AIRCRAFT RISK ASSESSMENT FOR BUSINESS EXPANSION

Identifying Low-Risk Options for a Safe and Profitable Venture

Overview

- Our company is exploring the exciting opportunity to expand into the aviation industry.

- These presents a data-driven analysis to identify the safest and most suitable aircraft for our venture..

Data Source

- National Transportation Safety Board (NTSB) Aviation Accident Database
- Includes incidents from 2003 to 2023

Data Analysis Methods

Techniques Used:

- Descriptive Statistics: To summarize the data.
- Grouping and Aggregation: To identify trends and patterns.
- Visualization: To present findings in an understandable manner.

Risk Calculation:

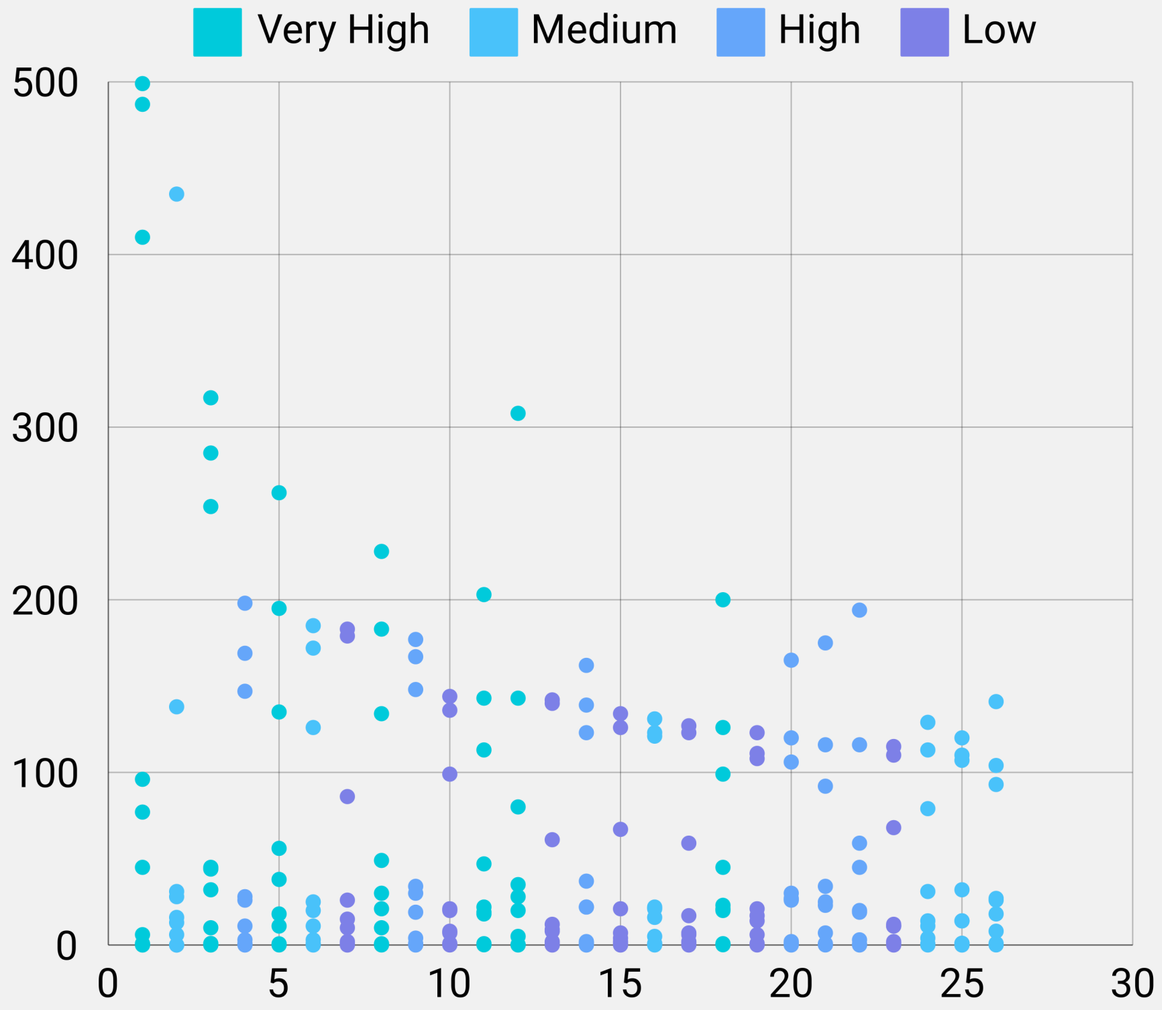
- Aggregate data by aircraft to calculate total incidents and incidents by severity level.
- Calculate weighted risk scores.
- Filter for aircraft with at least 100 incidents.

