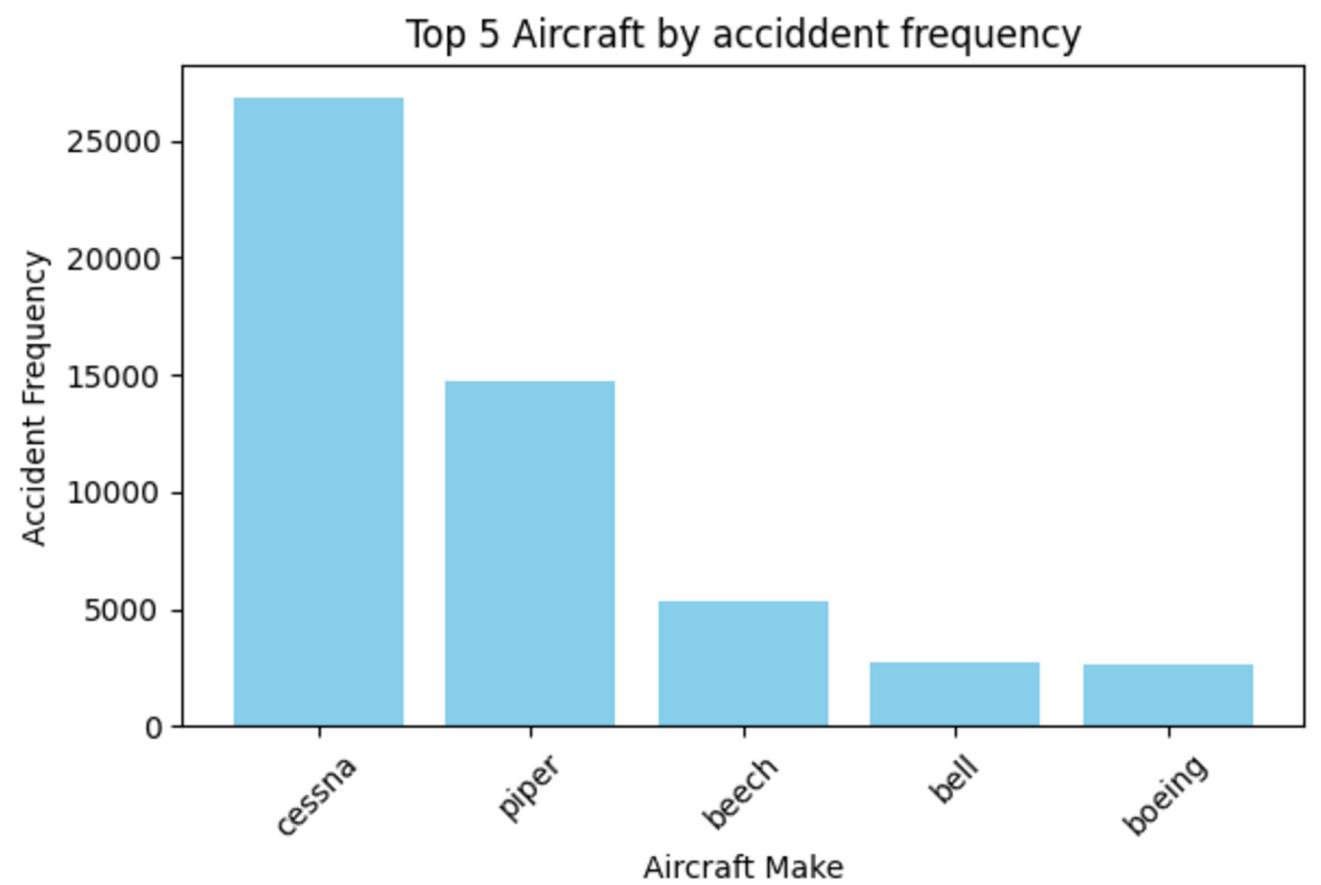
- verify data structure .
- prepare oneself for analysis.
- laying foundation for insights
- Identify key_points.
- prepare questions to answer .

