



LOW - RISK AIRCRAFT TO PURCHASE

Best Makes to go for:

Summary

This project aims to analyze data and recommend the low-risk aircrafts that a company that is looking into venturing in the aviation business can opt for.

The company also seeks to venture into both private and commercial aircrafts

After Analyzing the dataset we see that the for private venture **Boeing 747-123** would be the most preferred while for commercial we would go with **Cessna 421B** followed by **Boeing 727-22C**



Outline

01

Business problem

You can describe business problem

02

Data

Describe relevant characteristics of data

03

Methods

Describe the methods used. Can include data preparation and analysis

04

Results & Conclusion

Results of your analysis and recommendations, project limitation and/or future improvement ideas

Business Problem

Our Company is expanding and wants to venture in purchasing and operating aircrafts for commercial and private enterprises, but do not know the potential risks of aircrafts. we are tasked to determine which aircraft are the lowest risk for the company to start this new business endeavor. We then translate finds into actionable insights that the head of the new aviation division can help decide which aircraft to purchase



Data

The data is an aviation dataset from the National Transportation safety board that includes aviation accidents from 1962 to 2023 about civil aviation accidents and selected incidents in the United states and international waters. Every accidents / incident has:

- i. The Injury Severity category it falls into i.e (Minor, Fatal,Non-fatal,serious or incidents)
- ii. The level of damage to the aircraft i.e (Destroyed, substantial or minor)
- iii. The total number of fatalities, of serious injuries and of uninjured
- iv. Purpose of flight whether its personal, business among others but for our scenario we will focus on the two



Methods

I Chose specific columns that are important for my analysis which include Injury severity, Aircraft damage, Make, Model and Purpose of flight.

Our dataset has real incidents and accidents so in our data cleaning for missing values it didn't seem sensible to fill with the most common values so I dropped the rows with minimal NA values e.g. Make and Model column which has less than 0.00071% and 0.00055 respectively. For the other columns I filled with placed 'Unknown' or 'UNK' depending on the placeholder for that column

For my analysis I did a low risk test of each feature and then finally all factors together that would bring about a low risk aircraft

