

# Aircraft Risk Assessment

## Introduction

Identifying which aircraft models are the lowest risk for the company to invest in for commercial and private use requires deep understanding of aircraft history.

When expanding into aviation, choosing the right aircraft category is critical, not just for performance, but for safety in all weather conditions. Our analysis identifies the top 10 safest aircraft categories with the fewest reported accidents, even in challenging weather. These models demonstrate consistent reliability, making them ideal candidates for our new aviation division. Let's explore the data behind these low-risk

# Business Understanding

Stakeholder: Head of the new aviation division.

Goal: To identify which aircraft models are the lowest risk for the company to invest in for commercial and private use.

Research questions:

- Which aircraft model has the lowest risk based on the dataset from the National Transportation Safety Board that includes aviation accident data from 1962 to 2023.
- Which aircraft models have the fewest accidents or fatalities?
- What causes are most common for different aircraft categories?

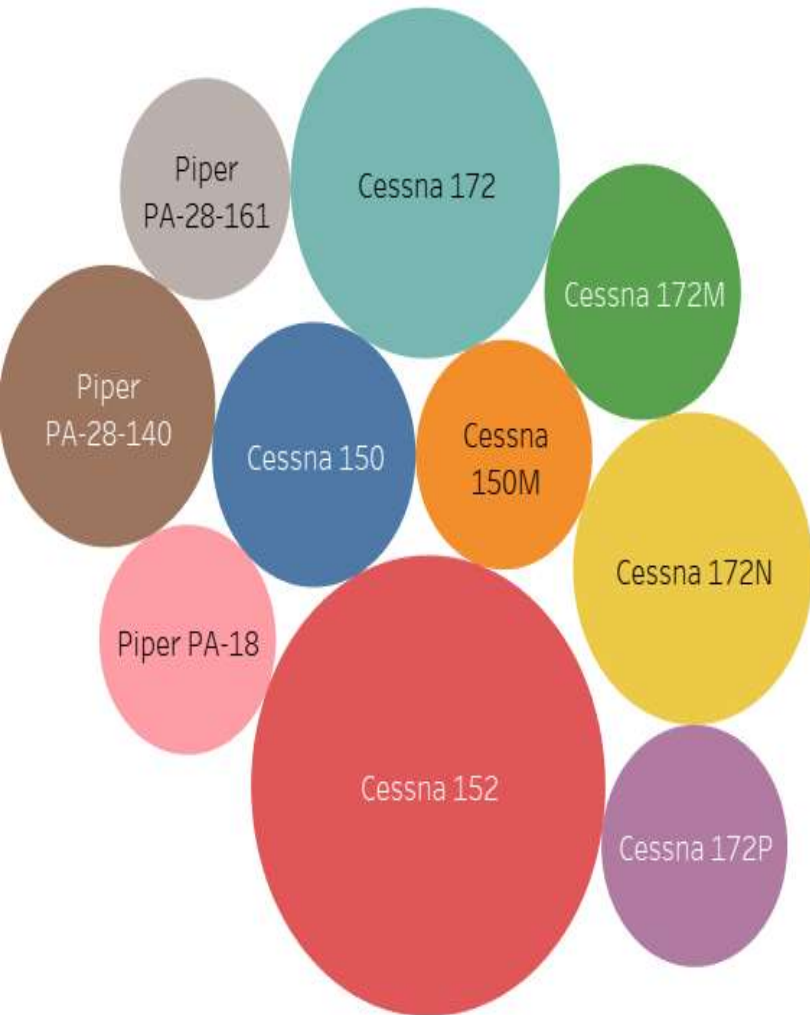
# Data Understanding

- The Dataset is sourced from kaggle, the National Transportation Safety Board Dataset that includes aviation accident data from 1962 to 2023.
- The data is about civil aviation accidents and selected incidents in the United States and international waters.
- It contains two csv files 'AviationData.csv' and 'USState\_Codes.csv'.

