# Aviation Risk Analysis for Business Expansion

Identifying Low-Risk Aircraft for Commercial and Private Operations

# Business Understanding

**Problem:** The company is expanding into aviation but lacks knowledge about aircraft risks.

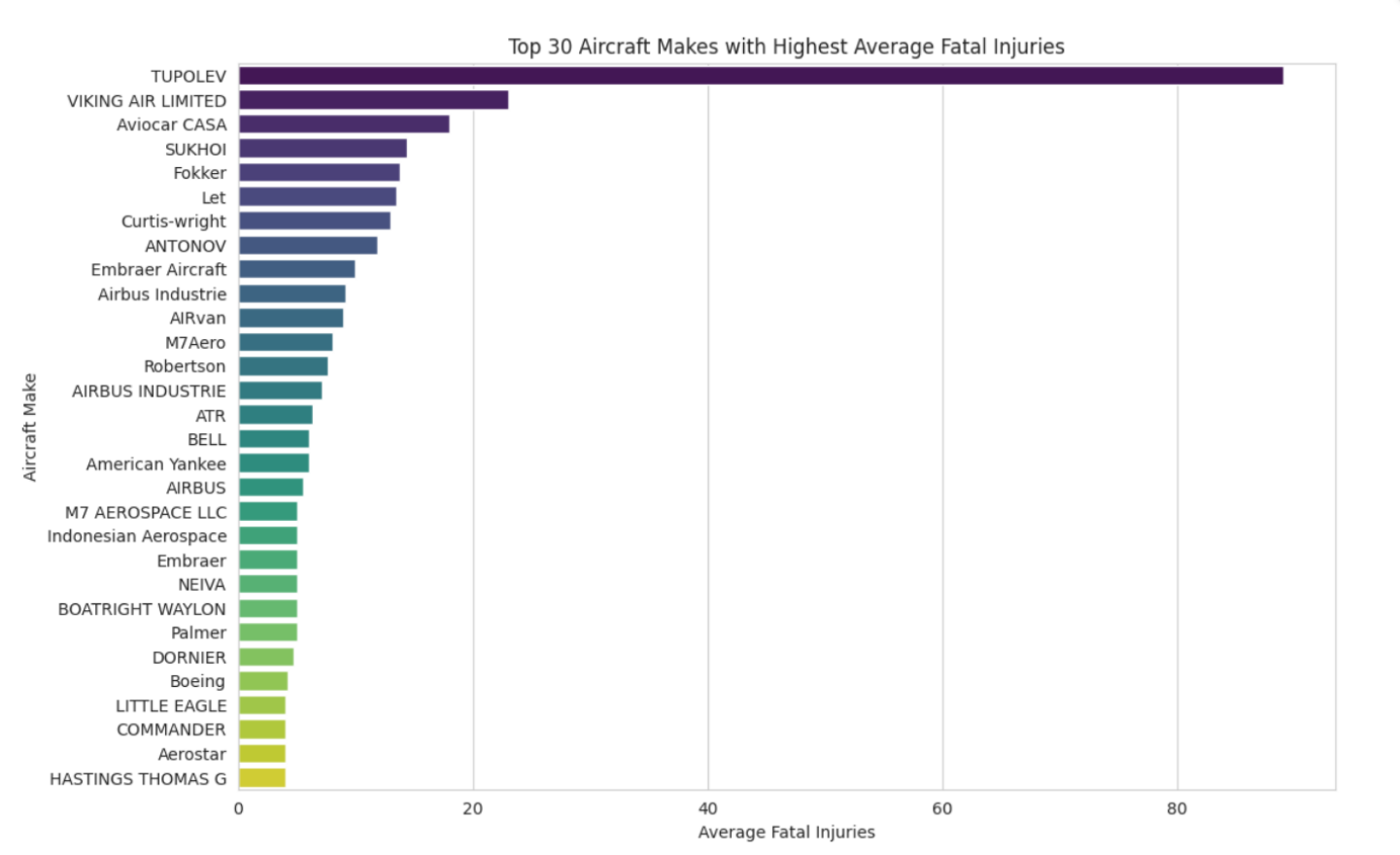
**Goal:** Identify the lowest-risk aircraft for safe and profitable operations.

