NON-TECHNICAL PRESENTATION

AIRCRAFT SAFETY ANALYSIS FOR SAFIRI BESPOKE

OVERVIEW & BUSINESS UNDERSTANDING
DE-RISKING SAFIRI BESPOKE'S AVIATION ENTRY

- **Goal:** Providing a data driven recommendation for the safest and low risk aircraft for the launch of Safiri Bespoke's commercial and private aviation services

- **Opportunity:** With Uber introducing helicopter rides in 2026, the aviation market is expanding and Safiri Bespoke is uniquely positioned to enter the airplane market.

- **Pertinent question:** Which aircraft models have the best safety profile and operational history?

MY APPROACH

- The dataset used was **'Aviation Accident' dataset** (1919–2023)

- Process followed:

1. Data preparation

2. Exploratory Data Analysis

3. Visualizing and reporting

4. Recommendations

DATA PREP

- Raw data had several inconsistencies

- I used Pandas to standardize the data

- Pandas is an open-source library used for data manipulation

- Data was also filtered to focus on the relevant columns and timeframes

- The result was a high quality and robust dataset.

DATA ANALYSIS

- Pinpointing the best commercial trip was the first task (safety)

- Fatality and injury trends weighted against the total volume of flights (implied by overall fleet size).

- **Analysis:** While the overall **Boeing** make shows a higher fatality count (due to older models and high operational volume), the modern **747 series** stands out as an exceptionally safe workhorse.

- Any model from the **Boeing 747-300 to 747-400** series is highly recommended.

DATA ANALYSIS

- This was followed by visualizations using Pandas
- Most important metrics were:
- ✓ Total fatalities
- ✓ Serious injuries
- ✓ Minor injuries
- ✓ Operational history
- ✓ Make
- ✓ Model

DATA ANALYSIS

- Most accidents occur during VMC (Visual Meteorological Conditions)

- Spotlight Visual (Visual 3): Accident Frequency by Meteorological Conditions (VMC vs. IFR)

- **Insight:** This unexpected result is largely due to **volume**. VMC days mean **higher air traffic volume**, naturally leading to a higher *total number* of accidents.

- Accidents in IFR (Instrument Flight Rules) conditions, while less frequent, are often more fatal due to the complexity of the weather.

RECOMMENDATION 1

- **Recommendation:** For private charters and tours, Safiri Bespoke should choose the **Bell 206B** helicopter model.

- **Business Justification:** It offers the **least operational risk** due to its documented safety history and decline in accidents. It provides a reliable, safe experience, which is paramount for our high-end private clientele.

VISUALIZATION 1

Airbus and Bell Accidents per Year
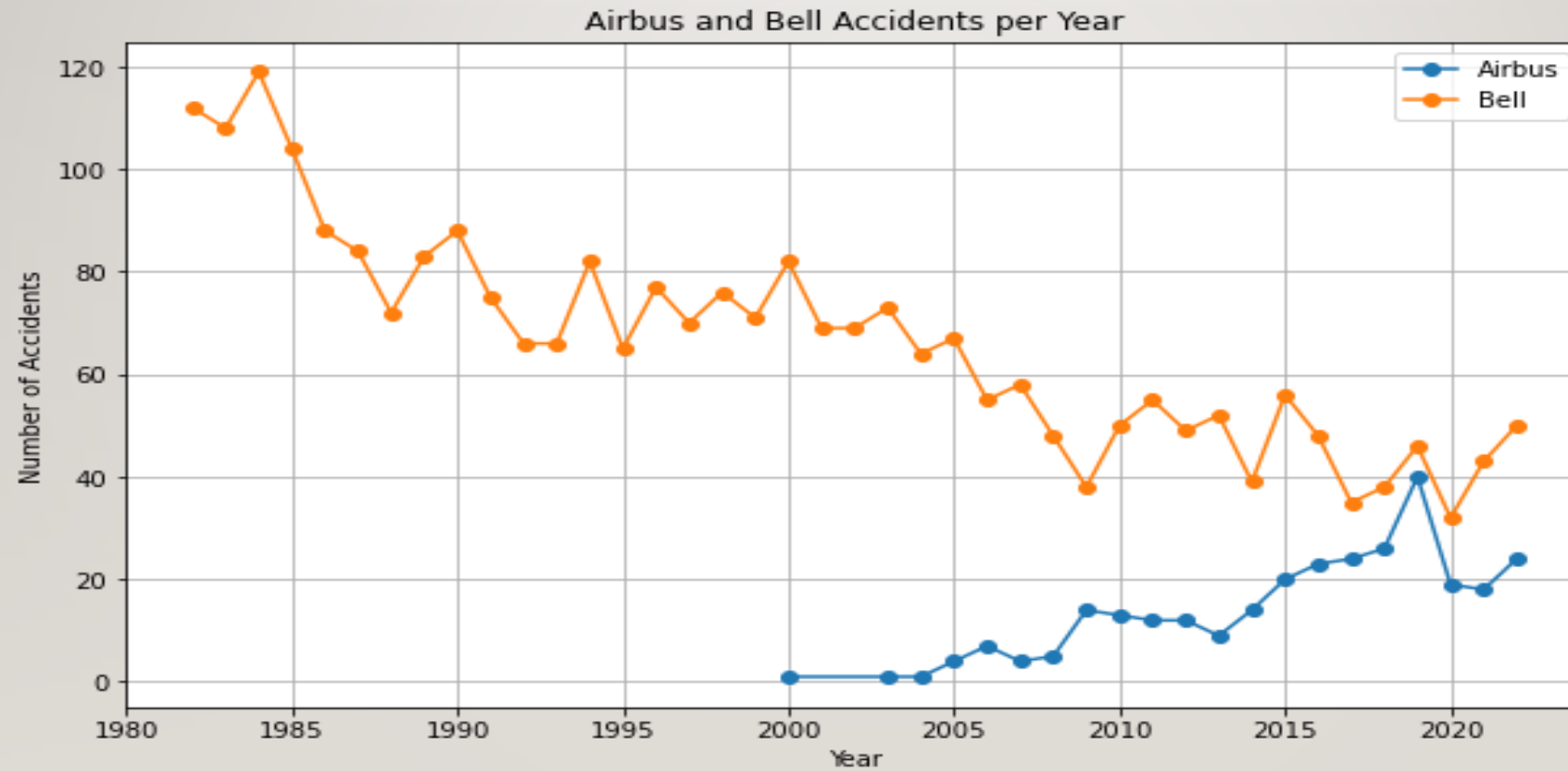
RECOMMENDATION 2

