

# IDS 567 : Business Data Vizualization

## Spirit Airlines

**Group 8 - Fall 2023**

(Vinny, Guido, Marina, Sankhadip, Plash)



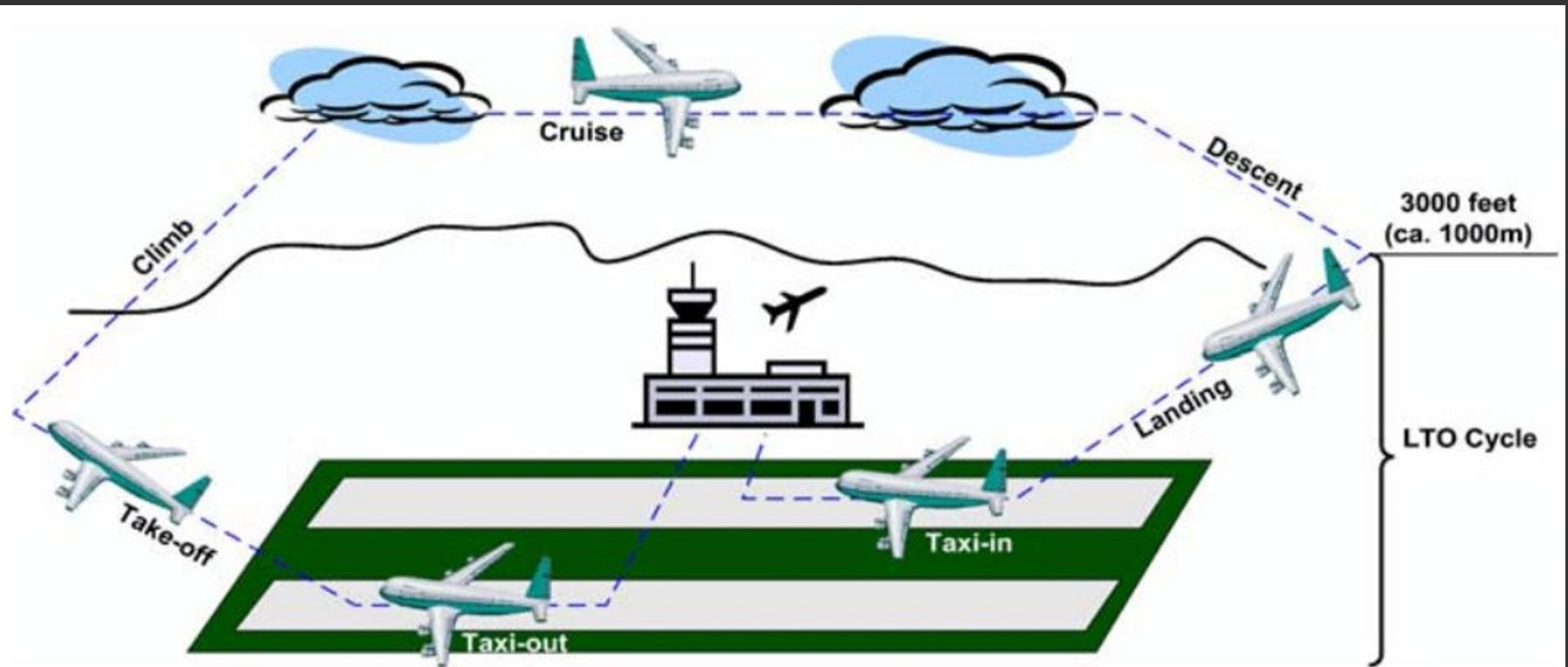


Spirit Airlines, Inc. is a major United States ultra-low cost airline headquartered in Miramar, Florida. Spirit operates scheduled flights throughout the United States, the Caribbean and Latin America. Spirit was the seventh largest passenger carrier in North America as of 2023, as well as the largest ultra-low-cost carrier in North America.

Objective:

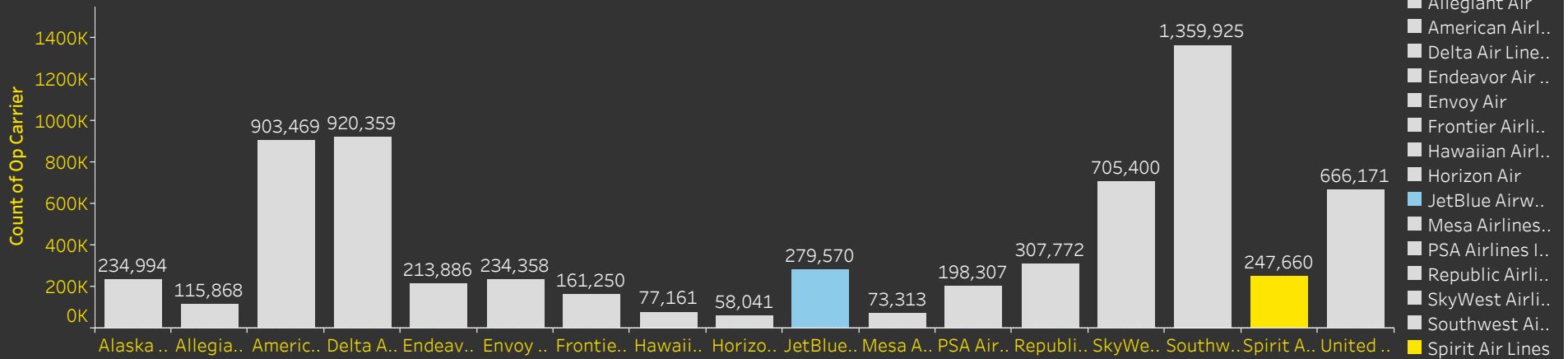
show how spirit performs with respect to other airlines in the U.S market. We have selected relevant metrics and performed data exploration to uncover Spirit Airlines profile, identify its major competitors, and compare its effectiveness with those competitors.

## Phases of a Flight

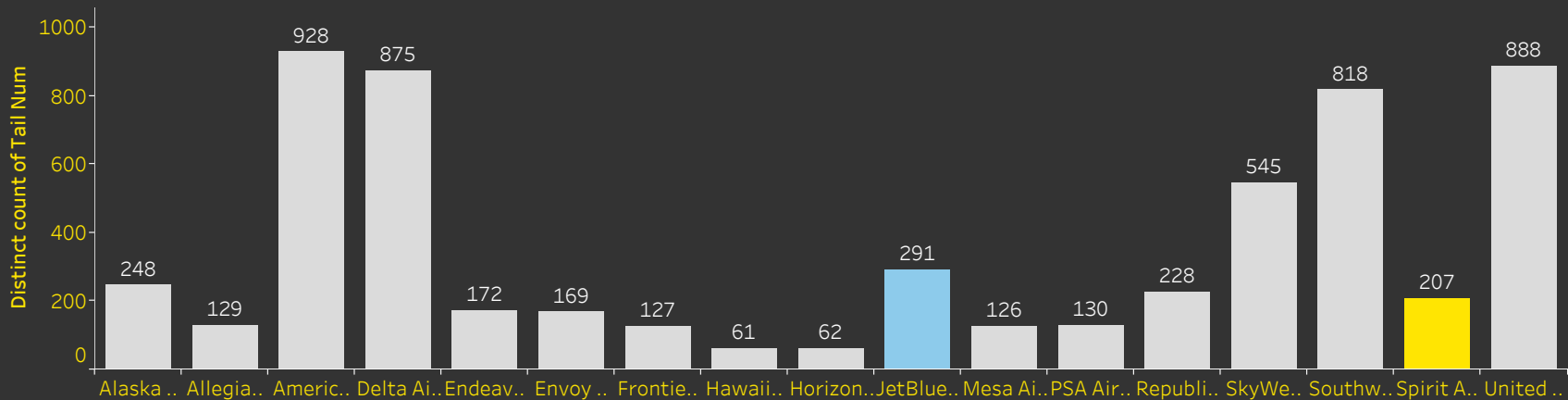


Flight phases of an aircraft, adapted from Rypdal (2000)

