Aircraft risk assessment

aircraft risk analysis

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About Us

- Multinational company
  - Provide logistics services
- Long-term goal oriented
  - Sustainable growth and predictable returns
  - Increase profitability during all market cycles
- Expansion plans:
  - Horizontally scale our services by adding aircraft fleet
    - Provide services for urgent, high-value, bulk and perishable goods

Business Expansion Goals

- Aircraft acquisition for portfolio expansion
  - increasing diversification of company's existing lines of business.
- Analysis of aircraft
  - Identify and distinguish lowest risk aircraft

Method of Analysis

- Utilizing publicly available aircraft data since 1962
  - Provided by National Transportation Safety Board (NTSB)
- Statistical methods and Technologies:
  - Programming language
  - Libraries
  - Interfaces or UI's

NTSB | National Transportation Safety Board

pandas

matplotlib

tableau public

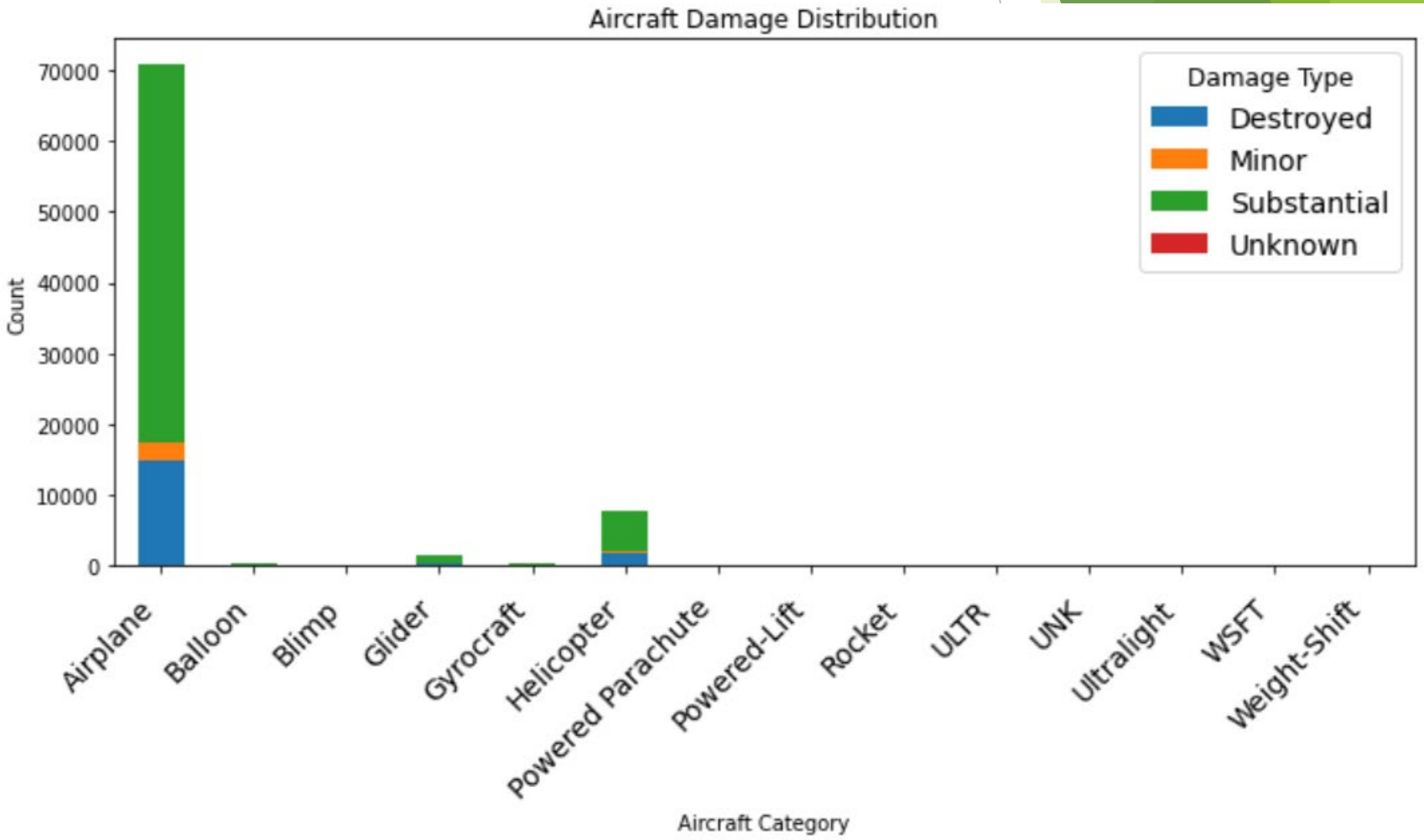
Analysis

- We are concerned with answering the following questions:
  - which aircraft type has the highest and lowest risk
  - How does engine profile correlate with total injuries
  - what is the survival rate of passengers based on airplane models