Data Analysis

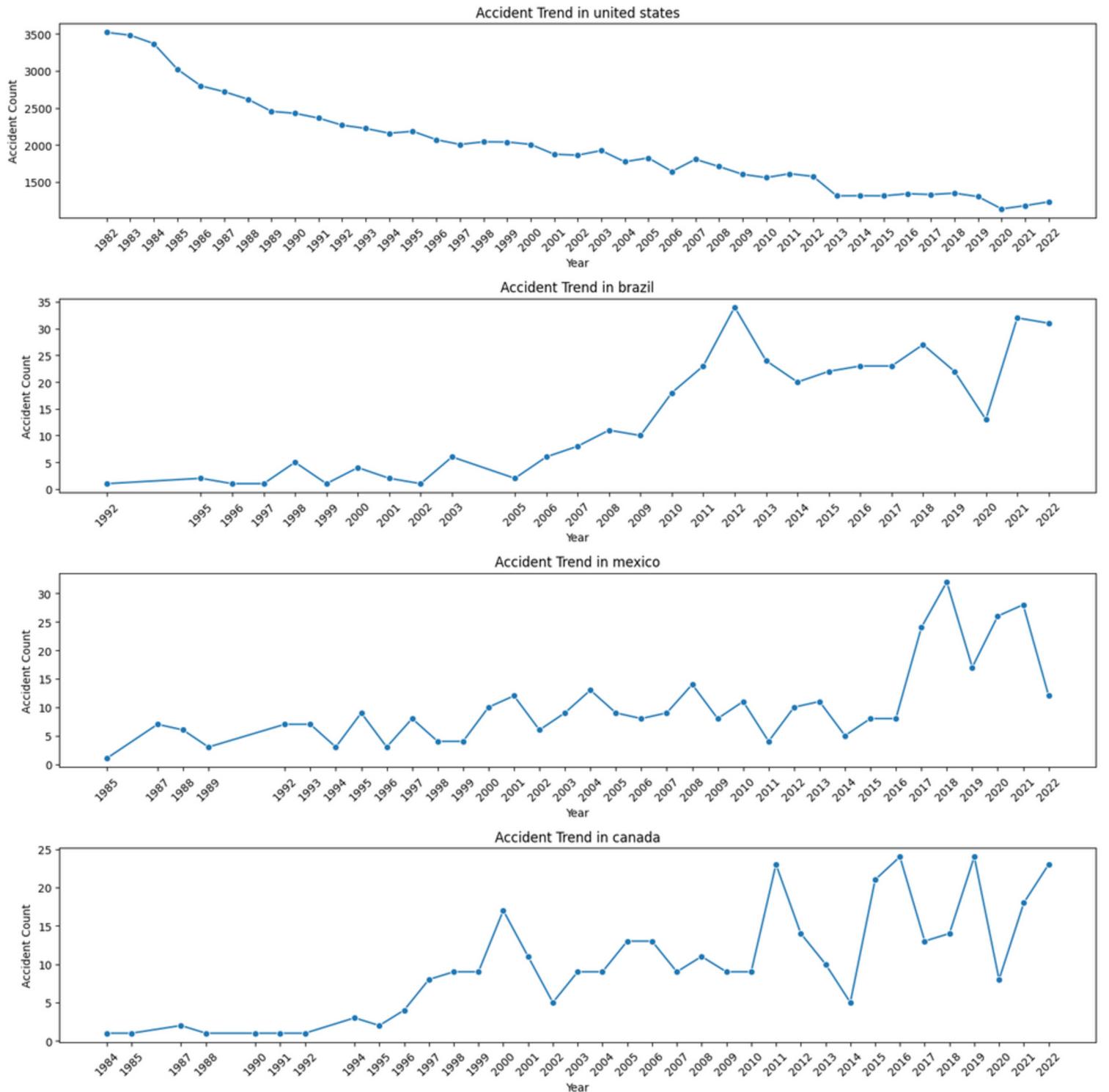
- Data Visualization
- insights and findings
- Identify trends/patterns.
- comparative Analysis
- risk assessment
- other

Which aircraft makes have suffered the fewest and the most accidents?

