STRATEGIC AVIATION EXPANSION:

Selecting the Safest Aircraft Models

Data-Driven Insights for a Low-Risk Fleet Investment

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EXPANSION PLAN

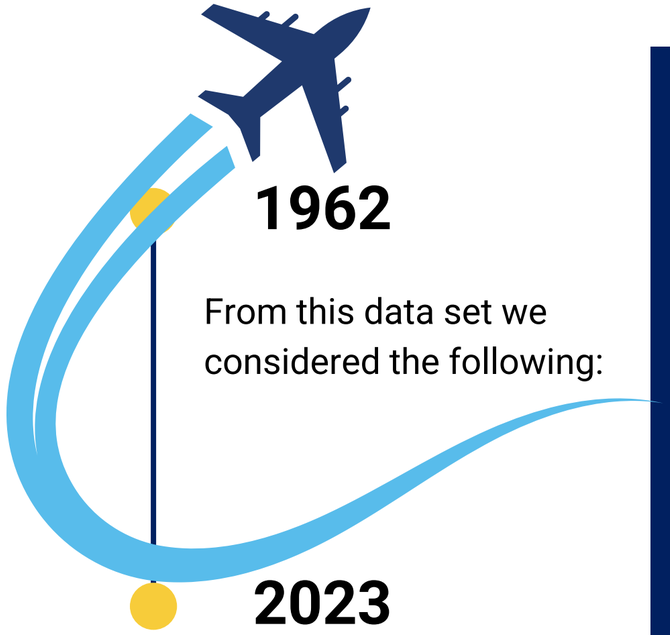
- We are diversifying into aviation and need to invest in a fleet of safe, reliable aircraft.
- **Safety** is our top priority to maintain operational efficiency and build customer trust.

KEY QUESTION:

Which aircraft models have the lowest risk and best safety records?

AVIATION RISK ANALYSIS

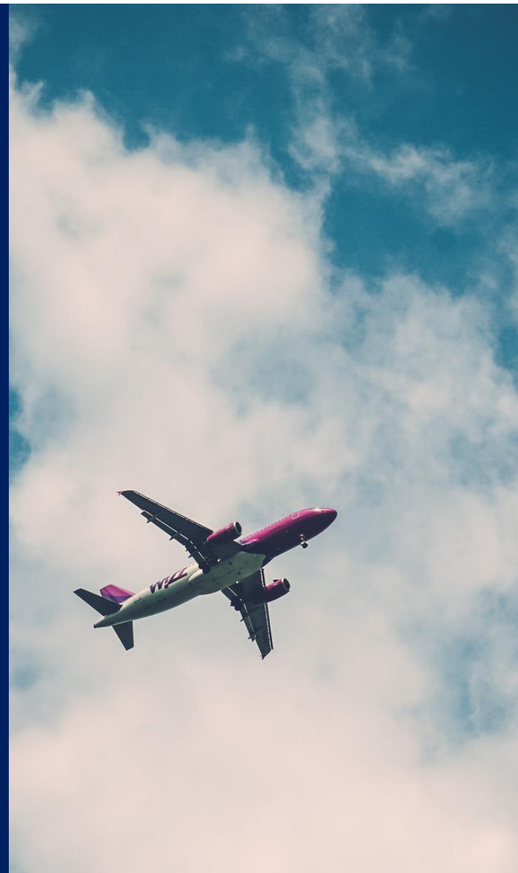
The risk analysis was conducted with data from the National Transportation Safety Board that includes aviation accident data from **1962 to 2023** about civil aviation accidents and selected incidents in the United States and international waters.



From this data set we considered the following:

KEY FACTORS CONSIDERED:

- Accident frequency – How often do accidents happen per model?
- Safety over time – Do certain aircraft remain consistently safe?
- Fatality & survival rates – Which aircraft ensure the best passenger safety?



