

# STRATEGIC AVIATION EXPANSION:

Selecting the Safest  
Aircraft Models

Data-Driven Insights for a  
Low-Risk Fleet Investment

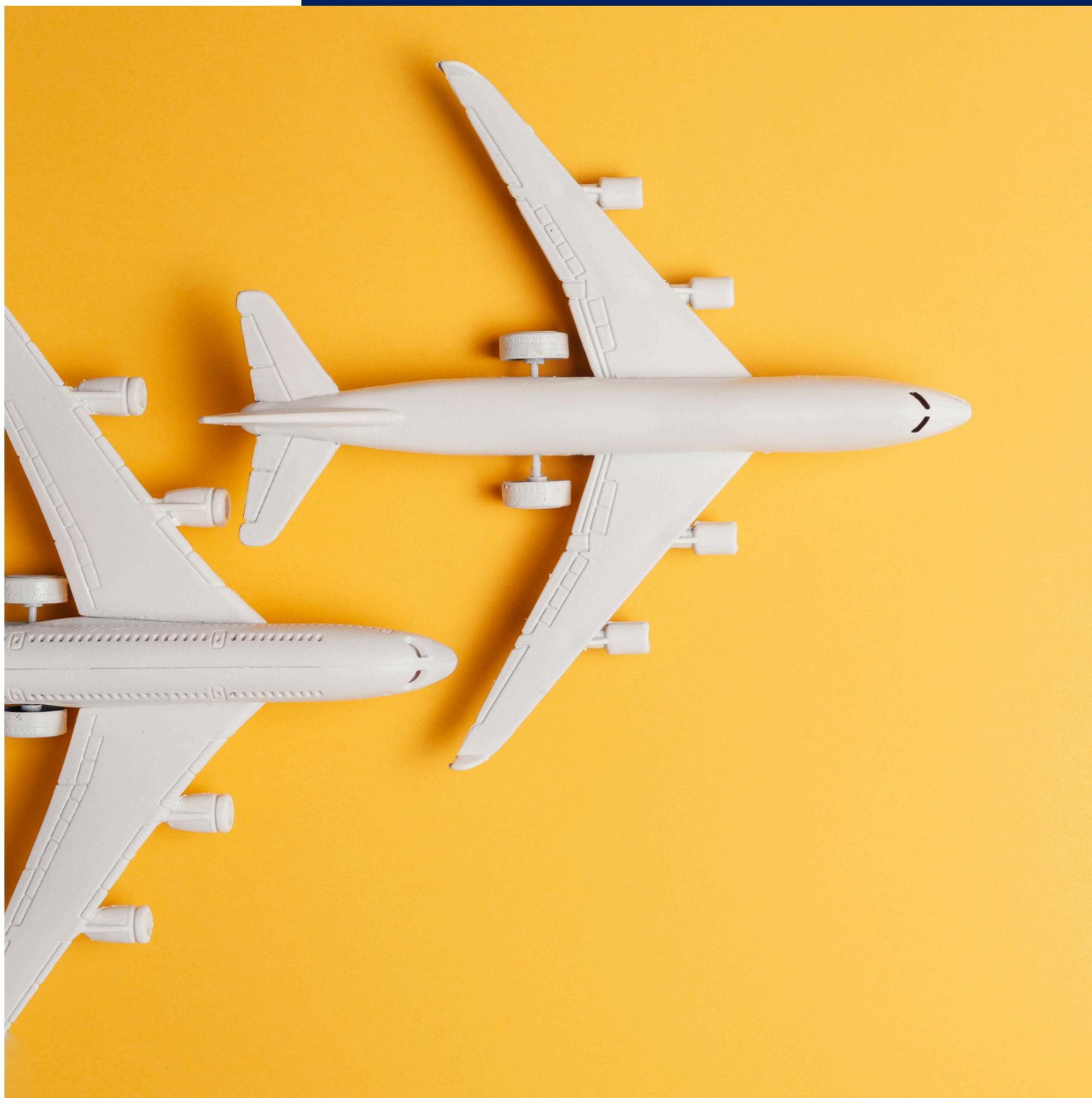
# EXPANSION PLAN



- 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.

