

Aircraft Safety Analysis (and other good things)



**By Todd Strain
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Virtucon and Aviation



- Virtucon wants to diversify into commercial aviation
- To succeed in the commercial aviation we want to focus on three areas
 - 1) Safety
 - 2) Environmental Impact
 - 3) Efficient Operations

How will we do this?

We will use data analysis with python on these datasets to determine the best solutions to our focus area ideas.

- NTSB Aviation Data
- BTS T100 Domestic Flight
- ICAO US Airports
- ICAO Aircraft Emissions
- FlightSaftey.org Engines
- Wikipedia Population

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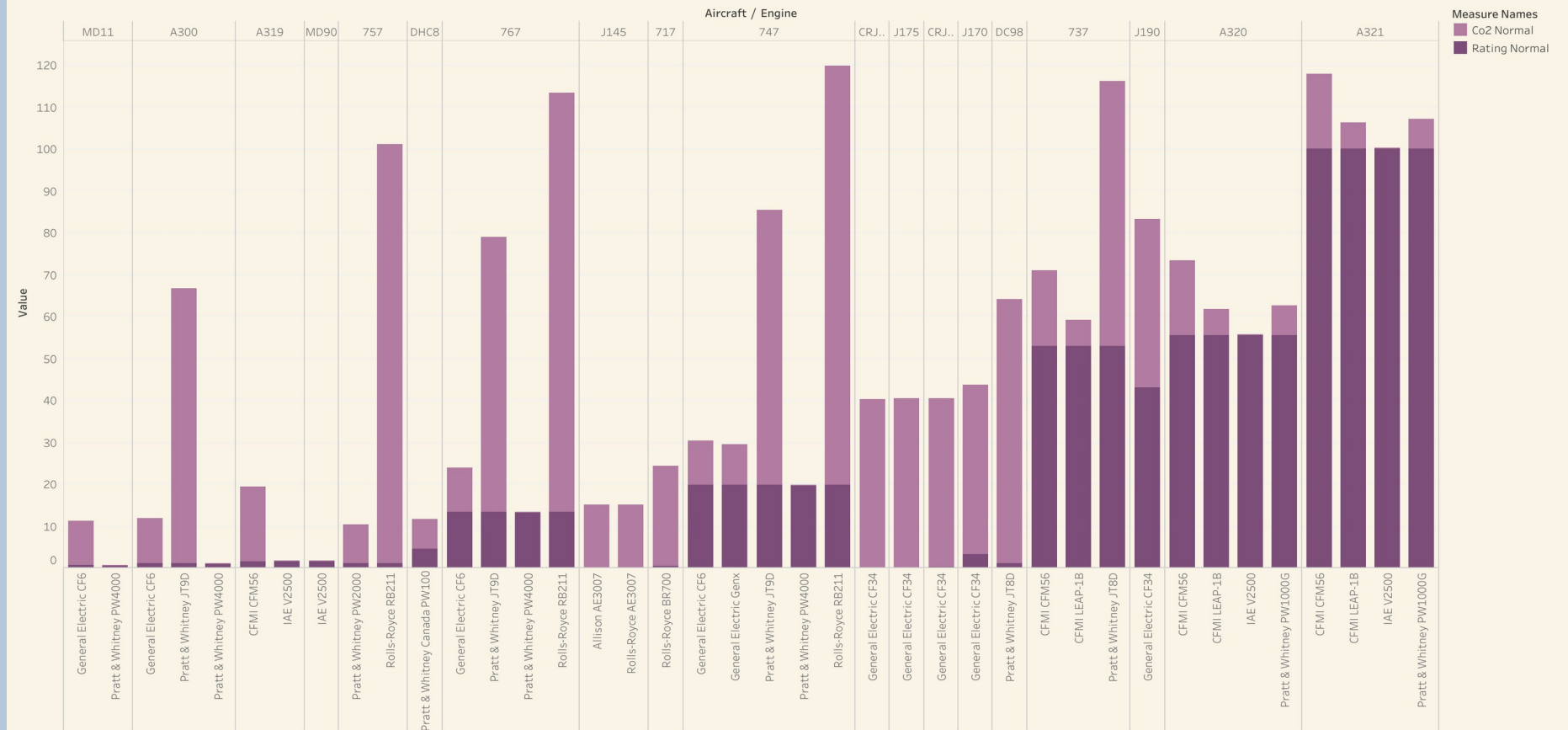
Data Processing