Analysis :
lower accident amount
 \neq Safety.



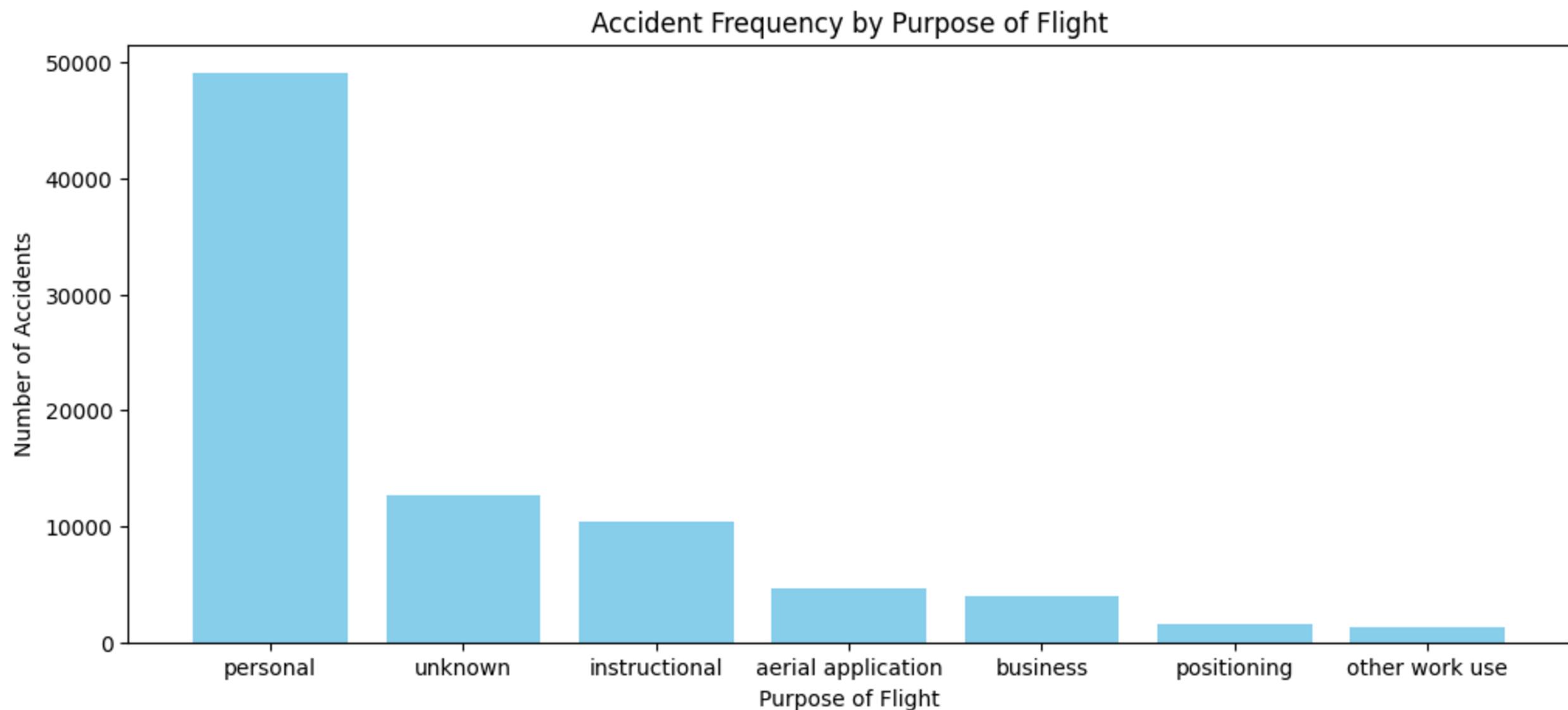
How has accident frequency evolved over the years for the country with the highest number of accidents?



