



# Assessing Aircraft: Risk Factors and Actionable Insights

This presentation explores key risk factors in aircraft operations and provides actionable insights for selecting lowQ risk aircraft models.



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# Key Risk Factors in Aircraft Operations

1

## Component Failure

Engine failure can lead to accidents if not detected early.

2

## Weather Conditions

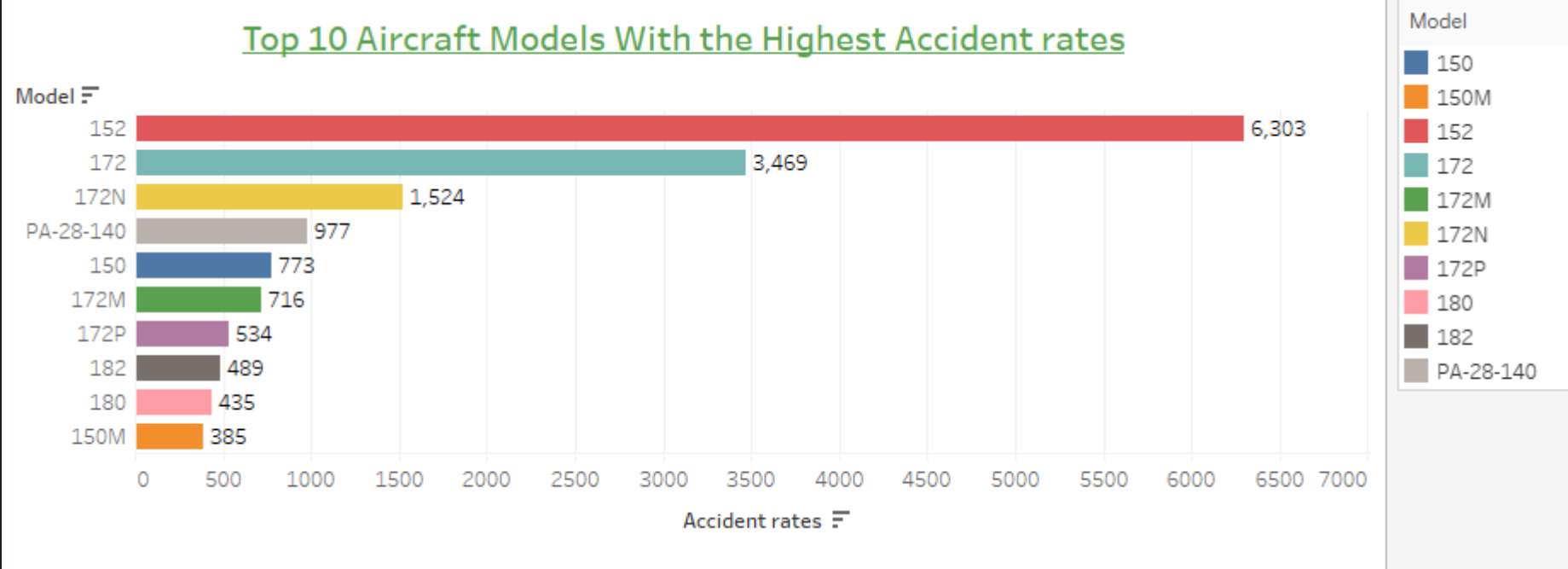
Poor visibility due to weather can increase the risk of accidents.

3

## Human Factors

Pilot error is a major contributor to aircraft accidents.

