

WINGS OF CAUTION

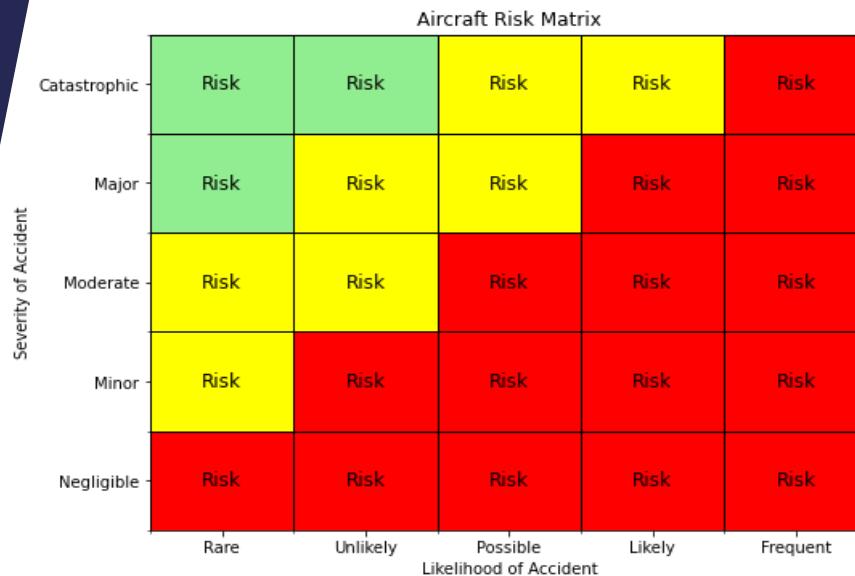


A DATA-DRIVEN APPROACH TO AIRCRAFT SELECTION

STRATOS AIR

Overview

- The company is **diversifying into aviation** but lacks risk insights.
- The aviation industry is **high-reward but high-risk** – safety and reliability are key.
- Goal:** Identify **low-risk aircraft models** for purchase based on historical accident data.



