

US Commerical Aviation Analysis

Group B05

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About the Data

U.S. Department Of Transportation Air Travel
Consumer Report - Airline Flight Delays in 2015

Source: Kaggle, Maven Analytics

- ~5.8 million flight records
- 4 tables - flights, airlines, airports, and cancellations
- 40 columns



Scope of Analysis

National vs. Boston Performance

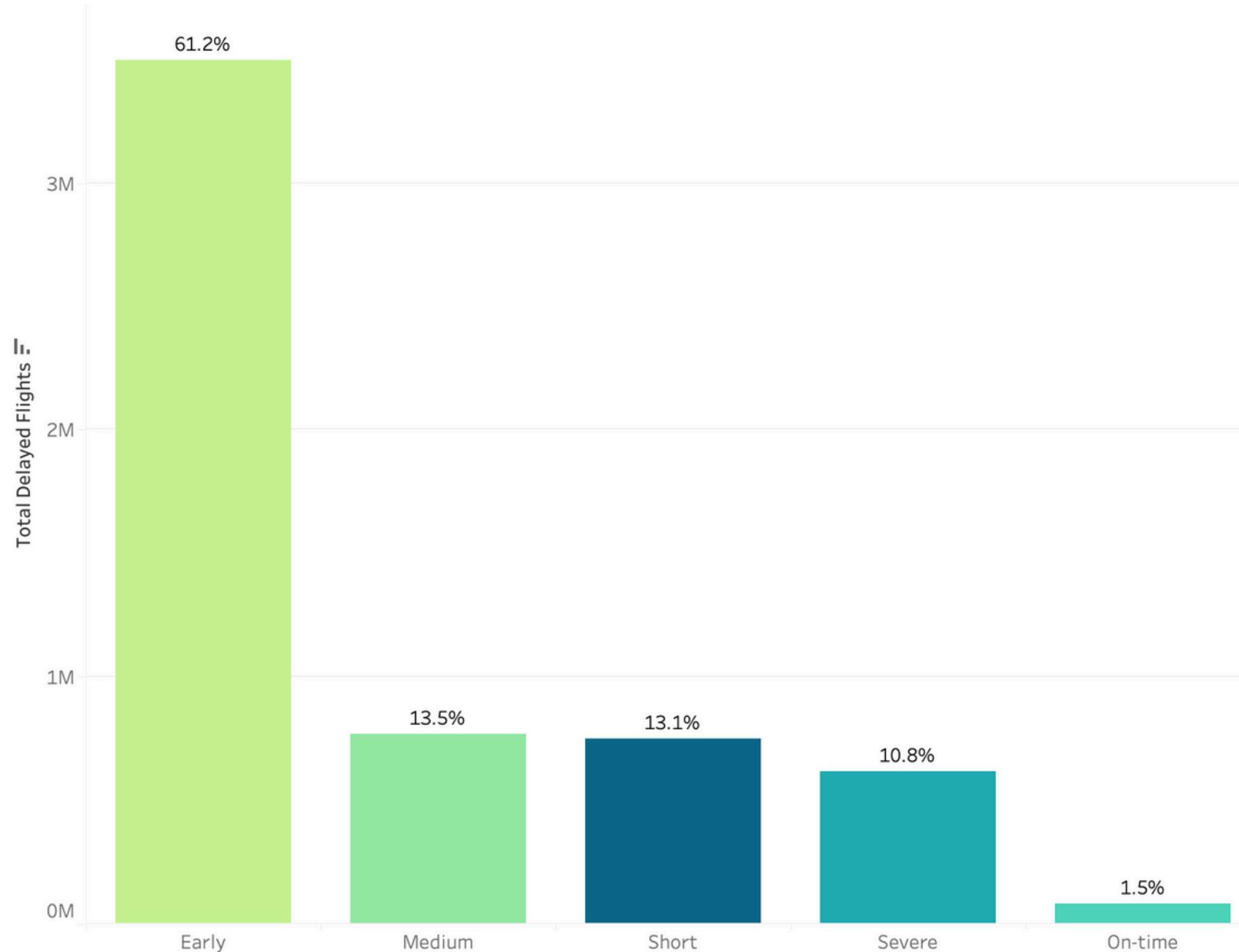
- Delays
- Cancellations
- Popular Routes
- Time Period Analysis



