SPIRIT AIRLINES

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OBJECTIVE

Our objective is to conduct a comprehensive analysis of Spirit Airlines' on-time performance for the year 2023 from January to December within the US flight routes in comparison to the domestic airline industry, and our nearest competitor (Alaska Airlines) is chosen based on the criteria that it has a similar number of flights. We will be conducting a punctuality analysis for Spirit Airlines to identify segments of flights that are constantly encountering delays.

United States
Mexico
Venezuela
Colombia
Peru
Brazil
France
Italy
Spain
Algeria
Analysis I: Spirit Airline Anal
Monthly flights
Flights on each day of week
Monthly avg arrival and departure
No of cities / month
Arrival and Departure delays based
filghts cancelled based on Sta
Majority Business
Analysis II: Spirit vs Airline Inc
No. of flights
Avg distance / flight
No. of cities
% of flights
Avg dep delays
cancellations; distance vs no. of f
Diverted vs cancelled
Analysis III: Spirit vs Compet
Monthly flight count
Avg. monthly distance
Monthly arrival and departure d
Total monthly flights and cancelle
% cancelleation based on Stat
Majority business
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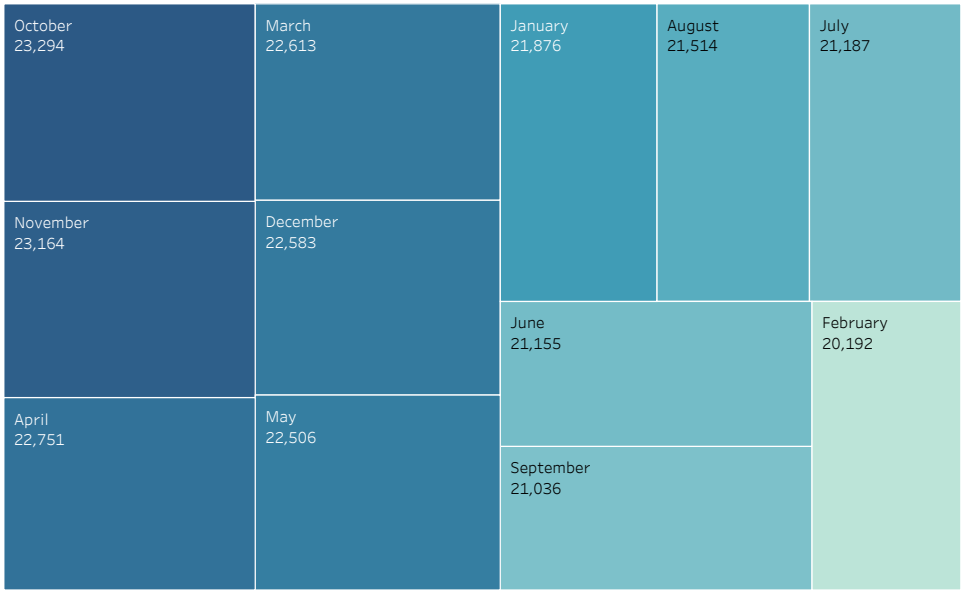
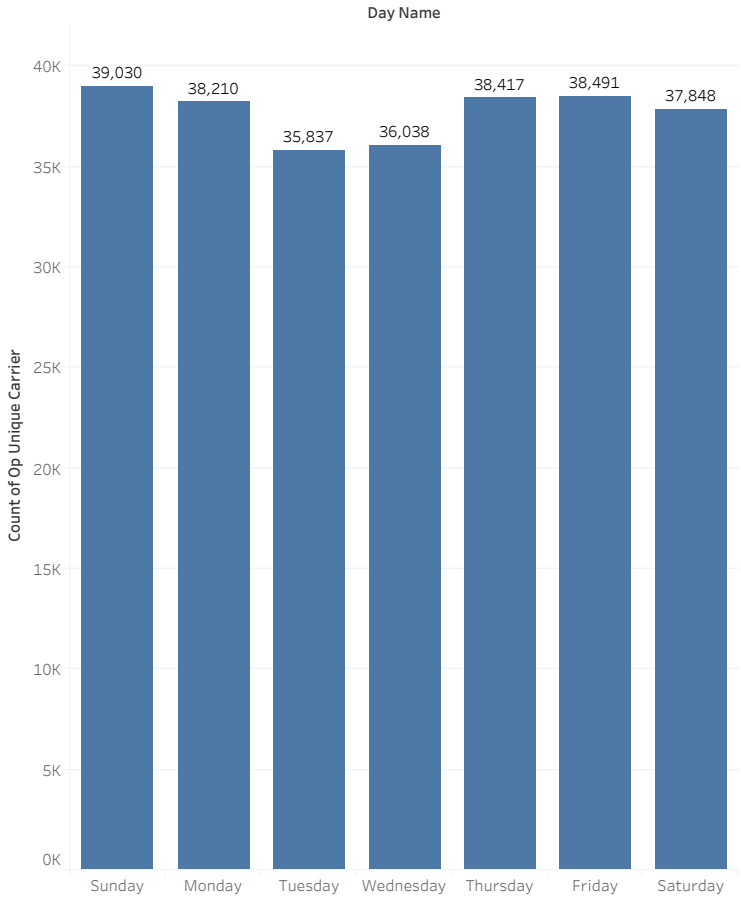
Monthly Flights of Spirit Airlines



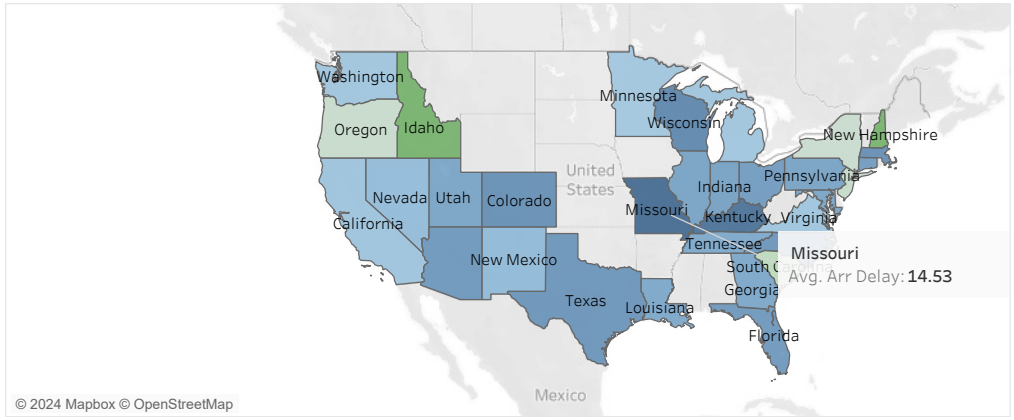
Total Spirit Airlines Flights on Each Day of the Week



Majority of the Spirit flights can be seen in the month of October 2023.

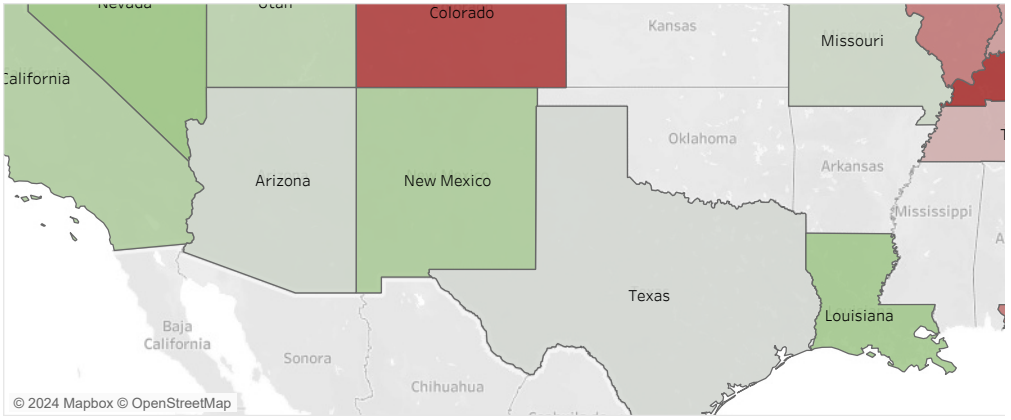
On a weekly basis, maximum number of flights fly on Sunday.

