

READY FOR TAKEOFF

A Data-Driven Risk Analysis for
Strategic Aircraft Acquisition



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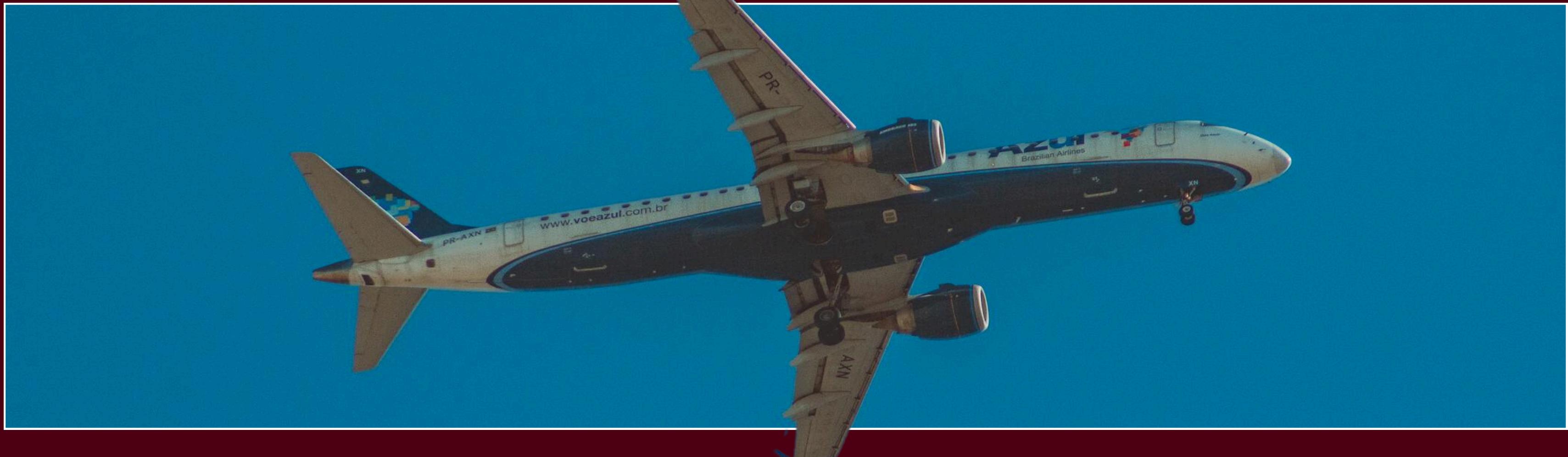
OVERVIEW

This project aims at analyzing data from the National Transportation Safety Board Aviation accident database, which contains aviation accident records from 1962 to 2023, within the United States, its territories and possessions, and in international waters. The primary objective is to assess the safety of various aircraft to ensure our clients make well-informed and risk-conscious purchasing decisions as they expand into the aviation sector.



WELCOME TO PRESENTATION

Hi , I'm Latifa and I'll be doing the presentation. For More analysis services feel free to reach out at latifariziki5@gmail.com