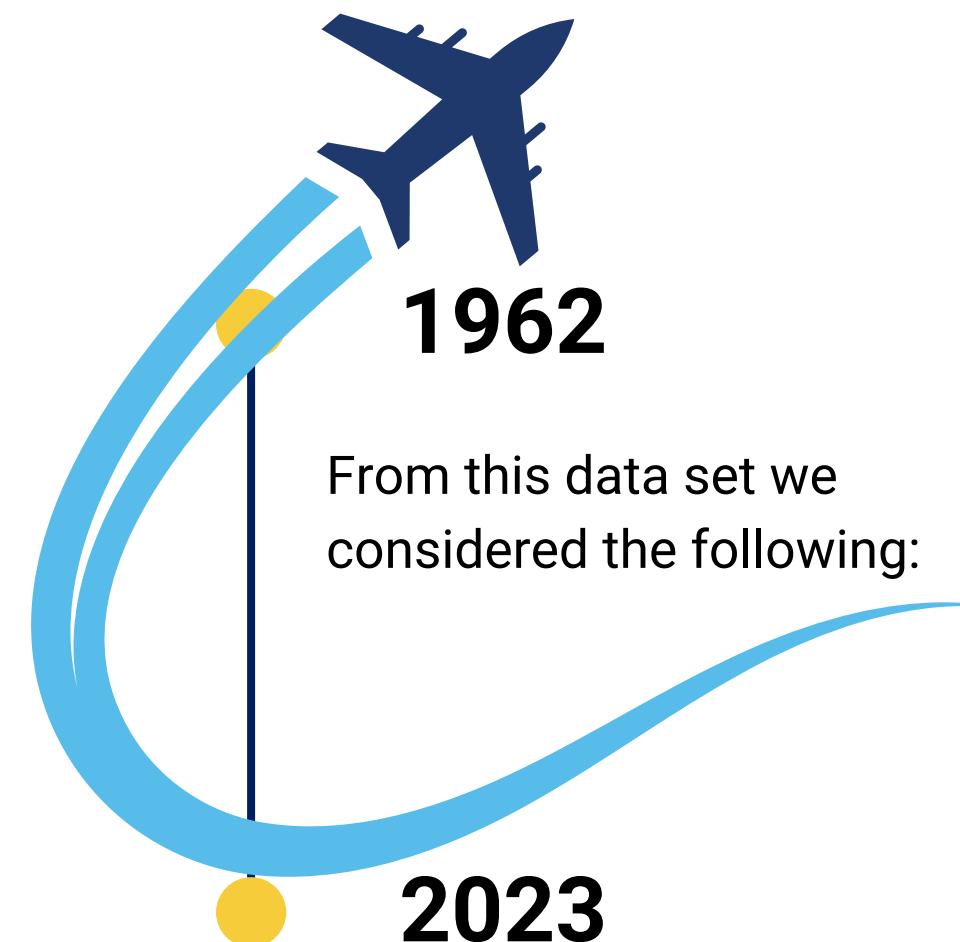
## KEY QUESTION:

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



# AVIATION RISK ANALYSIS

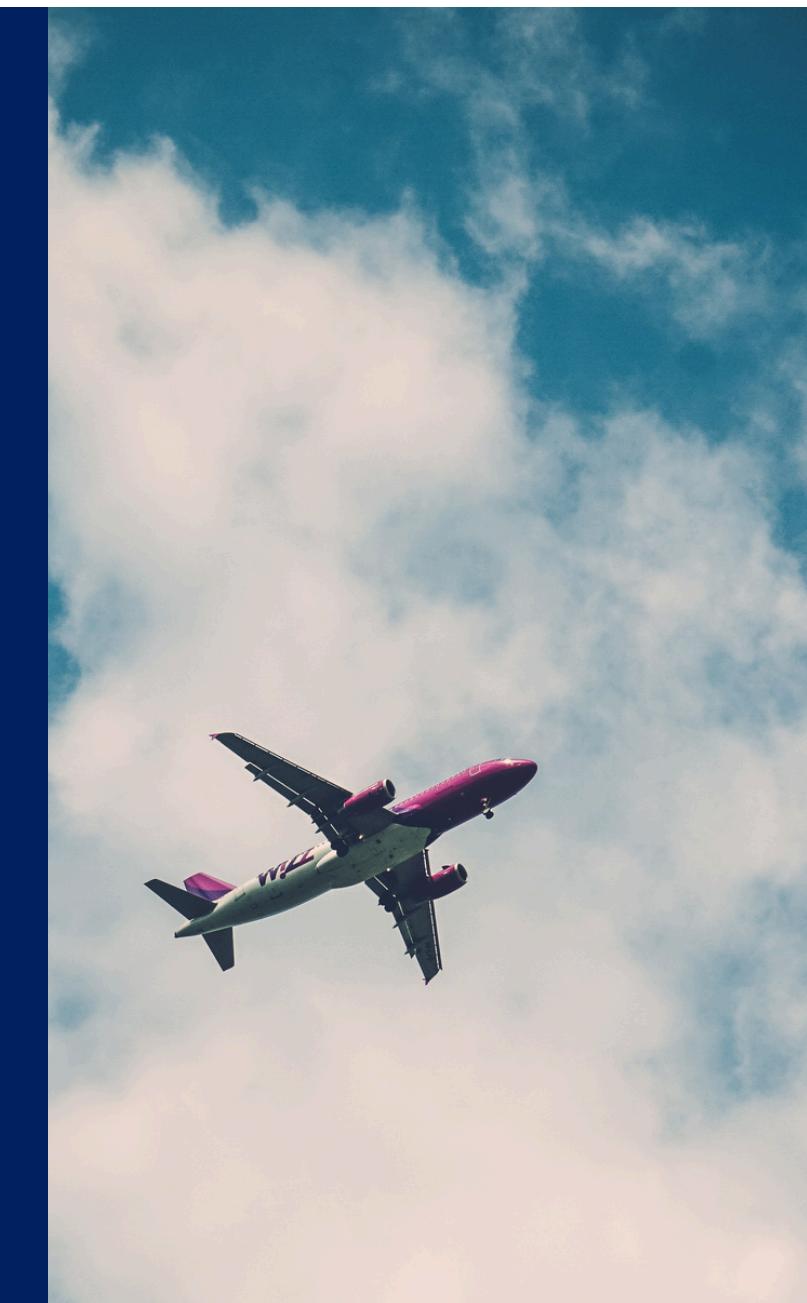
The risk analysis was conducted with data from the National Transportation Safety Board that includes aviation accident data from **1962 to 2023** about civil aviation accidents and selected incidents in the United States and international waters.



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?