Average Arrival Delays of Spirit Airlines for Each State



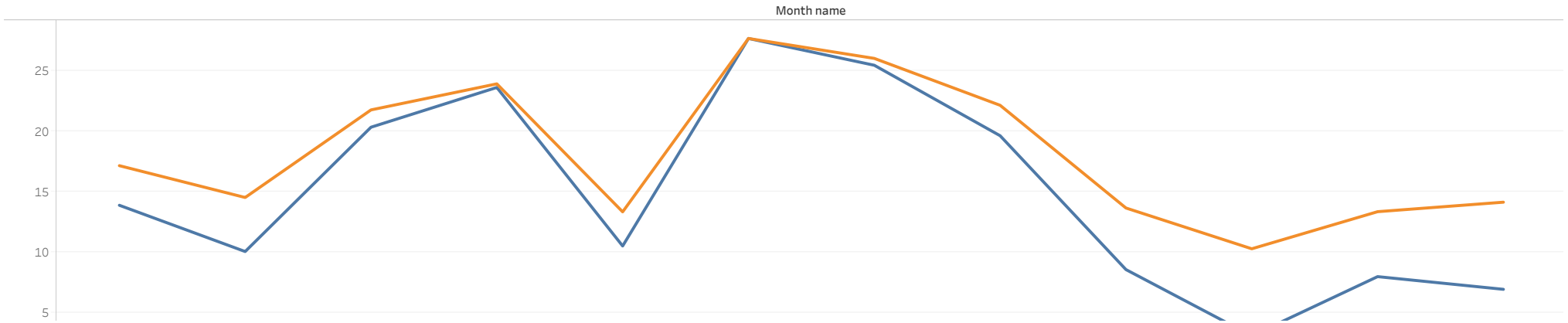
Maximum Arrival Delay : Missouri

Average Departure Delays of Spirit Airlines for Each State

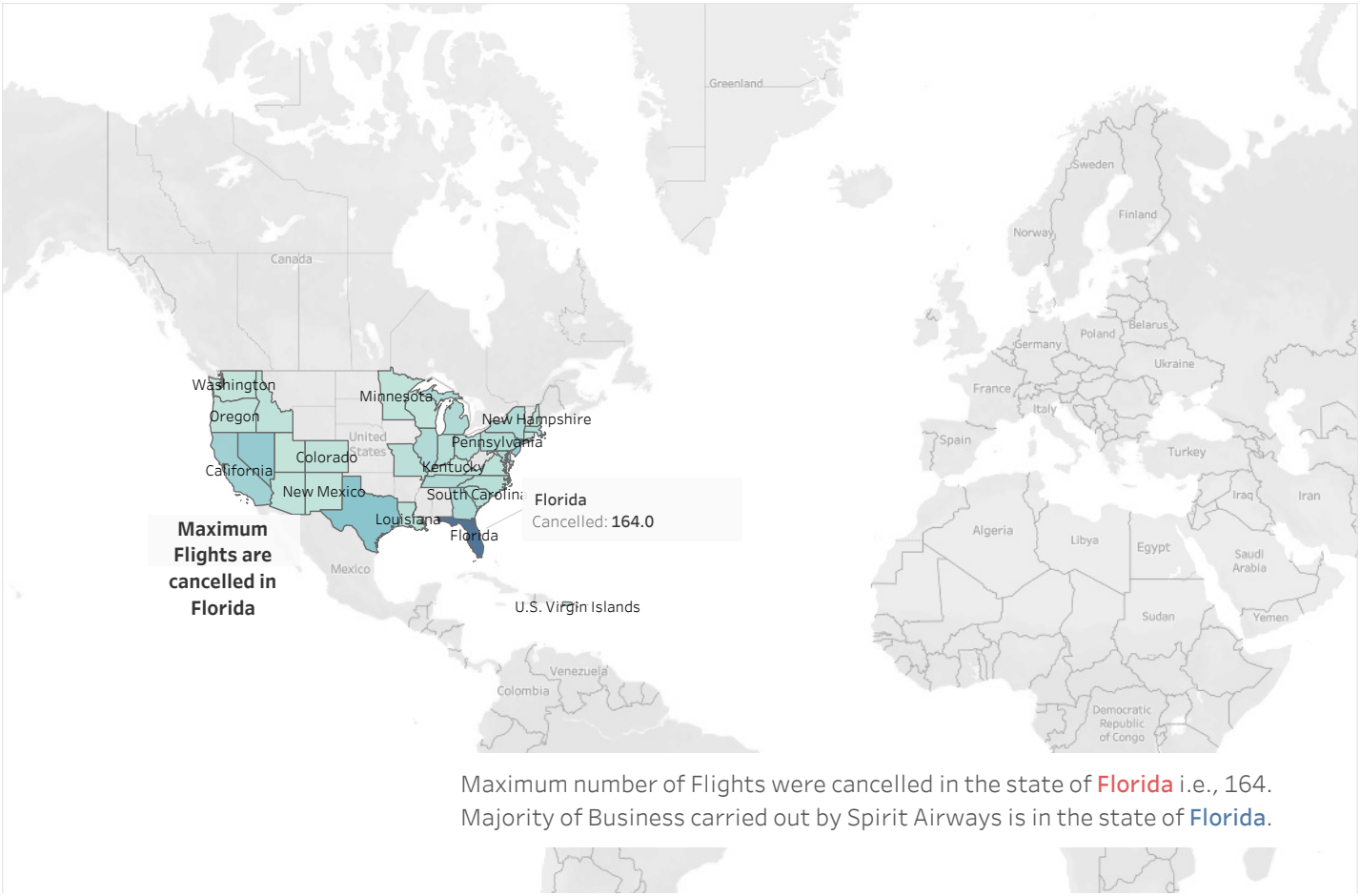


Maximum Departure Delay : Massachusetts

Monthly Trend of Average Arrival and Departure Delay of Spirit Airlines

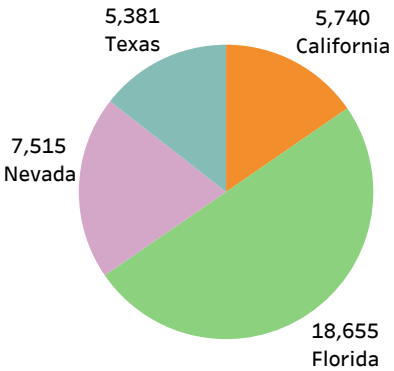


Flights Cancelled by Spirit Airlines for Each State

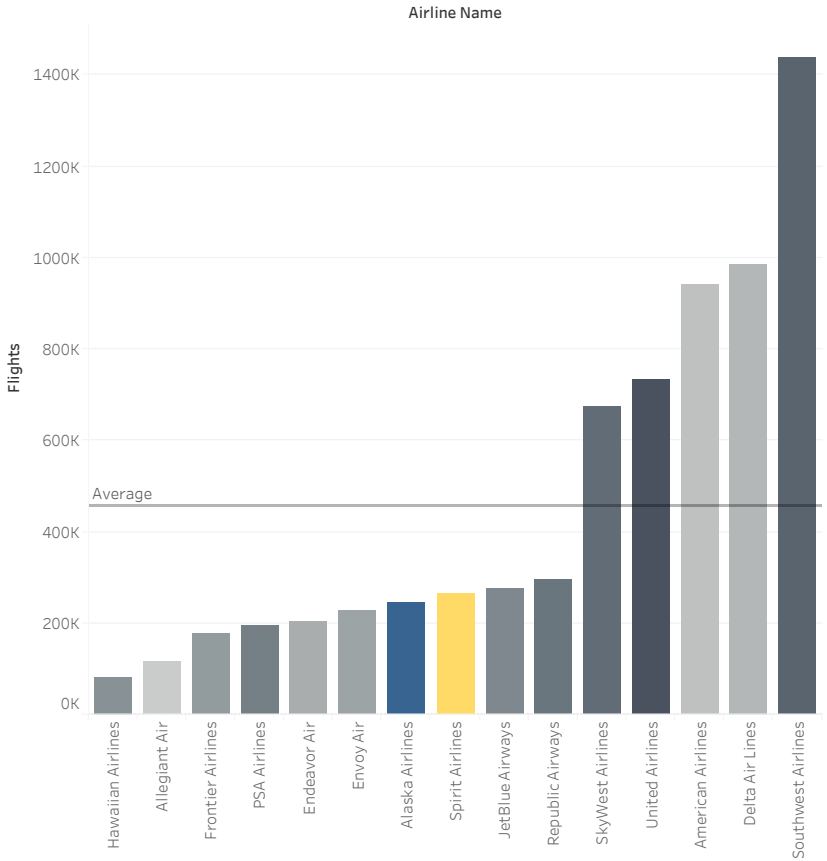


Maximum number of Flights were cancelled in the state of Florida i.e., 164.
Majority of Business carried out by Spirit Airways is in the state of Florida.

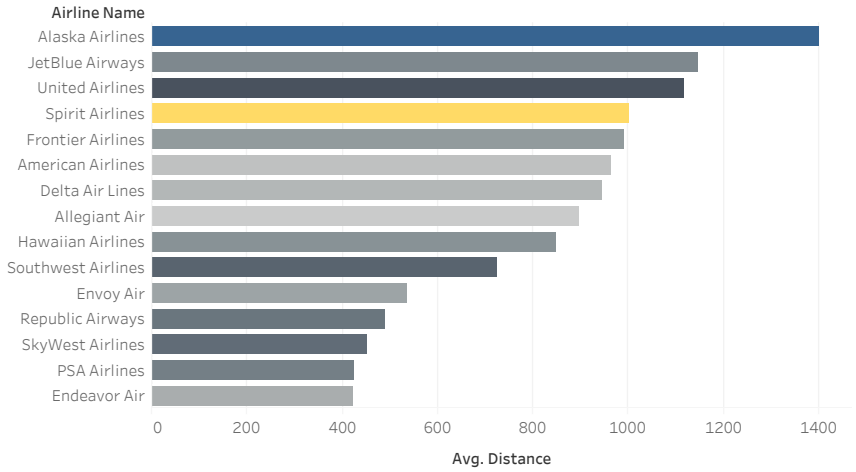