BUSINESS UNDERSTANDING

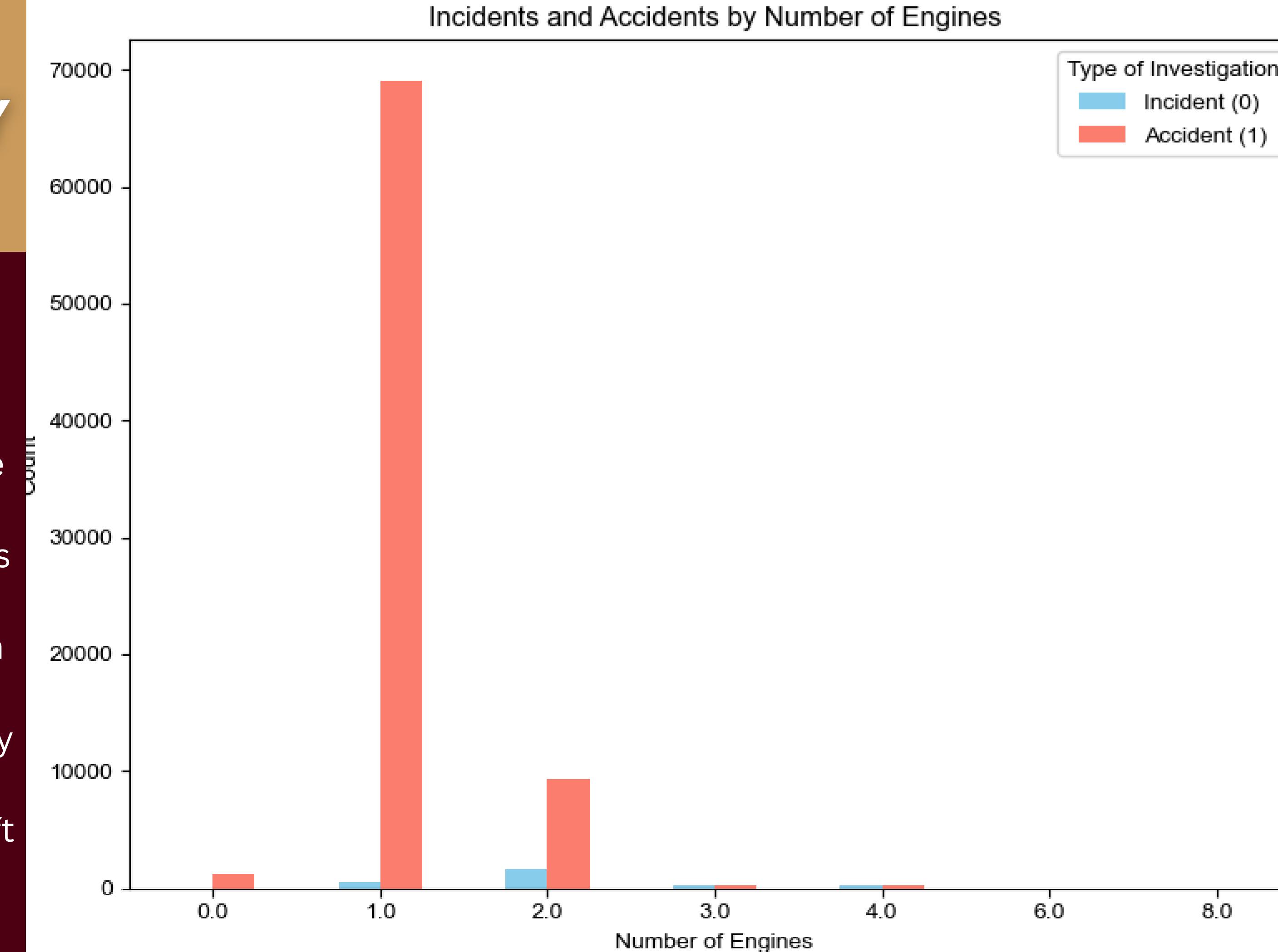


OUR CLIENT IS SEEKING TO BROADEN THEIR INVESTMENT PORTFOLIO BY ENTERING NEW MARKETS. PARTICULARLY INTERESTED IN ACQUIRING AND MANAGING AIRCRAFT FOR BOTH COMMERCIAL AND PRIVATE USE. AS A DATA ANALYST, MY OBJECTIVE IS TO IDENTIFY THE SAFEST AND MOST RELIABLE AIRCRAFT OPTIONS TO SUPPORT THE COMPANY'S ENTRY INTO THIS AVIATION VENTURE.

