https://github.com/miraculixx

US Flight Delays 2003 - 2017

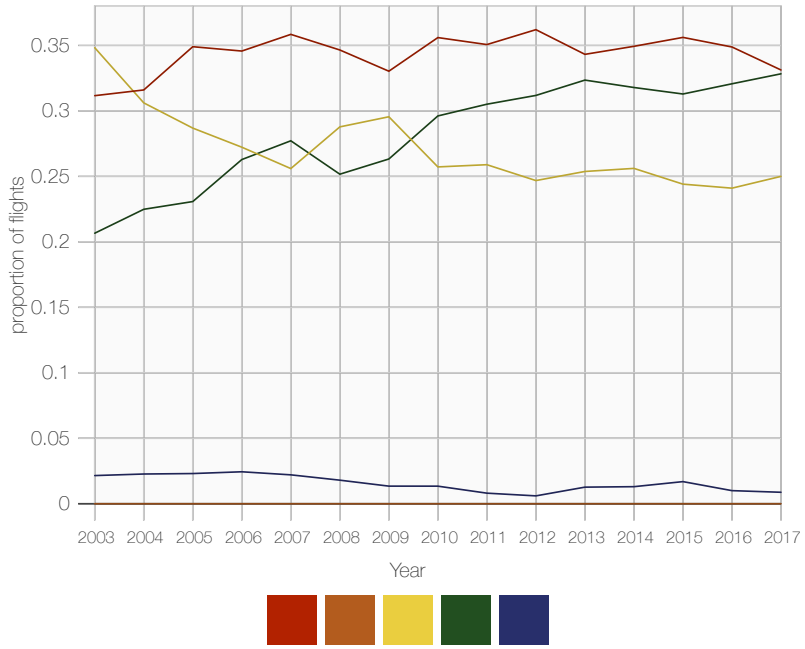
by Patrick Senti, patrick.senti at gmx.net

Flight delays are a cause of dissatisfaction for most if not all airline passengers. This story looks at the cause of flight delays using data provided by the US Bureau of Transportation Statistics, https://www.bts.gov/ (https://www.bts.gov/) throughout the years 2003 - 2017.

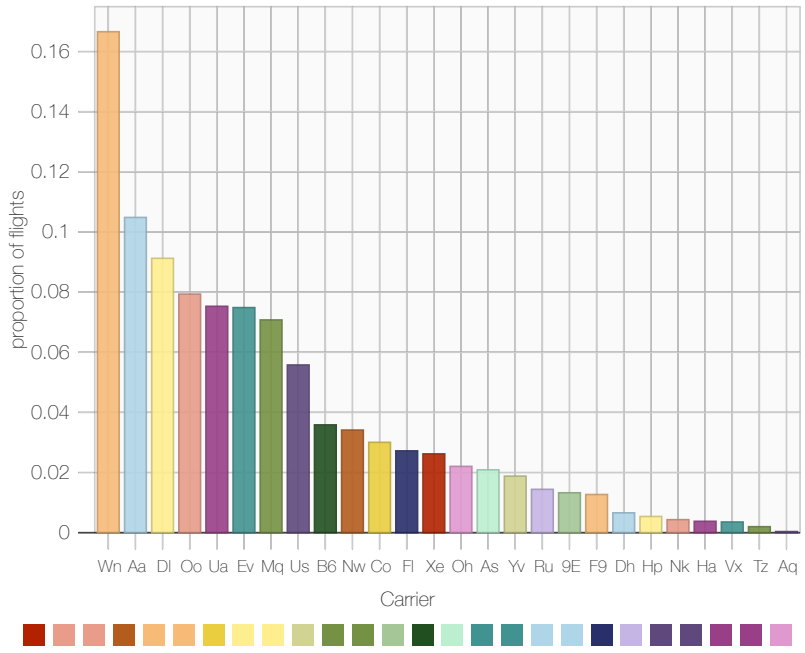
What's causing delays?

The majority of delays (33%) are caused by carriers (red line). The second largest group in 2003, the National Aviation System (NAS) has reduced its impact on delays from 35% in 2003 to 25% (yellow). While this indicates an efficiency gain in running the NAS, however this trend could also mean a statistical shift in the data. Consider that late arriving aircraft (green) as a cause of delays have increased dramatically and are now the cause of 33% of all delayed flights. Late arriving aircraft are reported when a previous flight with the same plane was delayed - no matter what the cause.

It is interesting that delays due to extreme weather conditions which stop any flight from departing or landing are rare and well below 5% (blue). The same is true for delays cause by security measures.



Which carriers cause the most delays?

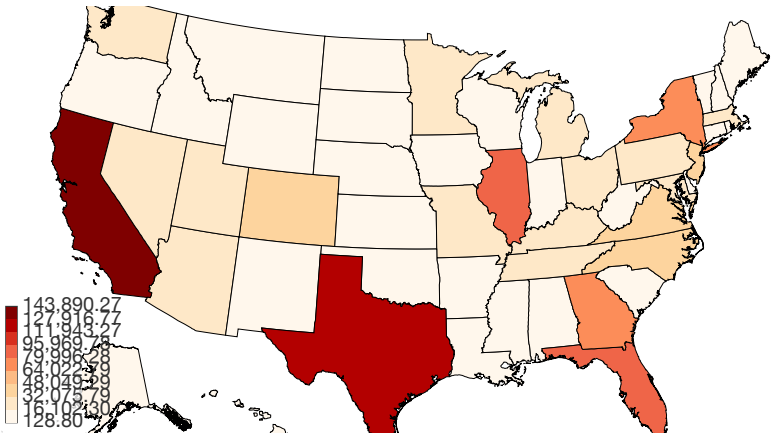


One third of all delays between 2003 and 2017 have been caused by just three airlines. The next third is caused by 5 airlines. The remainder 18 airlines have caused the remainder of delays.

In which regions do most delays occur?

On average most delays happen where there are the most flights:

- California (Los Angeles, San Francisco): 721'675 flights p.a., 143'890 delays (19.9%)
- Texas (Dallas): 677'255 flights p.a., 124'937 delays (18.4%)
- Illionois: 399'980 flights p.a., 87'741 delays (21.9%)
- Floria: 416'222 flights p.a., 85'269 delays (20.4%)



References

- Data source: Monthly US Flight Cause Delays Bureau of Transportation Statistics, Flight cause delays, 2003 - 2017 (https://www.transtats.bts.gov/OT_Delay/ot_delaycause1.asp?type=3&pn=1)
- Software libraries: d3, d3plus, jquery, underscore, backbone, marked

Comments

Add a comment (https://github.com/miraculixx/flightdelays/issues)

found 3 comments

4 - The first graph should have better color coding

for the first graph, I noticed the coloring for the line graph was hard to distinguish, when referring to the legend. This issue was resolved when the user hovered over the line. (comment by Raul M.)

3 - The second graph should have less gridlines

Coming to the second graph, I noticed the gridline in the background. It didn't truly distract me from the graph, but it can be a cause of distraction for visualization, per lesson plan. (comment by Raul_M.)

2 - Change variable labels to plain english

"Arr_Del15" is better to change to "Arrived Delay"(or something else) with a percentage value in the second chart. (comment by fxietech)