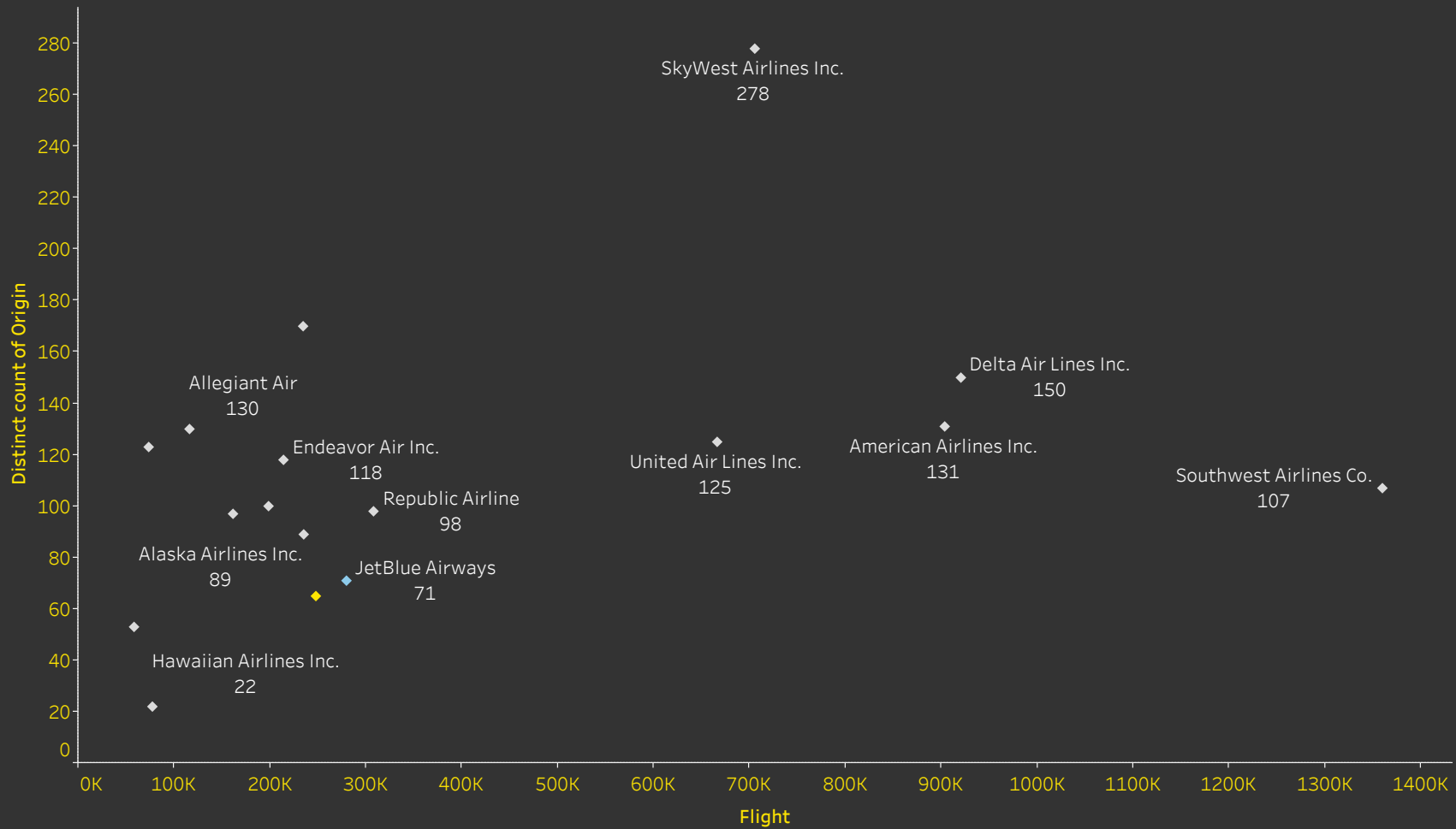
## Number of Flights Per Airline



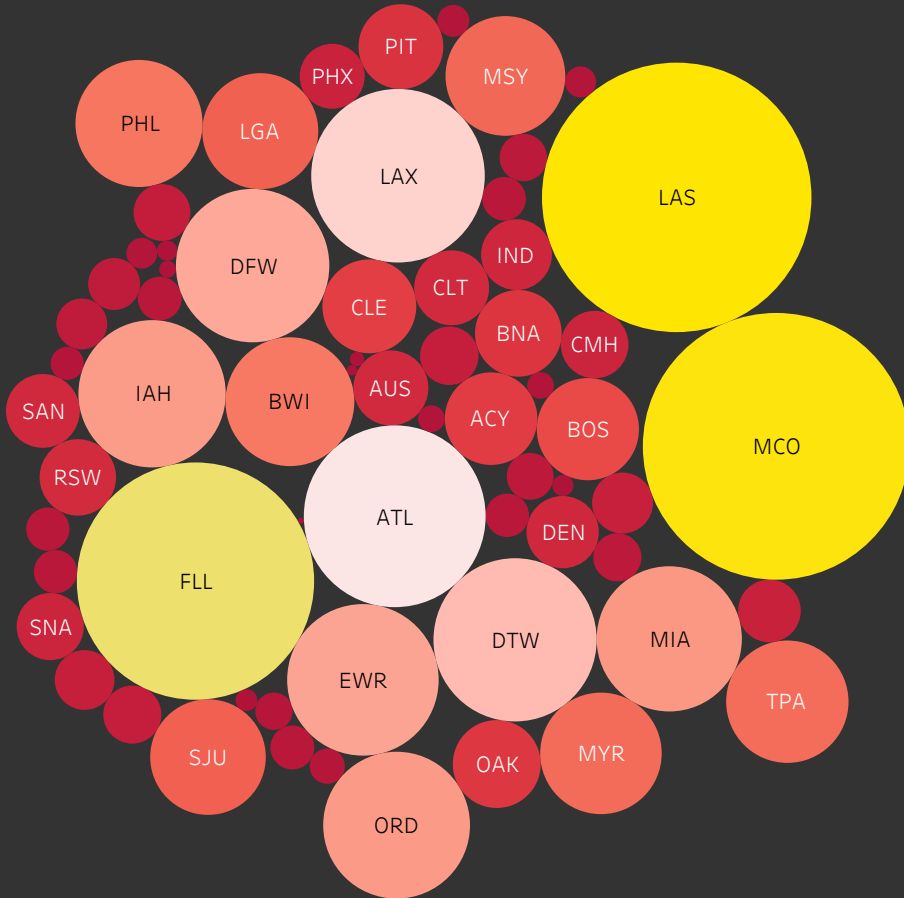
## Number of Equipment/Aircrafts



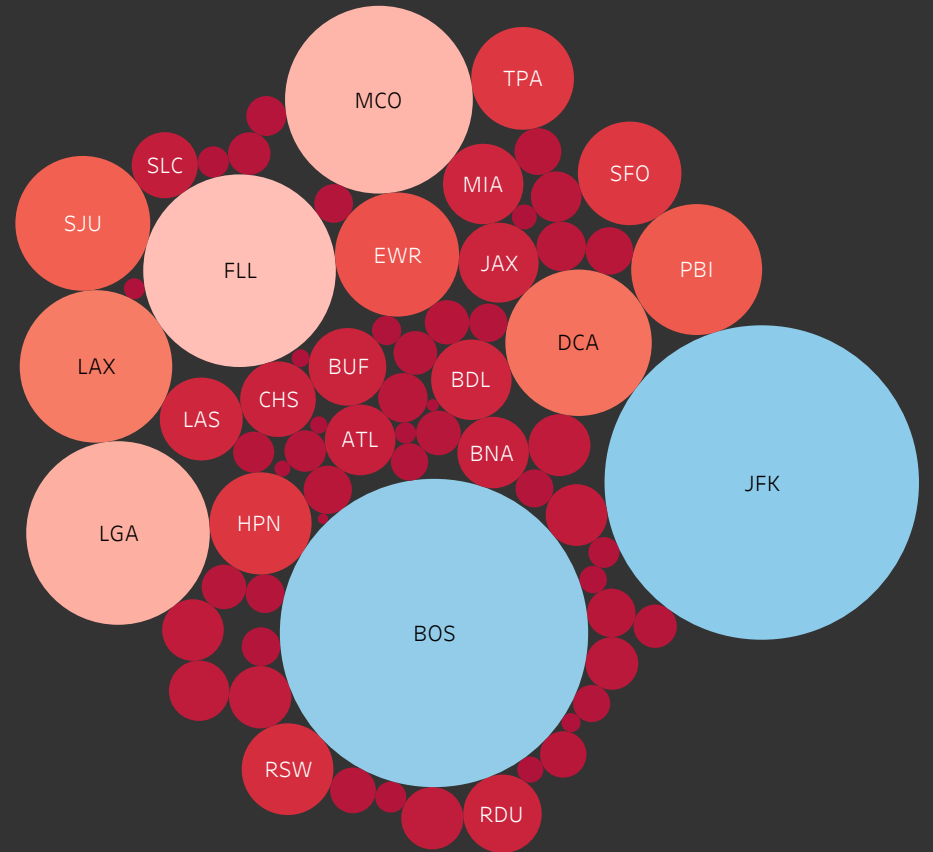
# Number of Airports From Where Airlines