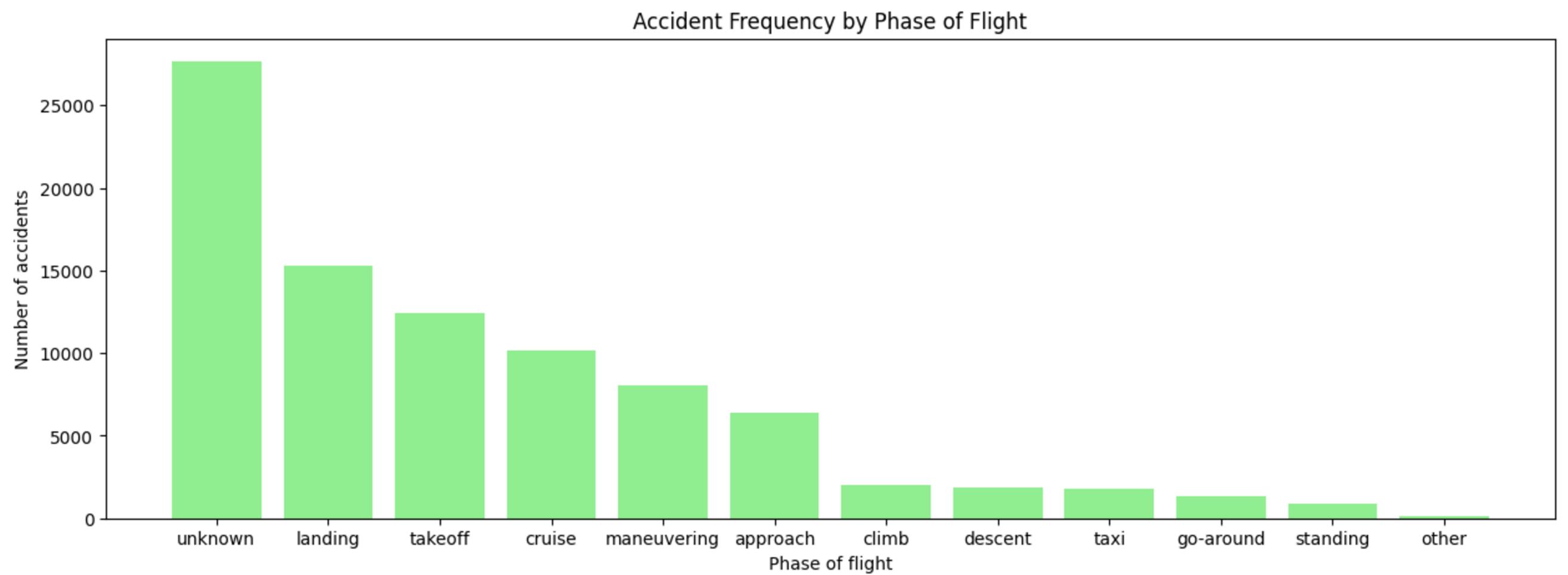
Importance of this Analysis:

- Identify high risk regions
- Evaluate safety trends
- Improve fleet management
- Support policy decisions

