Data Analysis for Turkish Delight Airlines Fleet Selection

Using Data-Driven Insights to Guide Aircraft Purchase Decisions

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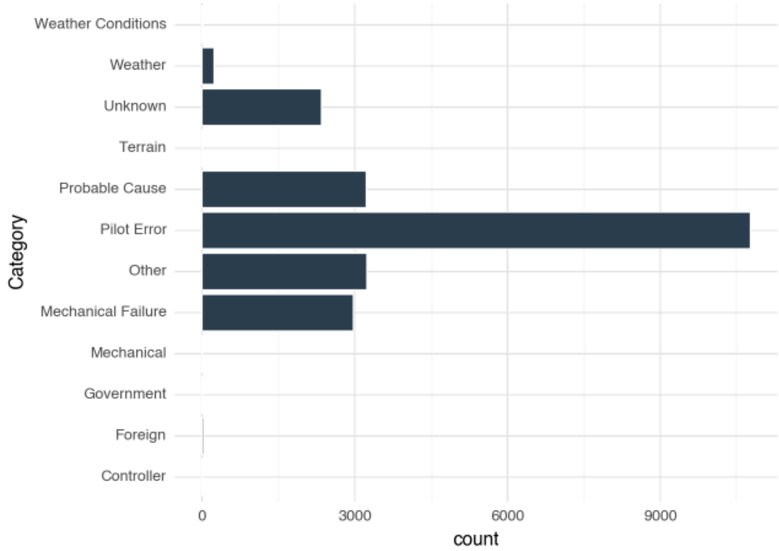
Business Case

- Turkish Delight Airlines is expanding its fleet for both commercial and private aircraft operations, focusing on routes between Turkey and USA.
- Leadership is seeking data-driven insights to make informed decisions on purchasing aircraft that are safe and efficient.
- The analysis focuses on:
  - Causes of accidents
  - Injury rates and severity
  - Days since last accident
  - Number of engines and operational efficiency

Breakdown of Accident Causes

- Major causes identified include:
  - Pilot Error
  - Mechanical Failure
  - Weather Conditions
  - Other and Unknown causes
- Conclusion :
  - Pilot Error is the most common cause, highlighting the need for advanced pilot training and operational systems to reduce human error.
  - Mechanical failures are significant, suggesting a focus on aircraft with reliable mechanical records.

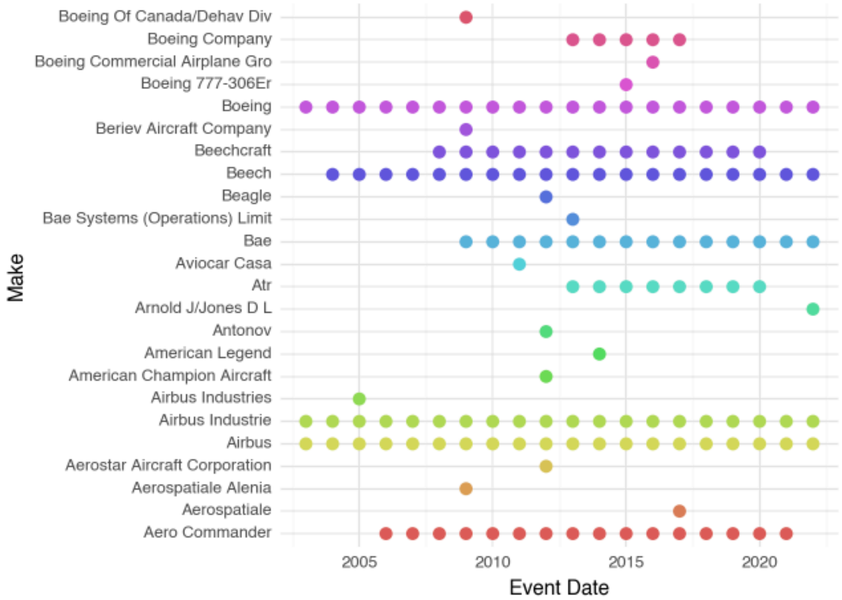


Injury Severity and Safety Concerns

- The injury analysis assigns a weighted score to accidents based on fatal, serious, and minor injuries.
- Conclusion :
  - Models with lower weighted scores should be prioritized to minimize injury risks, especially on long-haul flights.
  - Safe and reliable models are recommended.

Aircraft Reliability Over Time

- Days since last accident shows the operational reliability of different models.
- Conclusion :
  - Aircraft with long periods between accidents demonstrate high reliability and should be favored in fleet selection.



Engine Configuration and Operational Efficiency

- Two-engine aircraft are generally more fuel-efficient and suited for long-haul flights.
- Three-engine planes offer higher payload capacities but may increase fuel and maintenance costs.
- Conclusion :
  - Two-engine aircraft are recommended for long-haul commercial flights.
  - Three-engine aircraft may be used for cargo or specialized operations.

Final Recommendation

- Focus on aircraft with advanced automation systems to reduce pilot error.
- Choose models with low mechanical failure rates for long routes.
- Prioritize aircraft with lower injury severity records.
- Use models with long intervals accidents for high reliability.
- Balance operational needs with the number of engines to optimize cost-efficiency.