# Data Understanding

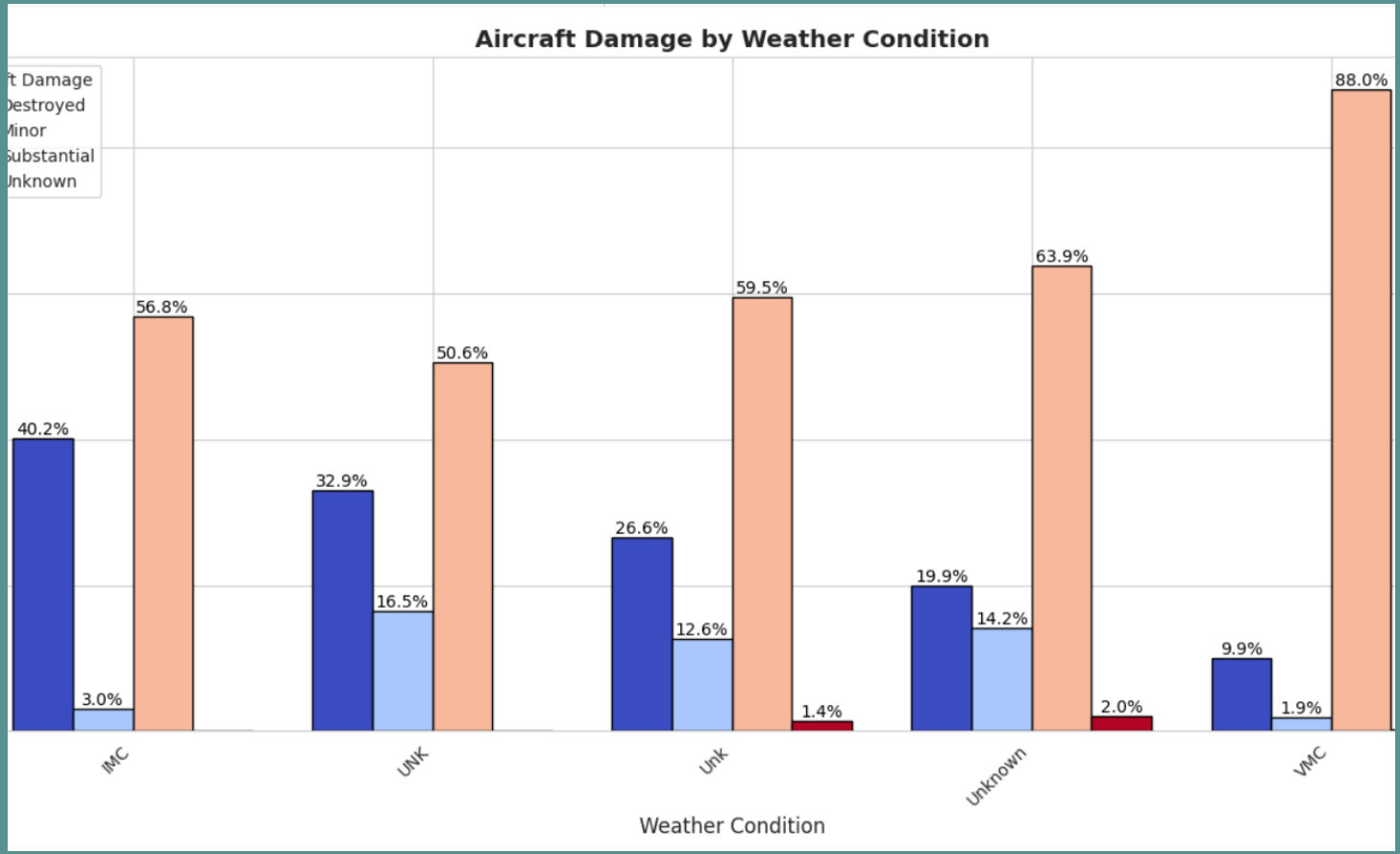
- Data Source: NTSB Aviation Accident Database (1962-2023).