Business Understanding

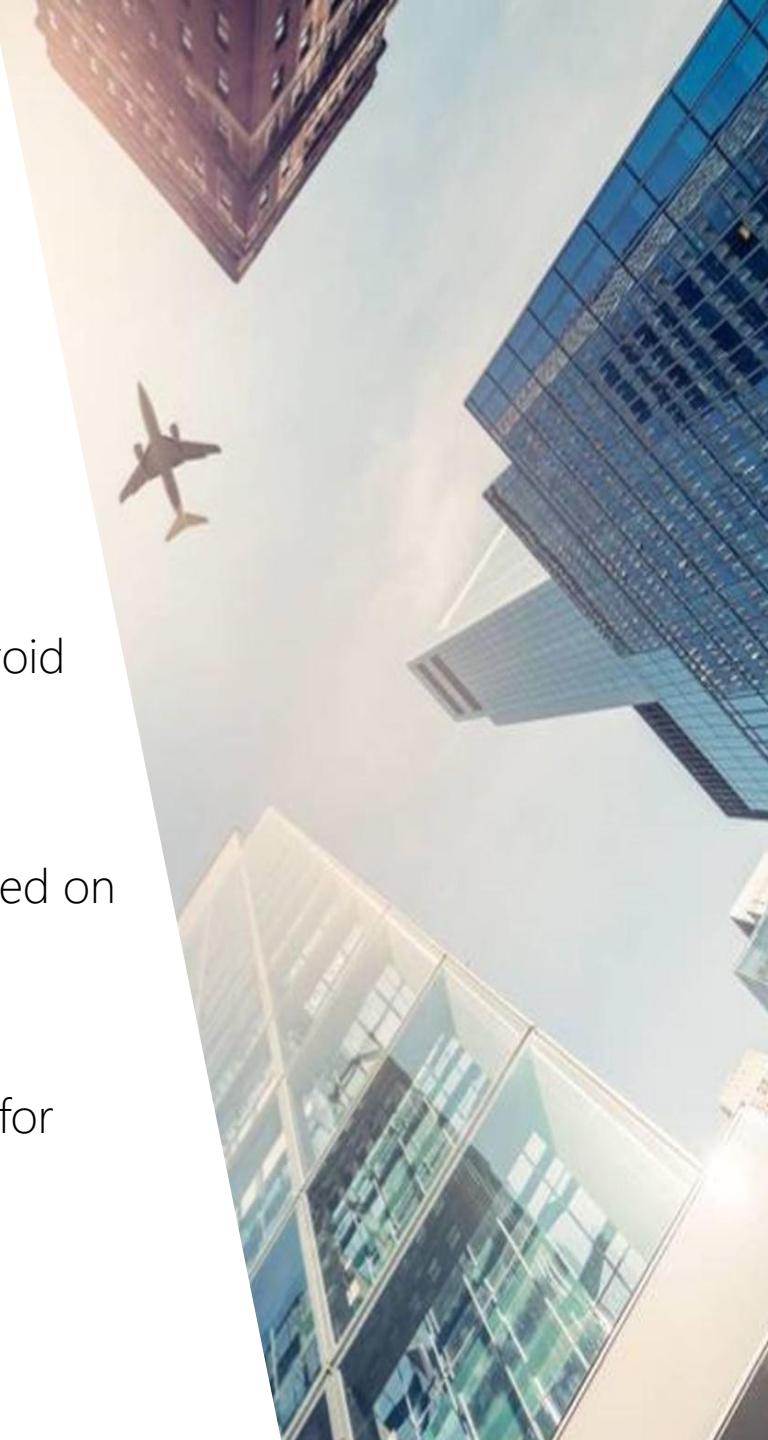
WHY RISK ASSESSMENT MATTERS BEFORE INVESTING IN AVIATION

Who benefits from this study?

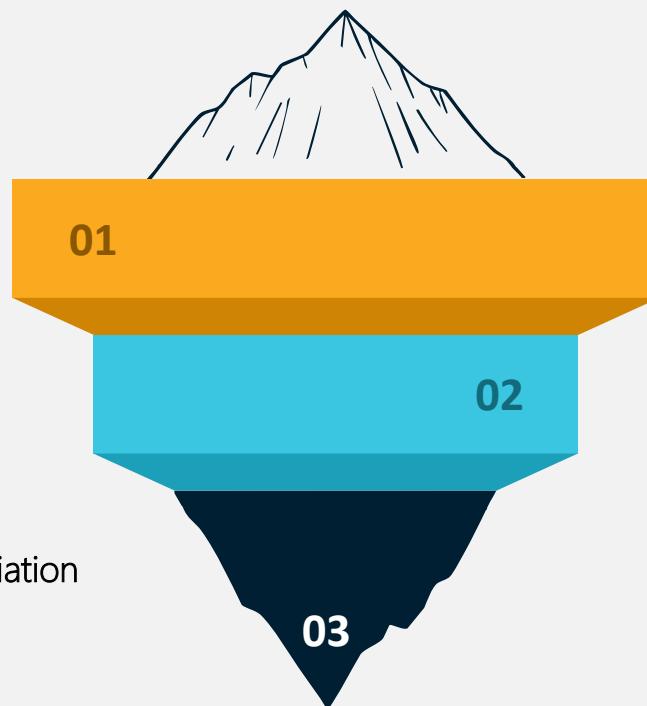
Company Executives: Ensure safe investments & avoid liabilities.

Operations Team: Plan maintenance & training based on risk insights.

Insurance & Legal Teams: Understand liability risks for different aircraft



Objectives



Objective 1

- Present findings on aviation accidents

Objective 2

- Identify risk factors

Objective 3

- Provide actionable insights for the aviation business

Risk Factors: What Increases the Chances of an Accident?

- **Aircraft Risk Factors:**

- Manufacturer (Are some brands more accident-prone?)

- Flight Phase (Which phases are riskiest?)