METHODOLOGY

DATA-DRIVEN RISK ANALYSIS

1.Data Cleaning:

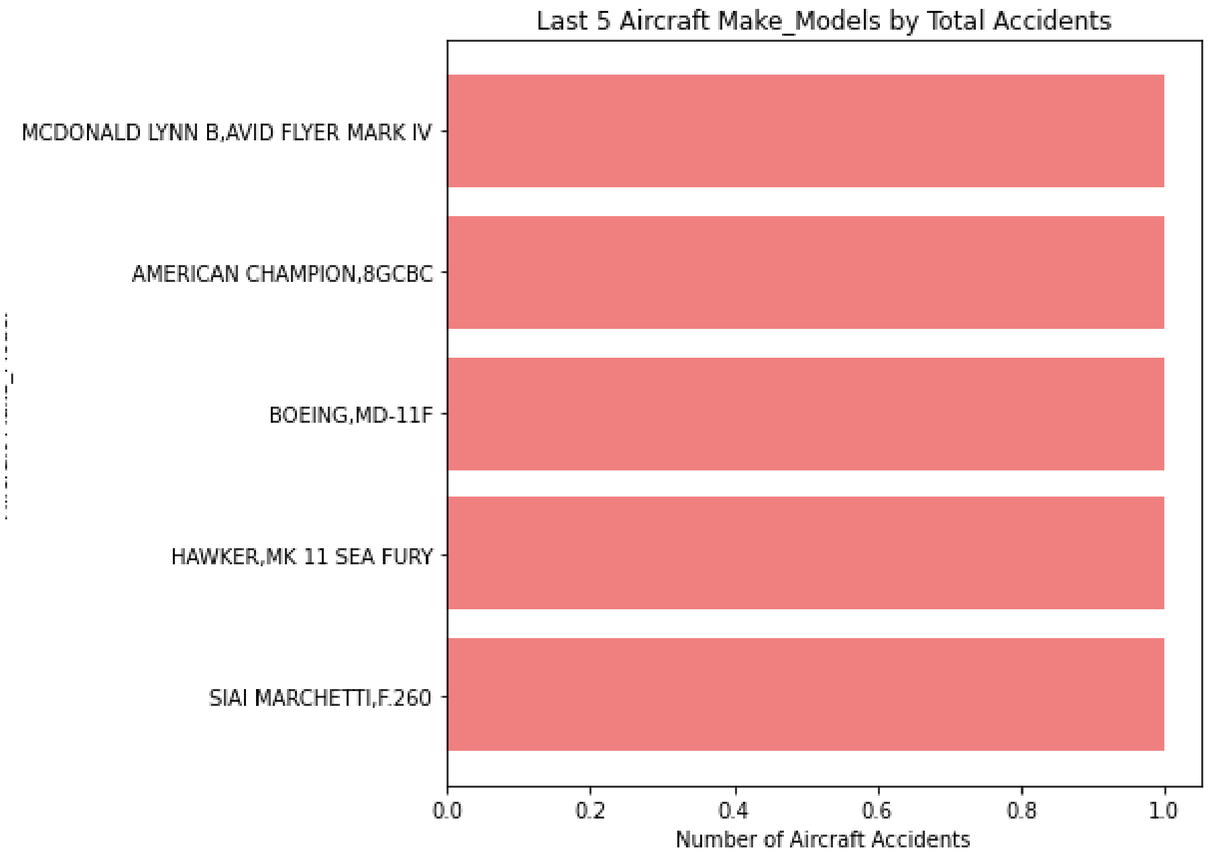
Standardized aircraft model names to remove inconsistencies.
Filtered out incomplete or duplicate records to improve accuracy.

2.Data Analysis Techniques

- **Descriptive Statistics:**Calculated accident frequency, survival rates, and fatality rates per aircraft model.
- **Time Series Analysis:**Identified trends in accident occurrences over multiple years.
- **Comparative Risk Scoring:**Developed a ranking system to assess aircraft safety based on accident frequency, stability over time, and passenger survival rates.
- **Data Visualization:**Used bar charts, line graphs, and survival rate heatmaps to make insights clear.

Aircraft Models with the Lowest Accident Rates

Reducing accident frequency directly lowers operational risks and insurance costs.



