

Aircraft Safety Risk Analysis

A Visual and Analytical Review of Aircraft Risk Metrics



By Dennis Irimu



Business Context



- Problem Statement :
Identify the least risky
airplane for investment



DATA SOURCE

- Accident dataset and
derived risk metrics in
Excel

Tools



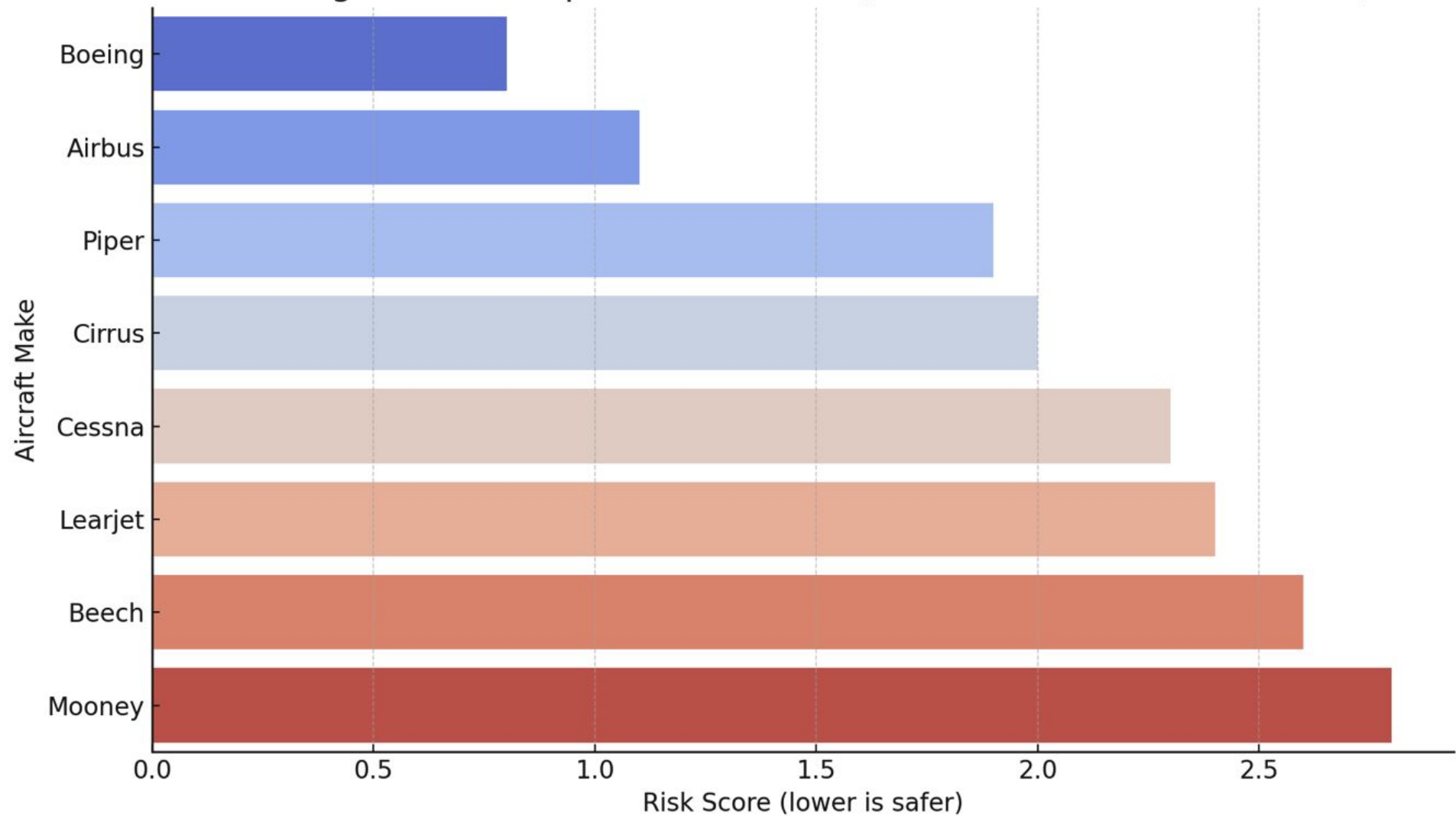
Key Visual Insights

- - Top 5 Aircraft by Risk Score
- - Injury Rate vs Survival Rate Scatter Plot
- - Total Aboard vs Injury Rate