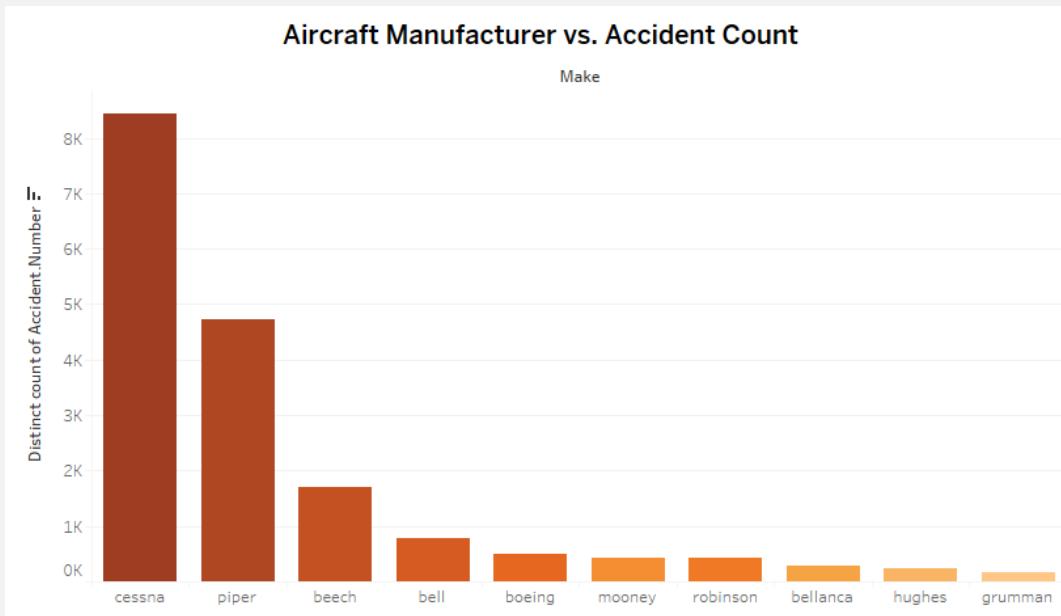
- Weather Conditions (Does poor weather play a major role?)

- Country & Region (Do accidents occur more in certain areas?)

- The focus will be on **selecting aircraft with lower accident trends** based on these factors.