The diagram shows the top 5 models were responsible for a large share of total accidents

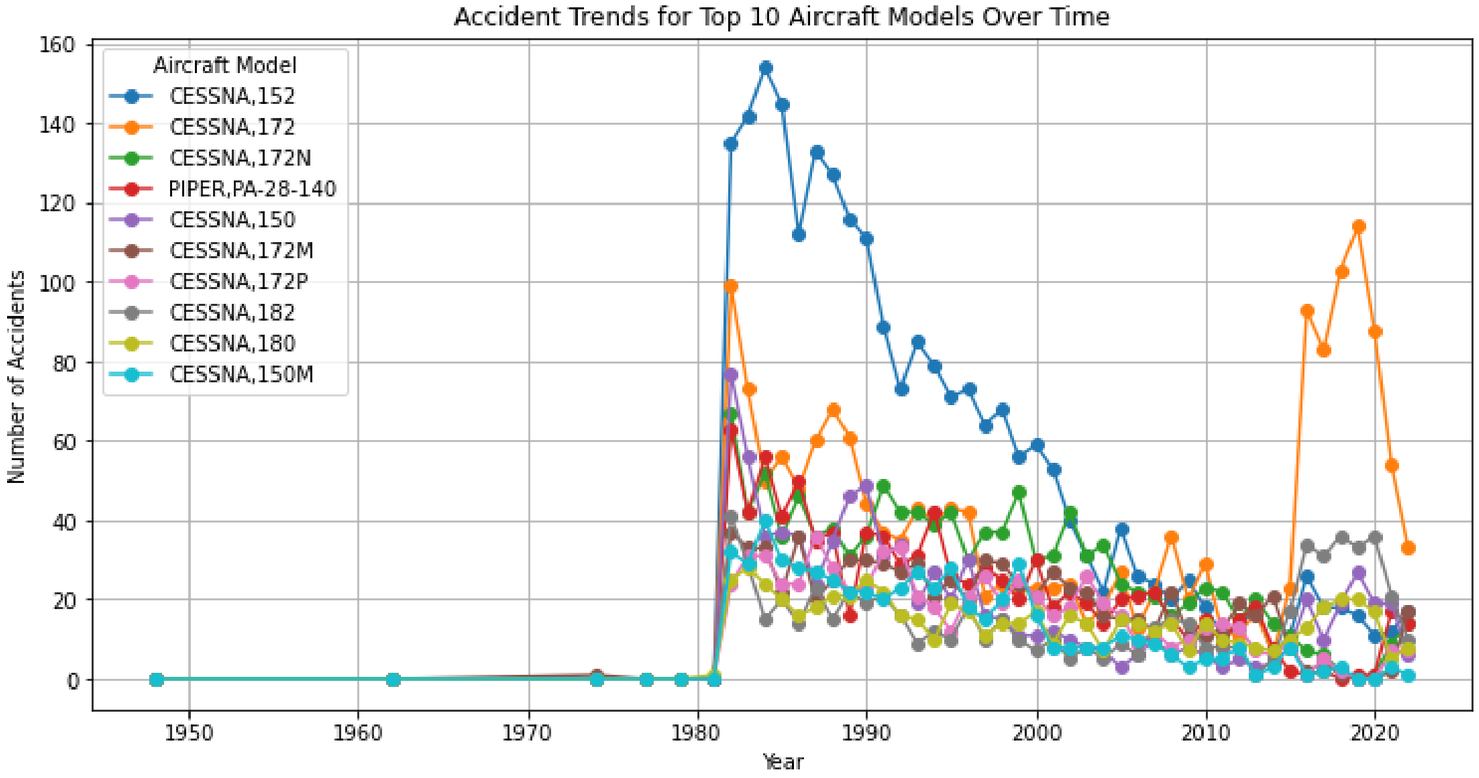
From the Analysis we concluded that the

Best Performing Aircraft (Lowest Accident Occurrence):

- **MILLER ROGER, THATCHER CX4**
- **AVIAT AIRCRAFT INC, HUSKY**
- **PIPER, J3C-75**
- **WACO, YMF-3**
- **DIAMOND AIRCRAFT INDUSTRIES INC, DA 20-C1**

We need models with a proven track record of safety over decades.