National Analysis



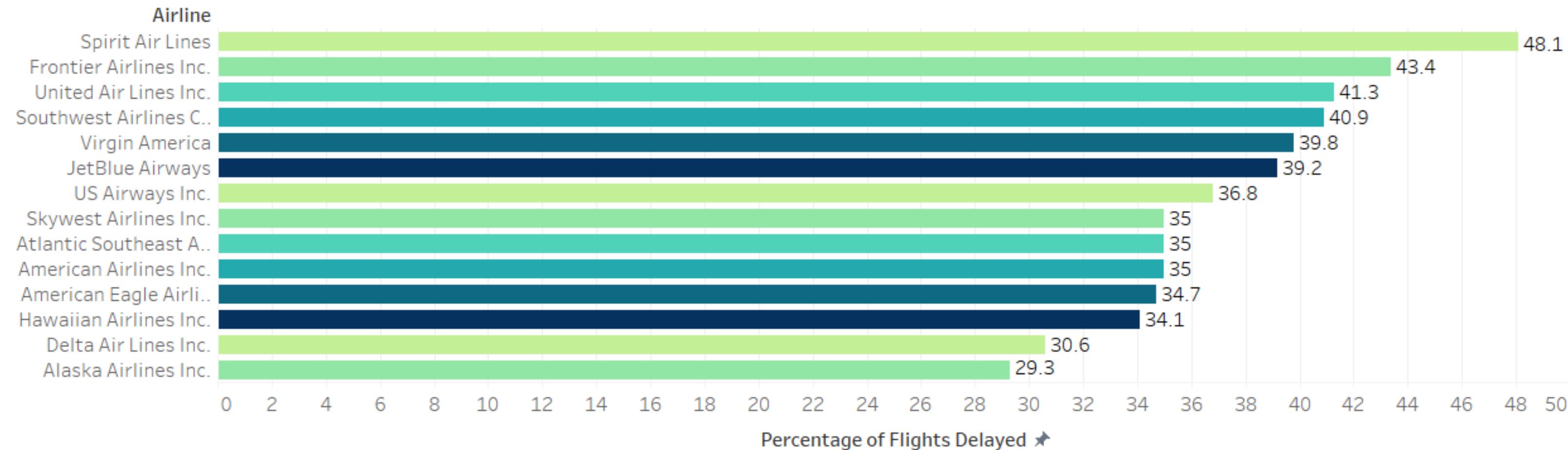
National Flight Delays



Early flights: 61.2%

Severe delays: 10.8%

Airline Flight Delays



Percentage Delays:

Spirit Airlines: 48.1%

Alaska Airlines: 29.3%

Avg Departure Delay (mins):

Spirit Airlines: 15.9

Alaska Airlines: 1.8

Avg Arrival Delay (mins):

Spirit Airlines: 14.5

Alaska Airlines: -1

Main Reasons For Cancellations

An Overview of Flight Cancellations: Analyzing the Primary Contributing Factors and Their Impact on Flight Frequency