Aircraft highest and lowest risk

which aircraft type has the highest and lowest risk

- What is high or low risk?
  - Substantial
  - Destroyed
  - Minor

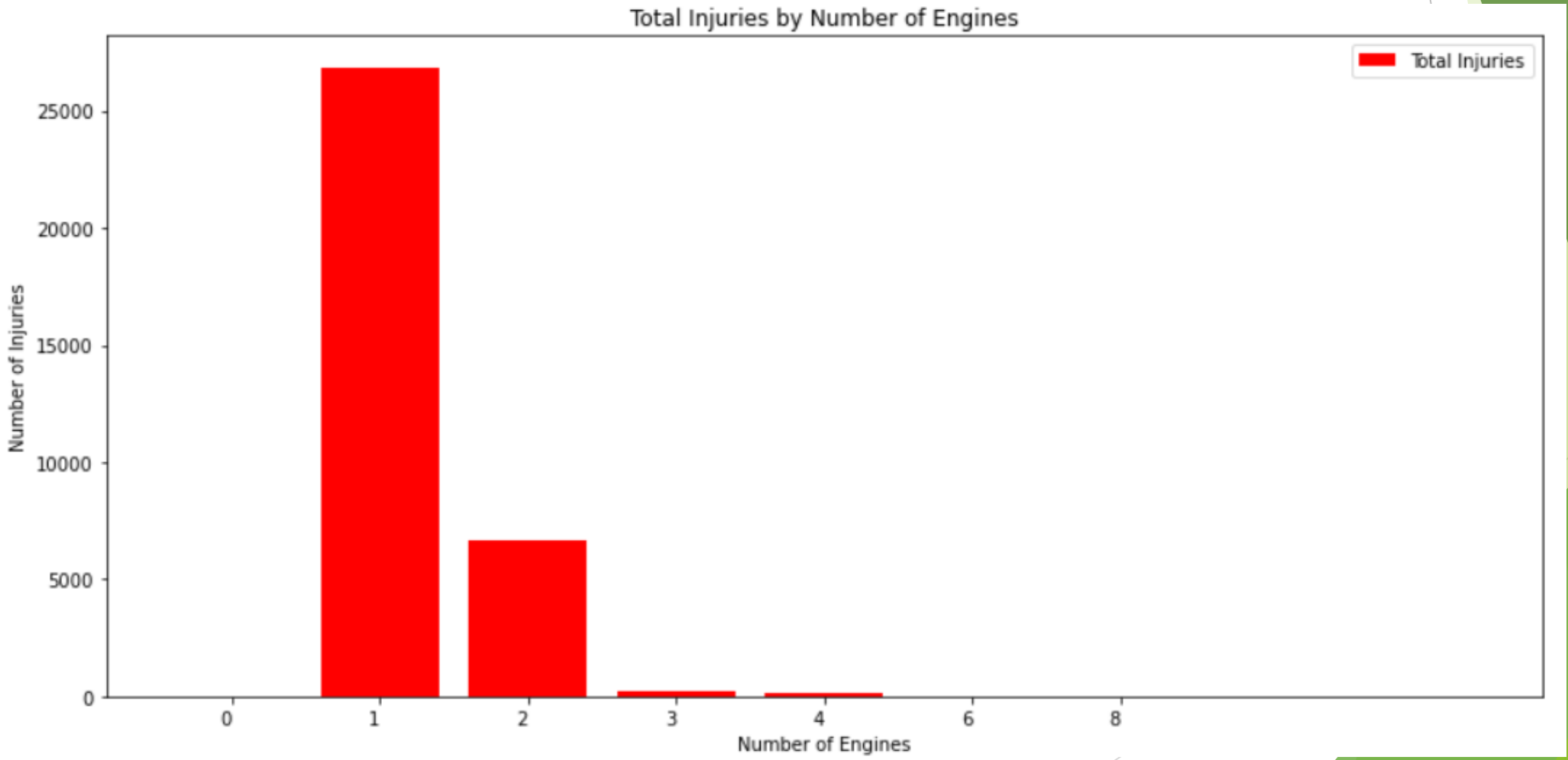