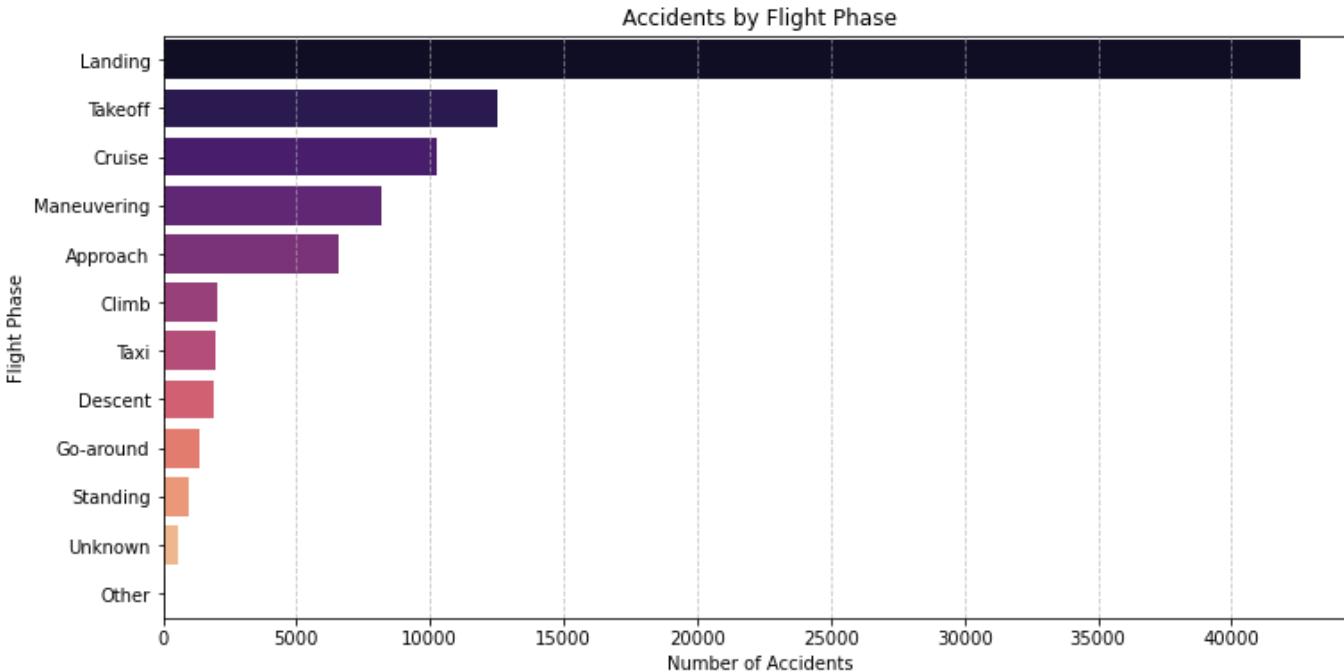
Visual 1



- Which aircraft brands have the most accidents?
- Are some brands consistently safer than others?
- Identify **low-risk** manufacturers for purchase.

"Cessna has the highest accidents, but Bellanca has significantly lower cases—should we consider Bellanca for our fleet?"

Visual 2



When do most accidents occur?
Landing & Takeoff → Highest risk.
Cruise → Lower risk.

- Aircraft for business use should have **strong safety records in critical phases.**
- How can we **train pilots** and **choose safer models?**

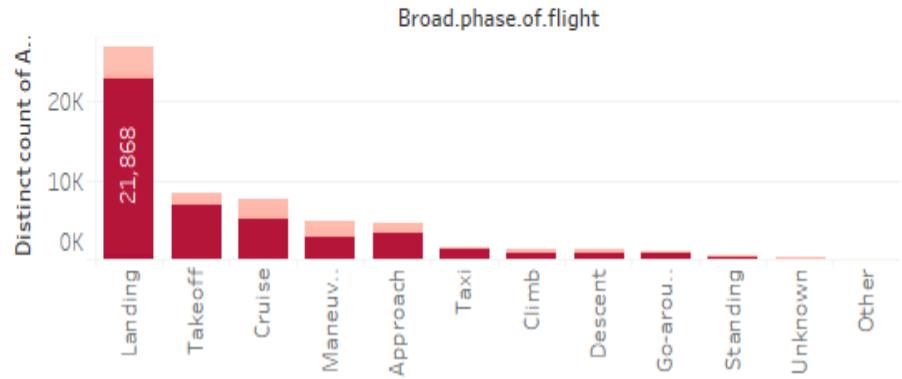
Visual 3



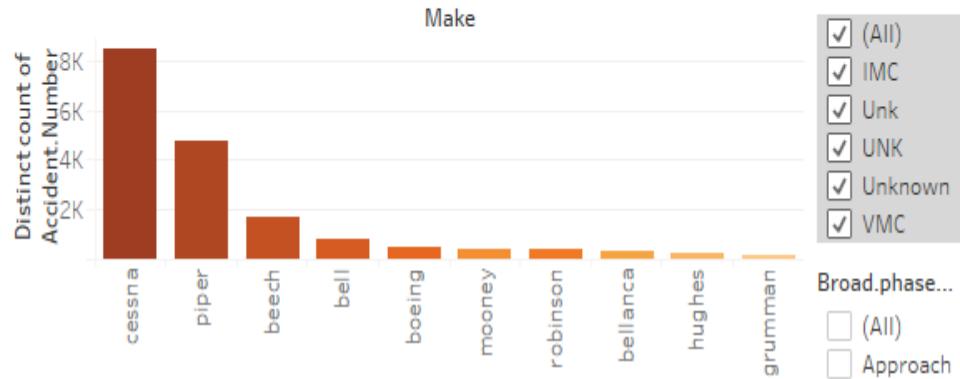
- Where do most aviation accidents occur?
- Should we **avoid operations in high-risk regions?**
- Do some countries **have better regulations & safety standards?**

Accident Overview Dashboard

Flight Phase vs. Accident Severity



Aircraft Manufacturer vs. Accident Count



Accidents by Country



- Event.Year
 2000 2022
- Weather.Con..
 (All)
 IMC
 Unk
 UNK
 Unknown
 VMC

- Broad.phase...
 (All)
 Approach
 Climb
 Cruise
 Descent
 Go-arou...
 Landing
 Maneuv...
 Other
 Standing
 Takeoff
 Taxi
 Unknown