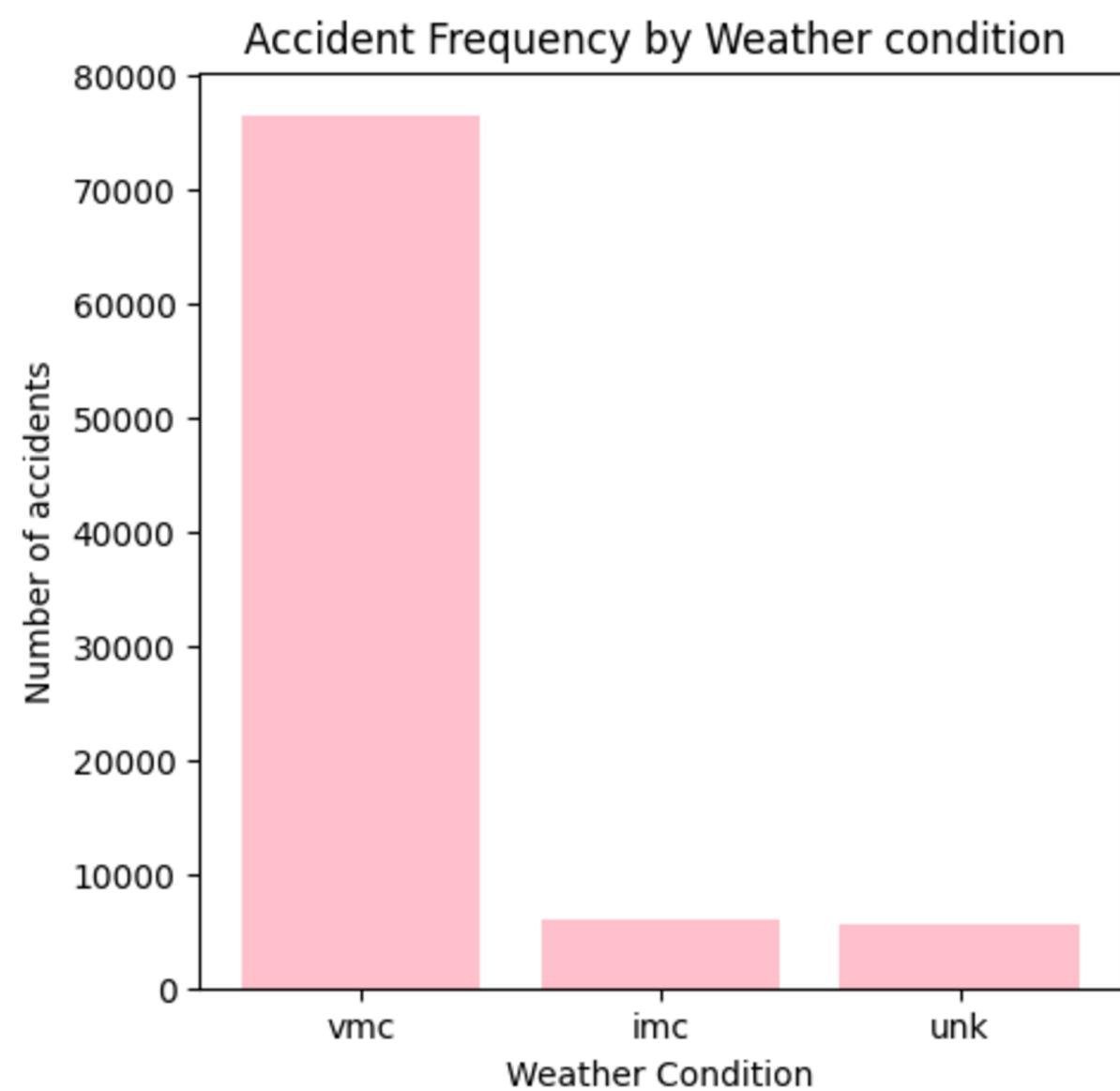
For which flight purposes have accidents been most frequent?



For which flight phases have accidents been most frequent?