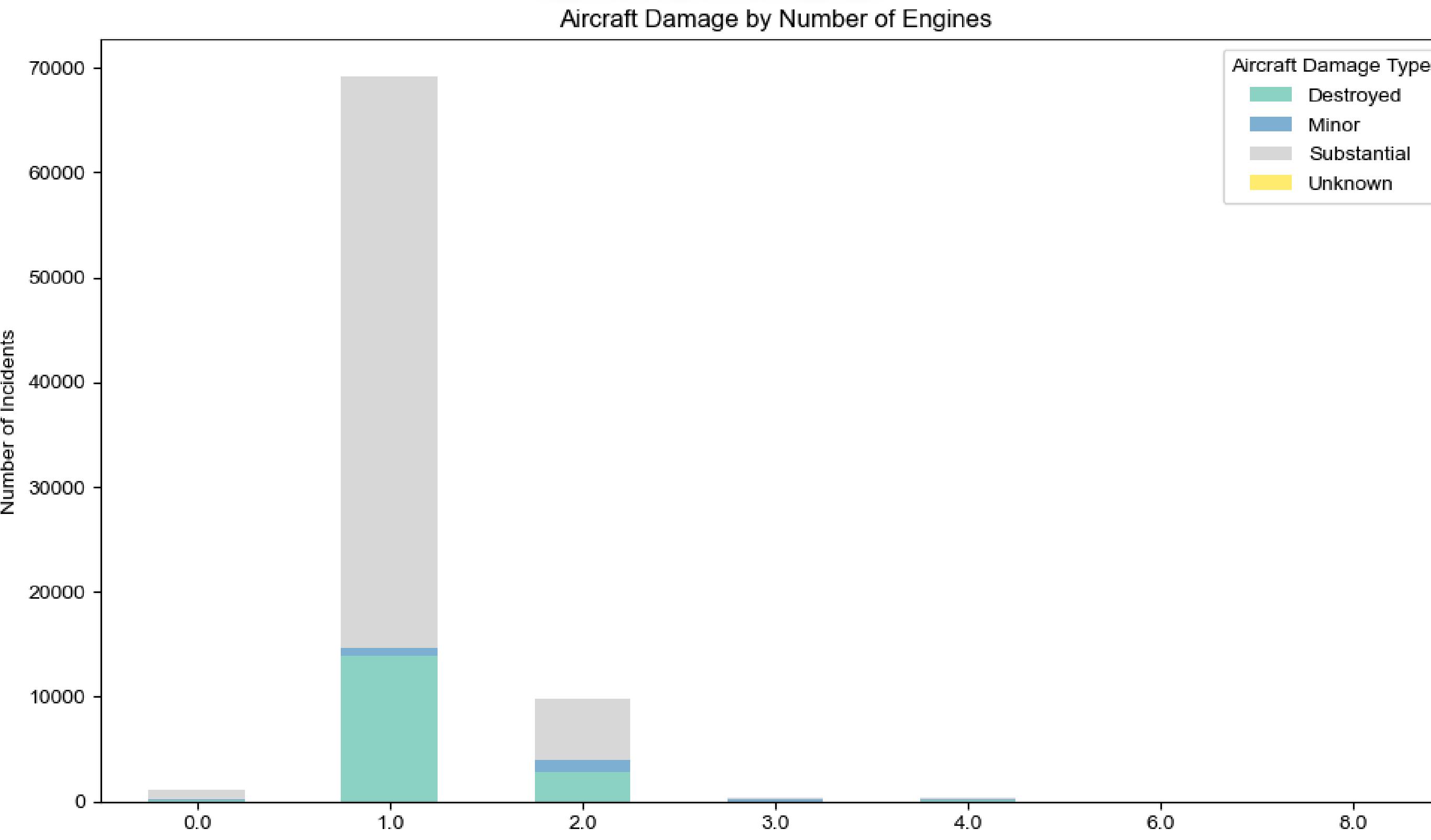
INCIDENTS & ACCIDENTS BY ENGINES

Analysis

From the graph, we observe that aircraft with one engine have a higher number of incidents. However, this does not necessarily lead to the conclusion that aircraft with more than one engine are inherently safer. Based on my analysis—after normalizing the data—I found that aircraft with three or four engines demonstrate greater safety.