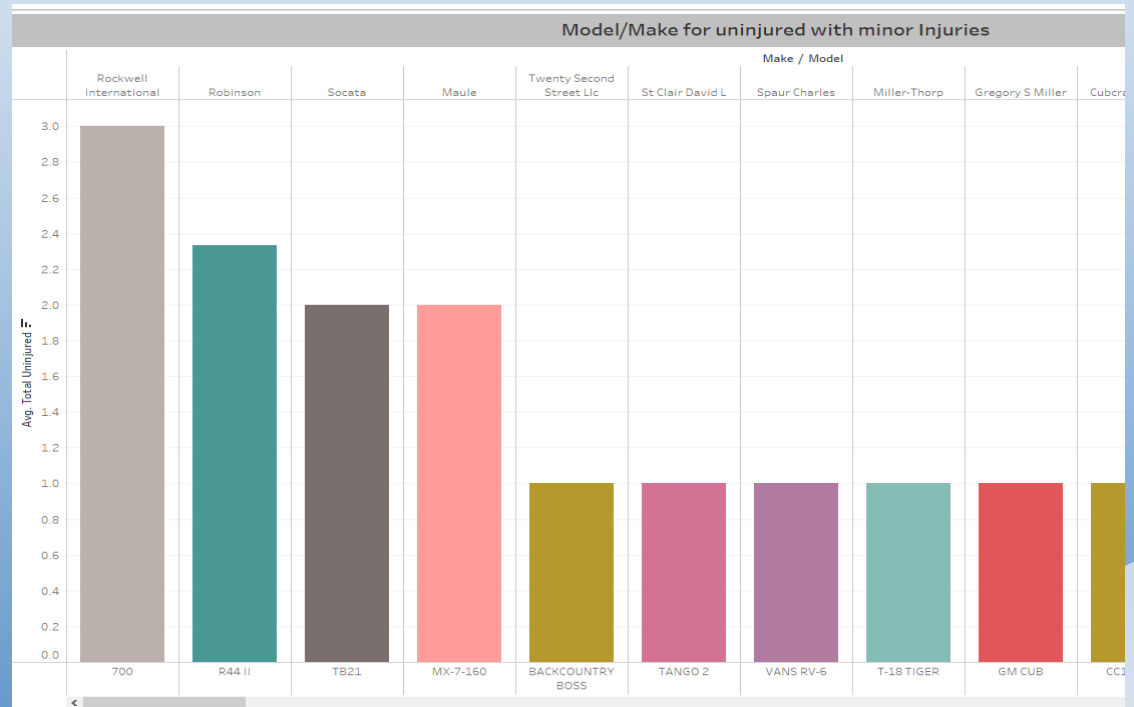
Results

I grouped the results based on whether it is private or public category

1. For personal/Private Enterprises with greater No of uninjured and with Minor Injury severity

a) private

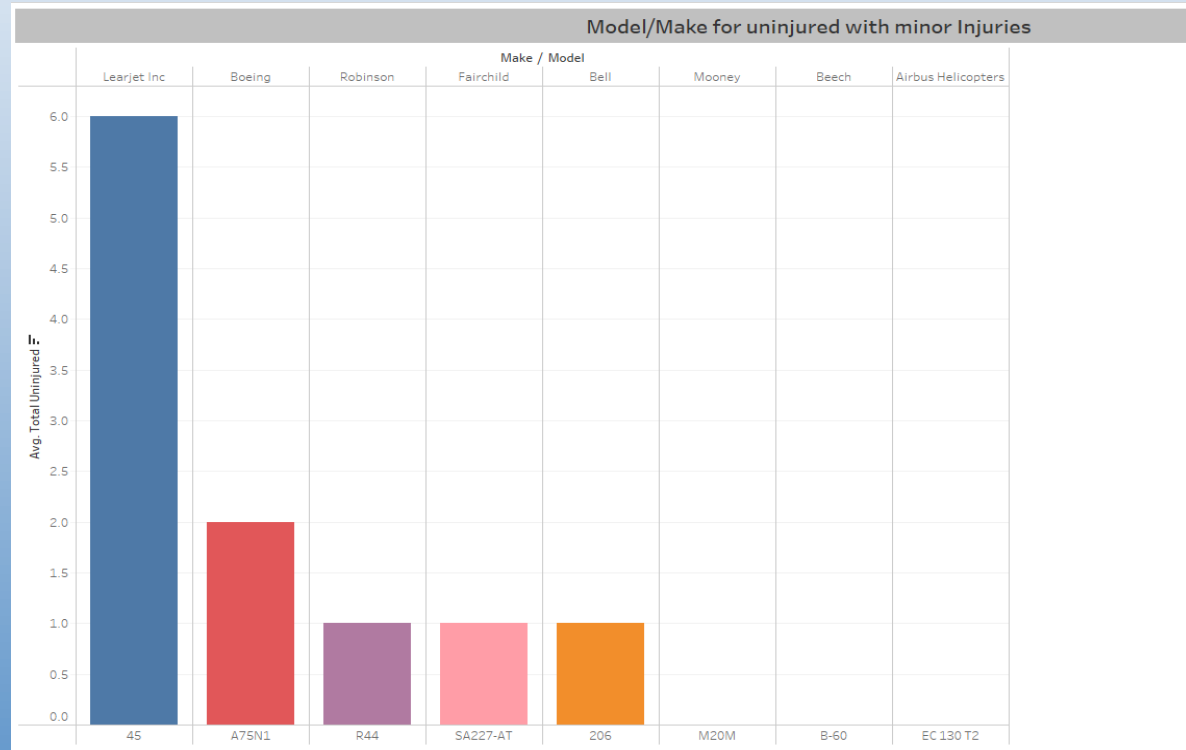
Rockwell 700 and Robinson 411
had greater no of uninjured with
minor injury severity