RISK TIER	COUNT
Very High	7
Low	7
Medium	6
High	6

Total Incidents vs. Weighted Risk Score

Note:

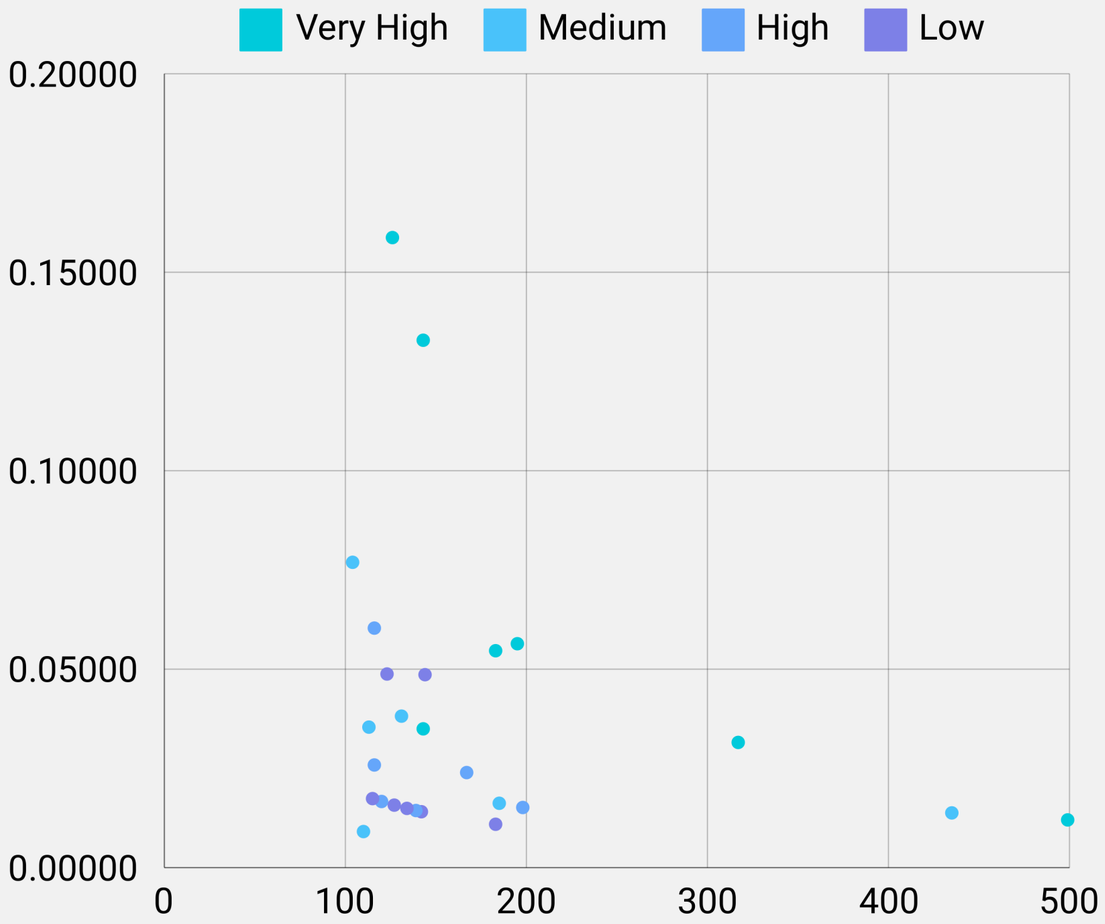
- No direct correlation between incident frequency and risk score.
- Risk tiers help us understand relative risk levels.