Operates



## Number of Spirit Flights From Different Airports

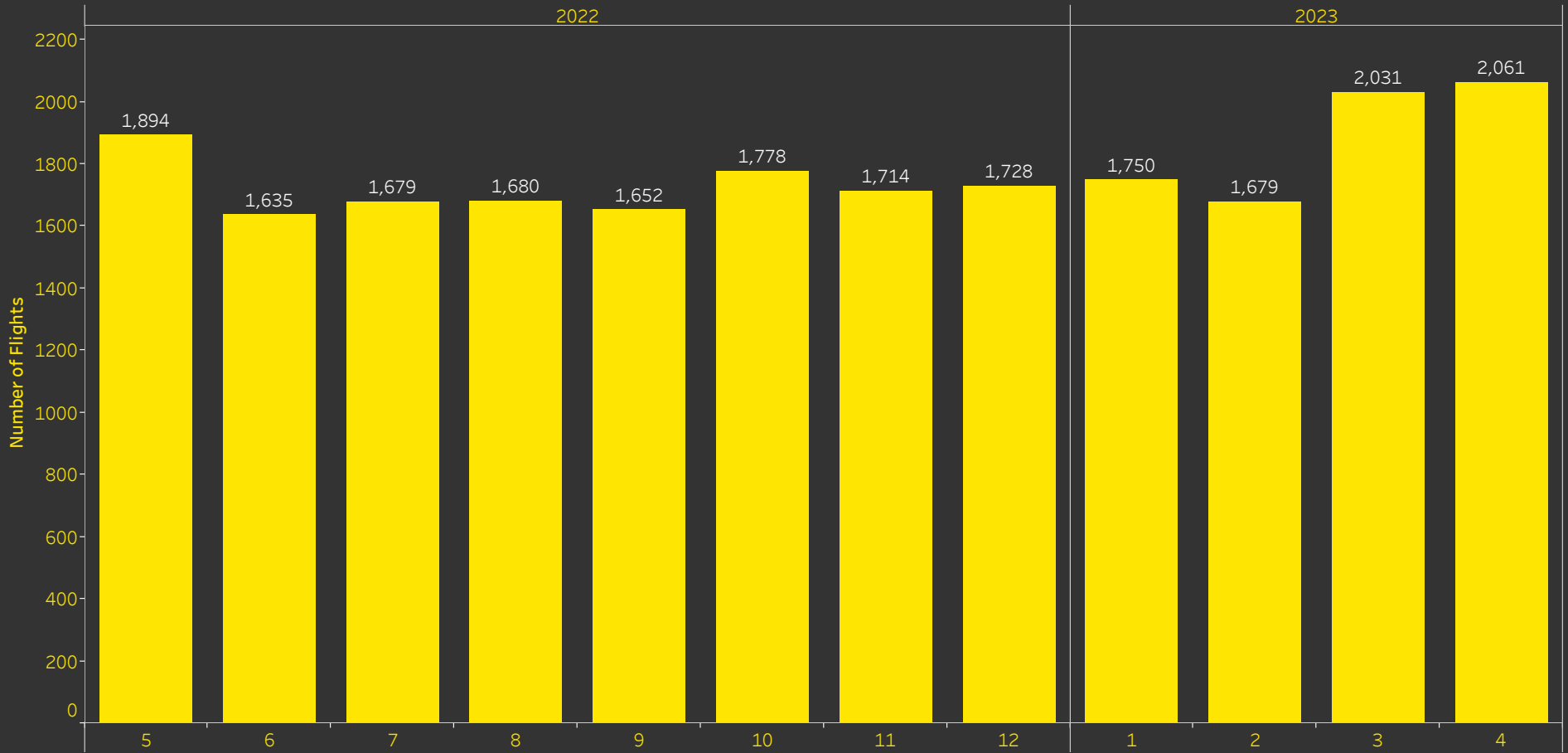


## Number of JetBlue Flights From Different Airports



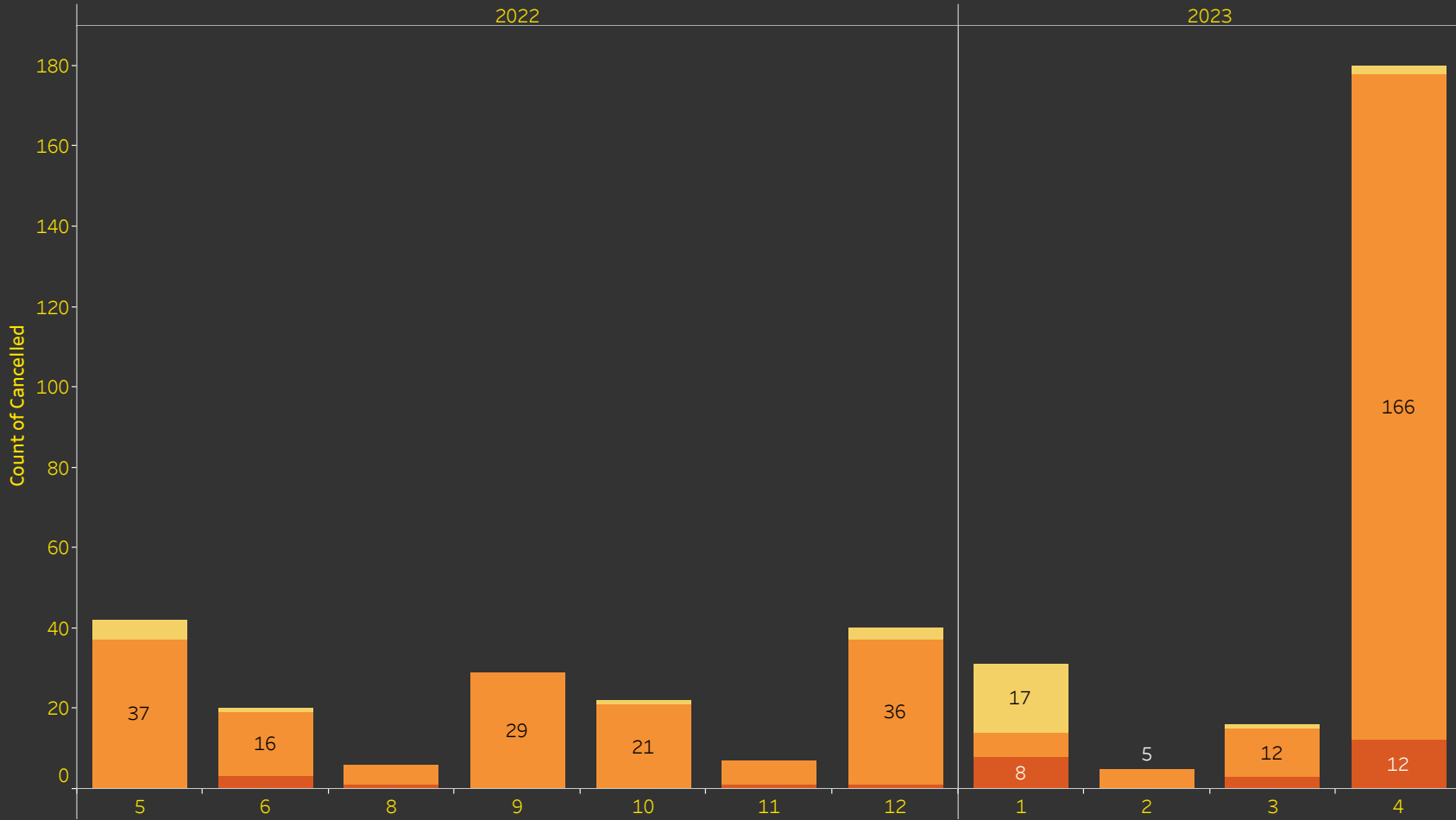
# Spirit's Monthly Flight Volume From FLL