Weather

Stands out predominant with **48,851 cancel flights**

Airline Carrier

*Following closely with **25,262 cancel flights***

National Air System

Another essential element contributing with **15,749 cancel flights**

Security

Contributed modestly with sporadic appears and **22 cancel flights**

Cancellations during the year

Weather : **7020**
Airline/Carrier : **2870**
National Air : **2090**

January

Weather : **6860**
Airline/Carrier : **2490**
National Air : **1630**

March

Weather : **2780**
Airline/Carrier : **2010**
National Air : **910**

May

Airline/Carrier: **2588**
National Air: **1335**
Weather: **882**

July

Airline/Carrier : **1088**
Weather : **505**
National Air : **482**

September

Weather: **2340**
National Air System: **1160**
Airline/Carrier: **1080.**

November

February

Weather: **15,450**
Airline/Carrier: **2815**
National Air: 2255

April

Airline/Carrier: **1795**
Weather: **1790**
National Air: **935**

June

Airline/Carrier: 3620
Weather: **3325**
National Air: **2175**

August

Airline/Carrier: **2365**
National Air: **1376**
Weather: **1310**

October

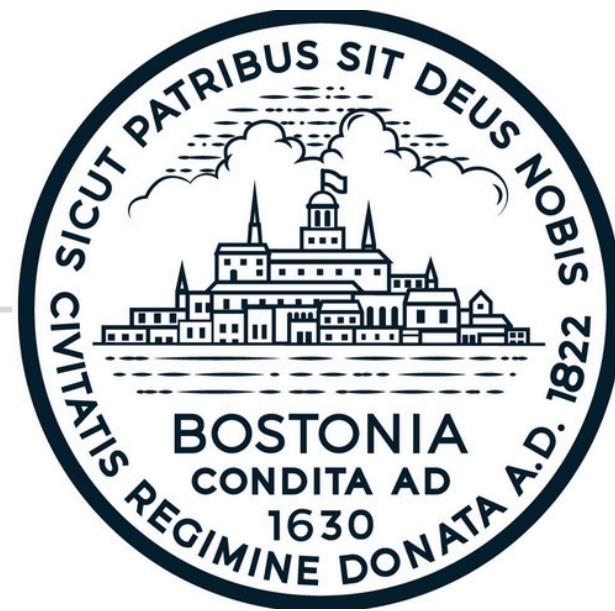
Weather: **977**
Airline/Carrier : **953**
National Air: **524**