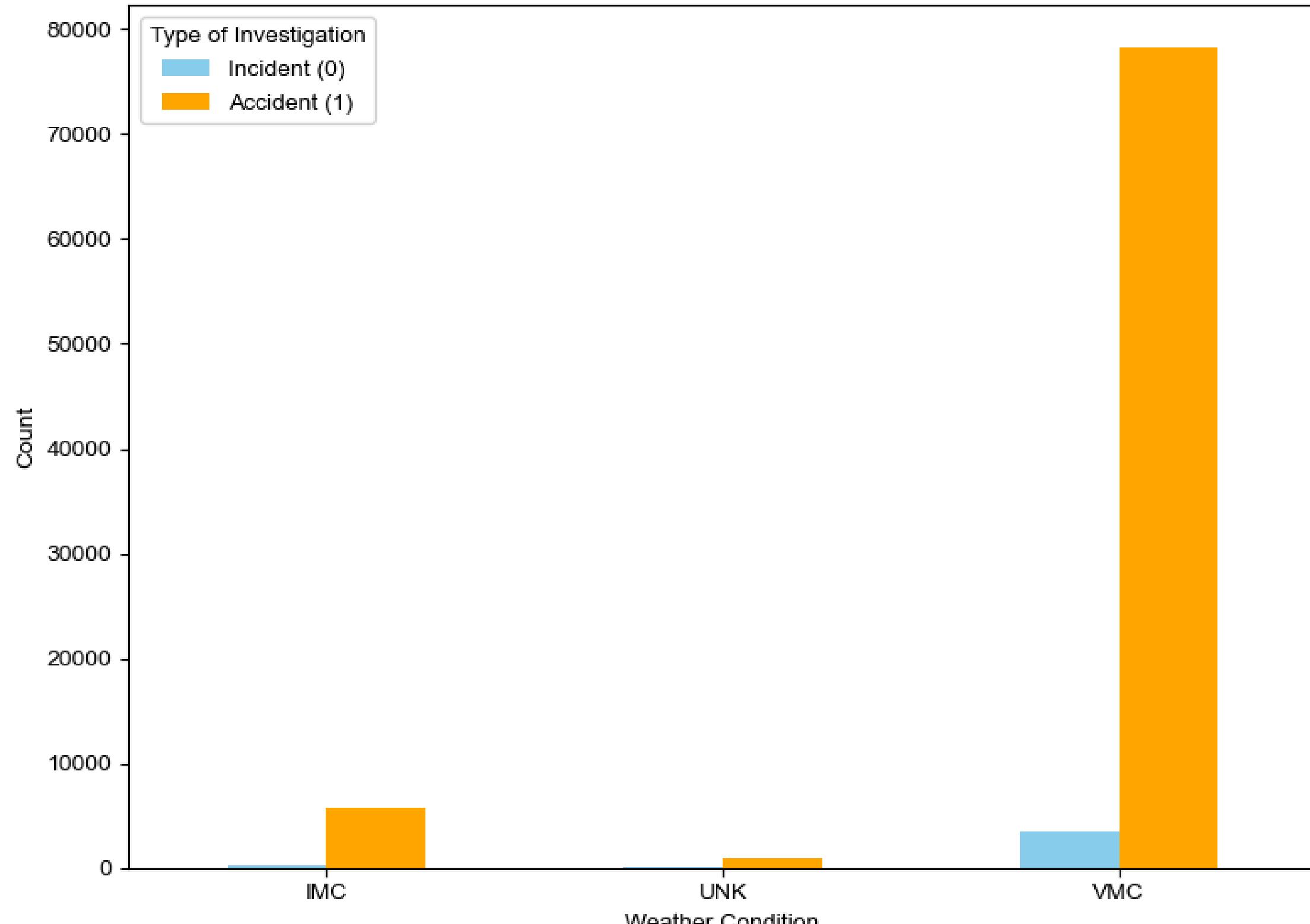
AIRCRAFT DAMAGE BY ENGINES

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Analysis

The graph clearly demonstrates that aircraft with a single engine exhibit the highest incidence of both destroyed and substantially damaged aircraft. This finding supports our initial decision to filter out single-engine aircraft from the analysis.

