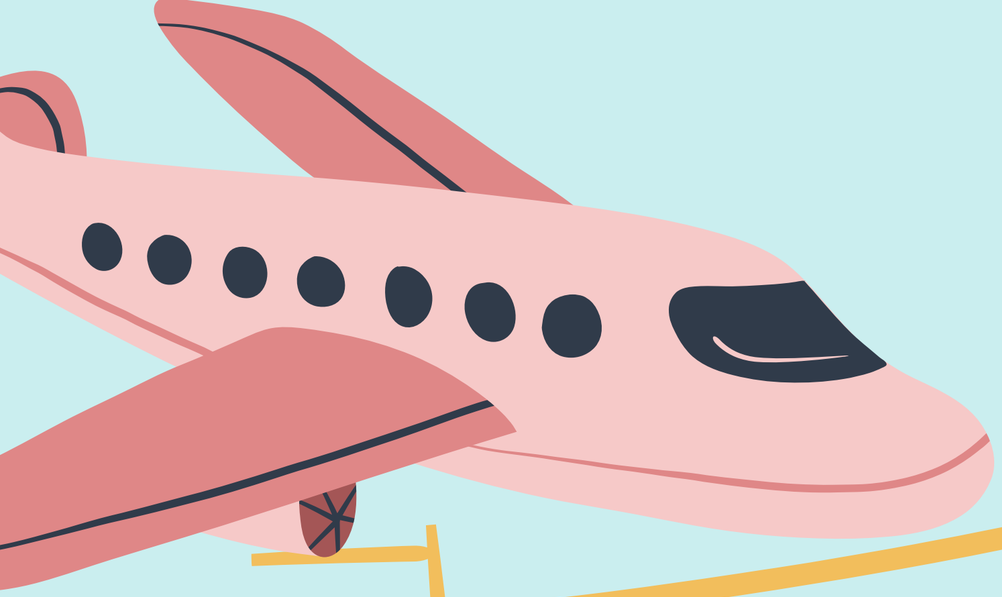
AIRCRAFT RISK ASSESMENT

Identifying the Lowest Risk Aircraft for New Business Endeavor



Overview

->The company is expanding into the aviation industry and needs to understand the risks of operating aircraft for commercial and private enterprises. But the company does not know anything about the potential risks of aircraft.

->The company needs help in determining which aircraft are the lowest risk for the company to start this new business endeavor.The analysis of past incidents will determine aircraft types that have minimal risk of accidents. This will, in turn, guide the company in investments into models to ensure safe and cost-effective operations as they venture into the aviation market.

->Data analysis and visualization using Tableau and Python in uncovering accident data trends and patterns, then applying descriptive and inferential statistics for meaningful insights.

Business Understanding

->The company is expanding into new industries to diversify its portfolio. Specifically, they are interested in purchasing and operating airplanes for commercial and private enterprises, but do not know anything about the potential risks of aircraft.

->The business problem is to Determine which aircraft have the lowest operational risk to minimize accidents, fatalities, and costly liabilities.

->The objective of the business is to select an aircraft make and model that has had lower accident and fatality rates.

Data Understanding

->Understanding the structure and content of the aviation accident data set is crucial for making informed recommendations about aircraft purchases.

->This dataset represents aviation accidents, giving insight into their occurrences over several decades.