# Data Visualization: Top 10 Aircraft Models with Highest Accident Rates



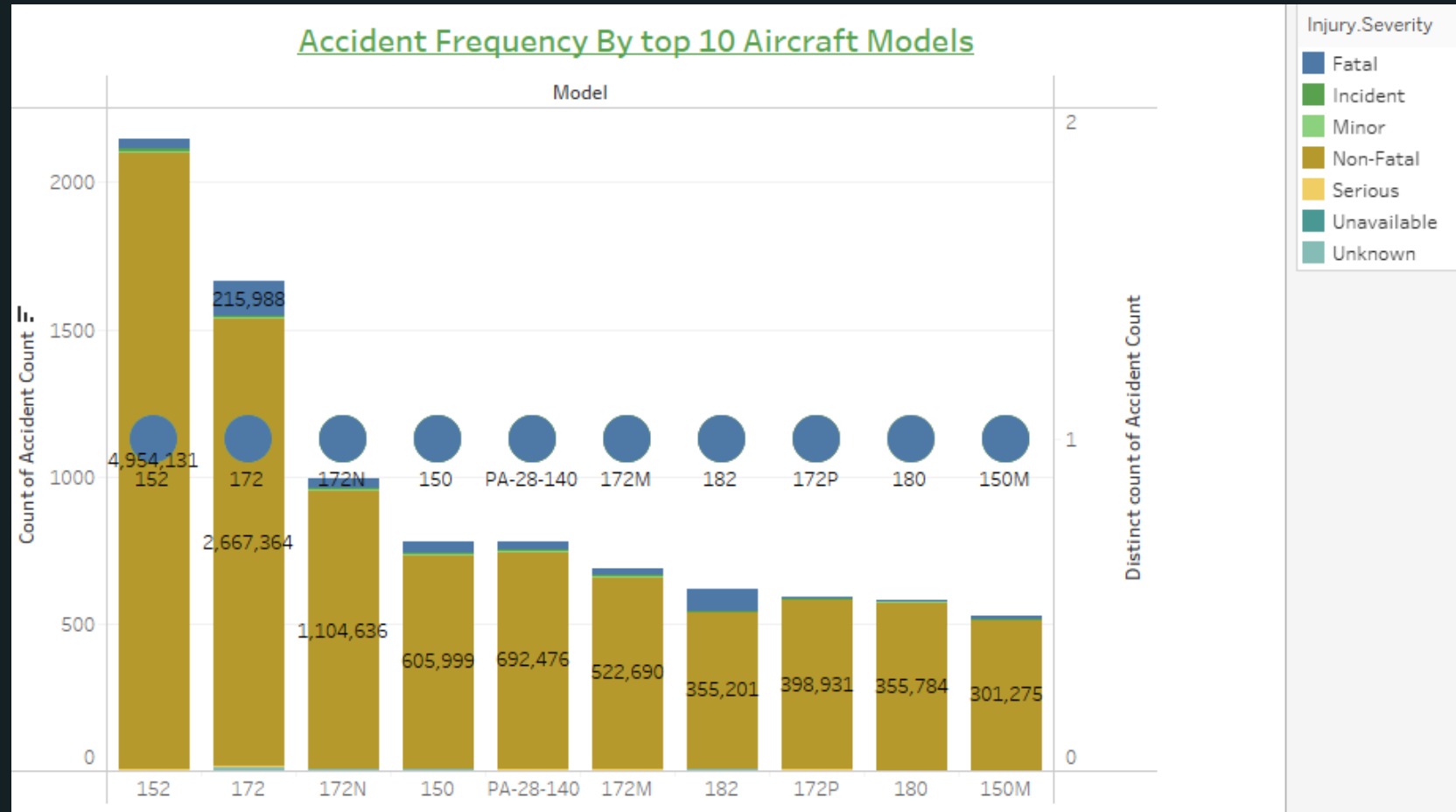
Model 152

Highest accident rate with 6;303 accidents.

Model 150M

Lowest accident rate with 385 accidents.