# OUR METHODOLOGY

## DATA-DRIVEN RISK ANALYSIS

### 1. Data Cleaning:

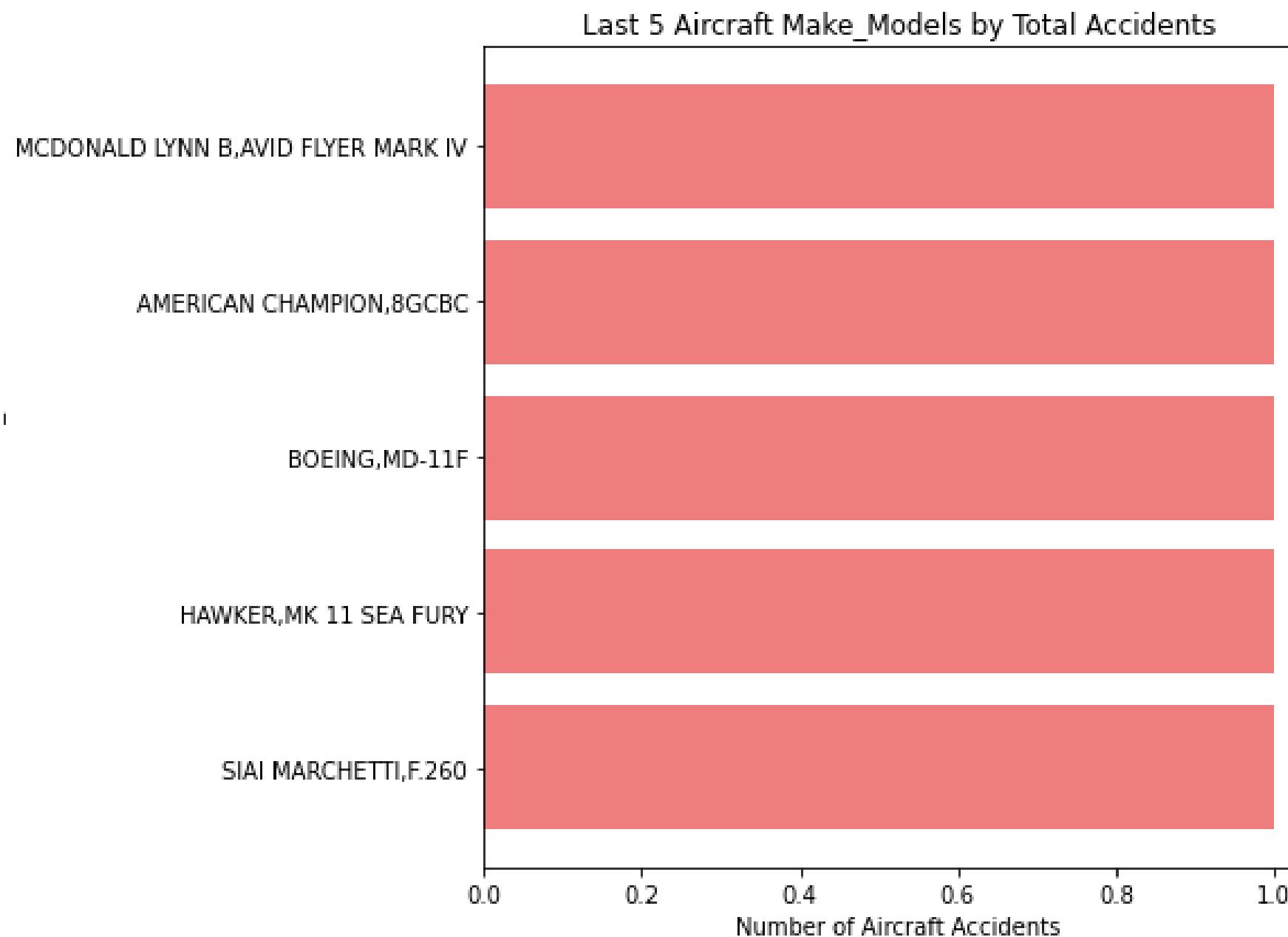
Standardized aircraft model names to remove inconsistencies.  
Filtered out incomplete or duplicate records to improve accuracy.