- Key Metrics:
  - Event.Date: Date of the accident.
  - Injury.Severity: Severity of injuries (e.g., Fatal, Serious, Minor).
  - Aircraft.damage: Extent of damage to the aircraft.
  - Make: Manufacturer and model of the aircraft.
  - Engine.Type: Engine details.
  - Total.Fatal.Injuries, Total.Serious.Injuries, Total.Minor.Injuries: Injury statistics.
  - Weather.Condition and Broad.phase.of.flight: Contextual details about the accident.

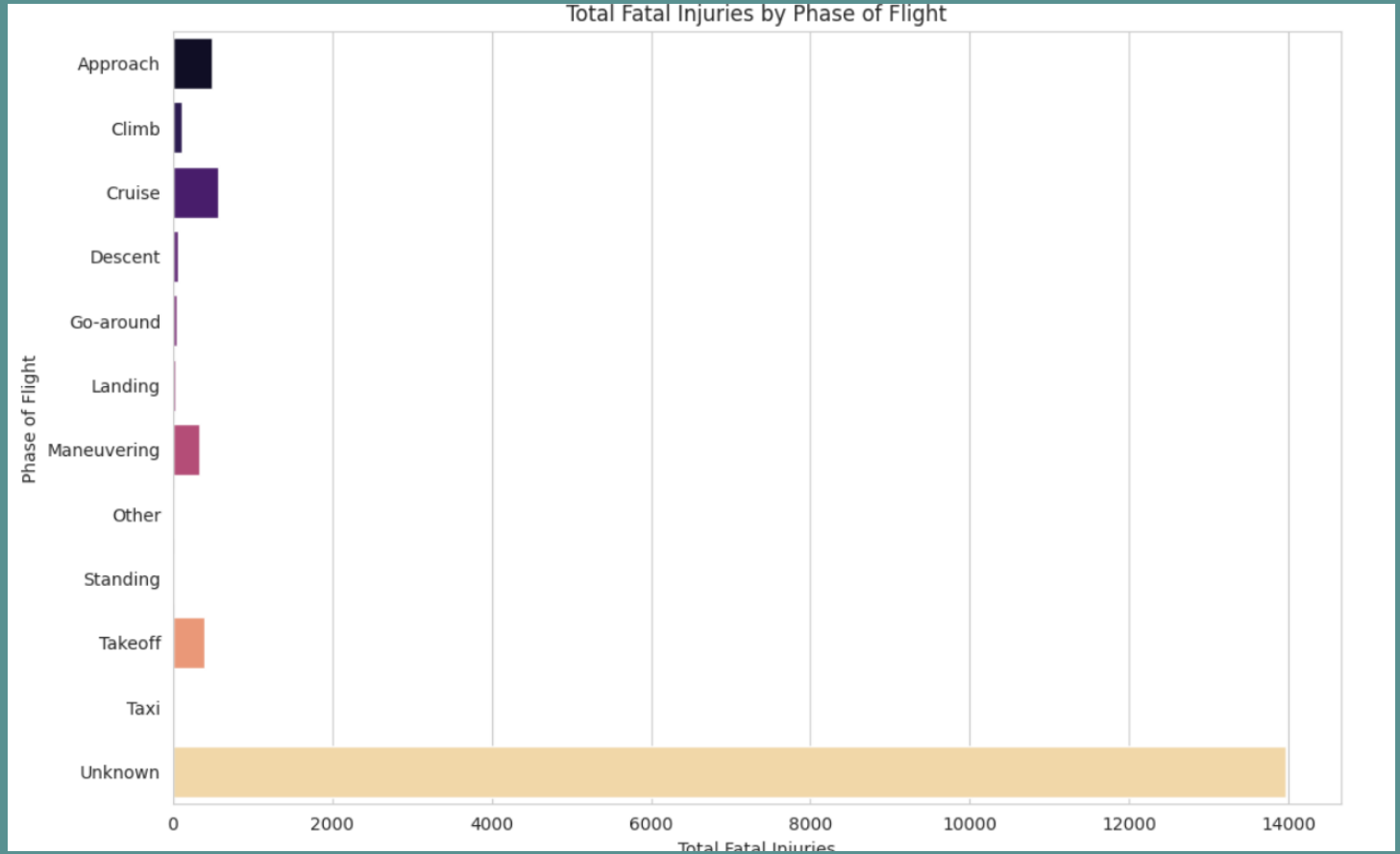
# Data Analysis - Top 30 Aircraft Makes with Higher Average Fatal Injuries