# Accident Frequency by Top 10 Aircraft Models



Model 172 and 182

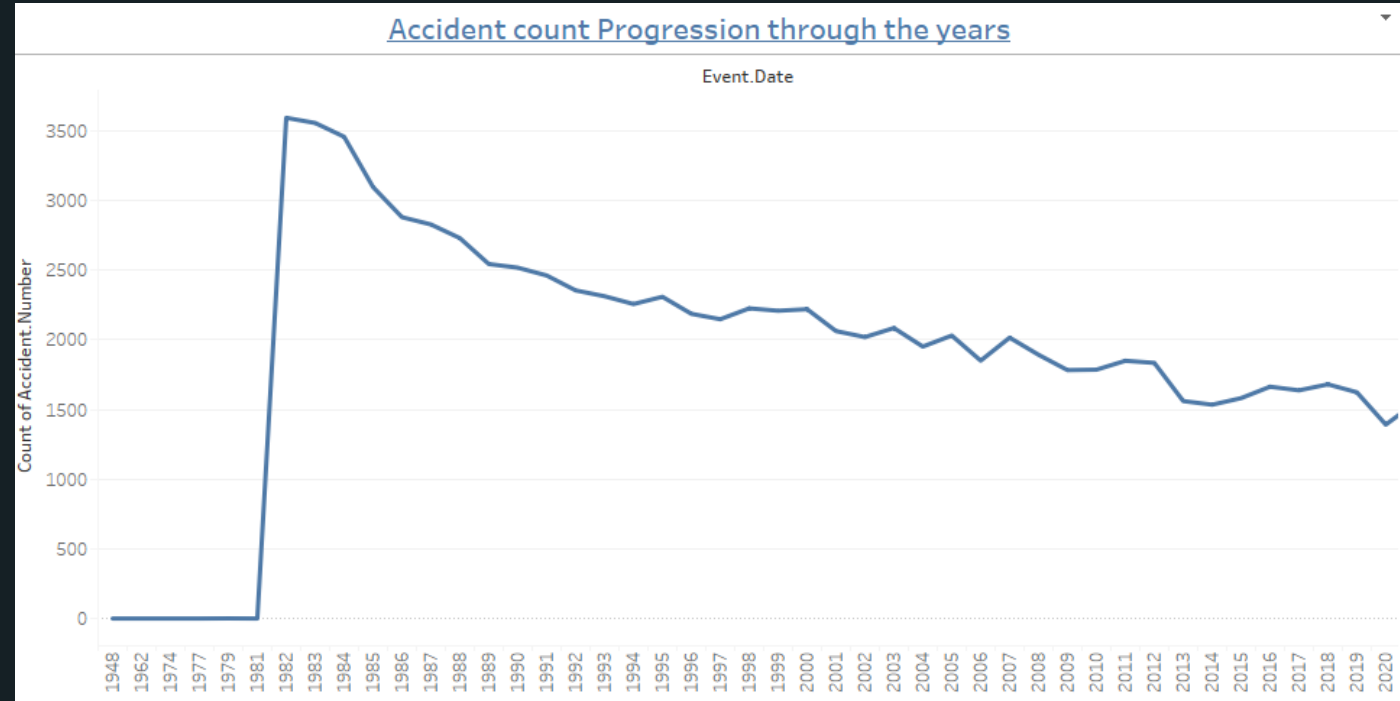
Highest fatal injury rates, making them a liability for commercial use.