which manufacturer makes the lowest risk aircraft

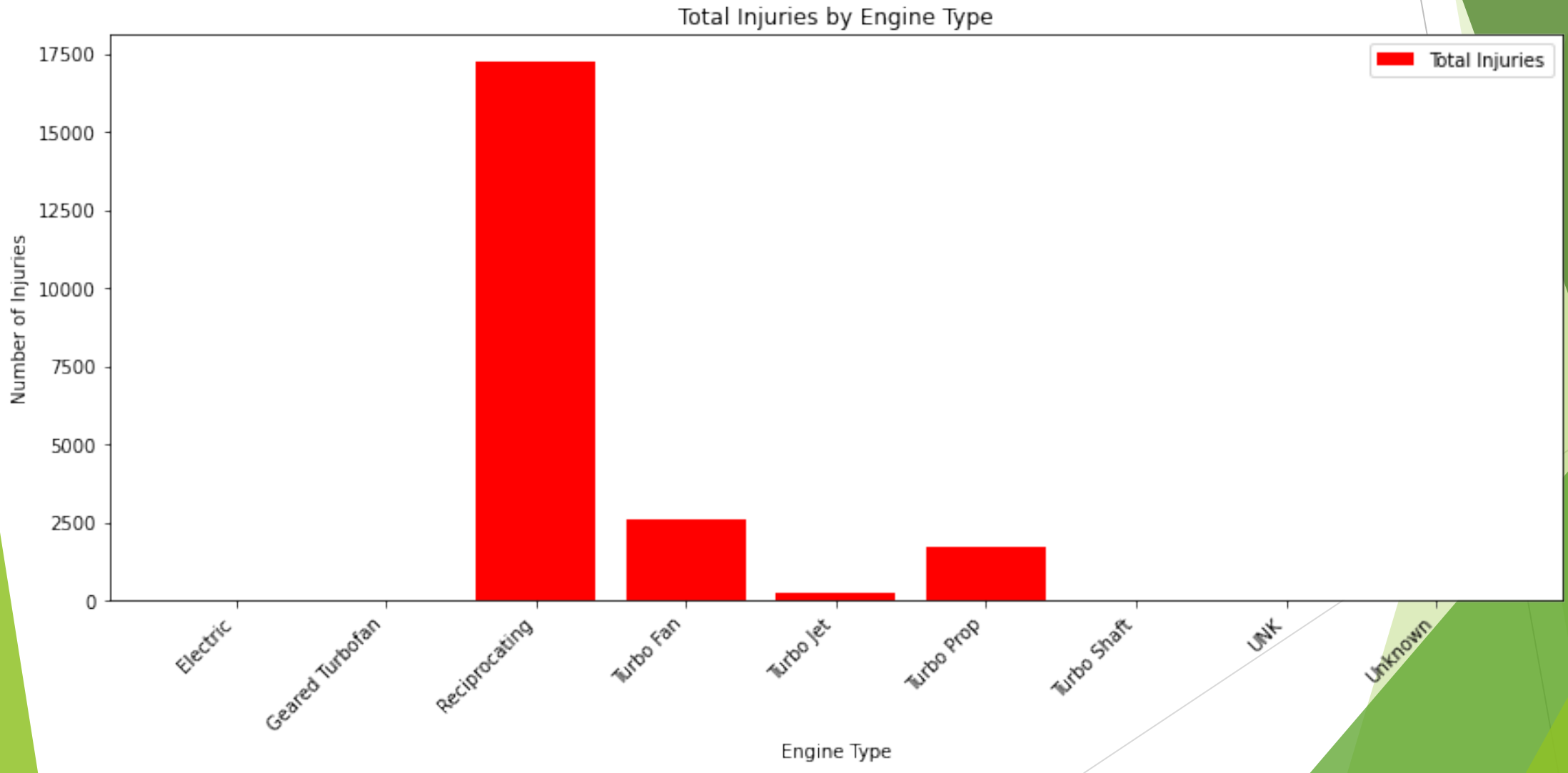
- Analyze by :
  - Make
  - Model
- Other basis of risk assessment:
  - Number of engines
  - Engine types