Weather : **5610**
Airline/Carrier : **1580**
National Air : **870**

Moving on to **Boston** Analysis



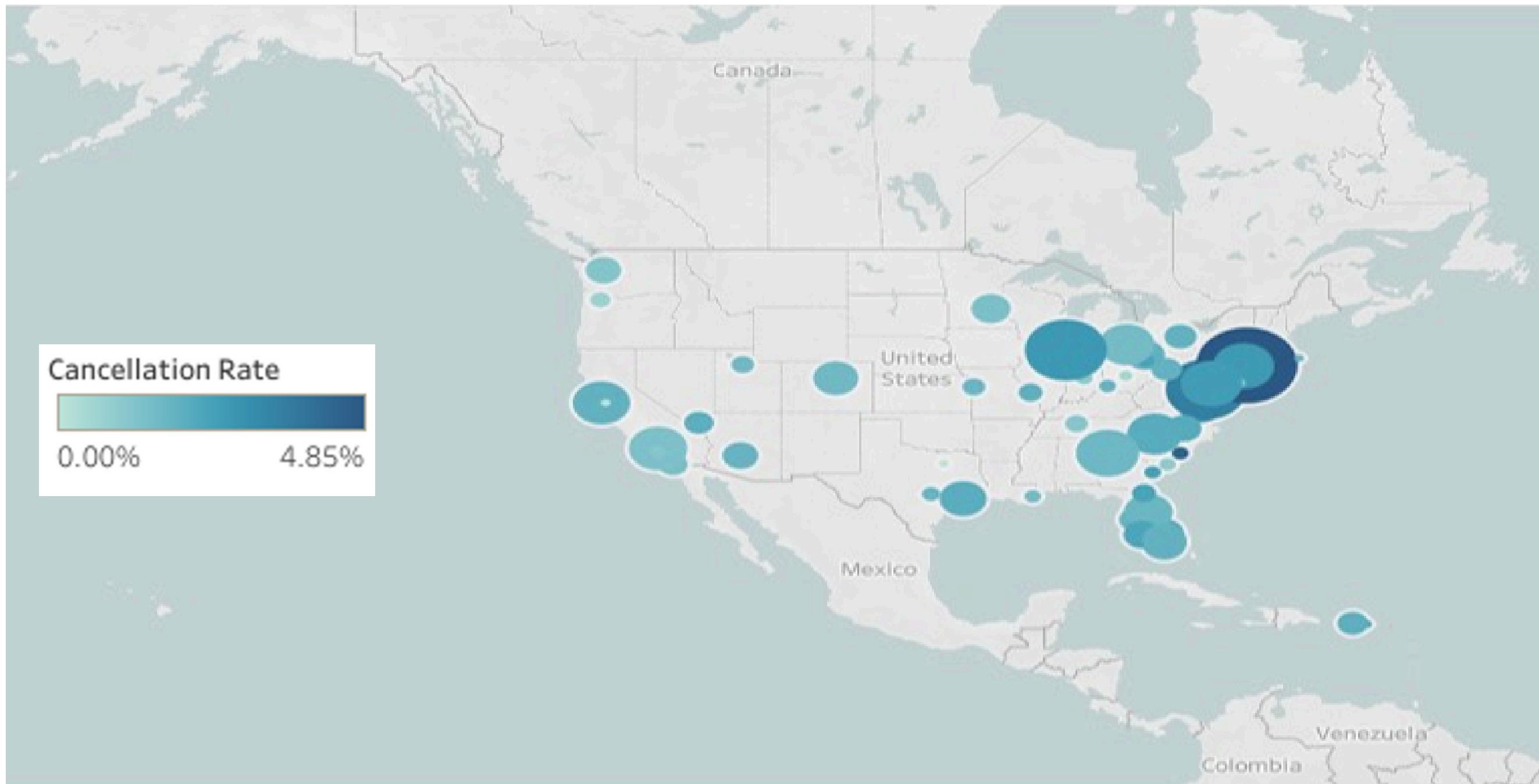
Popular Destinations



Destination_Airport_Name	Total_Flights
Ronald Reagan Washington National Airport	7421
LaGuardia Airport (Marine Air Terminal)	6653
Chicago O'Hare International Airport	6384
Philadelphia International Airport	5141
John F. Kennedy International Airport (New York)	4895

- *Most flights are within the Eastern Seaboard*

Flight Patterns



NYC

largest volume of flights by city

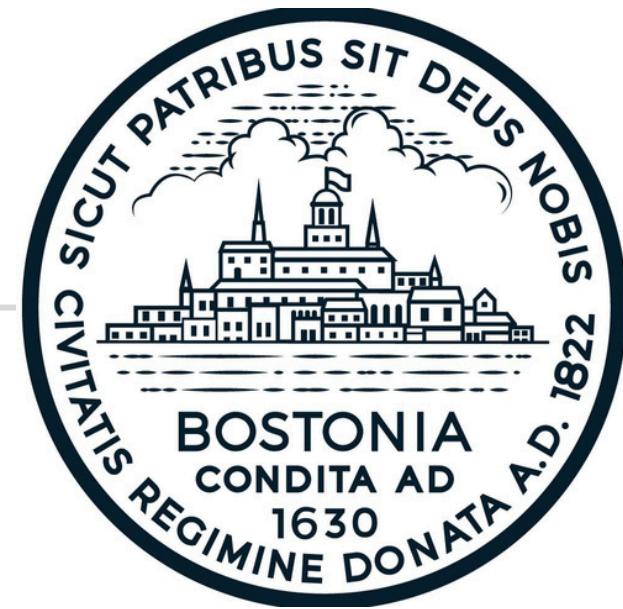