Model 152

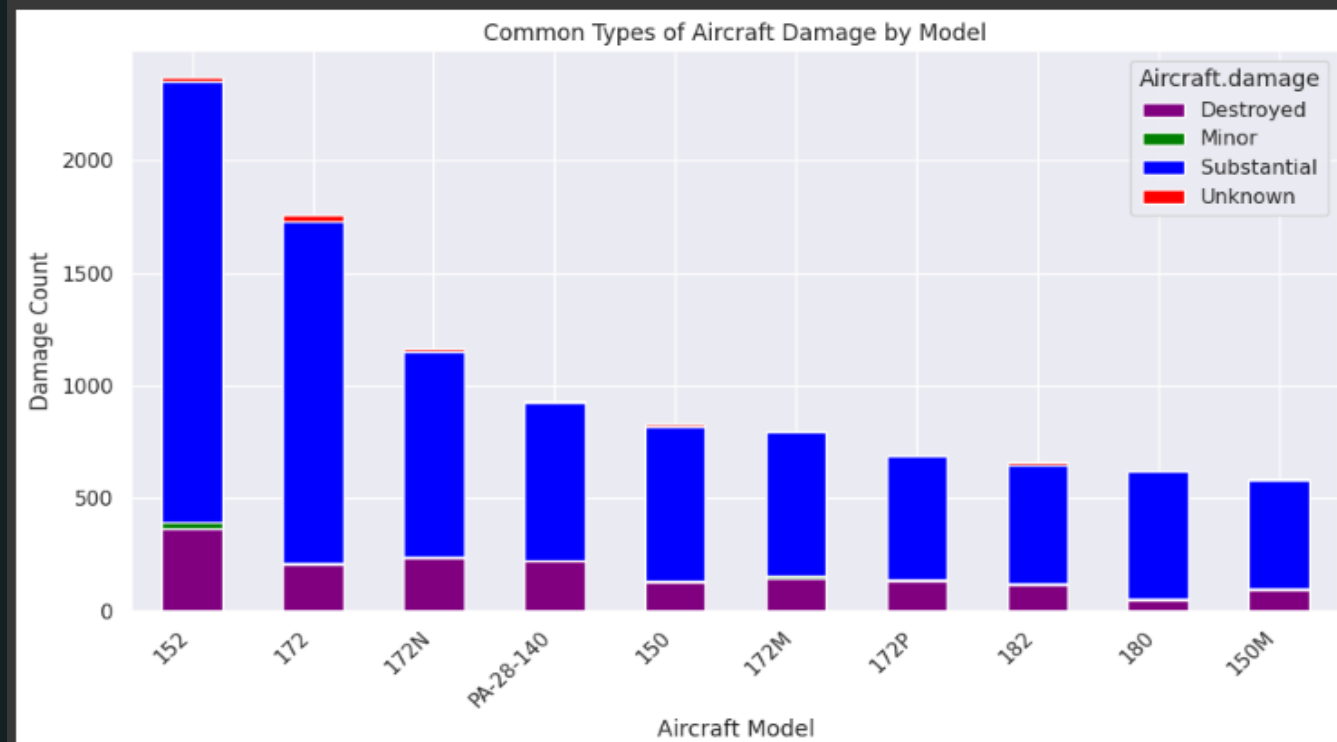
Highest accident count, but with non-fatal injuries.

# Accident Count Progression Through the Years

- 1 1981 and Before  
Low accident count.
- 2 1982  
Skyrocketing accident count.
- 3 2022  
Declining accident count.



# Common Types of Aircraft Damage by Model



## Substantial Damage

Most aircraft models experienced substantial damage.