### 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.



From the Analysis we concluded that the

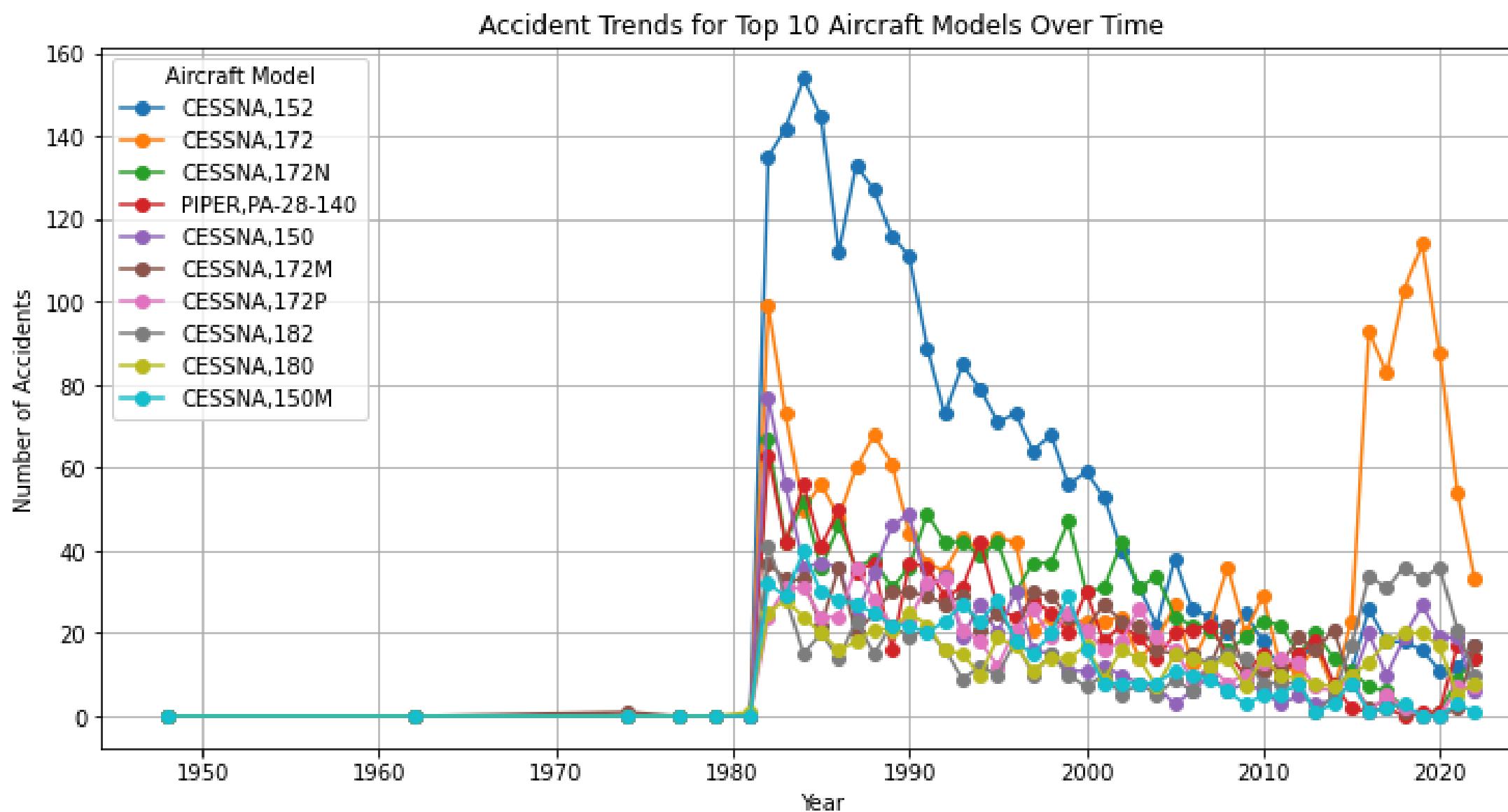
Best Performing Aircraft (Lowest Accident Occurrence):

