Insight 1

The first insight I gained from this series was that there was significant skewing caused by airports with very low flight numbers. I decided to remove all airports with fewer than 120 flights throughout 2015.

With the new dataset, we can see that Jackson Hole Airport had the greatest average flight delay time, with an average of 18.45 minutes over the course of 2015. Hilo International Airport had the lowest flight delay average over 2015, and actually ran 1.74 minutes ahead of time on average. It was one of only 3 airports to achieve a schedule-beating average, along with Easterwood Airport and Billings Logan International Airport.

If I was to remake this dashboard, I would set the colour filter so that only negative values appeared in blue, which is not currently the case when there are no negative values in a given month.

I used a line chart for this dashboard, along with a geographical map. The line chart allows a user to accurately compare one airport to another in an organized list, which is easier than using shades of orange and blue to compare two similar results. The colour map, however, allows a user to visually identify a cluster of poor performing airports (such as the right and lower-right side when selecting the data for March). The orange/blue palate was chosen as the two colours are visually distinct and, according to the Tableau documentation, is a common colour blindness friendly palette.

Insight 2

For this insight, I wanted to see what entity was at fault for the delays experienced across the year. At first, I expected to use a pie chart, but there's a lot more data density in this version.

I created this by creating 3 calculated fields. Combining the 'air system delay' and 'security delay' columns gave me airport related causes, combining the 'airline delay' and 'late aircraft delay' columns gave me airline related causes, and 'weather delay was used by itself. As these are based in minutes, I divided these by 60 to give the total number in hours, as I find that to be more easily understood.

We can see that airline caused delays are 2-3 times airport caused delays, depending on the month. They are also much more variable than airport caused delays.

Weather related delays are the smallest category, but peak in February, June and December.

Overall delays peak in June and July, with the lowest amount of delays in September. It would be interesting to view this as a ratio of total flights to see the impact of demand loading.

There was a lot of data within this insight. I decided to use side-by-side bars as it allowed for a direct comparison between the three delay categories, trend comparison for the same categories over the course of the year, and also overall delay trend between months. I was really pleased with how many insights could be gleaned from this one visualization. I added red as the third colour as it seemed visually distinct from the orange and blue.

Insight 3

https://public.tableau.com/app/profile/thomas.pincher/viz/2015USflightcancellationreasons/Dashboard1?publish=yes

I'm not graphically happy with this, but I was struggling to make the pie chart do what I wanted to. Microsoft Excel has a bunch of presentation features that I either couldn't find, or Tableau doesn't have. Regardless, this does show the insight I found, and it complements the previous insight well.

Weather issues account for more than half of all cancellations for 2015, which was interesting considering it was consistently the smallest amount of delays when measured by hours lost. This makes intuitive sense, as we have good meteorological systems to predict weather, but it's hard to predict when an airline system will go down or security threat will emerge.

It was also interesting to see that June through to September it was airline/carrier issues that caused the most cancellations. Again, this makes intuitive sense as those are the Summer and early Autumn months for the Northern hemisphere.

This final visualization was my least favourite of the three. I had found the insight and wanted to find a way to convey that properly, and an area-based chart got the message across the best. Originally, I just wanted to use the pie chart but added the bar chart to reinforce the point. I do like that it's responsive, and again the orange/blue/red colour scheme was chosen as they are visually distinct and colour-blindness friendly.

Additional resources:

N/A