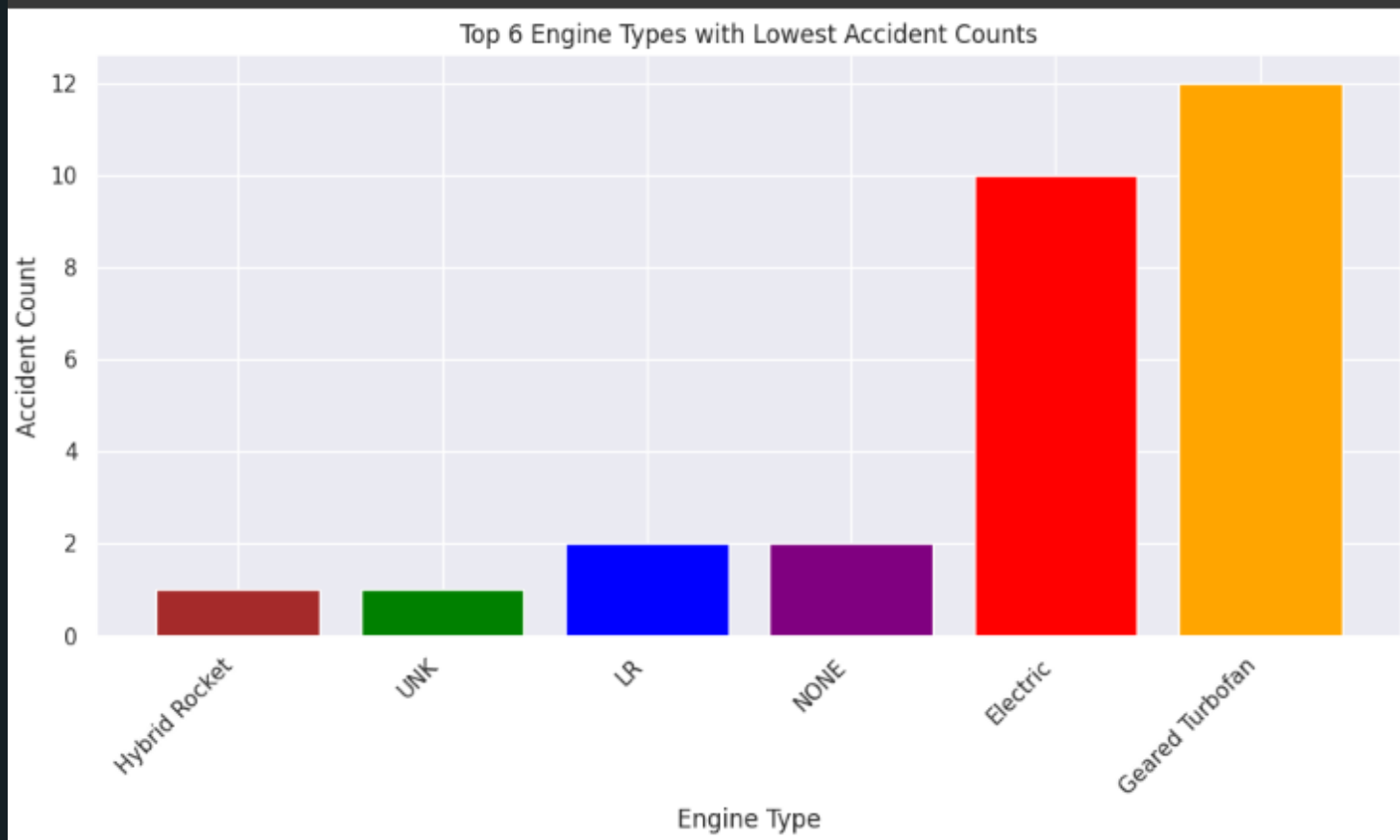
## Complete Destruction

Few aircraft models were completely destroyed.

## Model 152

Highest number of destroyed aircraft, indicating a higher risk.