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

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

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**

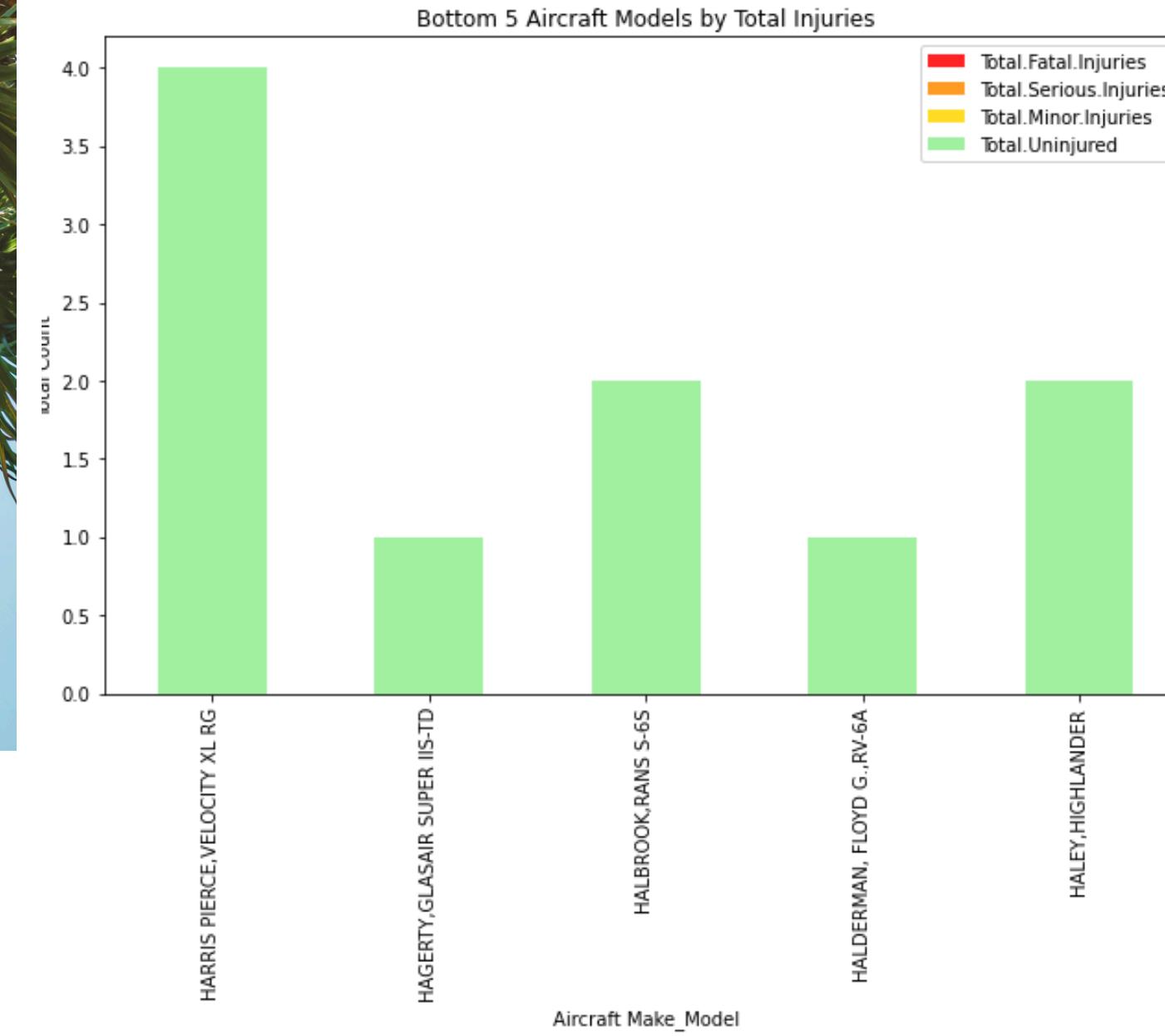


# Aircraft with the Highest Survival Rates

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.