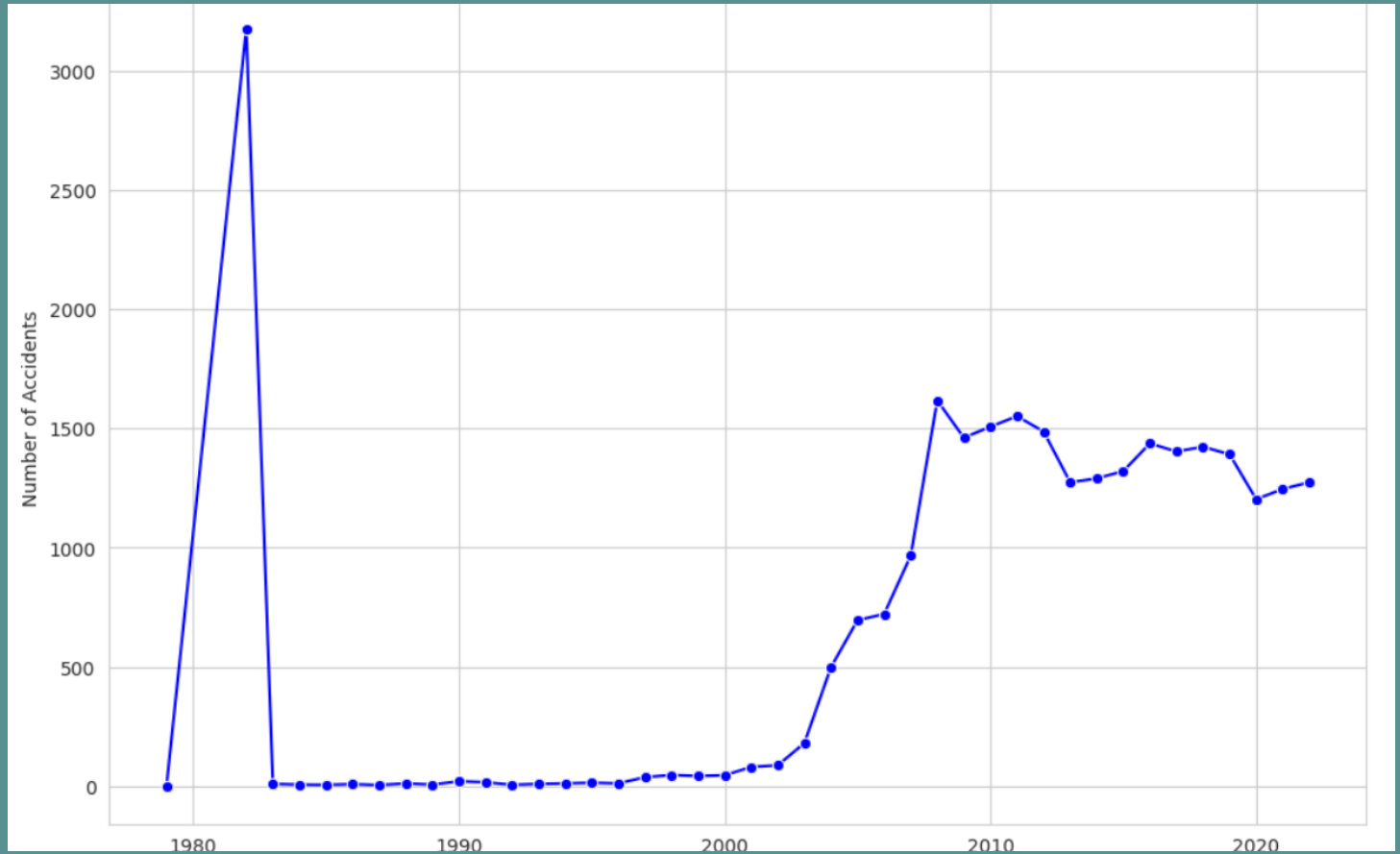
# Data Analysis - Aircraft Damage By Weather Condition