- **Recommendation:** For commercial routes, Safiri Bespoke should invest in the Boeing 747 series (747-300 or 747-400).

- **Business Justification:** These are **proven, high-safety commercial jets** that can handle the volume and range needed for a tours and travel agency, minimizing risk while maximizing passenger capacity.

VISUALIZATION 2

Total Uninjured by Aircraft Make and Model (Top 30)
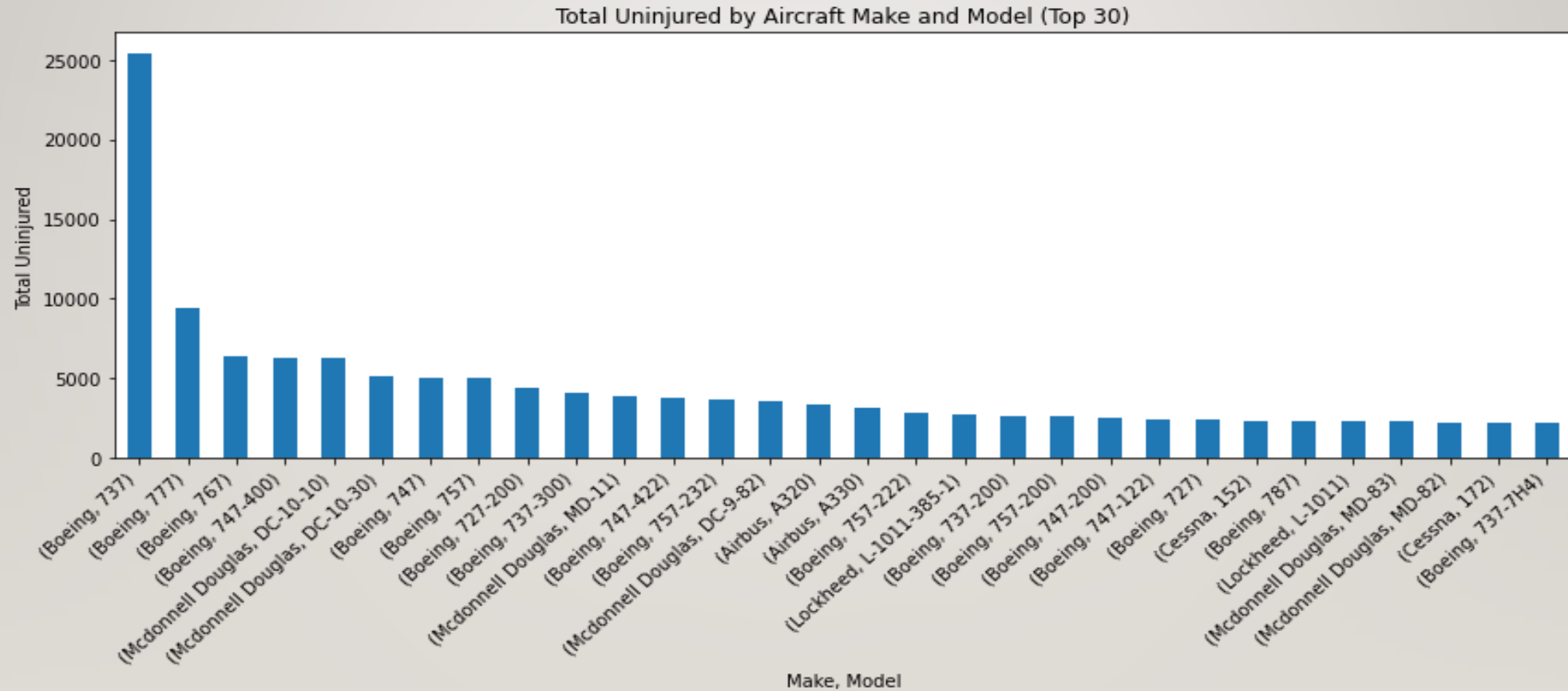
RECOMMENDATION 3

- **Recommendation:** Implement strict safety protocols and **crew resource management (CRM) training** specifically targeting **high-traffic, VMC condition operations**.