Results

b)Commercial

Learjet 45 followed by Boeing
A75NI

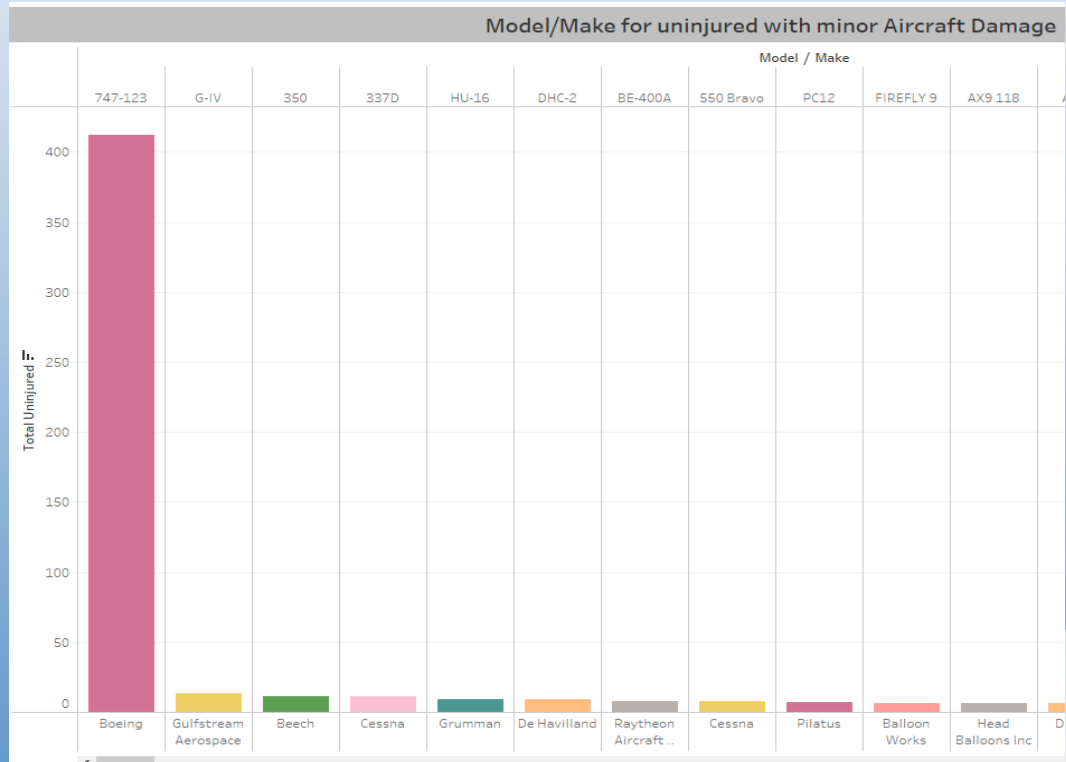


Results

2. For personal/private enterprises with greater no of injured for minor Aircraft Damage

a)private

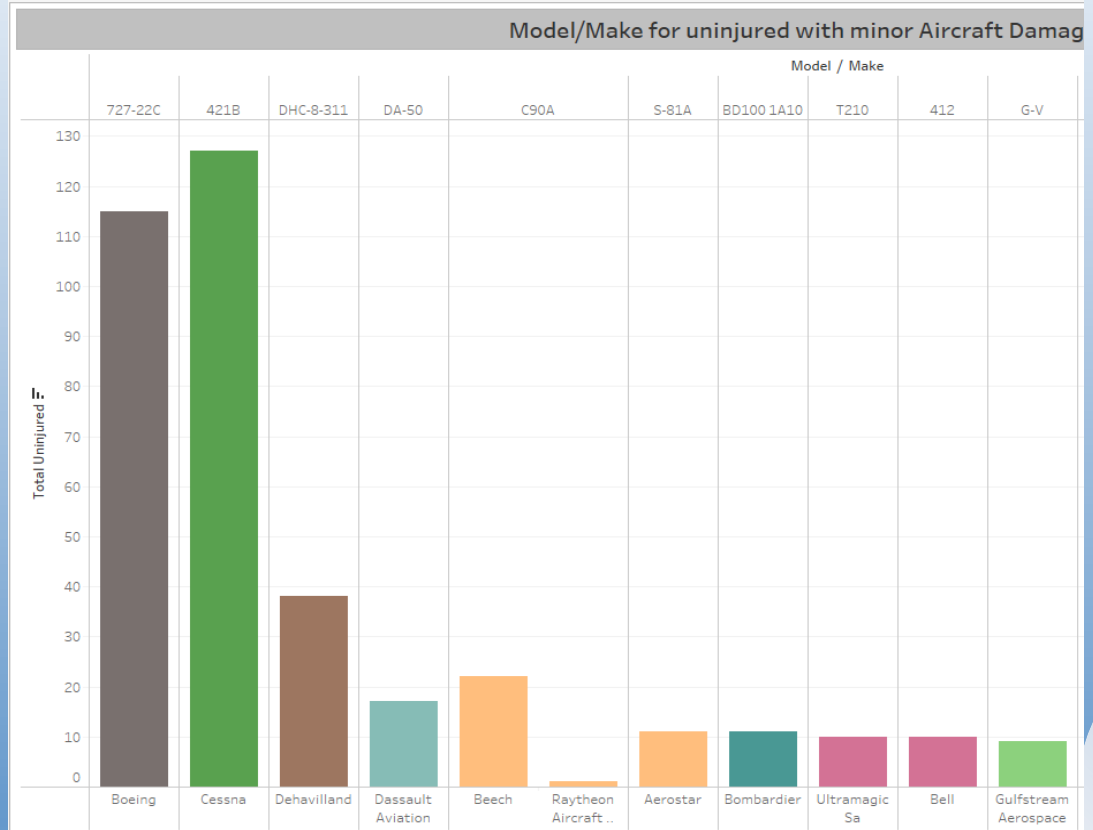
Boeing 747-123 had greater no of total uninjured with minor damages to the aircraft