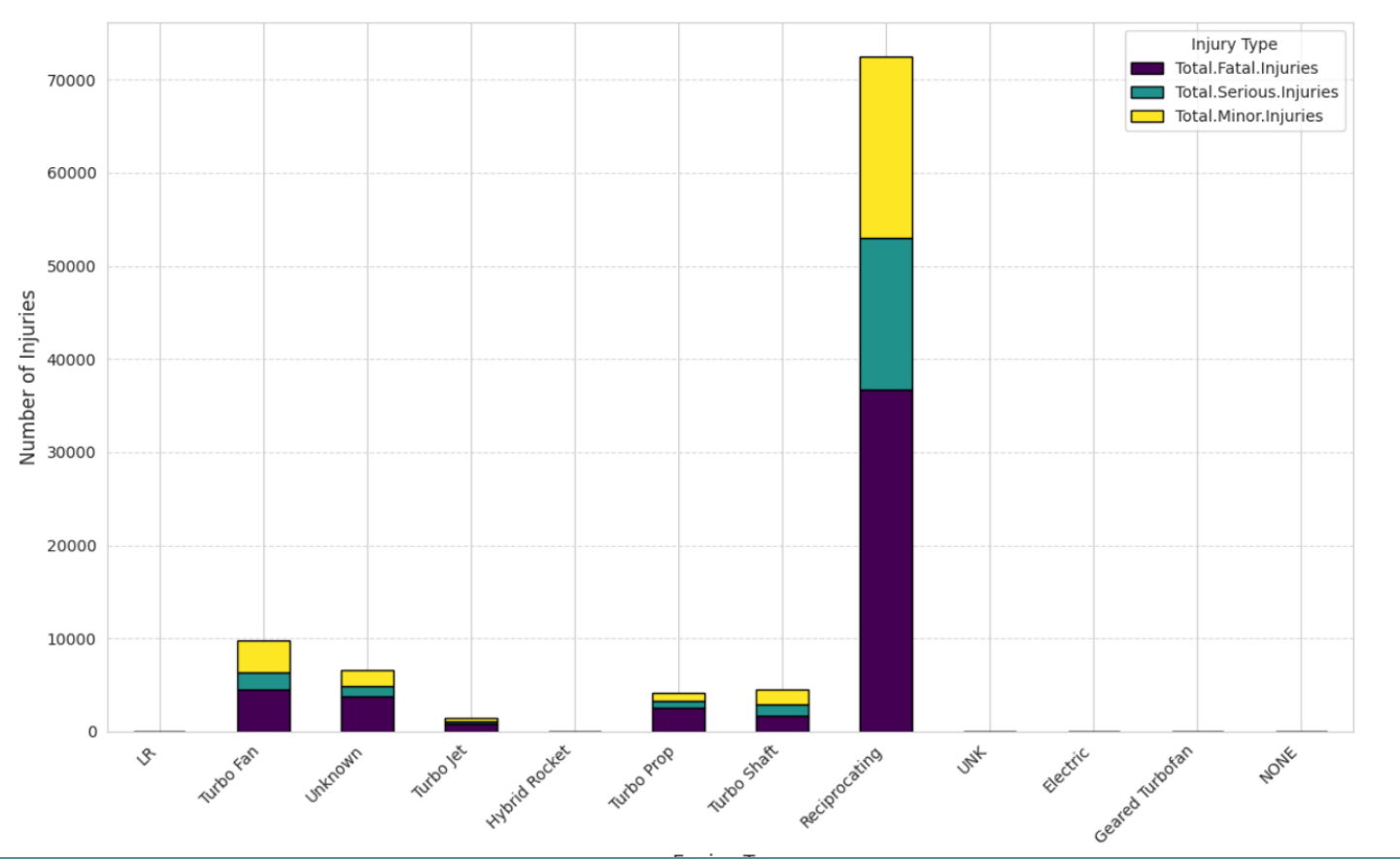
# Data Analysis - Total Fatal Injuries By Phase of Flight



# Data Analysis - Accident Trends over Time



# Data Analysis - Injury Severity By Engine Type



# Recommendations

- Focus on Safer Aircraft Makes.
- Enhance Safety During Takeoff and Landing.
- Choose Aircraft with Turbine Engines.
- Avoid operating aircraft in adverse weather conditions