Total injuries by Number of Engines

How does engine profile correlate with total injuries

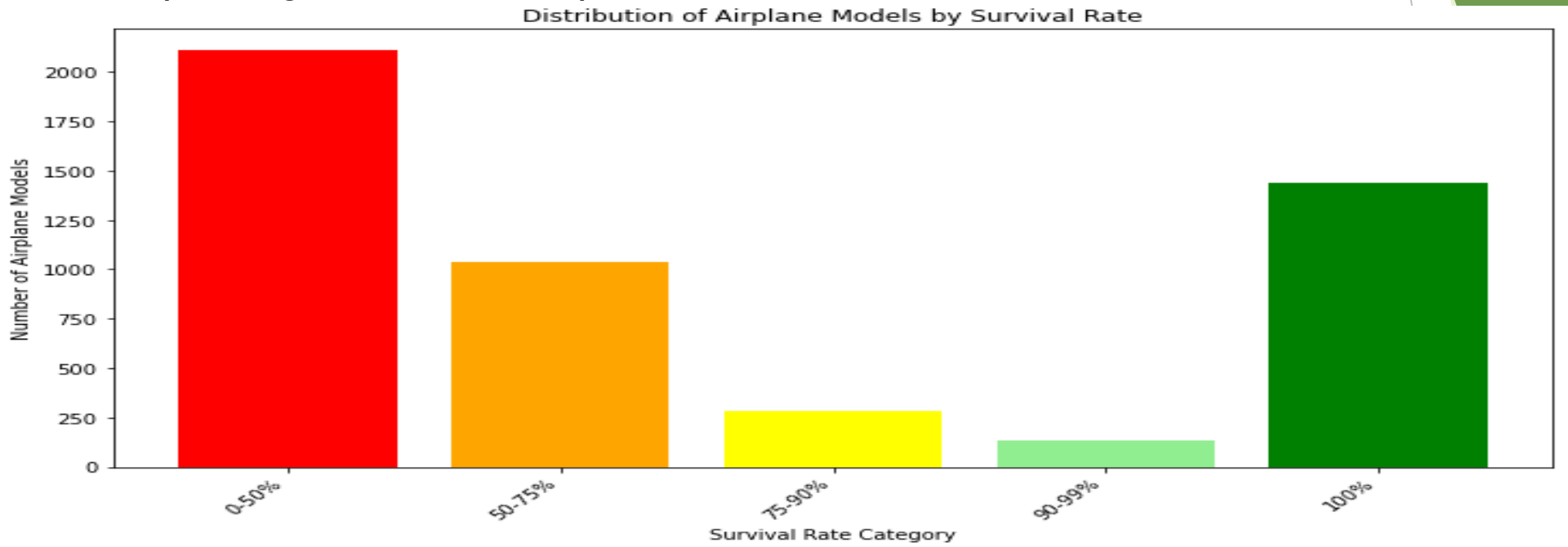


What engine type is the safest



Survival rate by Models

survival rate of passengers based on airplane models



Airplane Models by Survival Rate Category

Survival Category	Airplane Models
0-50%	SEA-ERA, EAGLE 540, EA300, Titan Tornado II, SE5-A...
50-75%	Lightning, PIETENPOL AIR CAMPER, PA46R, JR. SR, MD 11F...
75-90%	DC-3T, A 1B, PA 32-260, 525B, AA 5...
90-99%	777 - 236, A319 132, DC-9-82, 777-236ER, 320-200...
100%	HPL 1 HIGH WING PARA, BL, BT13, BT 15, BRISTELL S-LSA...

Conclusion

- Our analysis shows that the safest aircrafts for our business has the following features and combinations:
  - Airplane
  - Dual engine
  - Jet propulsion
  - Models:
    - 777-236, A319, DC-9-82, 777-236ER, 320-200, MD-83
    - L1011-385, B767-287ER, DC-8-71F, F28 Mk 0100

*this is a short list of models that fall into our category.