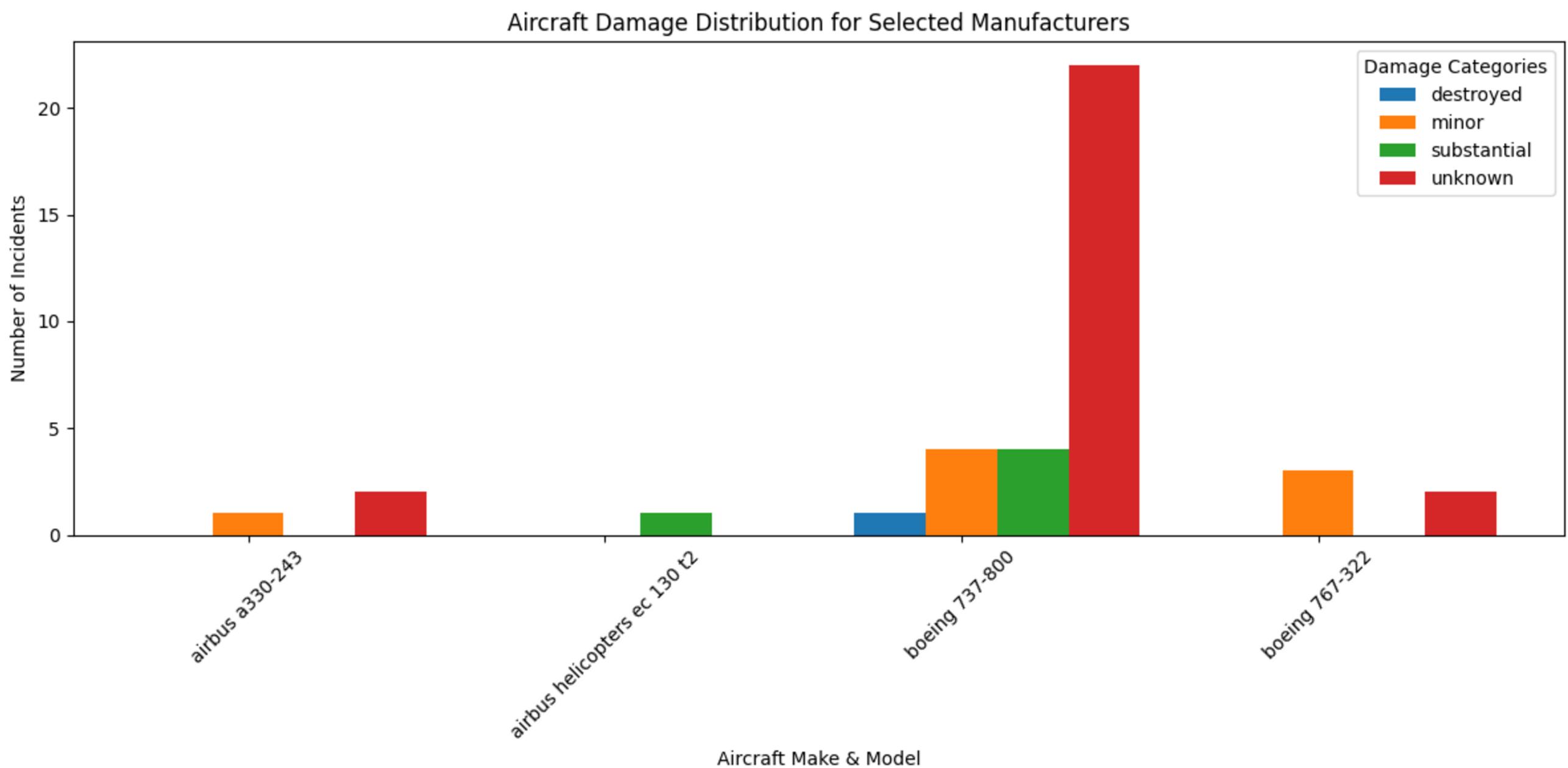
For which weather condition have flight accidents been most frequent ?



Result:

- unfavorable conditions : 8%

How resistant are aircrafts to accidents for Top Manufacturers ?

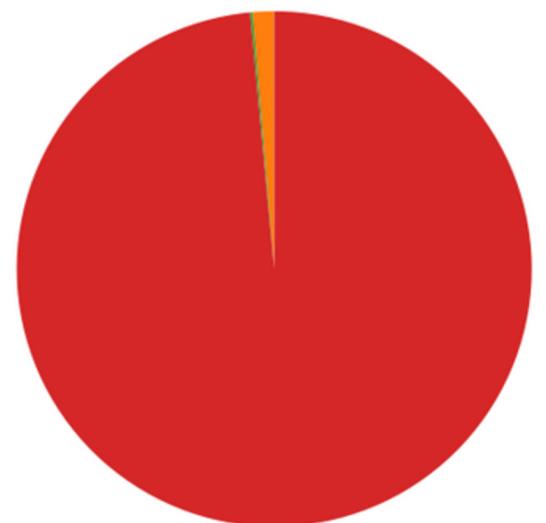


Why use the top aircraft manufacturers ?