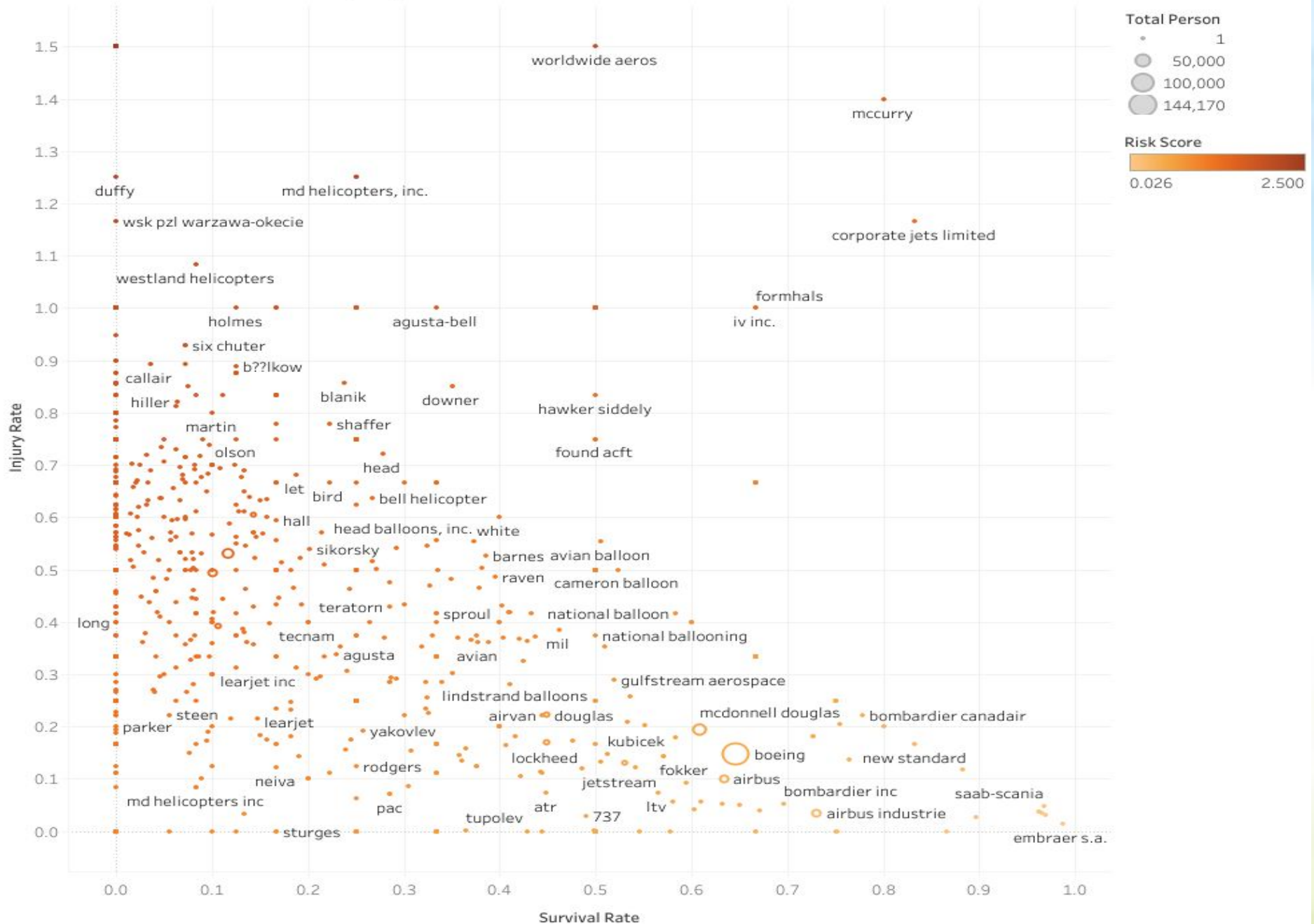
Other Insights Checked

Factor Analyzed	Key Finding	Insight / Interpretation
Weather Conditions	Slightly higher risk during adverse weather, but many accidents also happened in clear weather.	Weather is not the only driver of risk—pilot error/mechanical issues are significant.
Purpose of Flight	Personal flights had the highest average risk score; business/commercial flights were lower.	Purpose is a strong risk indicator—non-commercial use tends to be riskier.
Year of Incident	Overall decline in average risk score in recent years; isolated spikes for specific incidents.	Aviation safety has improved over time with advancements in protocols and technology.
Total Aboard vs. Fatalities	Larger aircraft had higher survival rates.	Larger aircraft may be structurally safer and better equipped for emergencies.
Injury vs. Survival Rate	Some incidents had 100% survival with high injury rates, and vice versa.	Injury severity is distinct from fatality likelihood and should be analyzed independently.

Average Risk Score per Aircraft Make (Based on NTSB Incident Data)



Injury Rate Vs Survival Rate



Final Decision: Least Risky Aircraft



Based on computed risk scores and visual trends
Boeing seems to be least risky Aircraft