Florida

competes when comparing by States

Alaska | Hawaii

no direct flights from Boston in 2015

Delayed Flights



	Airport	total_flights	count_delays	perc_delays
0	Luis Muñoz Marin International Airport	1032	577	55.91
1	Fort Lauderdale-Hollywood International Airport	2188	1117	51.05
2	Akron-Canton Regional Airport	299	152	50.84
3	McCarran International Airport	1026	503	49.03
4	Cincinnati/Northern Kentucky International Air...	278	134	48.20

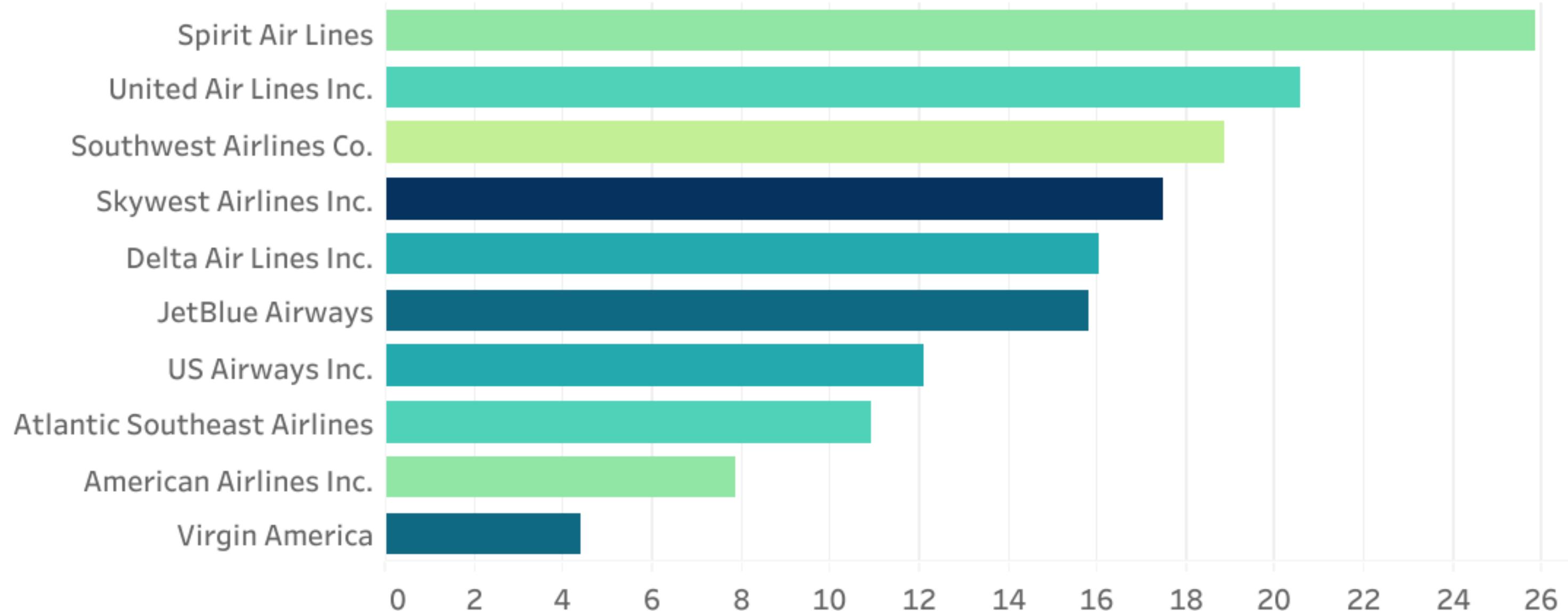
- *Flights towards the Caribbean are delayed often*
- *Ohio is a tough place to fly to*