# Engine Types with Lowest Accident Count



## Hybrid Rocket

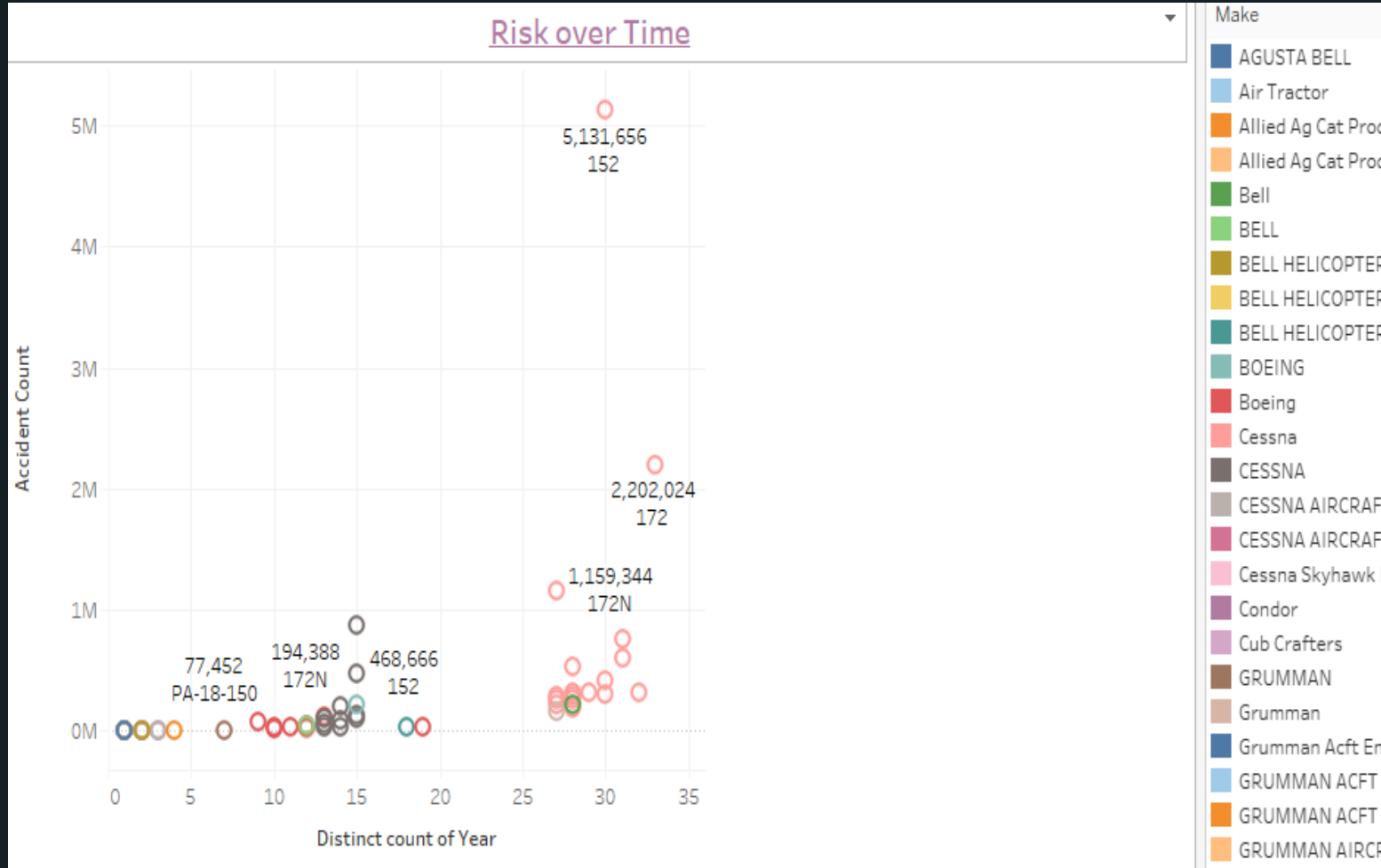
Lowest accident count, but complete destruction upon accident.



## Geared Turbofan

Highest accident count, but with substantial damage.