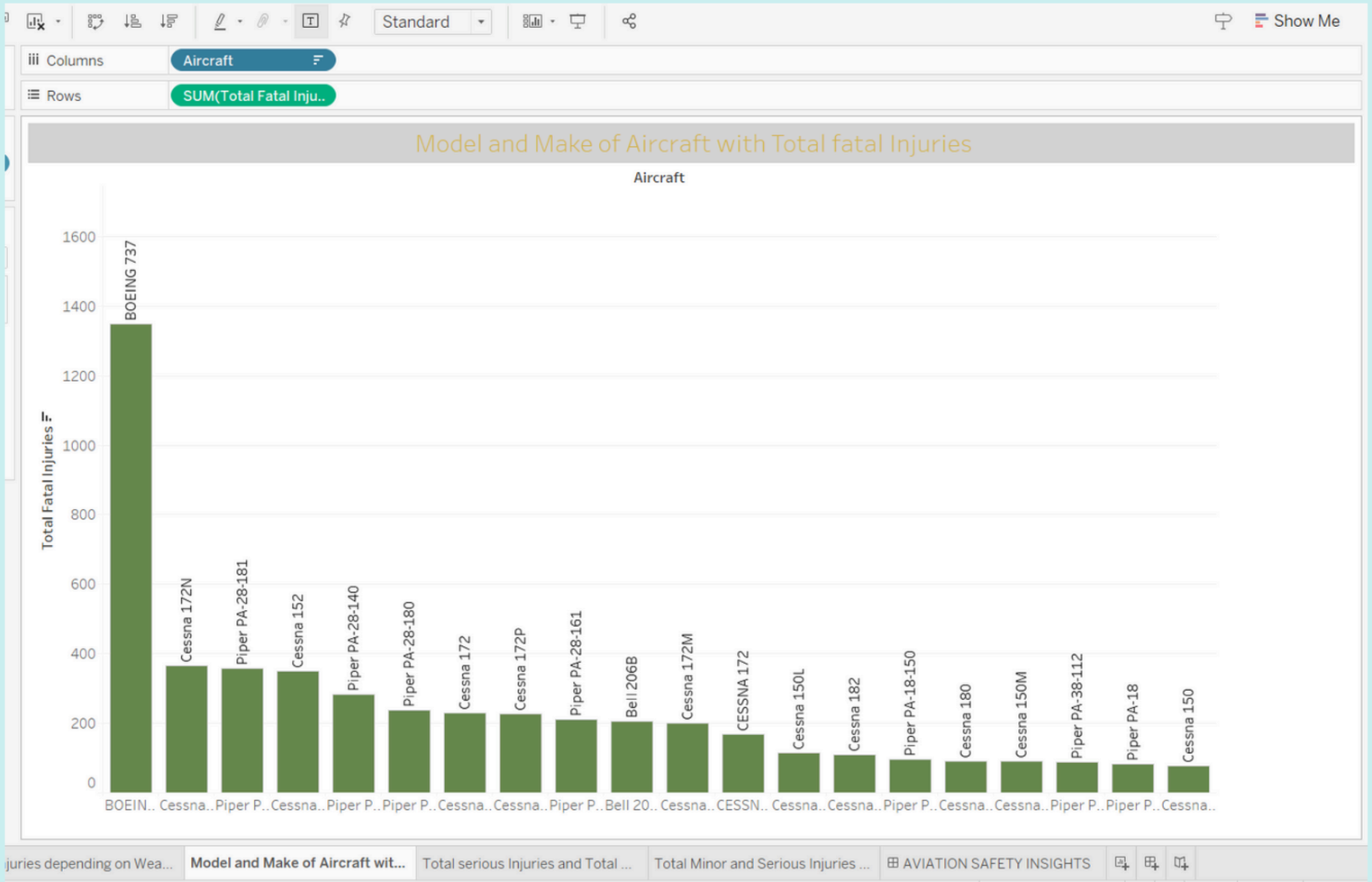
->The dataset contains 88889 rows and 31 columns. Some of the relevant columns are Make, Model, Accident Severity, Total Fatal Injuries, Purpose of Flight, Weather Conditions and Weather Conditions. This columns will be crucial for making the correct analysis.

->Accident severity and fatalities are critical for determining risk levels and making safe recommendations