Average Delay by Airline

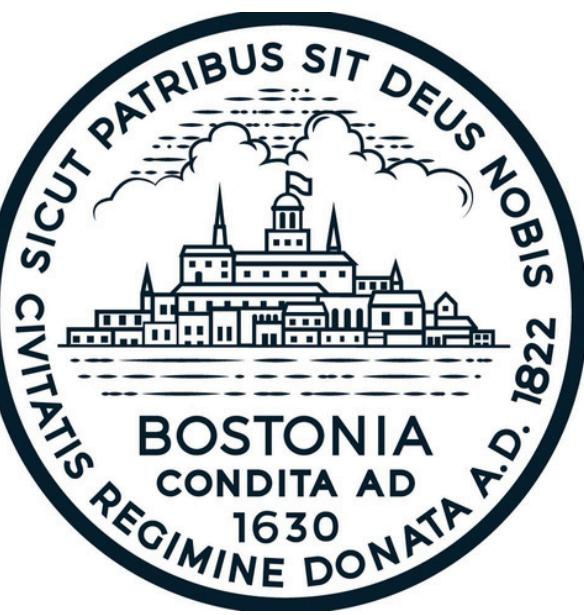


Top 2 Airlines with Most Delays (avg mins)

- *Spirit Airlines*
- *United Airlines*

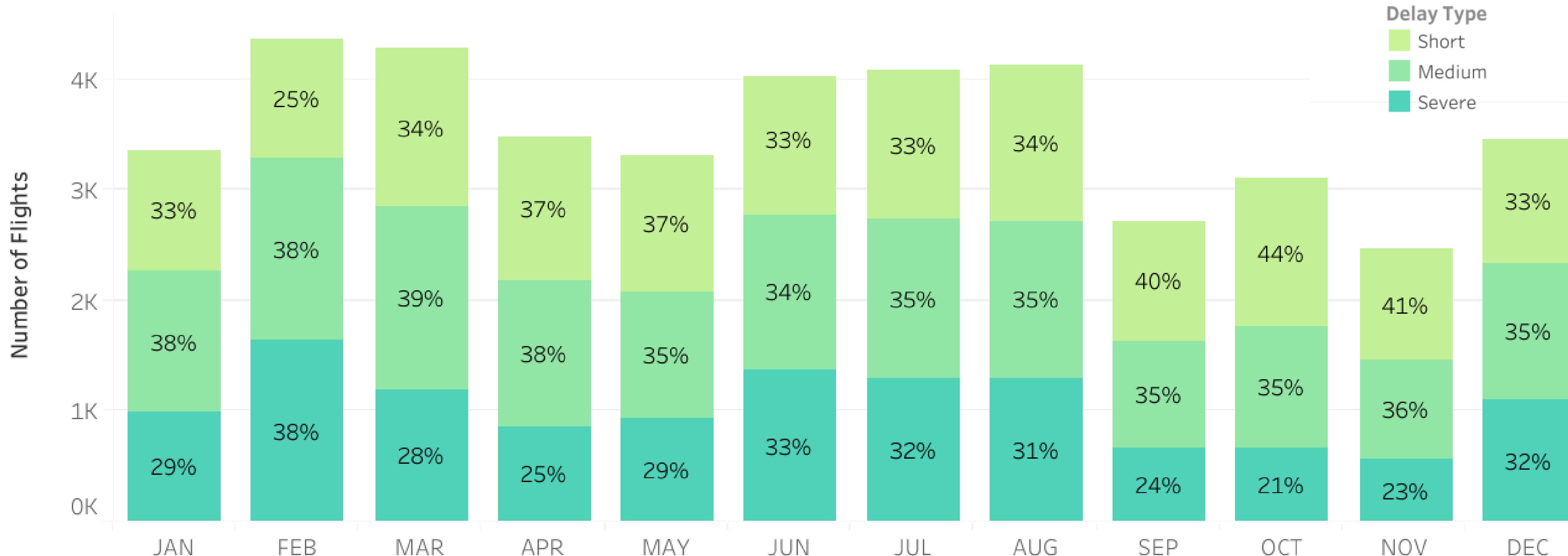


Delays by Month



Most Delays and Severe Delays

- National: June
- Boston: February

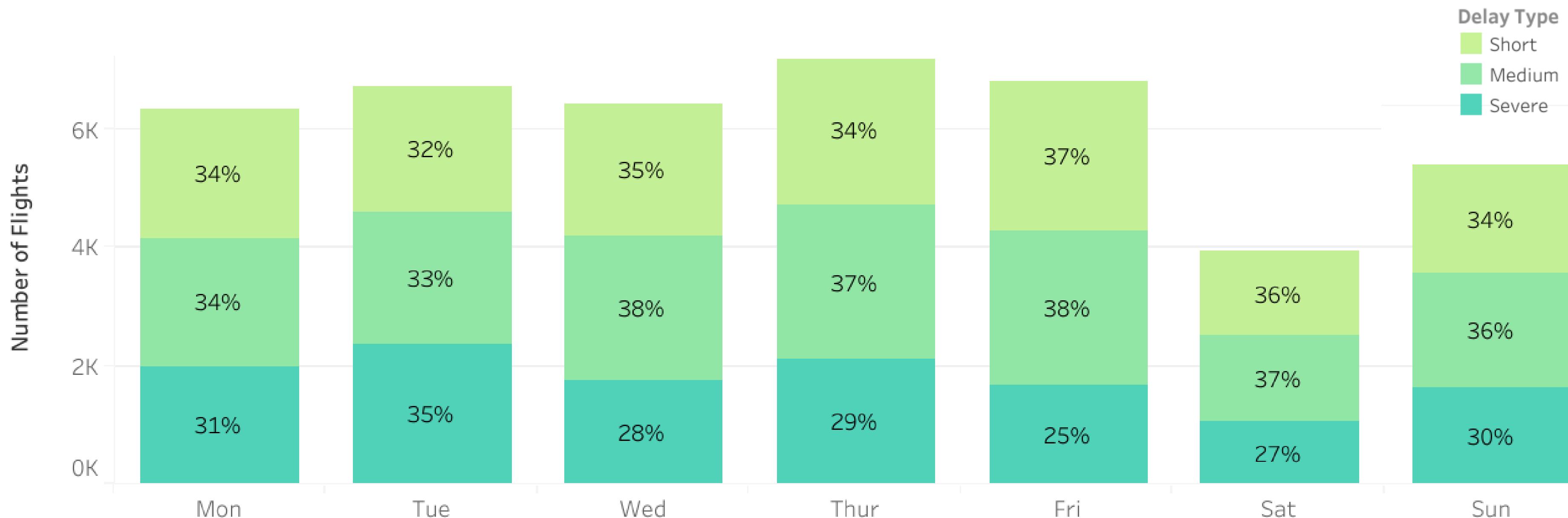


Delays by Day of Week



Most Severe Delays:

- *National: Thursday*
- *Boston: Tuesday*



Challenges



Data inconsistency with IATA Airport Codes

“10721”

Code for Boston airport! Solution wasn't scalable...



To avoid altering original data, we worked with views!

Conclusion



Boston

New York, Philadelphia, DC, and Chicago (East Coast)



Airlines

Worst: Spirit Airlines | Best: Virgin America



Delays by Time

Month: February (National: June)



Cancellations by Time

Reason: Weather

THANK YOU

Questions?