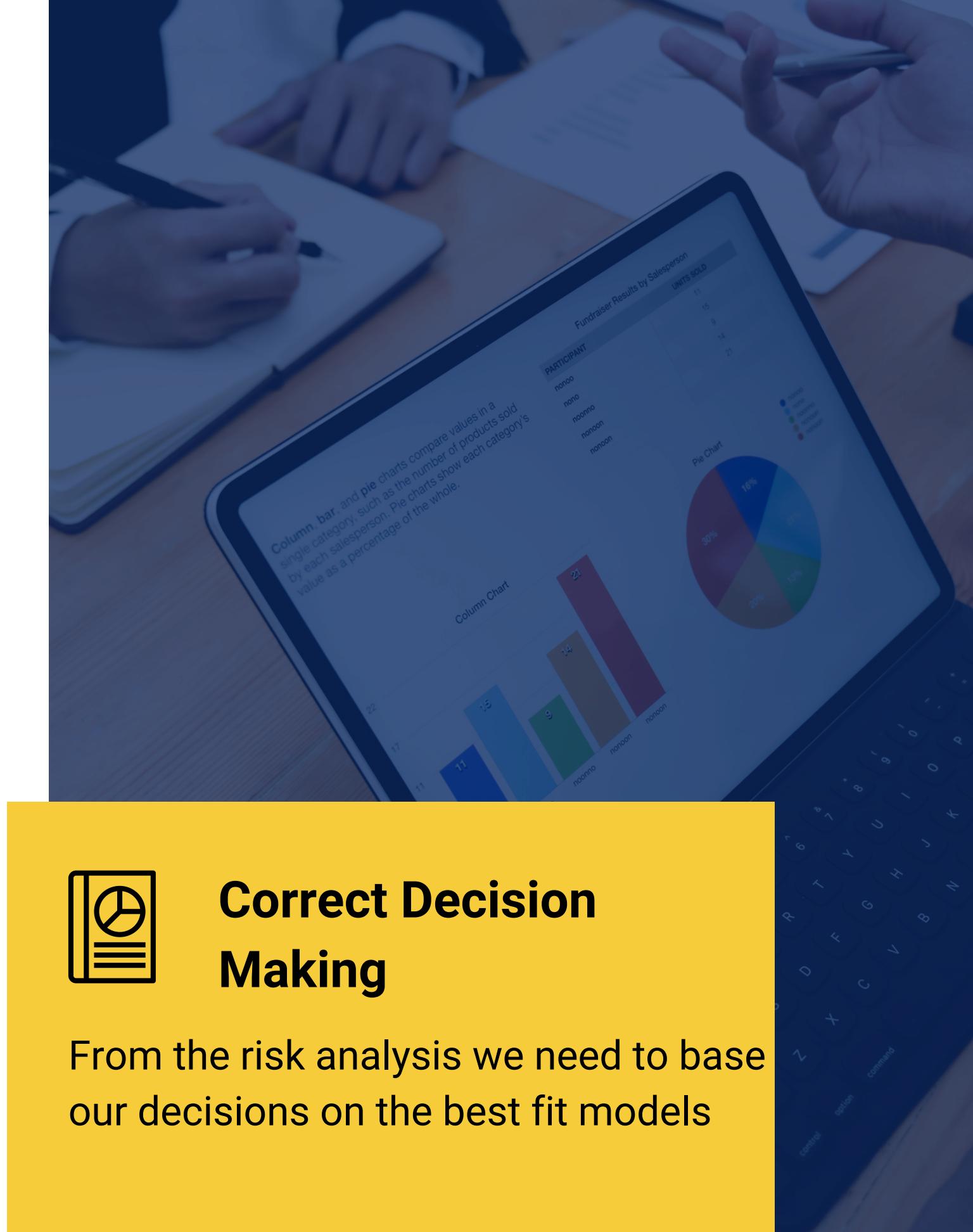


Best Performing Aircraft (Highest Survival & Lowest Fatality Rates):

- **GULFSTREAM, GULFSTREAM G150**
- **GULFSTREAM, GULFSTREAM GVI**
- **GULFSTREAM, GULFSTREAM150**
- **GULFSTREAM, GULFSTREAM200**
- **ZWICKER MURRAY R, GLASTAR**

# 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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