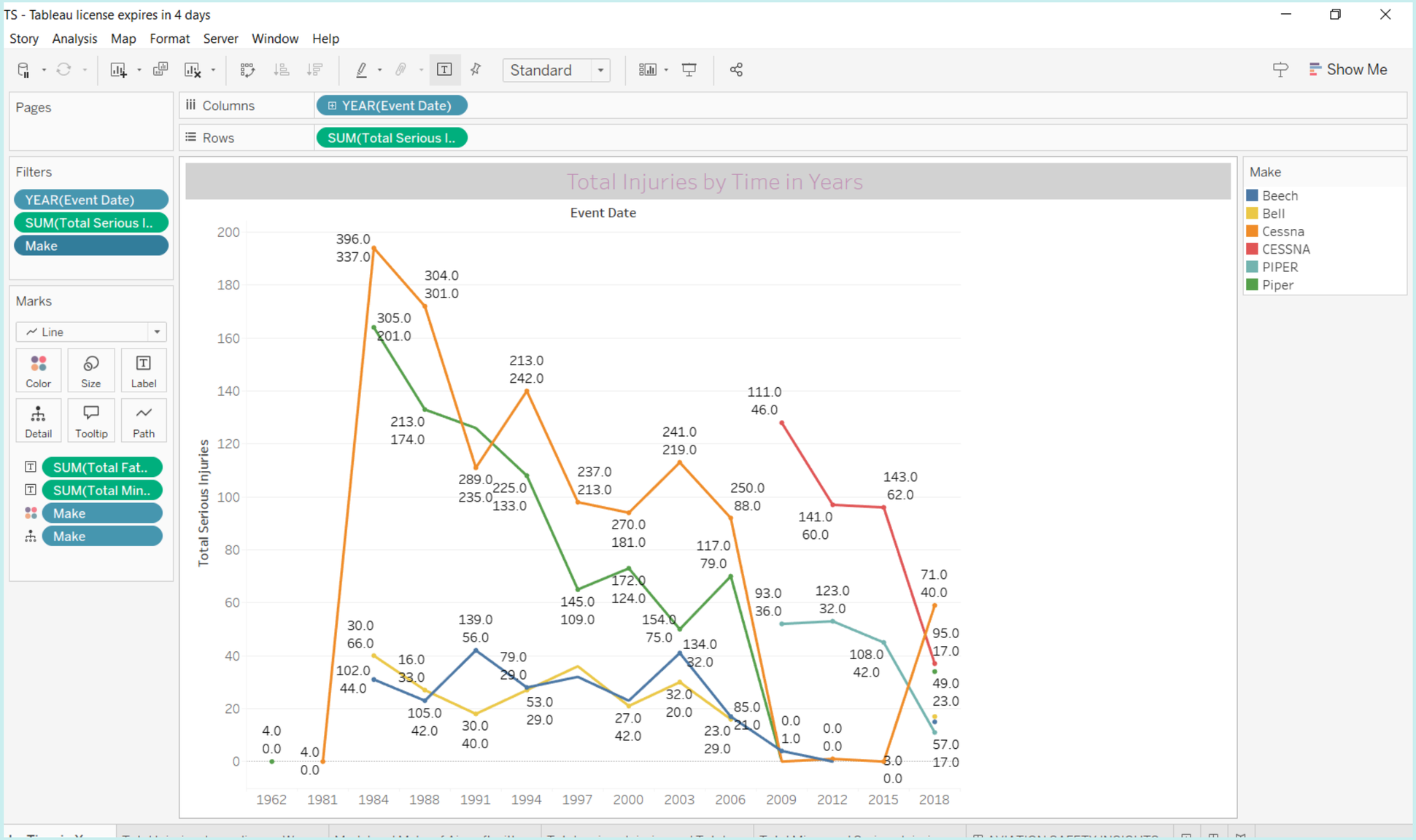
Data Analysis

Descriptive and inferential statistical methods have been applied in this analysis to deduce insights that could inform business recommendations.