Total Number of Flights: 21,281



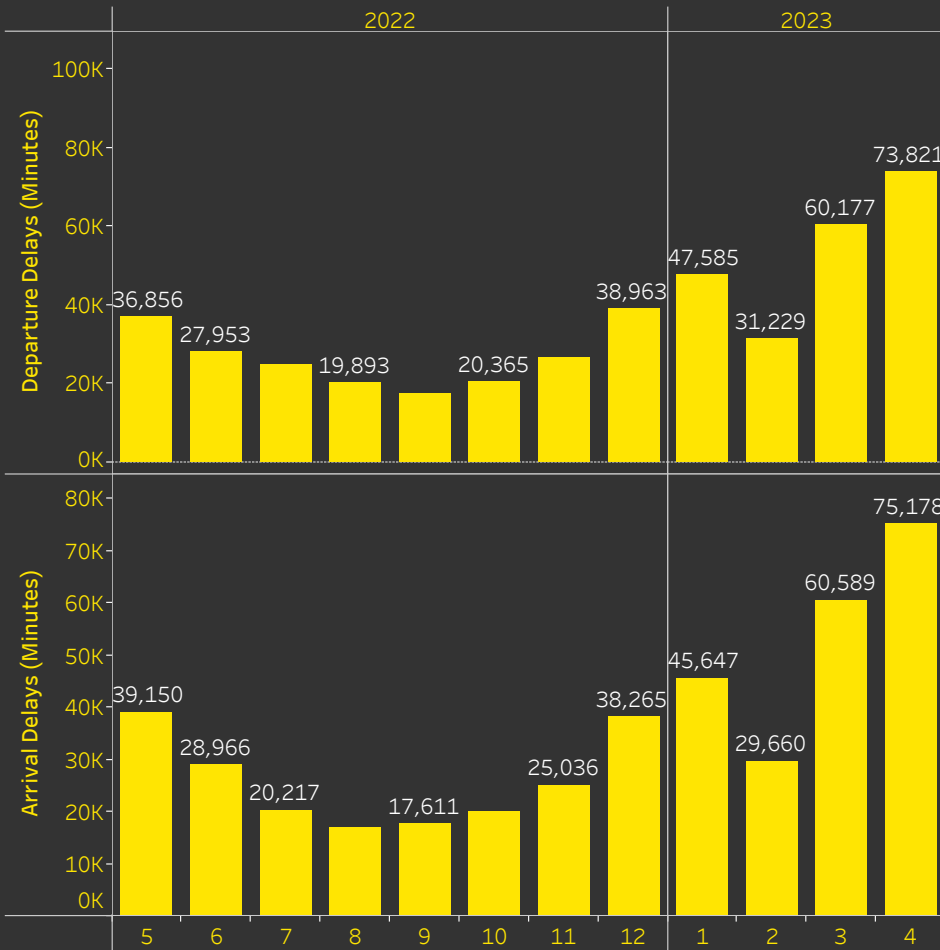
# Spirit's Monthly Cancelled Flights From FLL

Cancellation Code  
A  
B  
C

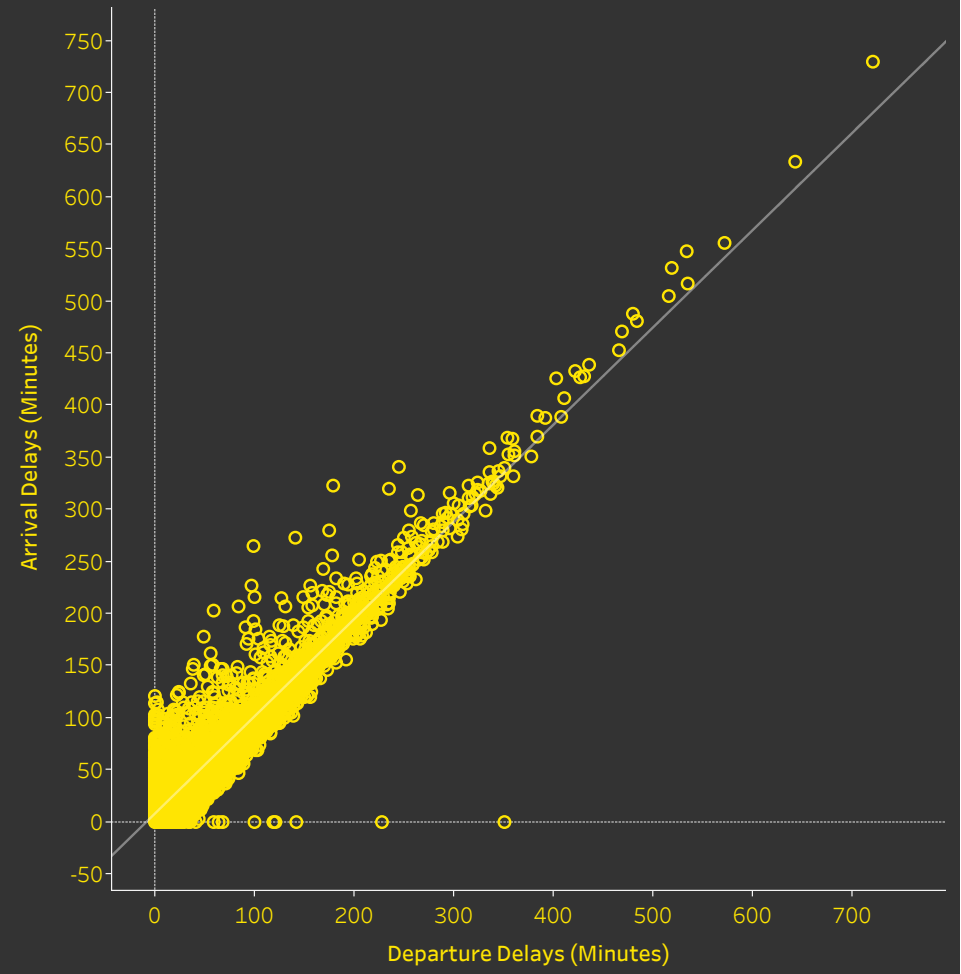




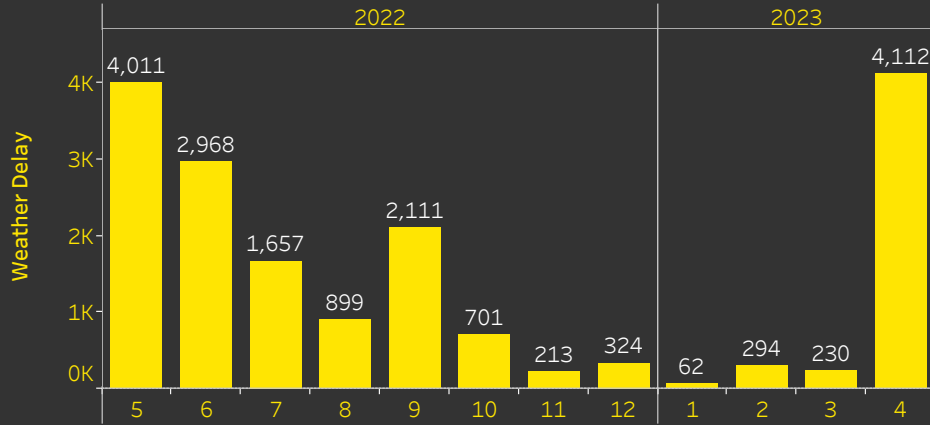
# Spirit's Monthly Delayed Flights From FLL