# Risk Over Time

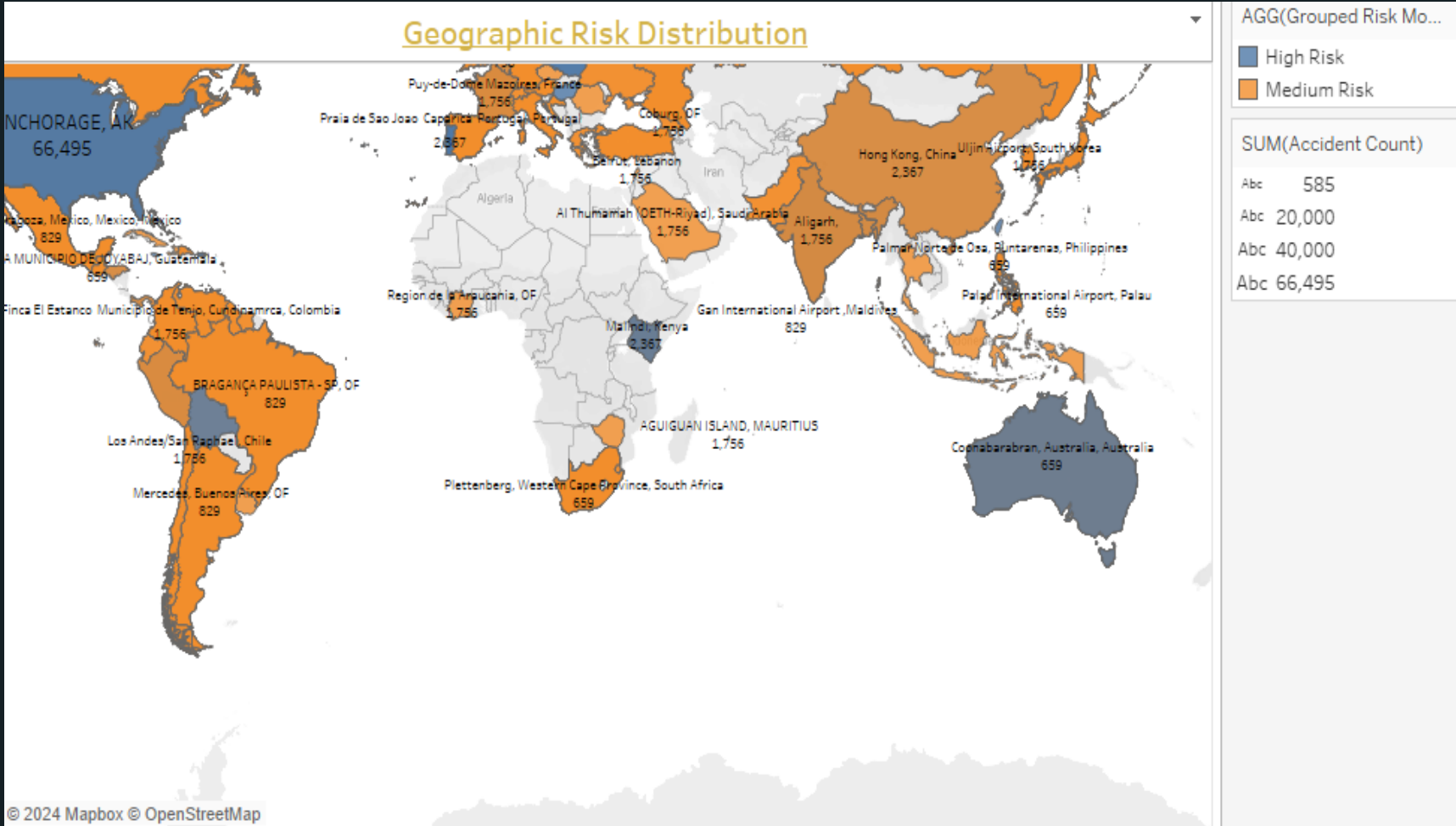


- Certain Models such as the 172N displays varying accident totals across different years which suggests higher risk.

- Aircraft Models That have been operational for a Longer Period(High Distinct Count) have Higher Accident Count



# Geographic Risk Distribution



-From the Geographic Distribution we note that areas such as the U.S have a higher risk distribution.

- Areas such as Europe have Medium Risk distribution

# Conclusion and Aircraft Purchase Recommendation



1

## Prioritize

Purchase aircraft models with the lowest accident rates, such as the 180 model.

2

## Focus

Operate in regions with lower historical risks, such as Europe.

3

## Update

Regularly update risk assessments with newer datasets and operational insights.

# Feedback Session