- **Business Justification:** Addressing the *high-volume* VMC environment is key to minimizing the total number of accidents.

- This proactive safety investment protects our passengers, brand reputation, and assets.

VISUALIZATION 3
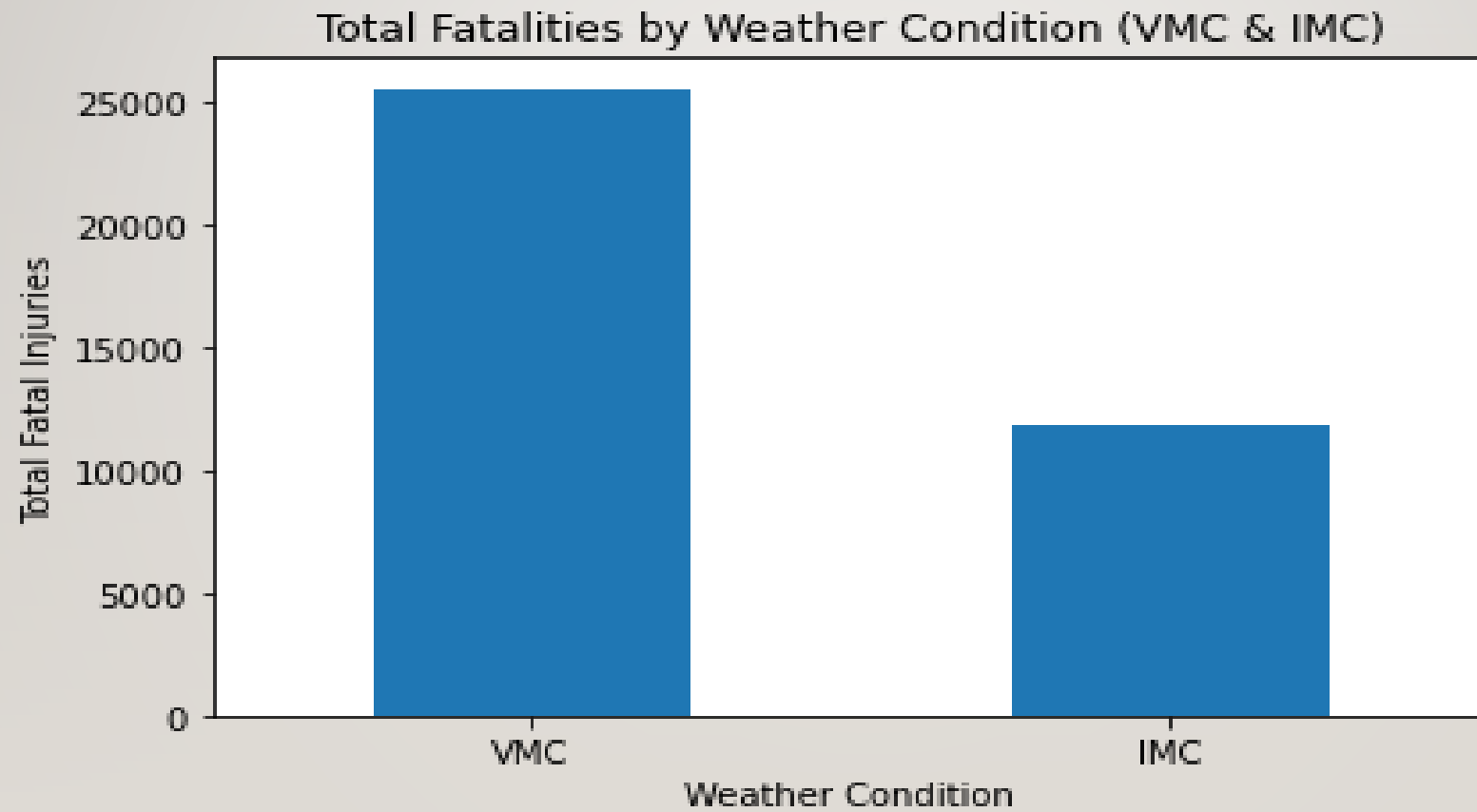
NEXT STEPS

1. **Procurement Review:** Engage with Finance and Operations to begin evaluating procurement costs for the Bell 206B and Boeing 747 series.

2. **Dashboard Integration:** Utilize the **Interactive Dashboard** (created in Tableau) to set real-time safety metrics and monitor the accident-rate and injury data of the newly acquired fleet models.

3. **Risk Mitigation:** Develop the specific safety protocols and training programs based on the VMC/IFR findings.

THANK YOU & QA

- Thank you for your time. I'm confident these recommendations will allow Safiri Bespoke to enter the aviation market successfully and safely.

- I'm happy to take any questions regarding the analysis, the data, or the specific recommendations.

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