Incidents and Accidents by Number of Engines

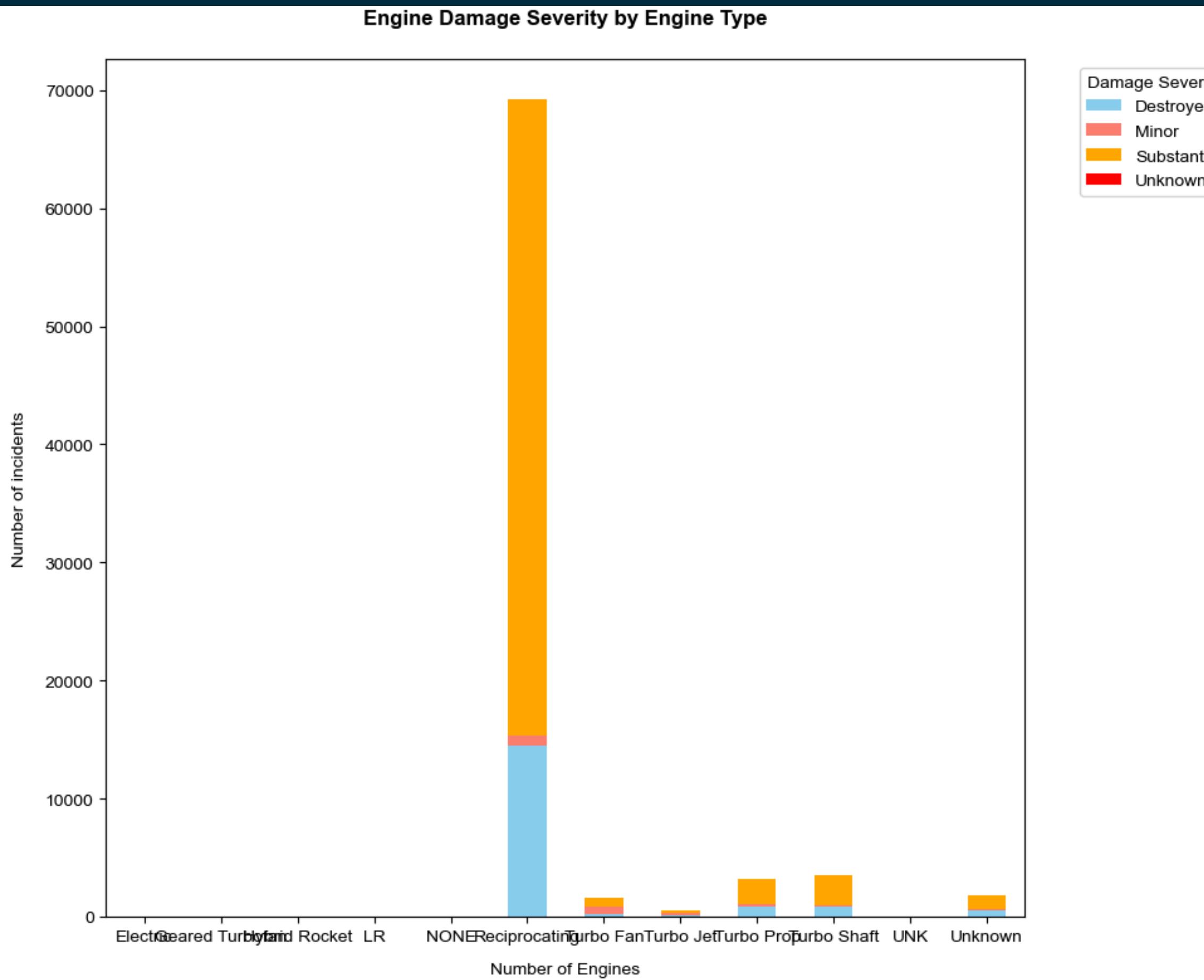


INCIDENTS AND ACCIDENTS BY NO. OF ENGINES

A number of incidents occurred under favorable weather conditions 'VMC'. This suggests that weather may not have been the primary contributing factor in these cases. Further analysis is needed to explore other contributing factors such as pilot experience, mechanical failure, or maintenance history."