States where Spirit Airlines have Majority of their Business



Total Number of Flights



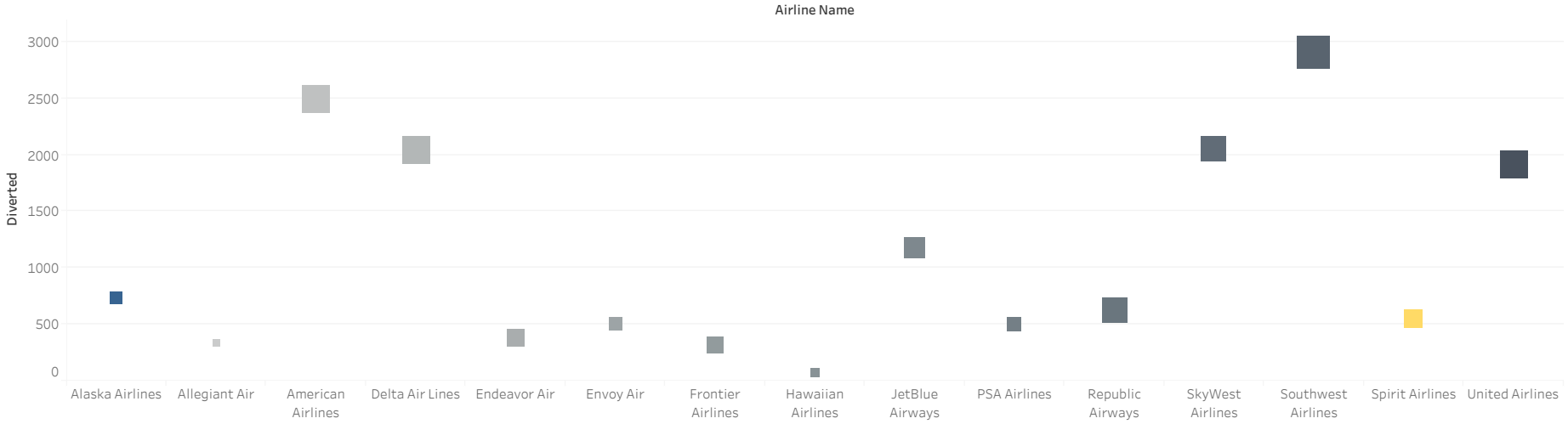
Average Distance Flown Per Flight

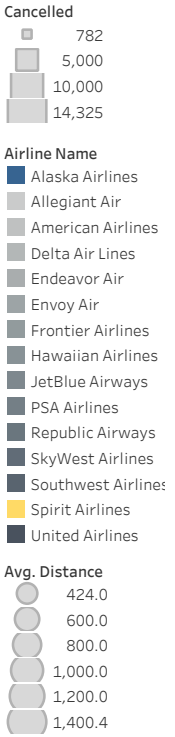


Spirit Airline remains below Average in terms of the total number of flights for year 2023

On average, Spirit Airline covers a decent amount of distance per flight on average

No. of times Diverted vs Cancelled.

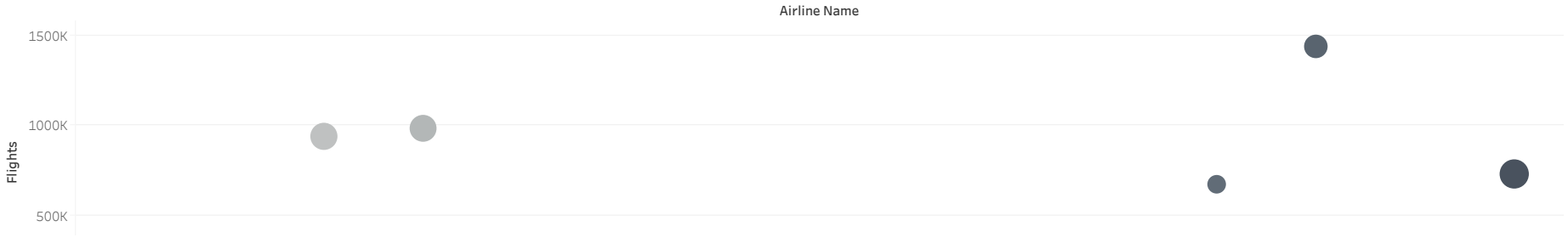




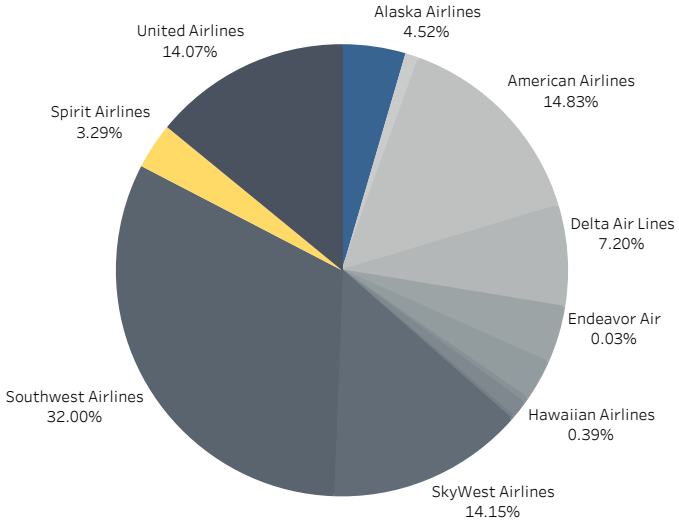
Spirit is smaller in size when it comes to diverted/cancelled flights in comparison to the industry

Spirit may not have flown as much as other contenders, but it has an impressive average distance traveled.