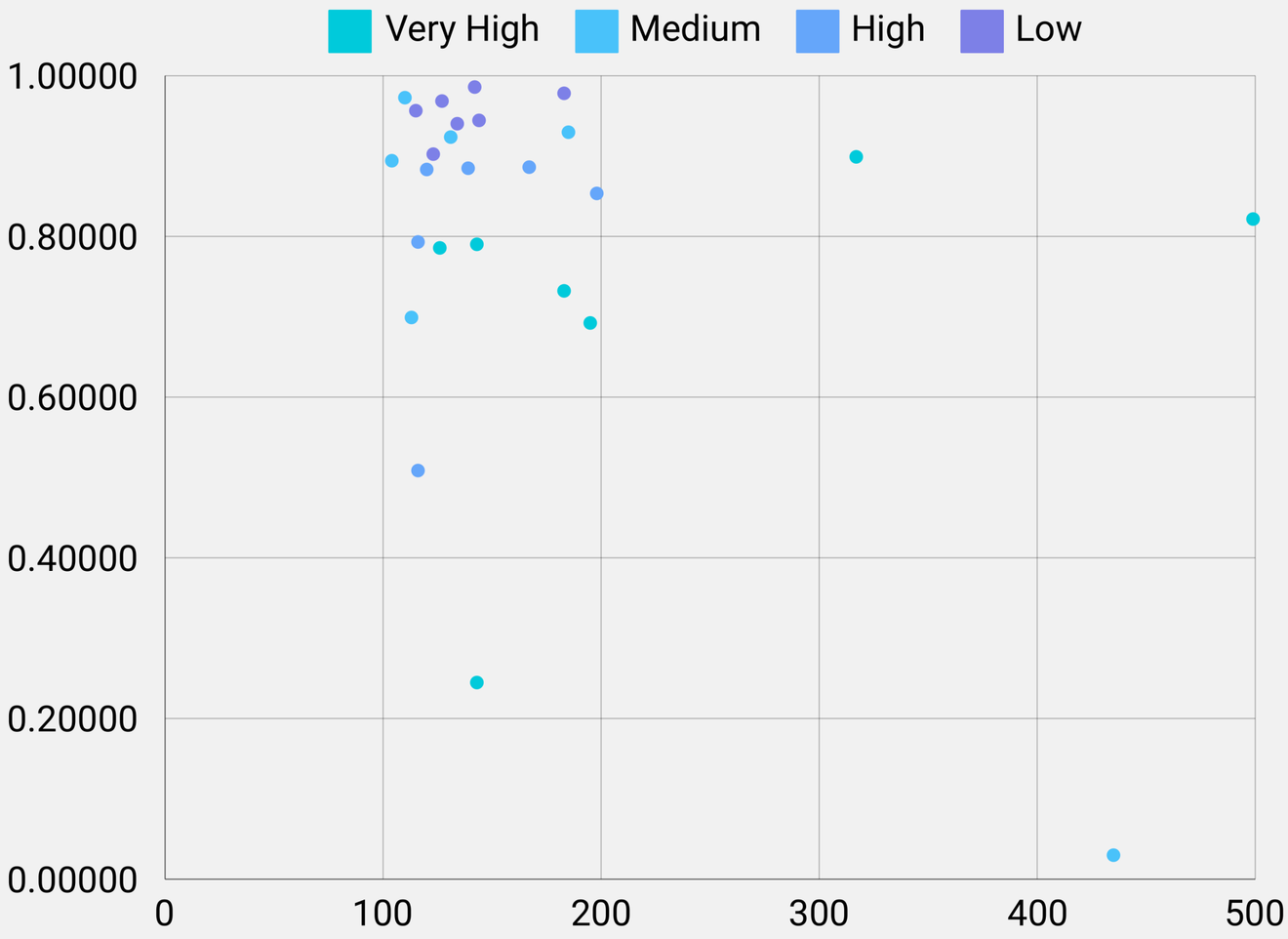
Total Incidents vs. Proportion of Incidents in VMC

Key Insights:

- Most incidents occur under Visual Meteorological Conditions (VMC).
- Some models have a higher proportion of incidents under Instrument Meteorological Conditions (IMC), requiring further investigation.



Total Incidents vs. Proportion of Incidents in IMC



Top 10 Lowest Risk Aircraft

Recommendations for Enhancing Safety

- Enhance Training: Focus on high-risk weather conditions.
- Investigate Aircraft: Thorough audits on high-incident types.
- Prioritize Low-Risk: Choose from 'Low' risk tier.
- Evaluate High-Risk: Conduct risk assessments for 'Very High' risk models.
- Implement Safety: Stricter protocols for VMC flights.

Next Steps

- DEVELOP A COMPREHENSIVE SAFETY STRATEGY BASED ON DATA-DRIVEN INSIGHTS.
- IMPLEMENT SAFETY MEASURES AND PROTOCOLS BASED ON MACHINE LEARNING MODEL RECOMMENDATIONS.
- CONTINUOUSLY MONITOR AND EVALUATE SAFETY PERFORMANCE TO MAKE INFORMED DECISIONS.

Thank You

Questions ?

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