ENGINE DAMAGE SEVERITY BY ENGINE TYPE

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Analysis

After normalizing incident data, our analysis reveals Turbo-fan and turbo-jet engines demonstrate a 62% higher frequency of minor damage incidents compared to reciprocating and turboprop configurations.

Although the Reciprocating engine is more common it seems to have a higher percentage of damages



FROM THE ANALYSIS, THESE ARE THE RECOMMENDATION OF AIRCRAFTS

1. The recommended aircraft are the aircrafts with 0 damages, 0 substantial damages and atmost 2 minor damage
2. The aircraft should have either 3 or 4 numbers of engine
3. The aircraft should have either Turbo Fan engine or Turbo Jet engine
4. Weather Condition, amateur architecture are not causation of accidents.
Research on pilot experience and maintenace history

CONCLUSIONS

LIST OF THE RECOMMENDED AIRCRAFT TYPE :

TURBO JET ENGINE WITH 3 OR 4 ENGINES

Mcdonnell Douglas DC 8-61', 'Boeing B727-023', 'Boeing B-727-90C',
'Boeing 727-51', 'Boeing 727-200B', 'Boeing 727-023',
'Boeing 727-22C', 'Boeing 707-323B', 'Boeing B-727-29',
'Boeing 727-254', 'Lockheed L1011-385', 'Mcdonnell Douglas DC8-55',
'Boeing 747-269BC', 'Boeing 727-276', 'Boeing 727-25C',
'Mcdonnell Douglas DC-10', 'Boeing B-727-61',
'British Aerospace AVRO 146-RJ85A', 'Boeing 747-300 SERIES',
'Boeing 747-451'

TURBO FAN WITH 3 OR 4 ENGINES



'McDonnell Douglas DC-8-73', 'McDonnell Douglas DC-8-54',
'McDonnell Douglas DC-8-71', 'Boeing 727-25C', 'Boeing 727-25',
'McDonnell Douglas DC-10', 'Boeing 727-122', 'Boeing 747-245F',
'British Aerospace BAE-146-100', 'Boeing 727-290',
'McDonnell Douglas DC-8-73F', 'Boeing B-727-200A',
'Boeing 707-323B', 'Boeing 727-254', 'Boeing 747-446B',
'British Aerospace 146-200', 'Boeing 727-214A',
'British Aerospace 146-300A', 'Boeing 747-368', 'Boeing 707-341',
'Boeing 747-240', 'Boeing 747-273C', 'McDonnell Douglas DC-10-15',
'Boeing 727-2K5', 'Boeing 747-2R7F', 'Lockheed L-1011-385-1-15',
'Douglas DC-8F-55', 'Boeing 727-212', 'Boeing 727-2Q8',
'Boeing 747-4F6B', 'Dassault DA-900B', 'Boeing B-727-100',
'Boeing 747-256', 'Dassault Aviation FALCON 900EX',
'Dassault Aviation DA-50', 'Airbus Industrie A340-300',
'Airbus A340-300', 'Lockheed 1329-23E', 'Boeing 747SR-146B SF',
'Dassault FALCON900', 'Douglas DC-8-73F', 'Douglas DC8',
'McDonnell Douglas MD-10-30F', 'Airbus A340 - 300',
'Bae Systems (Operations) Limit AVRO 146-RJ85',
'Bae AVRO146RJ - 100', 'Boeing 747 422',

THANKYOU ANY QUESTIONS

Feel free to check me out at [rizikilatifa](#) in GitHub and get the full report of this project