Results

b)Commercial

Cessna 421B followed by Boeing
727-22C

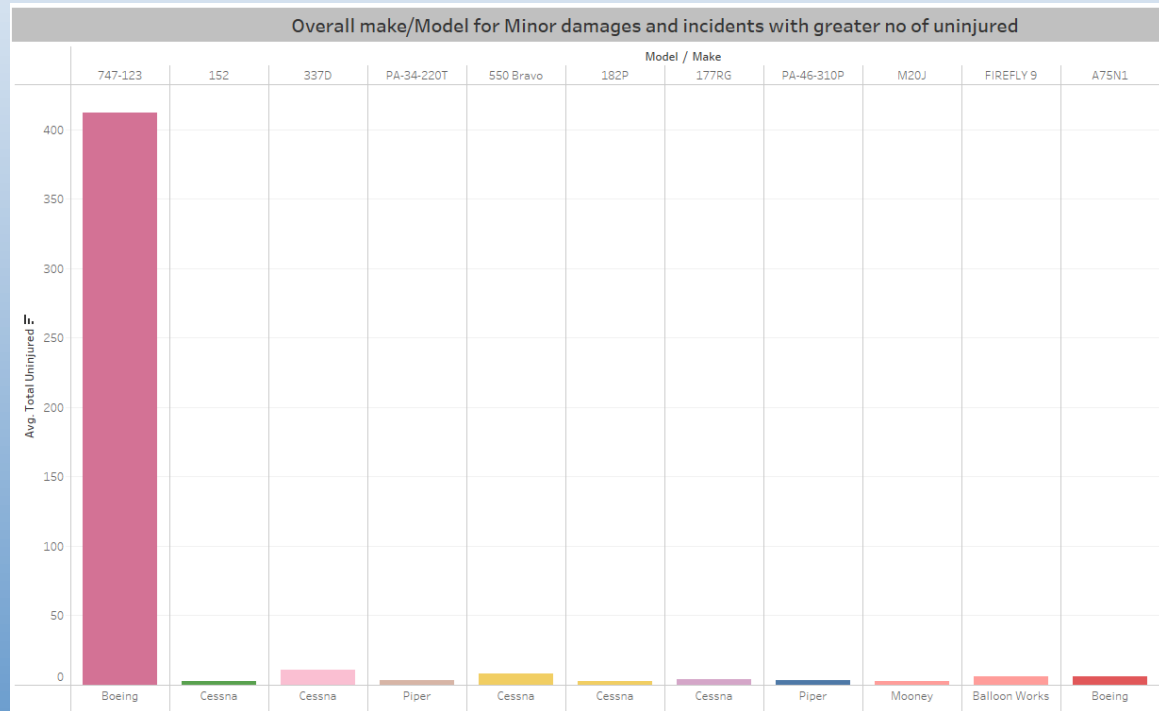


Results

3. Overall low risk Aircrafts with greater no of uninjured, has Incidents and minor Aircraft Damage

a)private

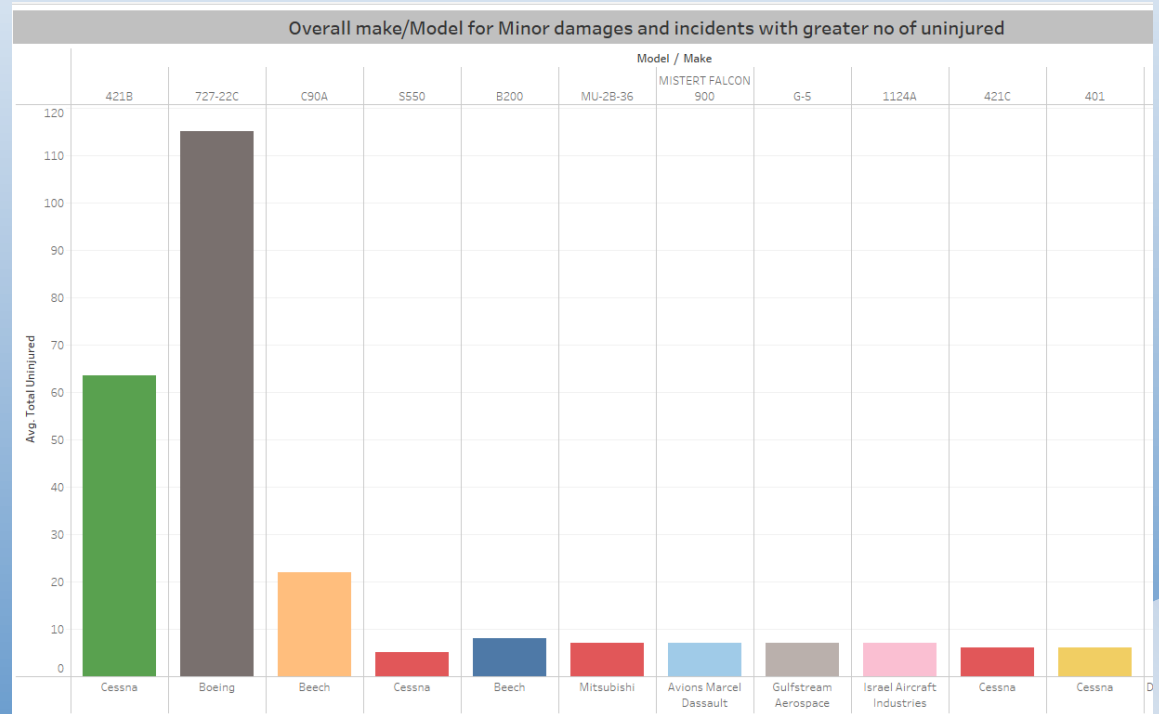
Boeing 747-123 followed by
Cessna 337D then Cessna 550
Bravo



Results

b)Commercial

Cessna 421B followed by Boeing 727-22C



CONCLUSIONS

This analysis led to the following recommendations on the best aircraft to purchase:

01 Overall Low Risk

For private enterprise the low risk is **Boeing 747-123** overall while commercial is **Cessna 421B** followed by **Boeing 727-22C**

02 Low Risk on Minor Injury

If priority is based on minor injury severity than aircraft damage then **Rockwell 700** and **Robinson 411** are preferable for private venture and **Learjet 45** followed by **Boeing A75NI** for commercial

Makes to Consider 03

Overall makes to consider are **Cessna**, **Boeing**, **Piper**, and **Beech**



THANKS!



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