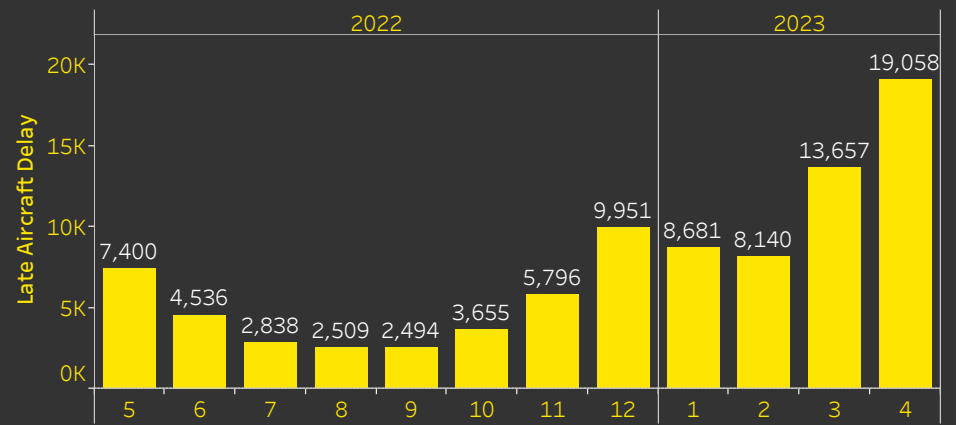
# Correlation Between Spirit's Delays



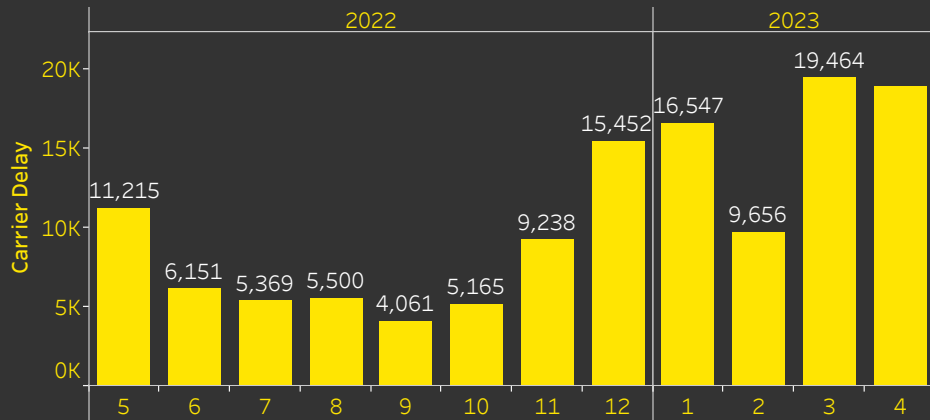
## Weather Delay



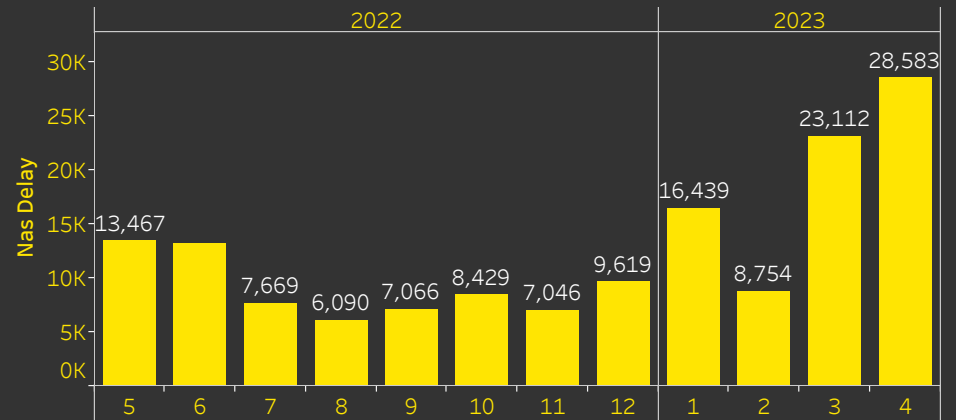
## Late Aircraft Delay



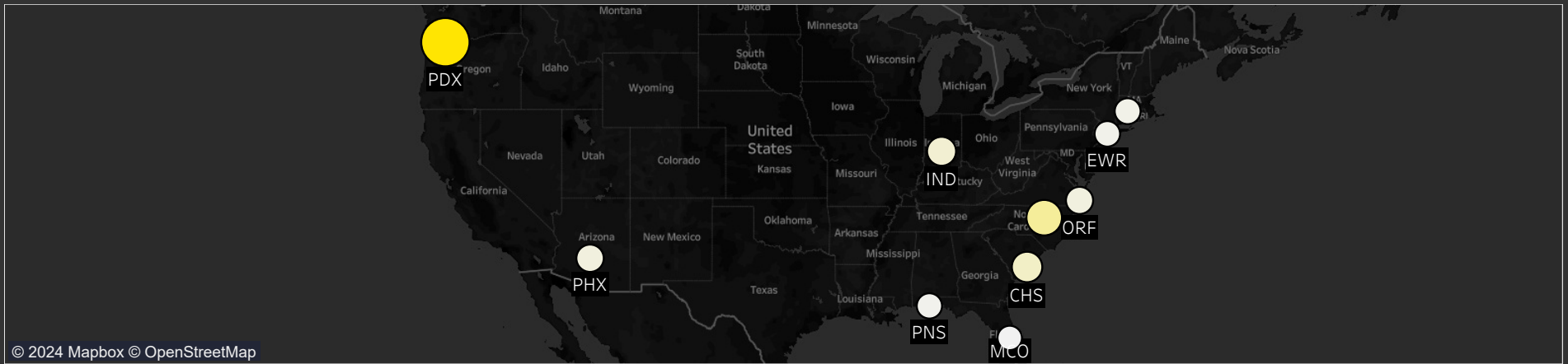
## Carrier Delay



## National Aviation System (NAS) Delay



# Spirit's Top 10 Destinations With the Highest Average Delays



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<b>PDX</b> <b>98.00 Minutes</b>	<b>RDU</b> <b>51.35 Minutes</b>	<b>IND</b> <b>33.33 Minutes</b>	<b>ORF</b> <b>29.02 Minutes</b>
	<b>CHS</b> <b>37.04 Minutes</b>	<b>PHX</b> <b>29.47 Minutes</b>	<b>BDL</b> <b>26.14 Minutes</b>