Aircraft Models That Are Most Reliable Over Time

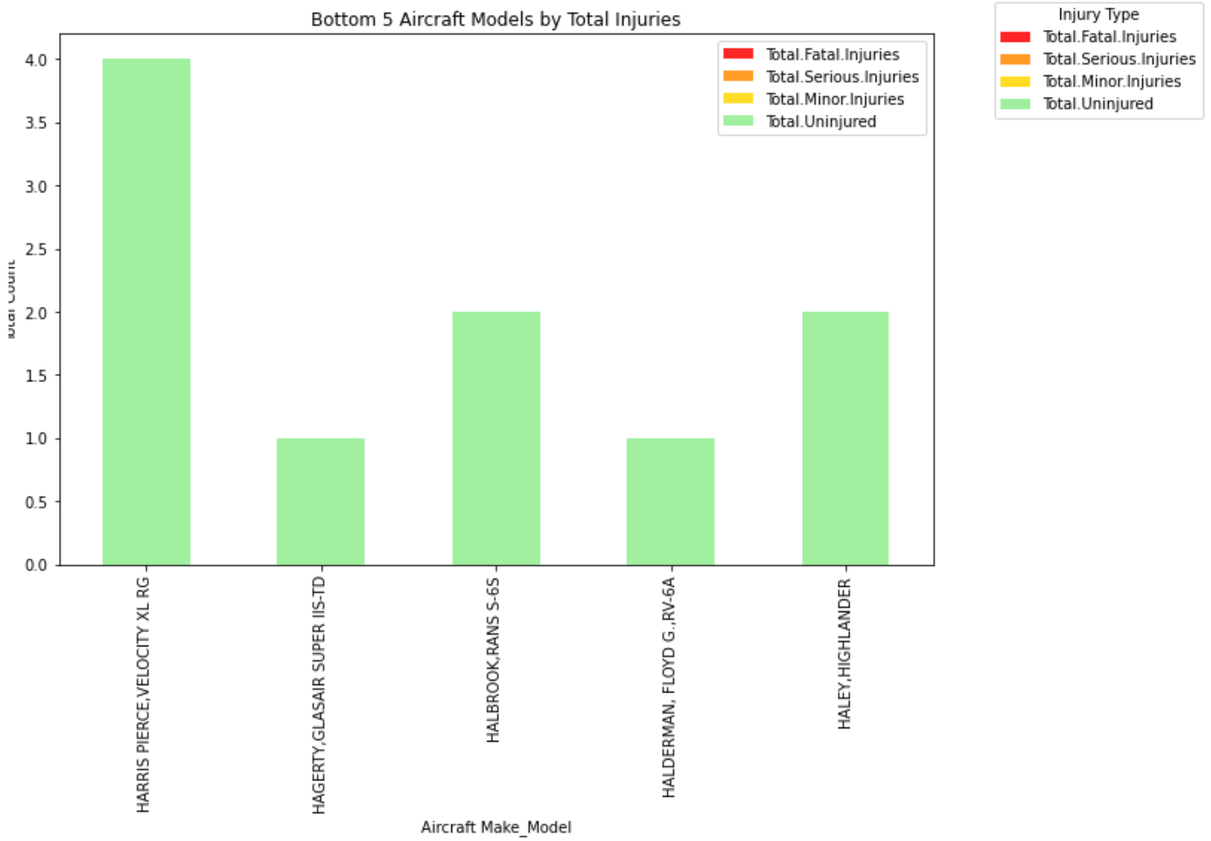


Some aircraft, like the **CESSNA_152** and **CESSNA_172,** show periodic spikes in accidents.

In contrast, other models have low, stable accident rates, making them safer for long-term investment.

Best Performing Aircraft (Consistent Safety Over Time):

- **CESSNA_150M**
- **CESSNA_180**
- **CESSNA_182**
- **ZENAIR, CH 2000**
- **YOUKEY, LANCAIR 235**



Aircraft with the Highest Survival Rates

Even in the event of an accident, passenger survival rates define a model’s true safety.

Investing in these models will enhance our safety reputation and customer confidence. These models had no injuries.

Best Performing Aircraft (Highest Survival & Lowest Fatality Rates):

- **HARRIS PIERCE,VELOCITY XL RG**
- **HAGERTY,GLASAIR SUPER IIS-TD**
- **HALBROOK,RANS S-6S**
- **HALDERMAN, FLOYD G.,RV-6A**
- **HALEY,HIGHLANDER**