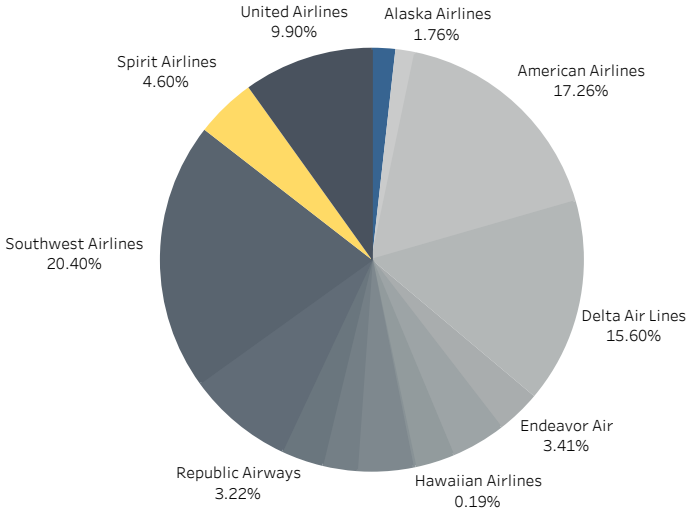
Average Dist vs Number of Flights per airline



Top 10 Largest States Catered by Carriers



Top 10 Populous States Catered By Different Airlines

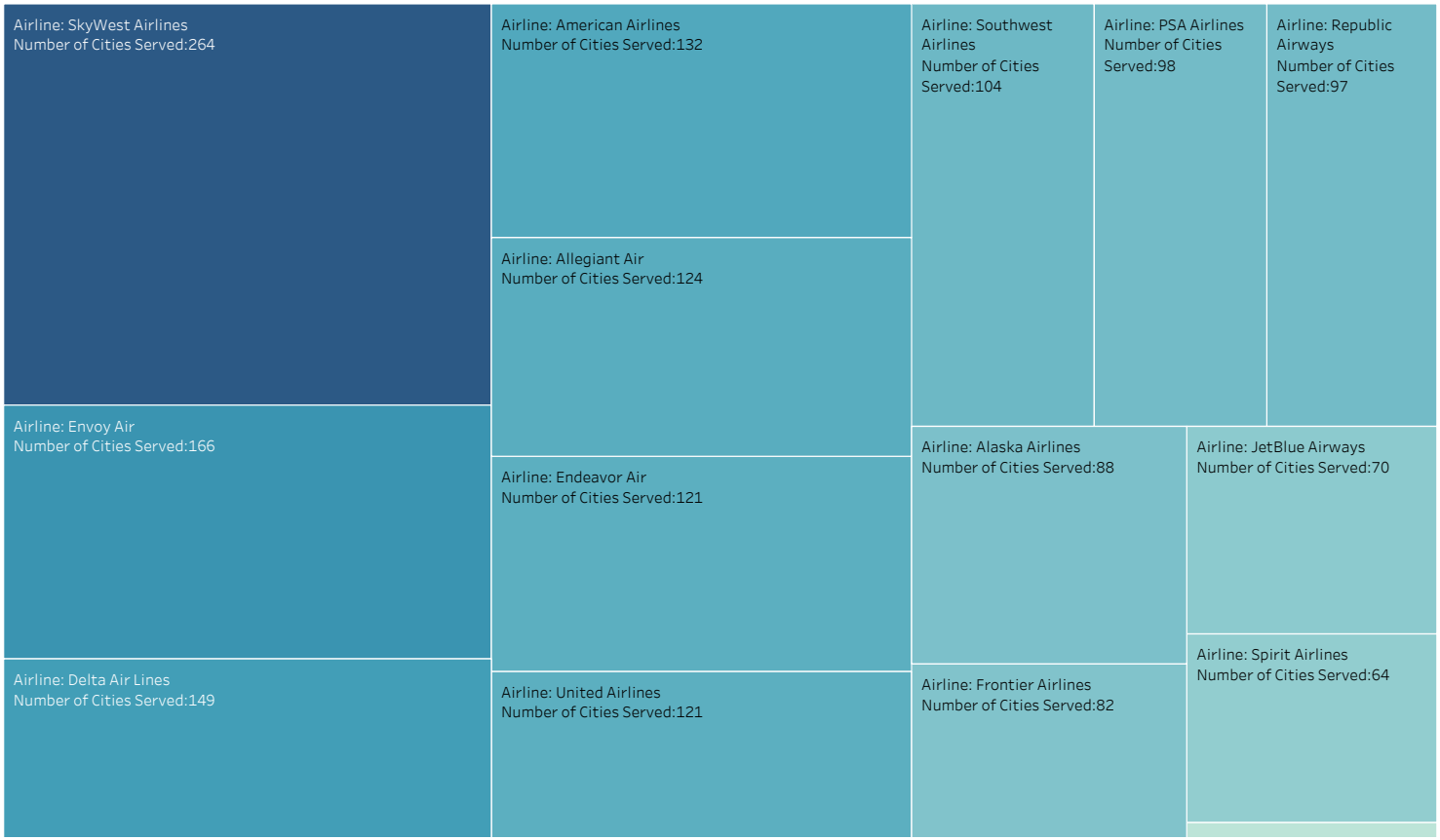


Observations:

Large states do not equal more populous states:

Spirit has a lower proportion in terms of flights to largest states in the United States, looks to instead focus on capturing flights headed to populous states, meaning states with higher concentration of people.

II_Cities_served

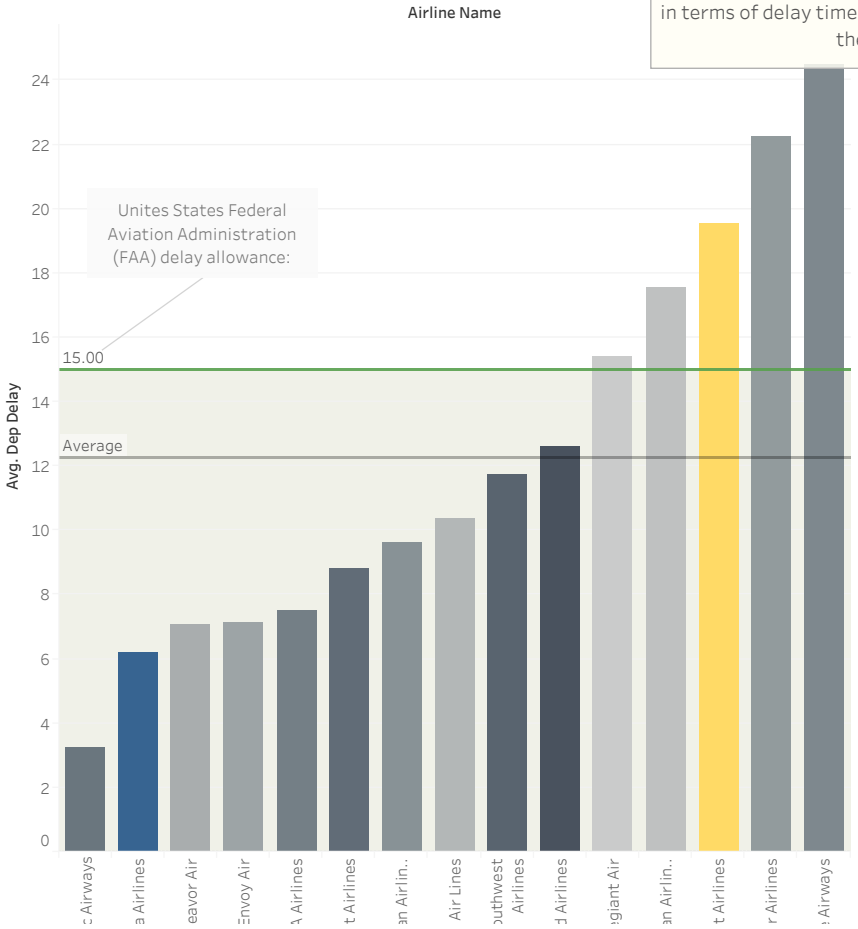


At a city level, we see a different level of detail:

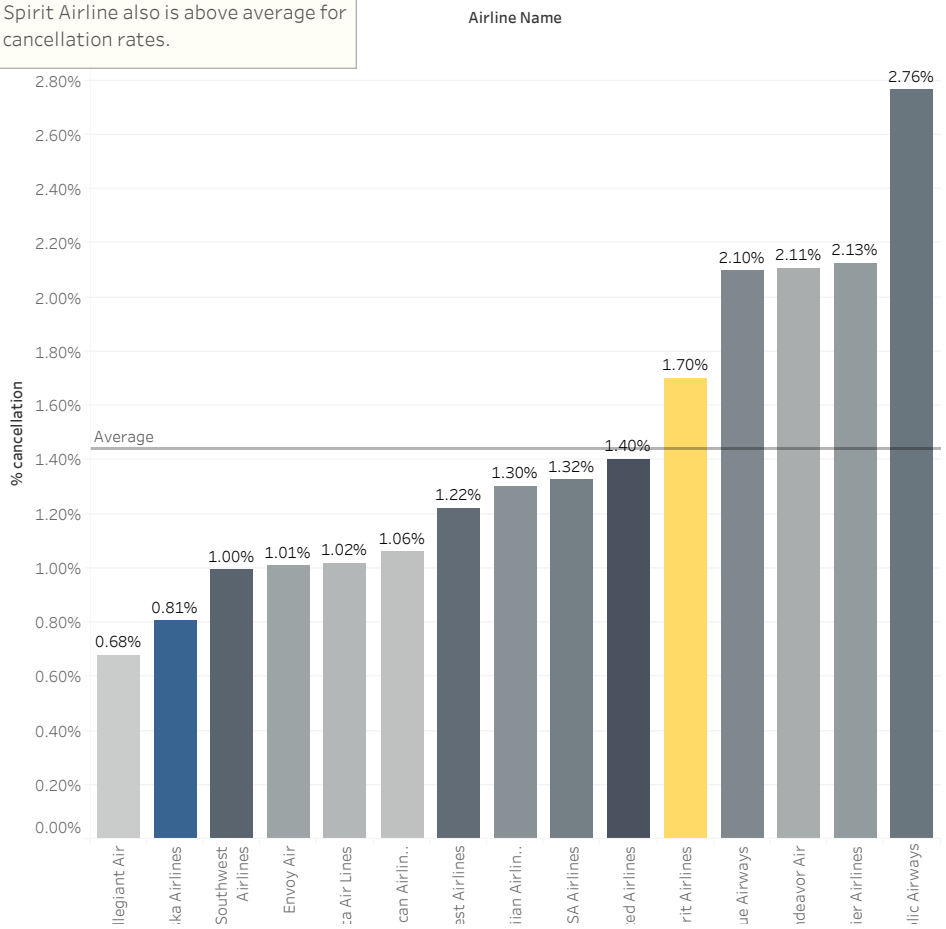
Skywest Airlines take the lead in terms of the number of cities served 264, where as spirit airlines only serve 64 cities.

Calling out the FAA allowance of 15 minutes before a flight is considered delayed. Spirit Airlines flights are delayed on average (above the 15 minute mark) and being above average in terms of delay time. Spirit Airline also is above average for the cancellation rates.

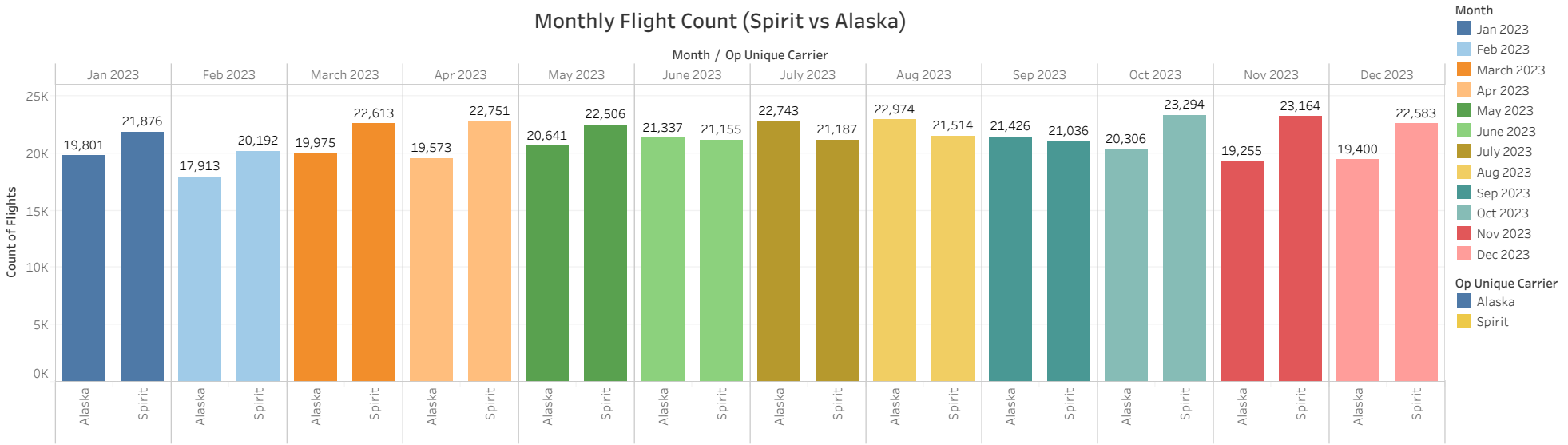
Average Departure Delay (Minutes)