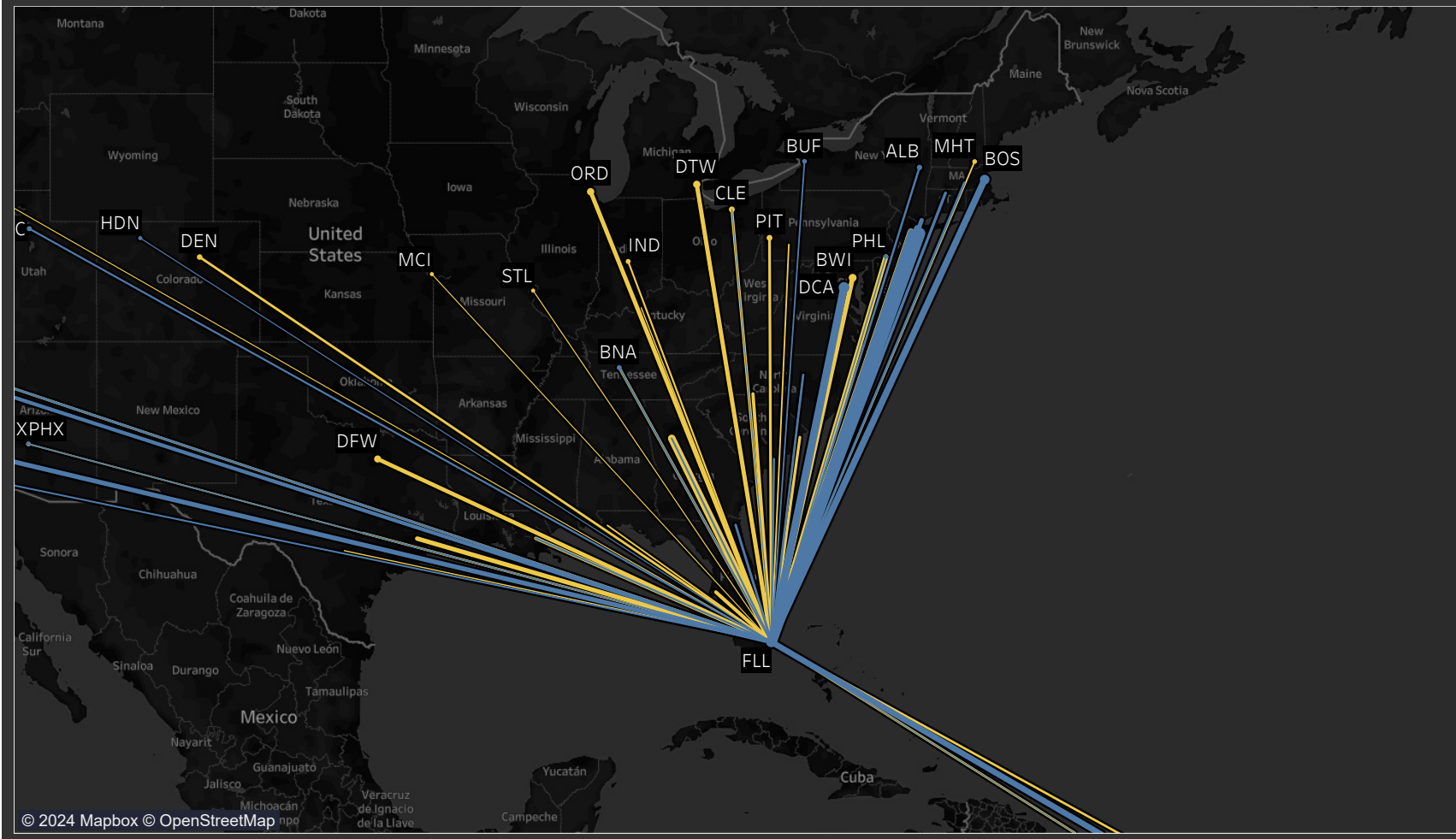
# Number of Flights Leaving FLL

Op Unique Carrier

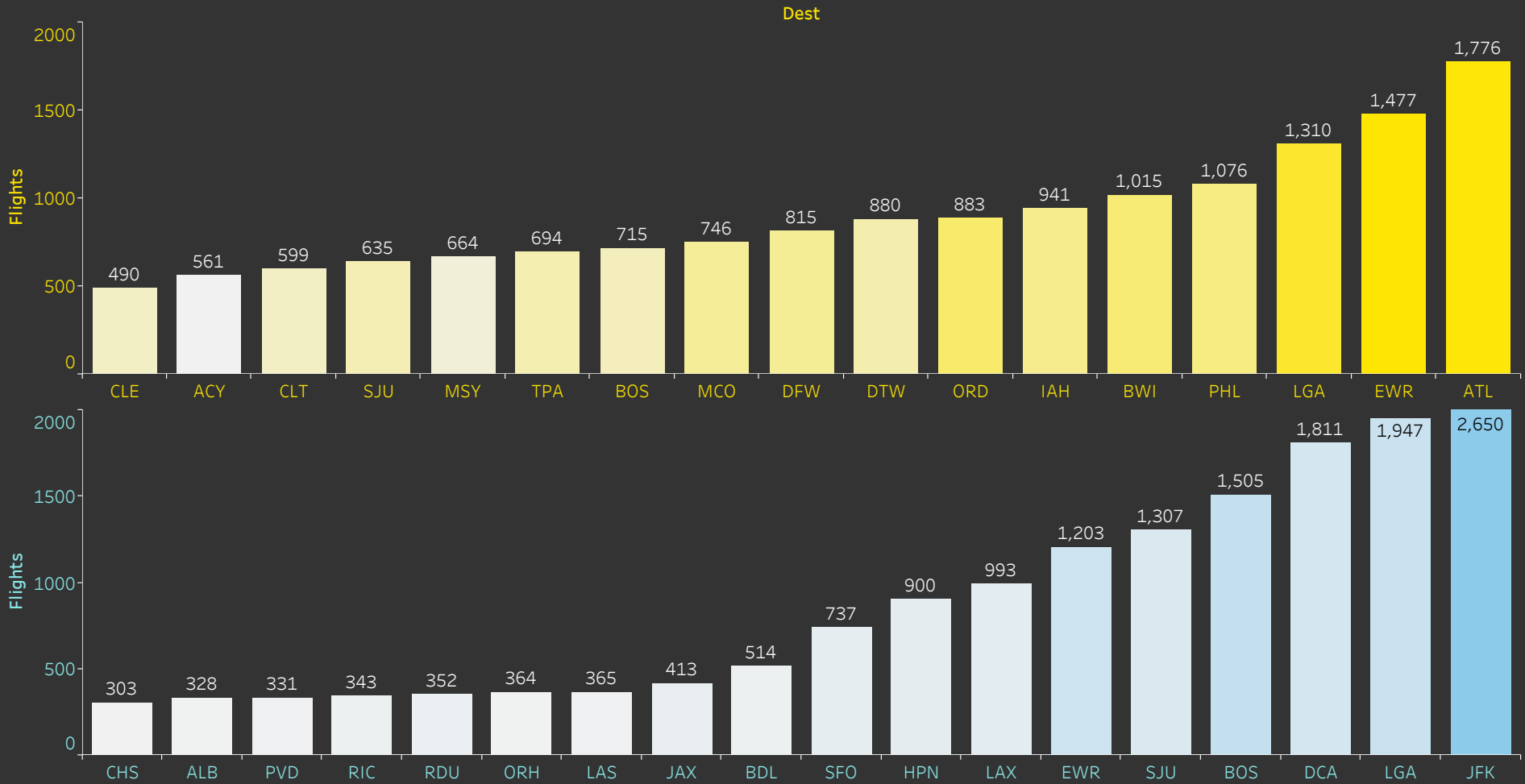
- B6
- NK

Count of Edges

- 1
- 500
- 1,000
- 1,500
- 2,000
- 2,650

