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Aviation Dashboard

The attached Tableau dashboard will be presented to an internal group of data scientists working for an airline. The two objectives of this dashboard are:

1) Determine how to inspire confidence with the public that passenger airlines are a safe method of travel.
2) Internally discuss what methods our airline should take to ensure the safety of our passengers.

My methodology for designing this dashboard was to place graphs pertaining to objective 1 on the top row and graphs pertaining to objective 2 on the second row. I placed the most impactful graph on the top left as this is the first place a viewer will look. I used a cohesive color scheme which is accessible to those with a vision impairment and includes a variety of graph types to prevent confusion.

The line graph on the top row is designed to clearly showcase that overall, passenger plane accidents have been on the decline. The stacked bar graph expands on the line graph by showing that only a fraction of aviation accidents involve passenger planes. The final graph on the top row is a side-by-side graph which highlights outliers that should be considered exceptions, not the norm. Additionally, this graph shows that no planes "disappear" over the ocean as is a common trope in entertainment media. This graph was originally a box-and-whisker plot, but I switched it to a side-by-side box plot as I'm unsure how adept the public is with interpreting box-and-whisker plots.

The bar graph on the second row shows the plane types that have the most appearances in accidents and the heatmap tallies which engines are involved in accidents. I have filtered both charts by plane types and engines associated with planes that had a first flight in the 21st century. Mechanical issues associated with planes prior to the 21st century have likely been adjusted for in modern aircrafts. The pie chart displays which phase of a flight incidents occur. Safety efforts can be focused on phases that show the greatest accidents. Safety efforts can be focused on phases that show the greatest accidents.

The main concerns I have about this dashboard are:

- It would be worth noting some of the different regulations that have made air travel safer since the 1940s when the graphs begin. Negative trend line in year over year incidents did not happen organically but rather as a result of increased oversight.
- The business should not base decisions solely on the bottom row of graphs. When an engine or a plane type is in an accident, it could be due to an unrelated matter such as pilot error. These graphs provide guidance as to where the business should look to uncover problems, but they are not concrete evidence of a problem.
- Although it is noted in the titles of the graphs, for transparency it should be made clear when presenting this dashboard that the plane type bar graph and engine type heat map have filtered out data prior to 2000 to only show modern technology.

REFERENCES FOR TABLEAU DASHBOARD

- The Aviation Safety Network. (n.d.). Safety Occurrences by Aircraft Type. Retrieved December 20, 2023, from https://aviation-safety.net/database/type/index.php.
- The Aviation Safety Network. (2021). Accidents and Fatalities per Year. Retrieved December 20, 2023, from https://docs.google.com/spreadsheets/d/1SDp7p1y6m7N5xD5_fpOkYOrJvd68V7iy6etXy2cetb8/edit#gid=661081734.