- We matched airplane model numbers from NTSB with flight data from BTS.
- A safety score was created using NTSB data. 3 points for fatality, 2 points for serious injury, half a point for minor injury.
- Next we found engine information for each aircraft from FlightSaftey.org
- Then we match engine emissions data from ICAO and normalized the value.
- Finally airport codes and flight data from BTS was combined with population data to create FPS score.



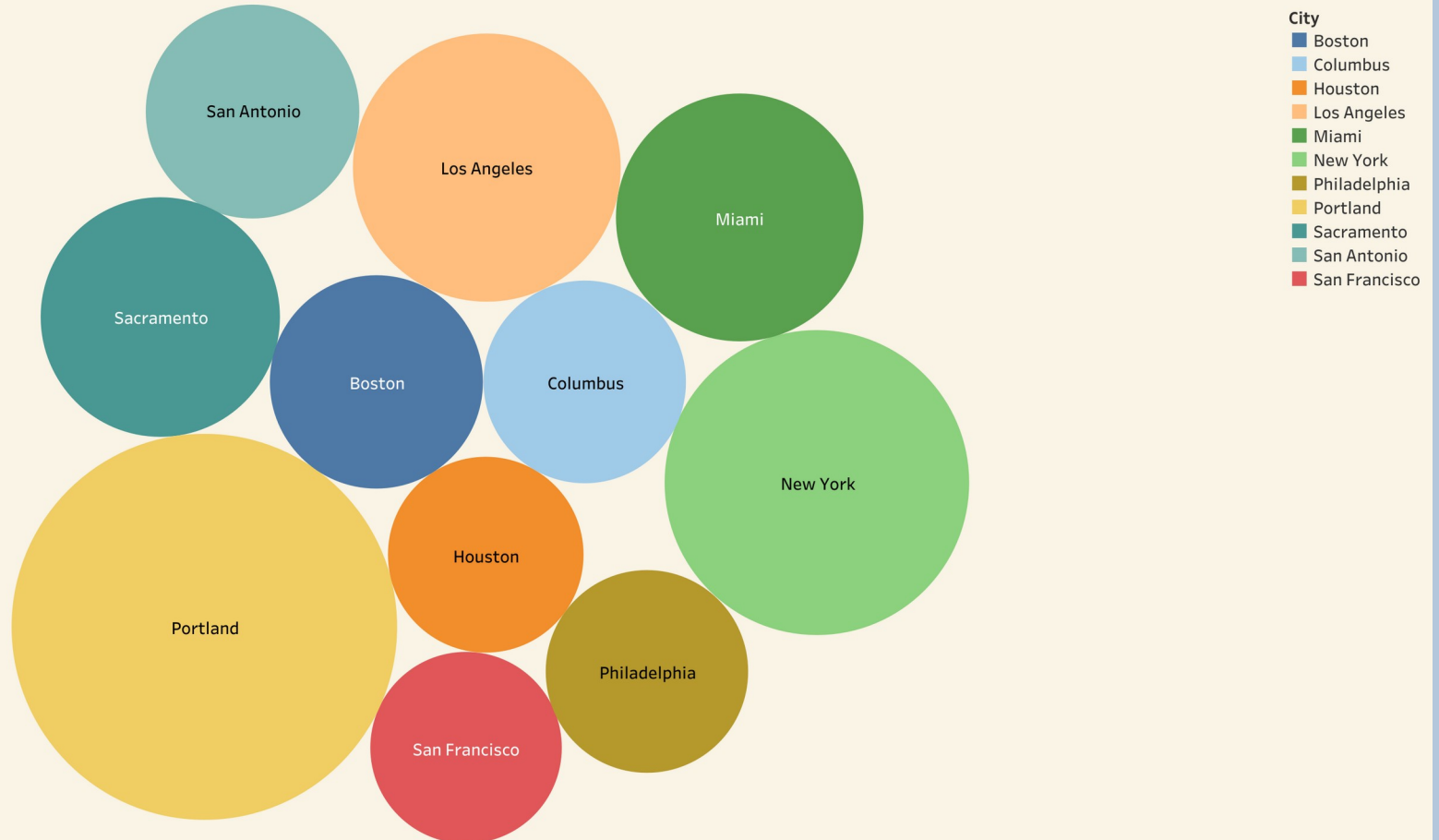
What Was Uncovered

Combined Rating



What Was Uncovered

Population Per Flight



Recomendations

Type	Narrow Body	Wide Body
Used	Airbus A319	McDonnell Douglas MD11
New	Embraer ERJ-175	Boeing 767



Recommendations

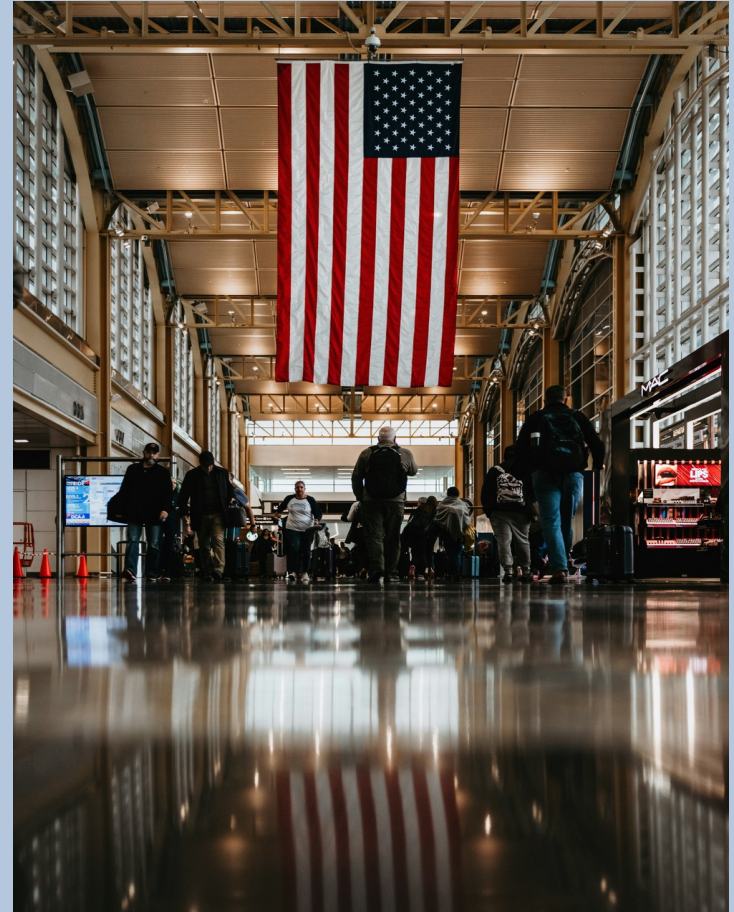
Type	Narrow Body	Wide Body
Used	Airbus A319 / IAE V2500	McDonnell Douglas MD11 / P&W PW4000
New	Embraer ERJ-175 / General Electric CF34	Boeing 767 / P&W PW4000



Recommendations

Cities with the highest population to flight ratios

	City	State	FPR
46	Portland	ME	415.729577
35	New York	NY	259.439290
27	Los Angeles	CA	200.556894
30	Miami	FL	171.359531
51	Sacramento	CA	160.136403
53	San Antonio	TX	127.566186
5	Boston	MA	127.011528
12	Columbus	OH	115.058592
43	Philadelphia	PA	114.615198
21	Houston	TX	106.999753
55	San Francisco	CA	102.549896





By using these you can avoid accidents,
oversaturated markets, and protect the environment.

What Could Be Better?

- We were limited by the quality of NTSB and Population data sets.

What Could Be Better?

- We were limited by the quality of NTSB and Population data sets.
- We only accounted for Co2 emissions, but not other emissions.

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