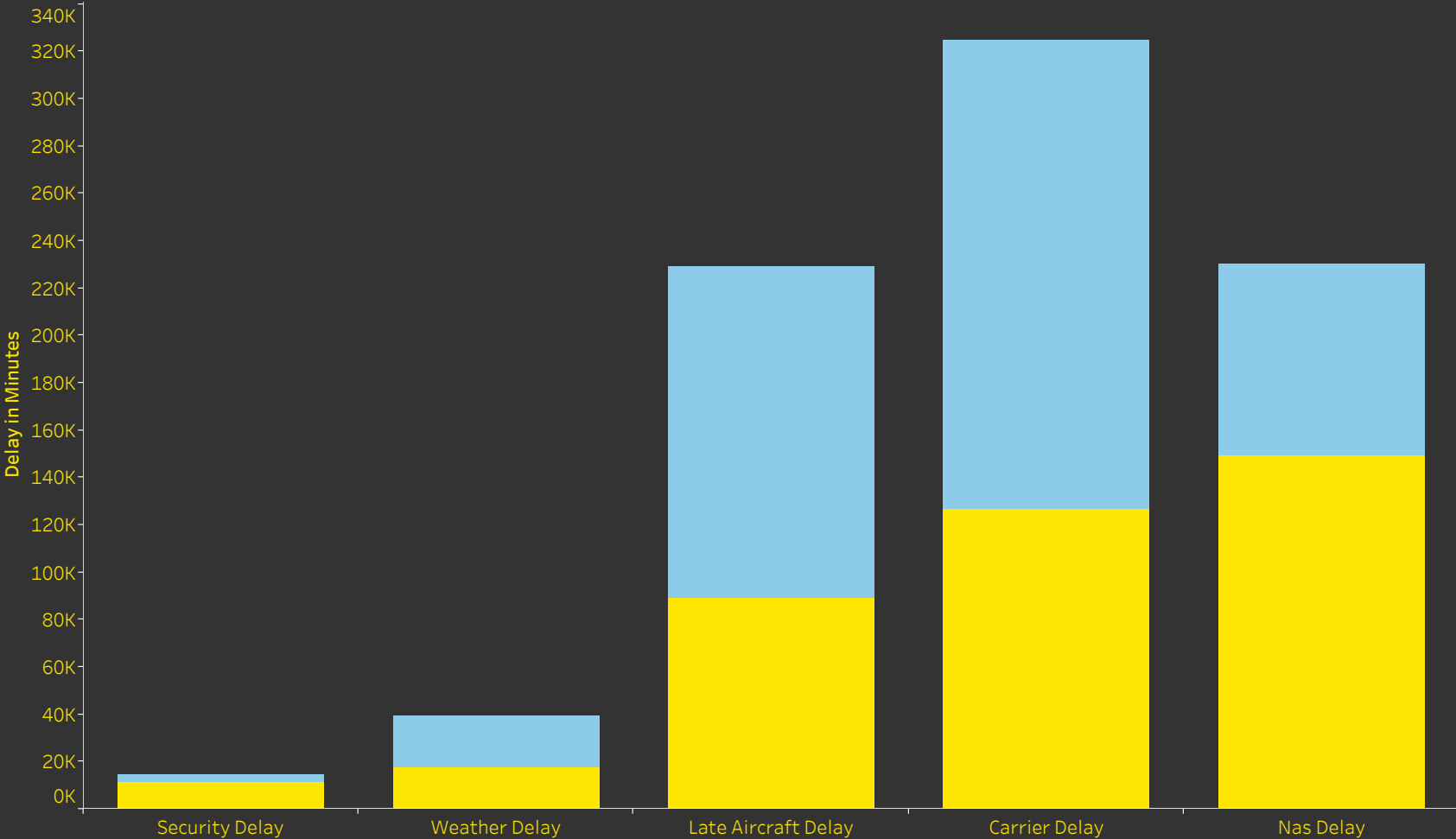


# Flights Leaving FLL Comparison Spirit and Jetblue



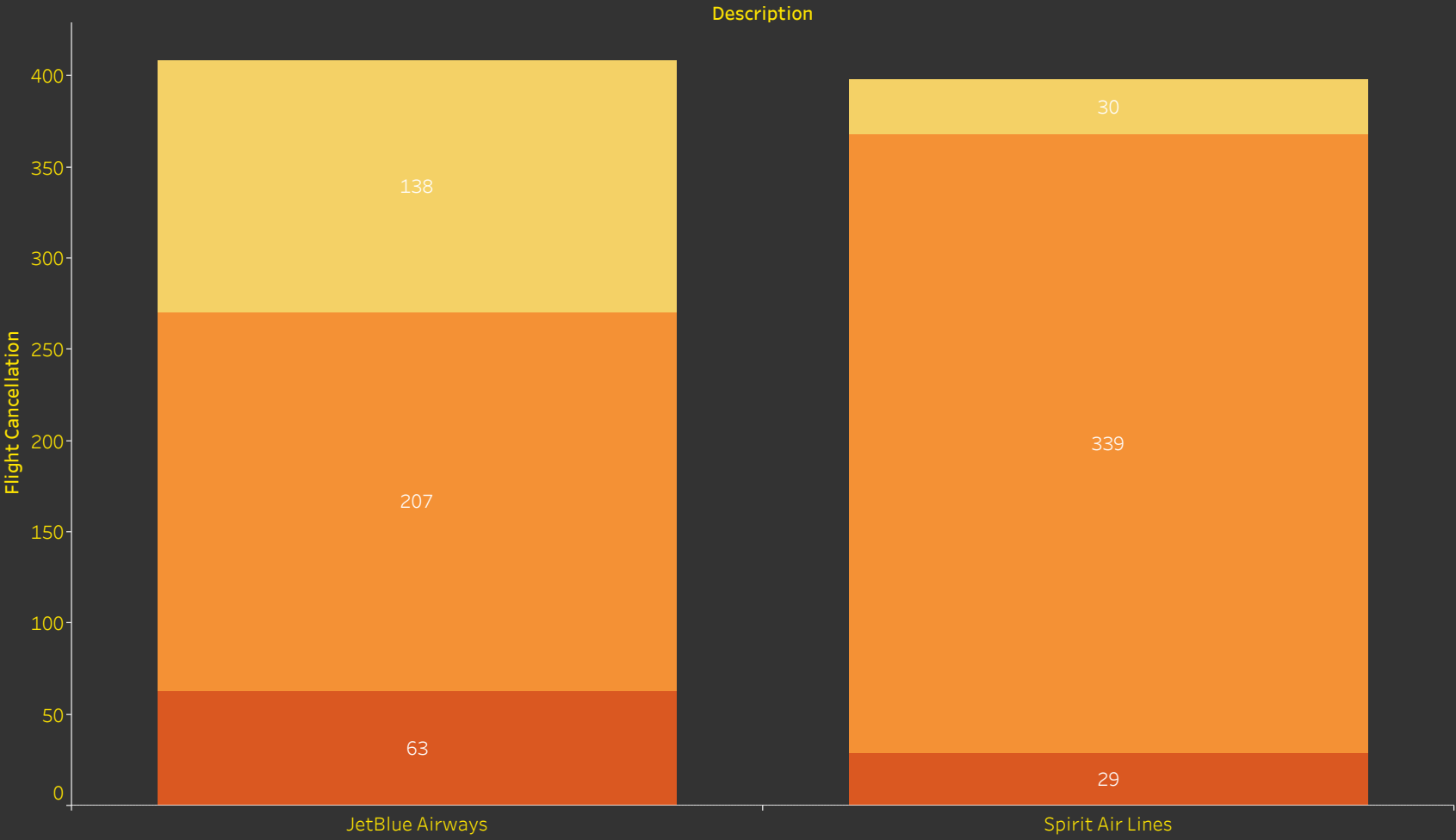
# Delay Reasons Comparison Between Spirit and Jetblue from FLL