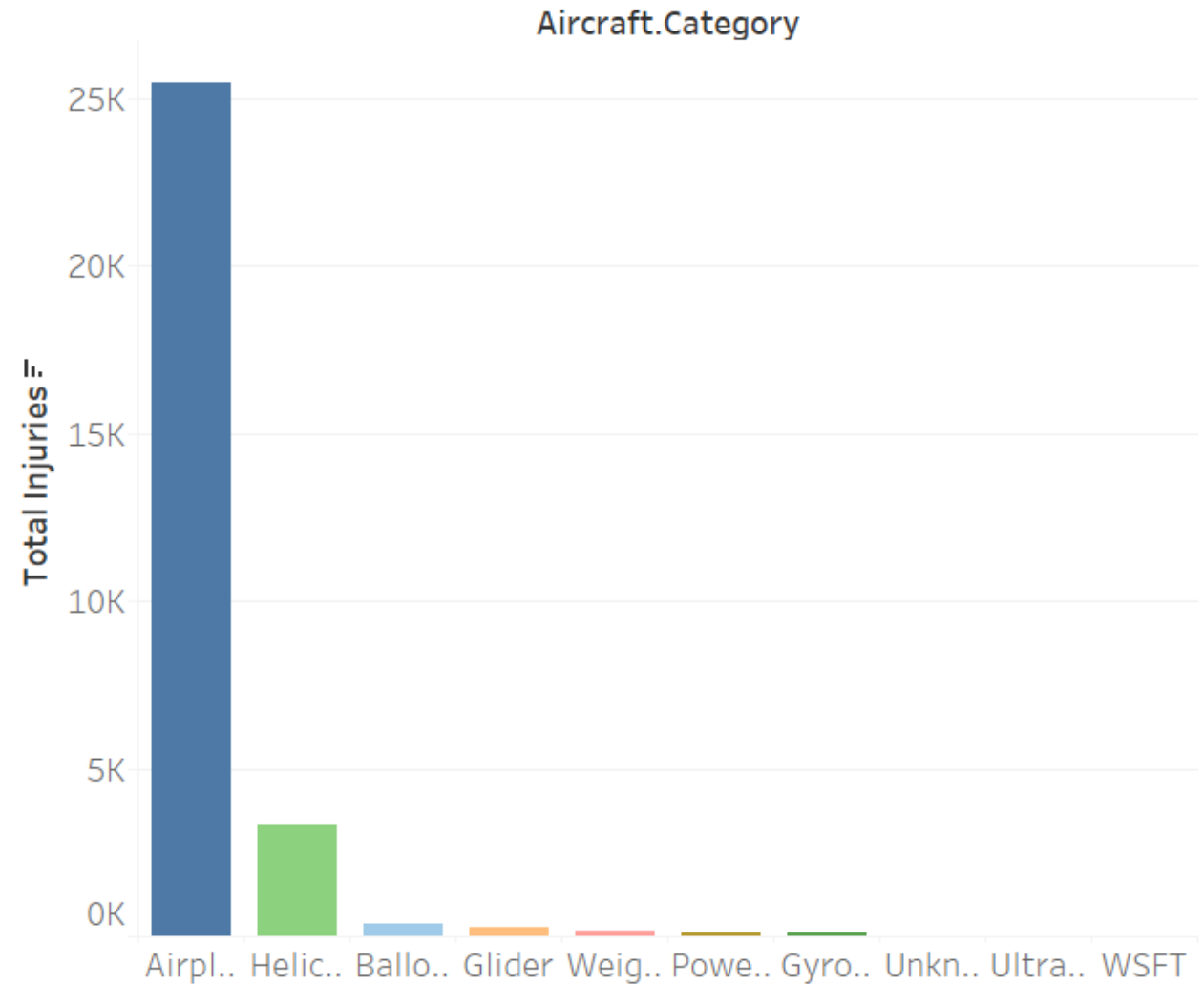
# Data Preparation

- \*Opening and inspecting the contents of the dataset provided.
- \*Identifying and handling missing and invalid values.
- \*Visualizing different trends and gathering insights from the dataset to help guide the choice of low-risk aircraft.
- \*Aggregating data. Counting all accidents by aircraft type and weather to identify the aircraft with low risk.

## Make and Model Number of Accidents



## Total Injuries against aircraft categories



# Recommendations

High-risk model should be avoided due to recurring mechanical failures and severe accident Histories. To launch safely, prioritize phased purchases of low-risk aircraft, invest in pilot training, and establish partnerships with certified maintenance providers.

The head of aviation Division should consider the other aircraft makes other than Cessna as they are less risk. This is because Cessna has had a history of higher accidents count.

Airplanes are higher risk for our Business hence not recommended.

Helicopter is a suitable choice when it comes to safety as it is

# Next Steps

Building a reputation for safety and reliability attracts customers  
and lowers costs long-term.

Regular maintenance of aircraft is required to ensure safety of the  
craft.



A view from an airplane window looking out at a sunset. The sky is a mix of deep blue and orange, with a bright orange glow on the horizon. Below the horizon is a thick layer of white clouds. The wing of the airplane is visible on the right side of the frame. The text "Thank You" is centered in the middle of the image in a white, sans-serif font.

Thank  
You