Data-Driven Recommendations

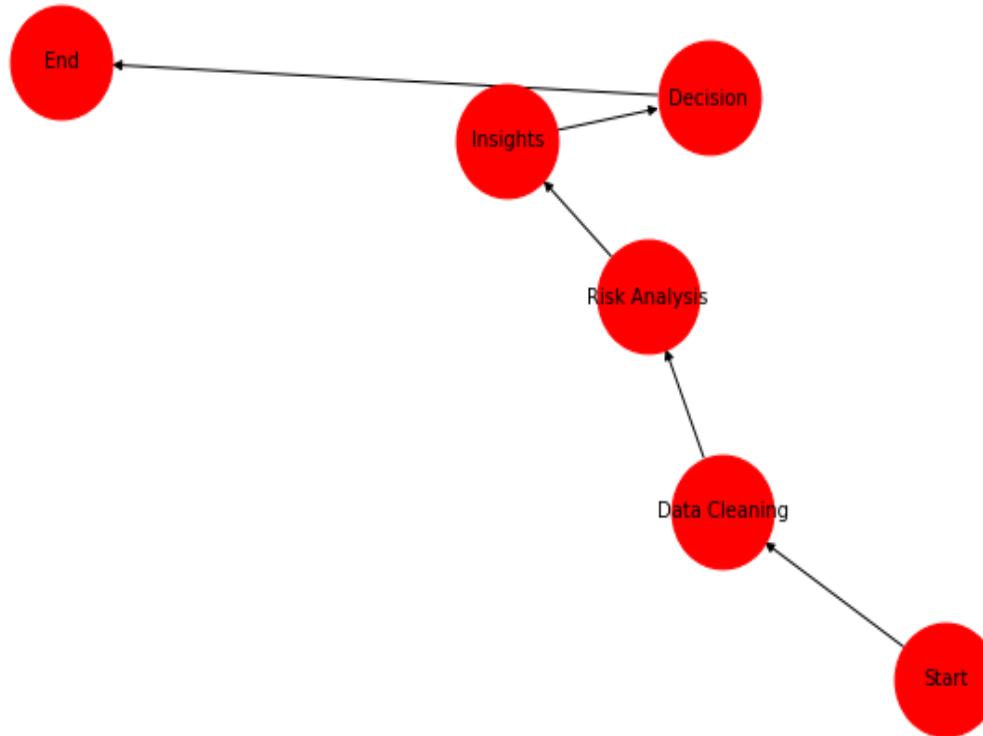
Aircraft Selection	Avoid high-accident manufacturers (e.g., Cessna).	High Risk	Choose aircraft with lower accident rates (e.g., Mooney).
	Prioritize safety-certified models with lower failure rates.	Low Risk	Purchase from trusted manufacturers (e.g., Bombardier).
Operational Regions	Avoid expansion into high-accident countries.	High Risk	Strengthen safety protocols in risky regions.
	Operate in countries with strong aviation safety regulations.	Medium Risk	Invest in training & compliance measures.
Flight Phases	Invest in advanced safety features for takeoff & landing.	Medium Risk	Implement automated safety mechanisms.
	Focus on training pilots for high-risk phases.	High Risk	Conduct regular simulation-based training.
Pilot & Crew Training	Enhance pilot certification programs.	Medium Risk	Require advanced training before deployment.
	Implement strict maintenance & safety checks.	Low Risk	Use predictive maintenance & regular inspections.

Final Recommendation → Focus on low-risk, well-regulated aircraft models with strong safety features for purchase

Action Plan

- ❖ Shortlist safest aircraft models based on data insights.
- ❖ Engage with manufacturers for safety certifications.
- ❖ Consult with regulatory bodies & insurers to assess risks.
- ❖ Develop pilot training & safety protocols to minimize risks

Timeline Flowchart



The background features a photograph of a cable-stayed bridge with a large central tower and multiple stay cables fanning out. The sky is clear and blue. Overlaid on this are several thin, light blue lines forming a cross-like pattern.

THANK YOU

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