Op Unique Carrier  
■ B6  
■ NK



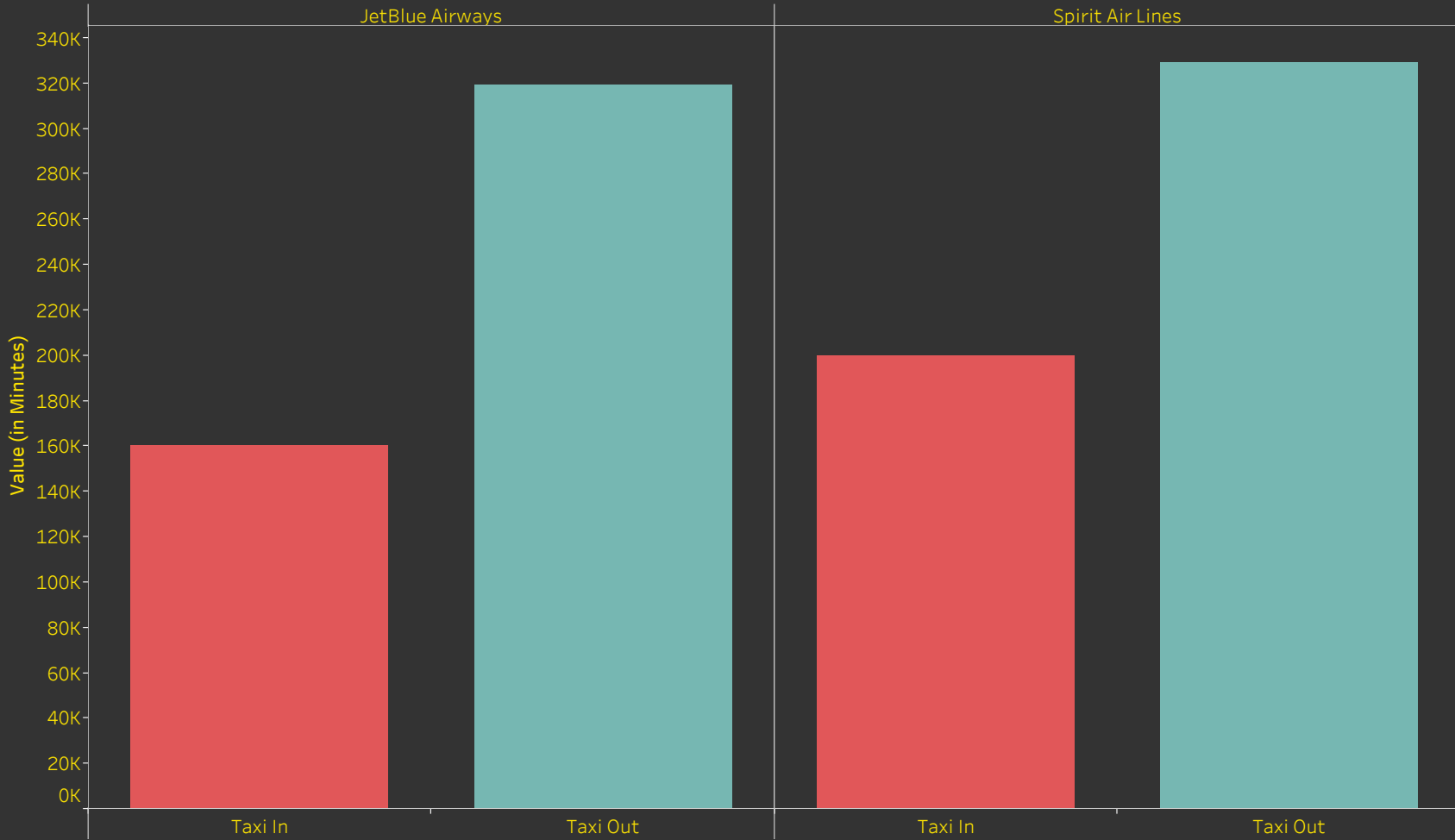
# Cancellations With Reason Between Spirit and Jetblue From FLL

Cancellation Code  
■ A  
■ B  
■ C



# Taxi Time Comparison Between Spirit and Jetblue

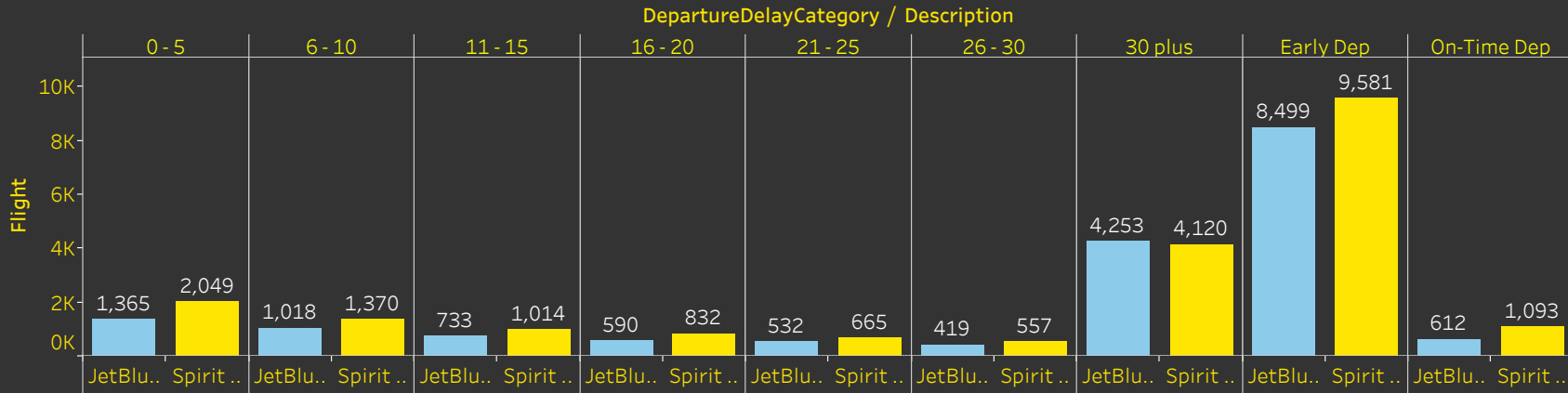
Measure Names  
Taxi In  
Taxi Out



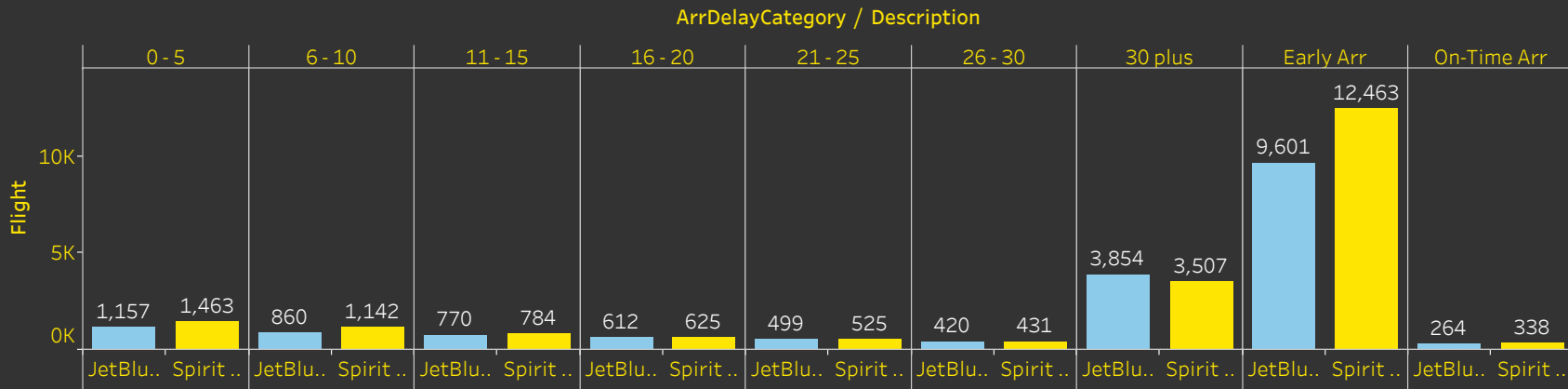


# Departure Delay Times Comparison Between Spirit and Jetblue

Description  
■ JetBlue Airw..  
■ Spirit Air Lines



# Arrival Delay Comparison Between Spirit and Jetblue





### Conclusion:

Spirit should focus on minimizing the Carrier and NAS delays, increase their number of flights, implement silent pushback to reduce their taxi in and out times, and plan ahead to avoid weather cancellations on FLL, this way they will keep ahead of Jetblue.