Our Recommended Fleet Strategy

1. Invest in aircraft models with the lowest accident records

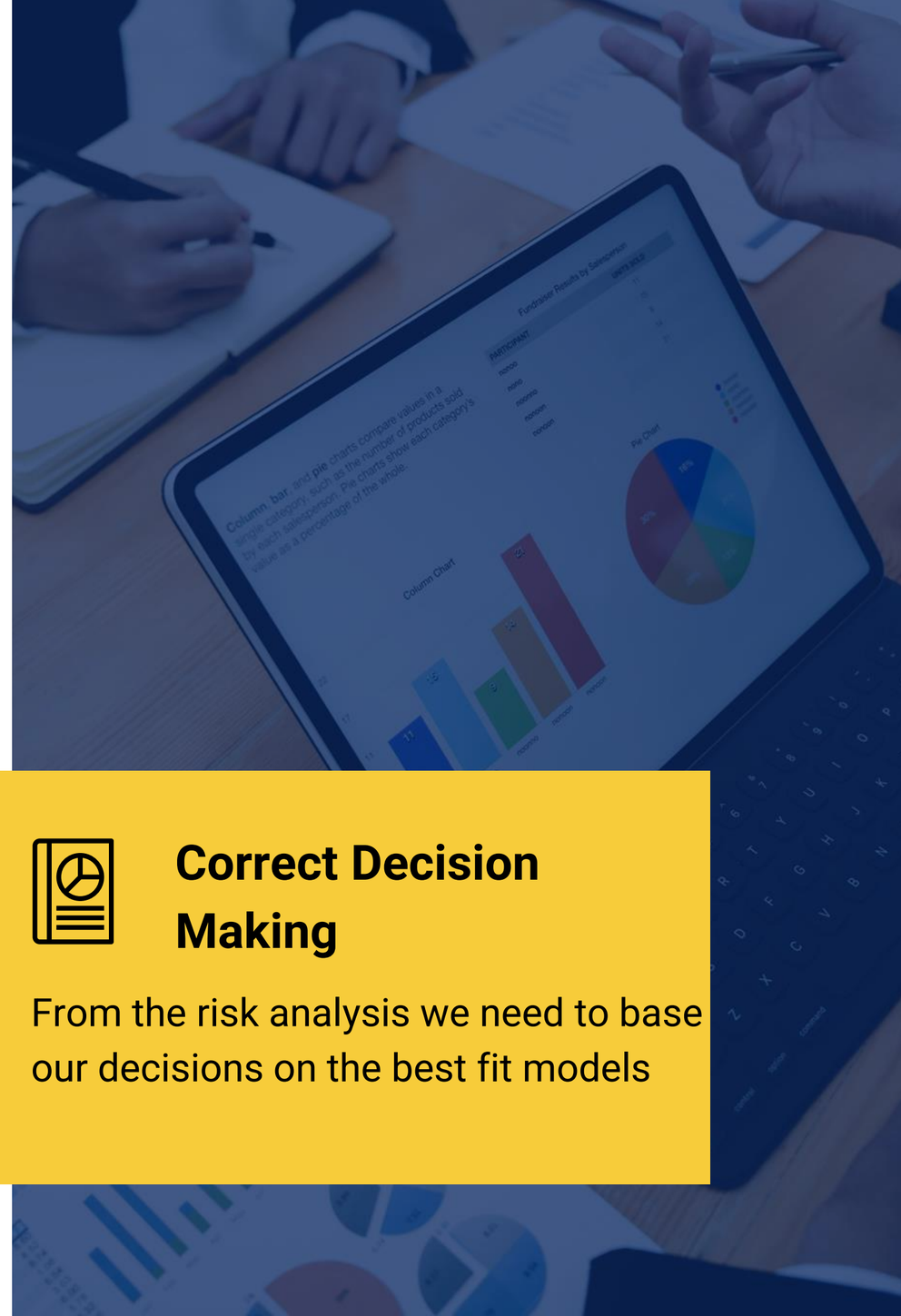
- *Focus on proven, low-risk aircraft for operations.*

2. Prioritize models with a history of long-term reliability

- *Minimize future risks by choosing stable performers.*

3. Select aircraft with the best survival and safety records

- *Protect passengers, build trust, and maintain strong insurance ratings.*



Correct Decision Making

From the risk analysis we need to base our decisions on the best fit models

What’s Next for Our Aviation Expansion?

- **Finalizing Our Fleet Selection:**Conduct due diligence on top recommended aircraft models.
- **Building a Risk Management Strategy:**Work with safety regulators to ensure compliance.
- **Long-Term Growth:**Explore predictive safety analytics for ongoing risk reduction.

Thank You - Let’s Discuss!

Any Questions?

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