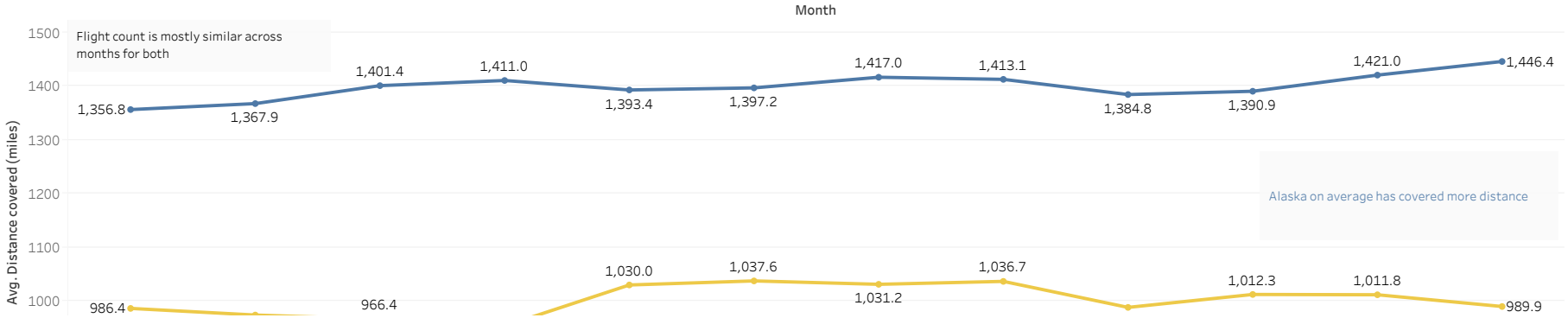
% of Cancellation

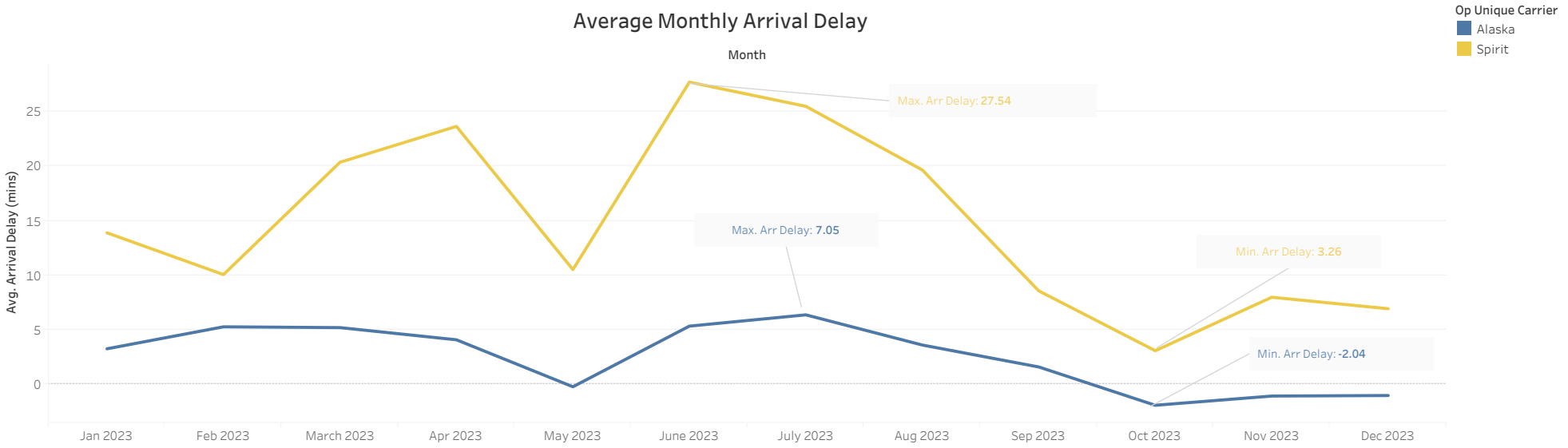


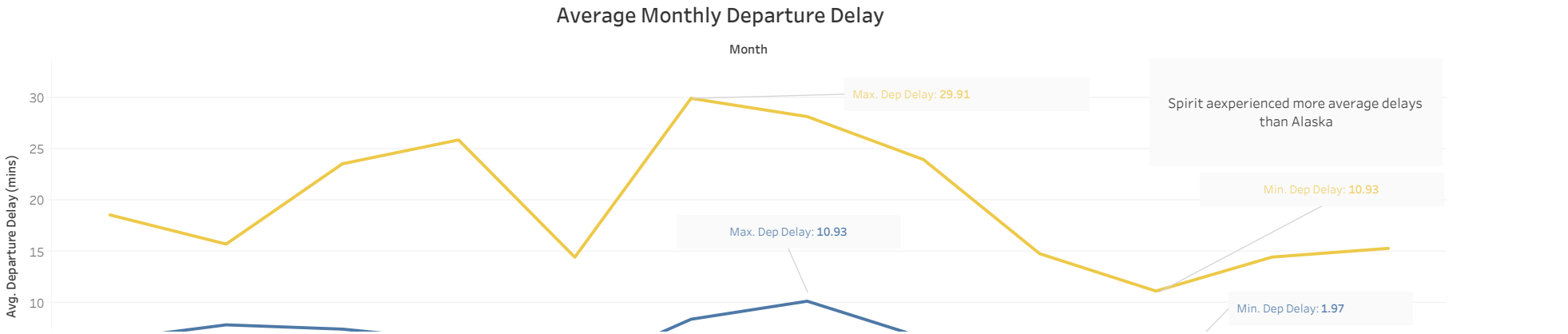
Monthly Flight Count (Spirit vs Alaska)



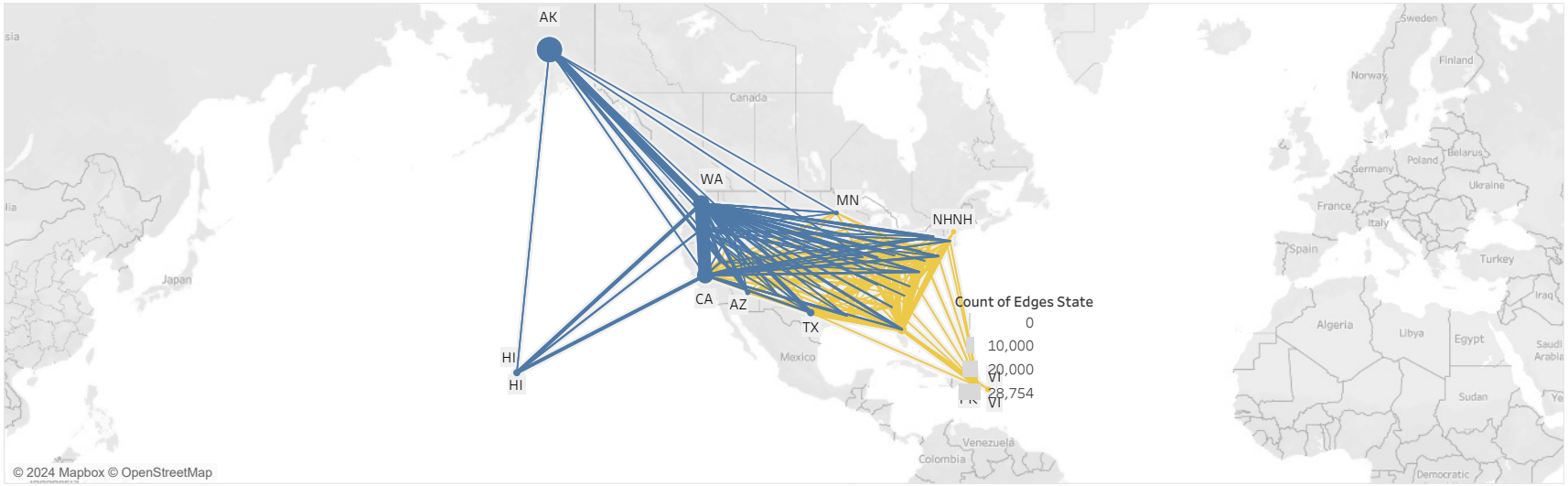
Average Monthly Distance Covered



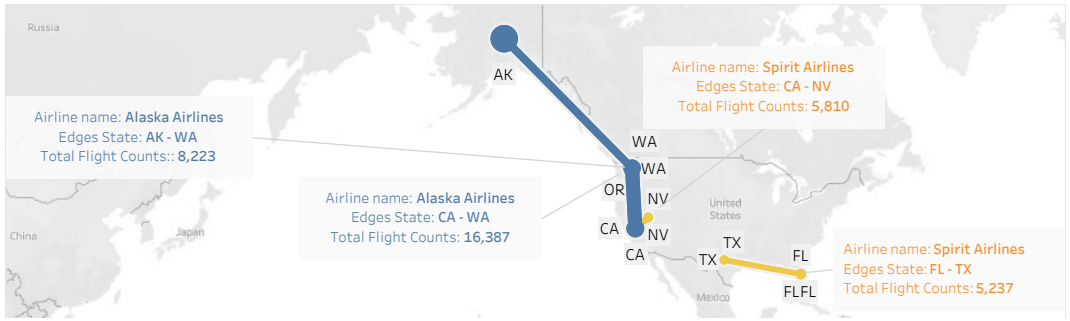

Average Monthly Arrival Delay
Month
Op Unique Carrier
Alaska
Spirit
Avg. Arrival Delay (mins)
25
20
15
10
5
0
Max. Arr Delay: 27.54
Max. Arr Delay: 7.05
Min. Arr Delay: 3.26
Min. Arr Delay: -2.04
Jan 2023
Feb 2023
March 2023
Apr 2023
May 2023
June 2023
July 2023
Aug 2023
Sep 2023
Oct 2023
Nov 2023
Dec 2023


Average Monthly Departure Delay
Month
Avg. Departure Delay (mins)
30
25
20
15
10
Max. Dep Delay: 29.91
Max. Dep Delay: 10.93
Min. Dep Delay: 10.93
Min. Dep Delay: 1.97
Spirit aexperienced more average delays than Alaska