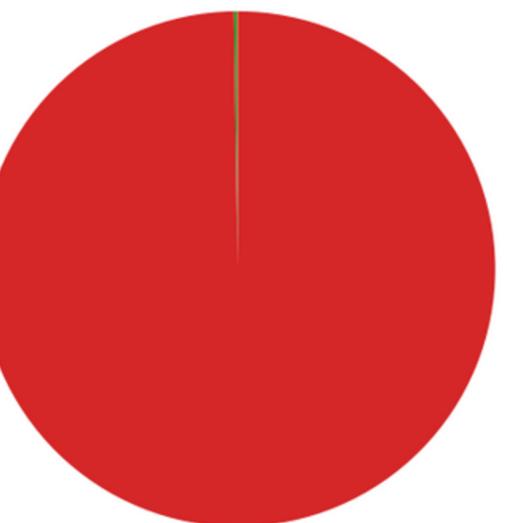
- highly recognized
- trusted
- reliable
- effective

How well are passengers protected in the event of an aircraft crash For top Aircraft Manufacturers?

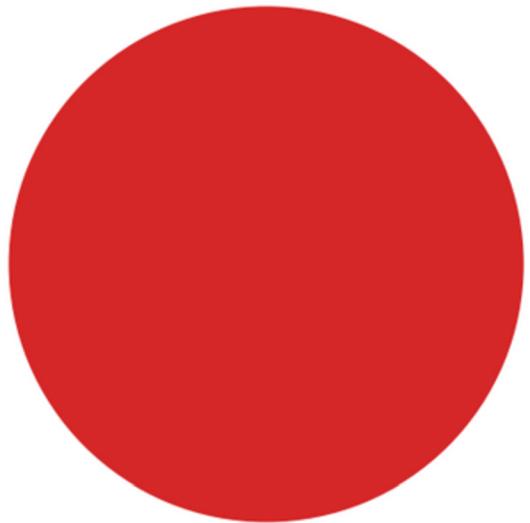
Injury Distribution for boeing 767-322



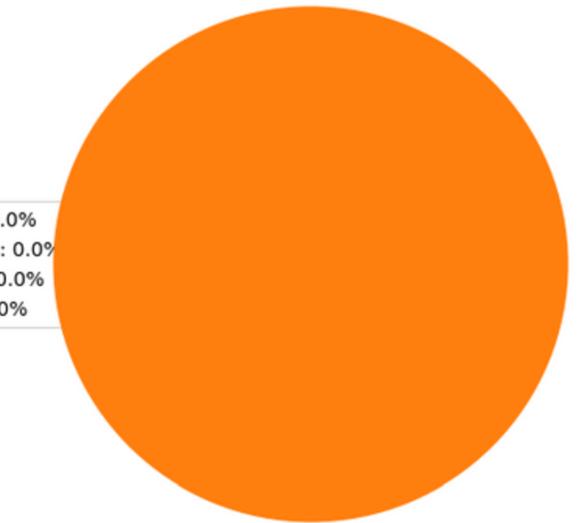
Injury Distribution for boeing 737-800



Injury Distribution for airbus a330-243



Injury Distribution for airbus helicopters ec 130 t2



Summary

- few accidents \neq safety
- Accident Frequency for Canada and Brazil
- Frequency for Purpose of flight
- Frequency for phase of flight
- destroyed Aircrafts /injuries rate

Recommendations

- further research on canada/Brazil
- measures of purpose
- measures for flight phase
- measures for weather conditions
- Airplane recommendations

**THANK
YOU!**

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