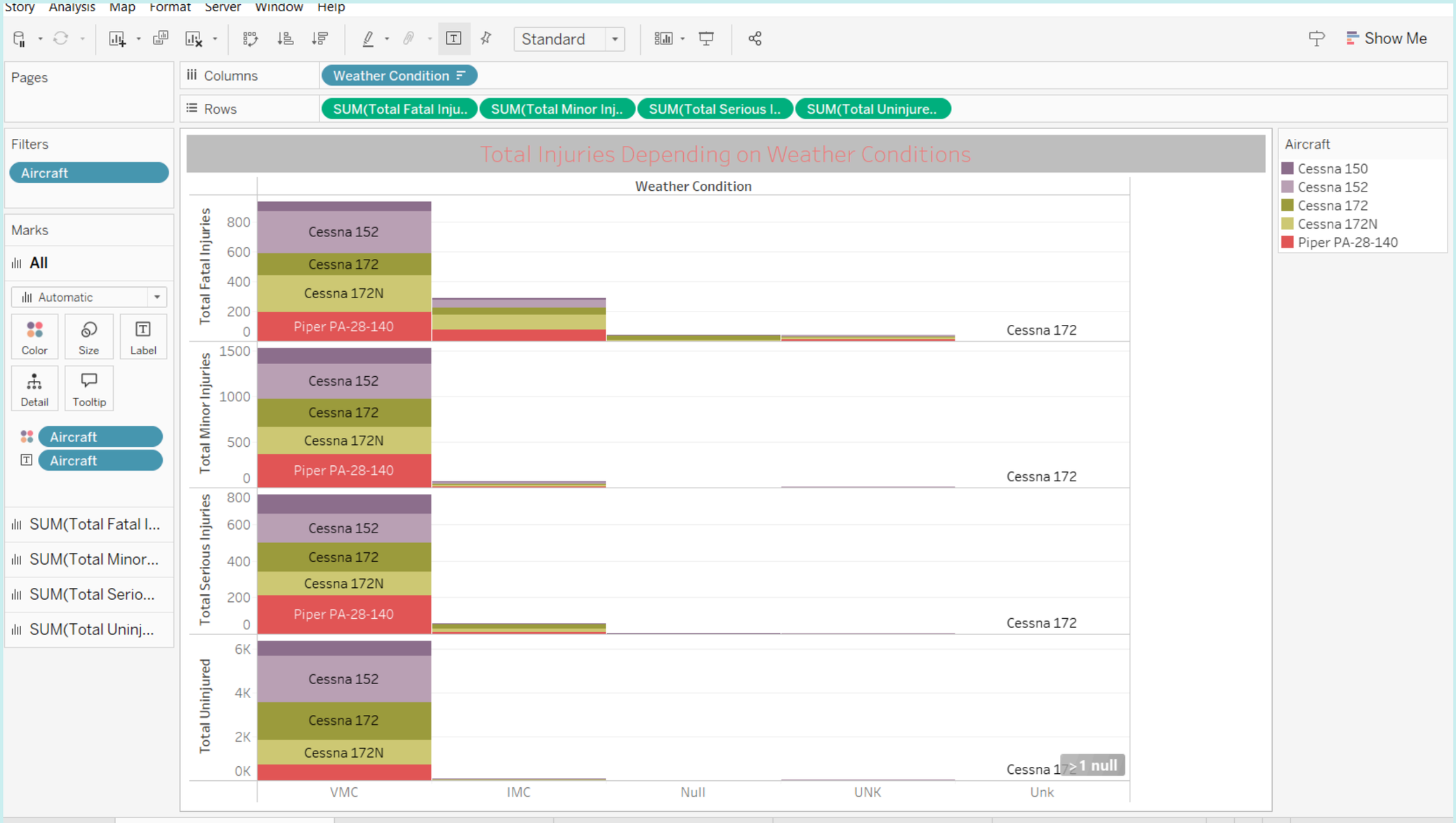
1.Total Fatal Injuries by Aircraft Make and Model Analysis



2.Total Serious Injuries by Time in Years



3. Total Injuries Depending on weather



Recommendations

1. Emphasize Aircraft with the Lowest Accident Rates:

Aircraft models that consistently show better performance on the accident record should be selected for purchase. This would minimize operational risks and liabilities.

Recommendation: Avoid the Aircraft Make Cessna since it has proven to be among top in most fatalities and accidents and that is not good for business.

2.Select Aircraft from Fewer Critical Accidents Manufacturers:

Certain manufacturers have significantly fewer fatal accidents and are historically safer. These manufacturers should be the focus of your acquisition strategy.

Recommendation: Preference for aircraft models from manufacturers who have shown better safety performance to minimize the occurrence of expensive accidents.

3. Prioritize Commercial or Private Operations by Risk Level:

The analysis underlines various risk profiles of commercial and private aviation. The company should, therefore, concentrate on the industry that is compatible with its risk appetite.

Recommendation: Depending on the data insights, decide whether to emphasize commercial or private aircraft operations to lower overall risk.

Next Steps

1.Operational Cost Analysis:

Further research will be conducted into the recommended aircraft models' operational and maintenance costs to ensure financial feasibility while not compromising safety.

2. Research Vendors and Markets:

You can begin negotiations with manufacturers or leasing companies based on the analysis to secure the recommended aircraft models.

3. Additional Data Collection:

Further refinement of the risk assessment and decision-making may take into consideration additional data: pilot experience, maintenance history, route conditions.

Thank You

I would like to appreciate your attention immensely. Please ask questions or/and get in touch with me for any further details you might want to know.

Prompt for Questions: Are there any questions about the data, analysis, or recommendations?

Contact Information: Name: [Grace Mwega]
LinkedIn: [https://www.linkedin.com/in/grace-mwega-122956227/]