Routes For Alaska and Spirit



Major Cross City Routes For Alaska and Spirit

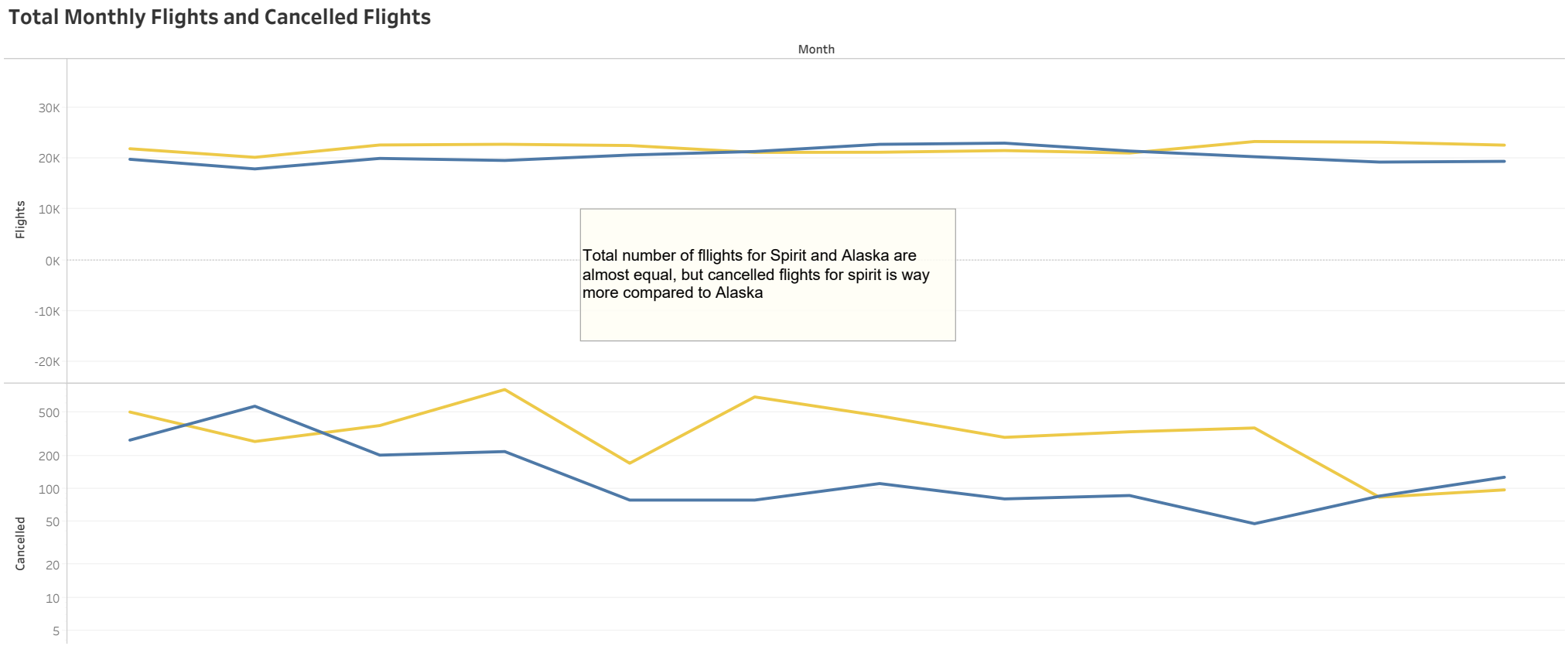


Airline name
- Alaska Airlines
- Spirit Airlines

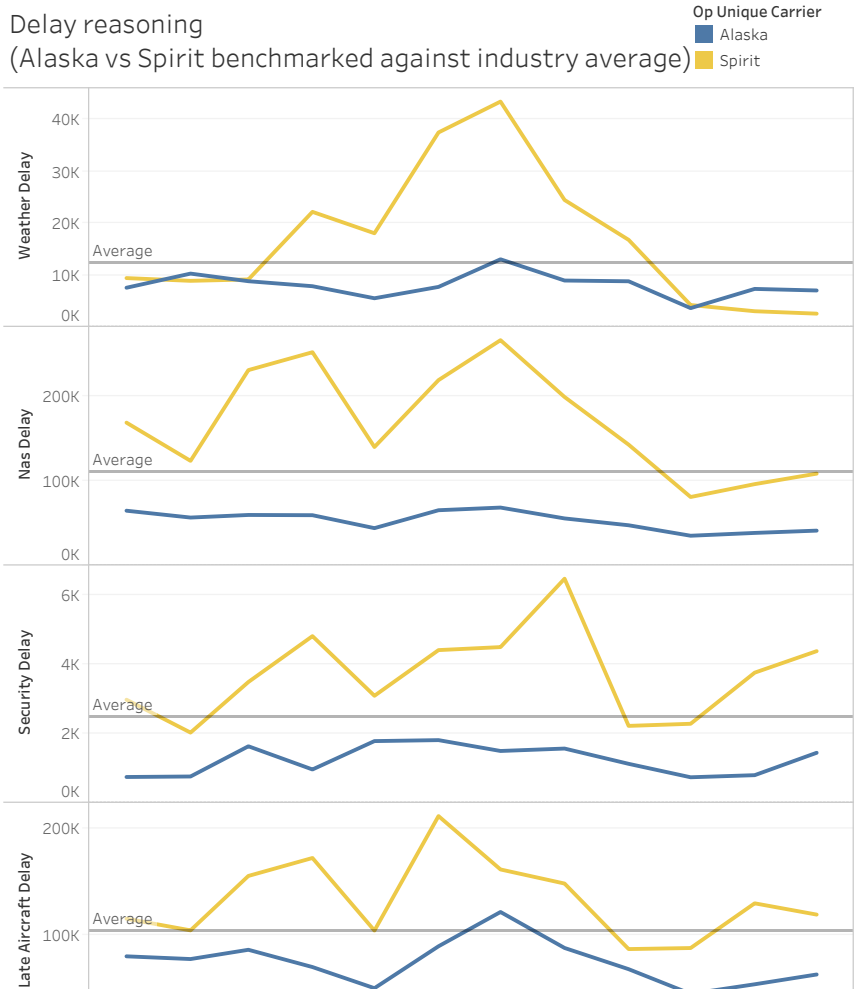
Spirit Airlines seem to cater more to diverse flights on the lower east side of the United States; Alaska Airlines in the exact opposite.

The majority routes pointed out on the map to the left depict the most frequent travelled states for the

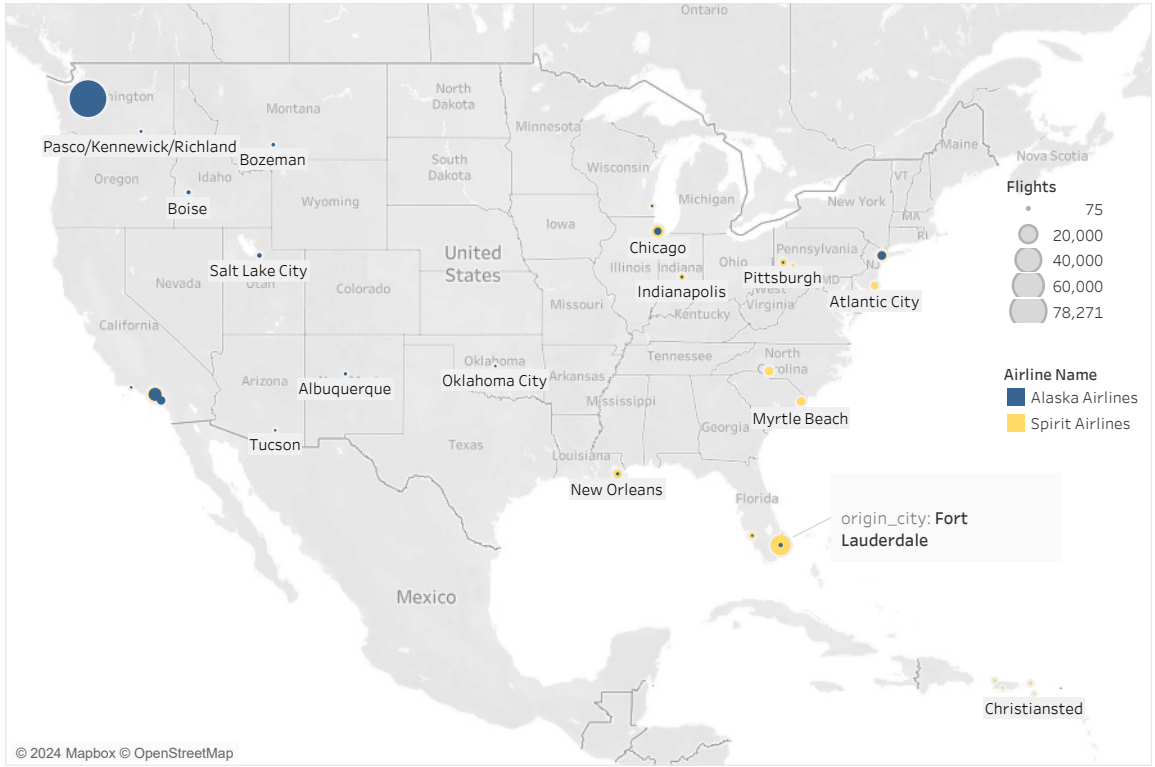
Total Monthly Flights and Cancelled Flights



