

# Create a Tableau Story Write-Up

## Summary

The main objective of the project was to create a data visualization using Tableau that tells a story or highlights trends or patterns in a data set. The main dataset used in the project contains information on the United States flight delays and performance in 2008 and comes from RITA. In the project, I have focused on highlighting general trends and patterns especially important from a passenger perspective, and factors minimizing risks related to delayed or cancelled flights.

The story is [published to Tableau Public](#).

## Design

### Dashboard1

The first view shows the carriers' landscape in the US. Three big numbers and a horizontal bars chart are used to show the 'market share' by carrier, by number of flights and number of hours spent in the air. Consistent, blue palette is used and different font sizes to make numbers more stand-out.

### Dashboard2

The view shows some patterns from two time-related perspectives (daily and monthly), with colors differentiating carriers (line charts for continuous data comparison). The view should be looked at with filters applied as displaying all information at once may not be much readable (the view is preset by default with some filters).

### Dashboard3

Three charts reveal information regarding delays and cancellations. Line charts show average and maximum delay trends and a cumulative bar chart shows clearly the distribution of cancellation reasons in each month.

### Dashboard4

Here is another view on delays, state-based average distribution. For such kind of information (geographical) a map seems to be a good choice. Below a box plot chart where more in depth information can be revealed regarding each state and city/airport.

### Dashboard5

The main objective of the view is to compare arrival and departure delays. To do this, side by side data is presented allowing to see with ease that there is not much difference between arrival and departure delays. Graphical (map, color, size of points) and numerical information (basic descriptive statistics and bubble size legend) is used to complete the picture.

## Dashboard6

To confirm correlation between arrival and departure delays and see the correlation in a 'by carrier' view scatter plots (and colors differentiating carriers) are used. An appropriate legend allows better understanding.

## Dashboard7

Shows flight paths with cancelled flights. As the information involve different airport locations and lines connecting them, a map view is the best choice for visualization.

Whenever possible and makes sense I made the dashboards interactive, so it is possible to play with data and find other insights than presented in the summary boxes in the Tableau story. The same applies to filters which by default should support the summary description for each story screen.

## Feedback

There were 2 people asked for feedback with the following result:

### Person 1

Feedback	Action
On Dashboard2 change the filter name from 'Manufacturer' to 'Airplane Type' for better clarity.	Change done.
On Dashboard4 change the map title from 'Average Delay by State' to 'Average Arrival Delay by State'.	Change done.

### Person 2

Feedback	Action
There should be less text in Tableau summary boxes.	Text reviewed and shortened whenever possible.
On Dashboard1 change colors of the big numbers to blue.	Change done.
On Dashboard2 change the chart title from 'Flights Monthly' to 'Flights Monthly per Manufacturer'.	Change done.
On Dashboard2 it would be nice to know why American Eagle Airlines stopped operating in September 2008.	I have checked and it seems the lines <a href="#">bankrupted</a> and then emerged under American Airlines. I have added this information to the summary.

On Dashboard 3 add to summary a comment about Security (not influencing much flights cancellations).	Change done.
On Dashboard 6 add to summary a comment about Aloha Airlines arriving and departing ahead of schedule.	Change done.

## Resources

1. [Combine year/month/day into a date column](#)
2. [Resolve encoding error for datasets after year 2000](#)
3. [Data blending in Tableau](#)
4. [Create maps that show paths](#) and [here](#)
5. [Calculated field of percent of total](#)
6. [Solution to opening a .twb file in Tableau 2018.3](#)

## Data Files

Source	Comments
2008.csv	Main dataset downloaded from RITA, downloaded from <a href="http://stat-computing.org/dataexpo/2009/the-data.html">http://stat-computing.org/dataexpo/2009/the-data.html</a>
Airports.csv	Supplementary file with airport names from <a href="http://stat-computing.org/dataexpo/2009/supplemental-data.html">http://stat-computing.org/dataexpo/2009/supplemental-data.html</a>
Carriers.csv	Supplementary file with carrier names from <a href="https://exploratory.io/data/kanaugust/9876993836892339">https://exploratory.io/data/kanaugust/9876993836892339</a>
Plane-data.csv	Supplementary file with plane manufacturers data from <a href="http://stat-computing.org/dataexpo/2009/supplemental-data.html">http://stat-computing.org/dataexpo/2009/supplemental-data.html</a>
FlighPaths2008.csv, FlighPaths2008_summary.csv	Transformed 2008.csv file to be rendered by Tableau in a way paths can be showed on a map (Dashboard7). Prepared using FlightPaths2008.ipynb.