Delay reasoning
(Alaska vs Spirit benchmarked against industry average)



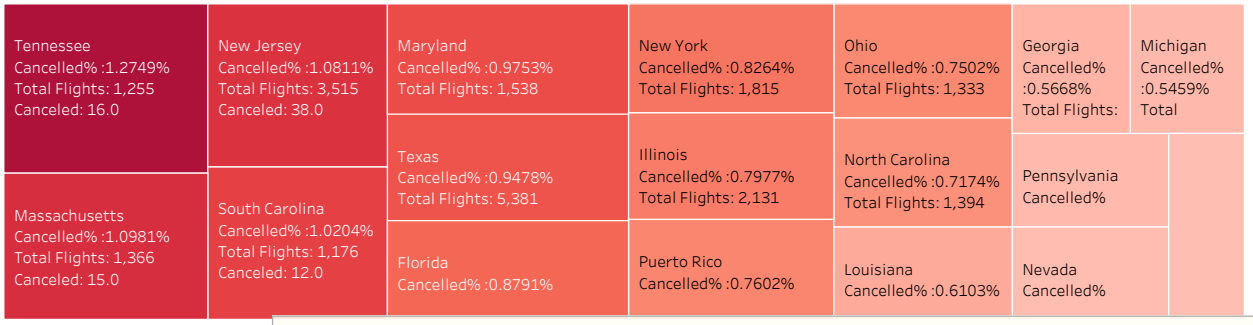
Suggestion for City to Fly From for Alaska versus Spirit Airline



Spirit Airlines experiences above average delay times, and being consistently higher in comparison to Alaska airline across various reasons

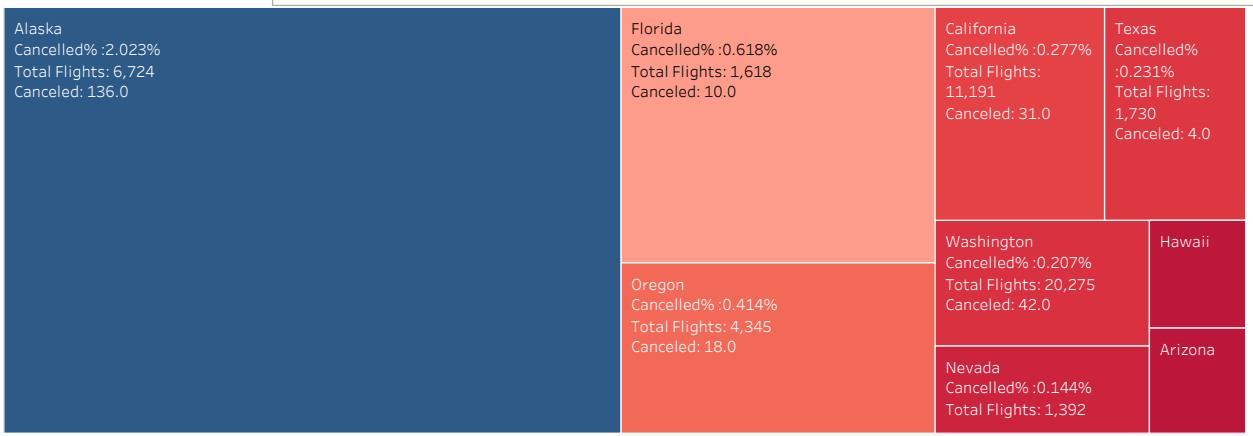
Flight Cancellation % for Each State

Spirit airlines



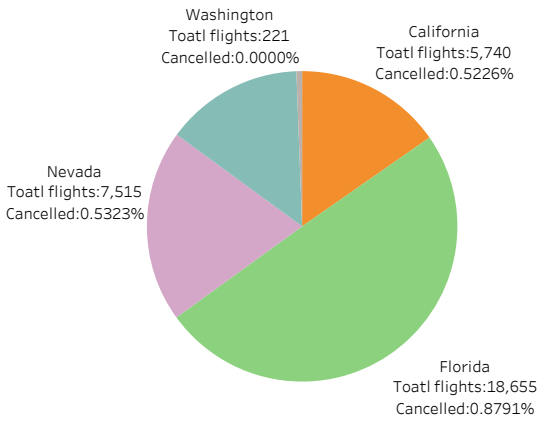
Spirit Airlines experiences higher cancellation rates in states like Tennessee and New Jersey, suggesting potential operational challenges in those areas, while Alaska Airlines generally maintains low cancellation rates across its key markets except for Alaska, where it could improve reliability.

Alaska airlines

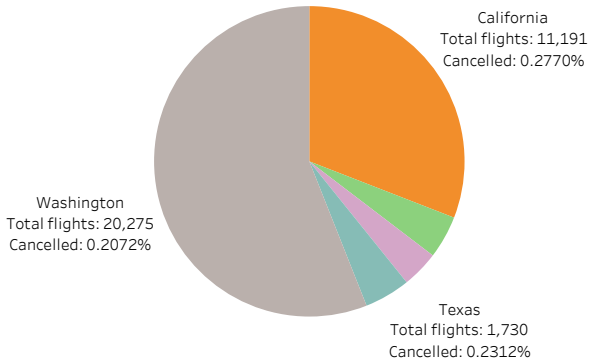


Top 5 States with Majority Business

Spirit airlines



Alaska airlines



Spirit Airlines has a strong presence in Florida with a high number of flights and low cancellation rates, suggesting a focus on this market. Alaska Airlines, on the other hand, has a more evenly distributed presence across several states with similarly low cancellation rates, indicating a more diversified market strategy and operational reliability across multiple regions.

Spirit Airlines- Conclusion

Key Findings across the three parts of analysis.

- Spirit Airlines is currently maintaining a slightly higher market share in populous states versus larger states. Given that majority business is concentrated in fewer states, there is room to tap into other states strategically.

- Spirit Airline consistently has had higher delay averages per flight above industry average and across all reasons in comparison to Alaska airline, specifically higher numbers related to **late aircraft delays and NAS delays...**

In terms of expansion:

1. Scalability while preserving USP is the key to growth, considering spirit's efforts in making travel affordable, there should be additional services line-up focusing on quality.

In terms of delays, Spirit Airlines needs to approach their operations in a proactive manner:

1. Implementing advanced weather monitoring systems and developing backup plans to reroute flights or adjust schedules to keep their flights on track.

2. Appointing loaner aircrafts for emergencies specifically for the months experiencing extreme delays/cancellations.

3. Reviewing current crew scheduling and availability to ensure that airplanes are proactively maintained to hopefully pick up a possible issue before it happens.