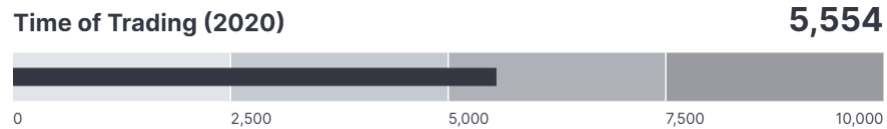# AeroFlight 2020

An analysis of this new company's data for their first year of trading

BY CARLOS NASSIM KHALILI BOUKAI – LONDON, 05/07/2024

The context for this study & data overview

Time of Trading (2020)   **5,554**

0	2,500	5,000	7,500 10,000

AeroFlight Ltd. is a new charter company offering cheaper charted flights. They started trading in January 2020, and after a year of trading they decided to analyse the data they have gathered in order to make business and marketing decisions for the new year.

AeroFlight operates mainly from USA airports, but they look forward to extend their service to other locations.

Carlos was hired as a data analyst for this project.

The dataset provided includes the following:

- **Year range: 2020**
- **Month range: from January to December of 2020.**
- **Breakdown of month per weeks and days.**
- **Departure and arrival times**
- **Flight duration.**
- **List of departure airports (40 in total).**
- **List of destinations offered (43 in total).**
- **Data about cancellations and their codes.**
- **Data about flights diverted.**

Quality and consistency of service

Quality of service:

- **96% of all flights booked were delivered.**
- **3% of flights were cancelled due to code 'A'.**
- **1% of flights were cancelled due to codes 'B' and 'C'.**

Insights:

- **In general, AeroFlight provides a consistent service to its customers.**
- **Most cancellations took place in January, March, May and November.**

Cancellations per Month (2020)
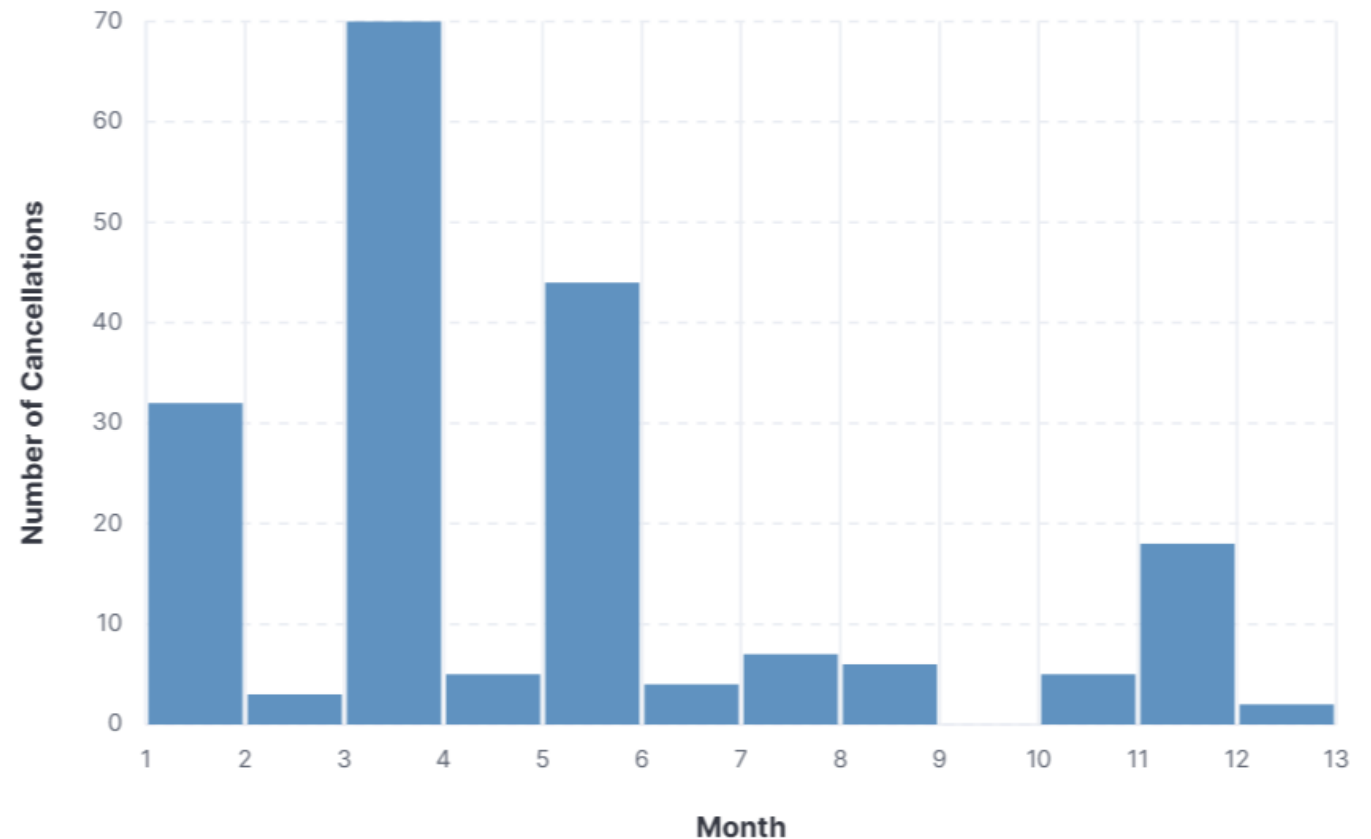
AeroFlight busiest airports and top destinations

Top 50 busiest airports - Origin

Insight on busiest airports:

- The busiest airports for AeroFlight are (in this order): Dallas, Los Angeles, New York, Miami, Chicago and San Francisco.

Top 50 destinations - Count of Dest

Insight on top destinations:

- The top destination airports for AeroFlight are (in this order): Dallas, Los Angeles, New York, Miami, Chicago and San Francisco. It is exactly the same trend for both origin and destinations.

Flights booked per month

Flights booked – breakdown per month:

- Jan =   19%
- Feb =   5%
- Mar =   27%
- Apr =   3%
- May =   18%
- Jun =   1%
- Jul =   7%
- Aug =   3%
- Sep =   1%
- Oct =   2%
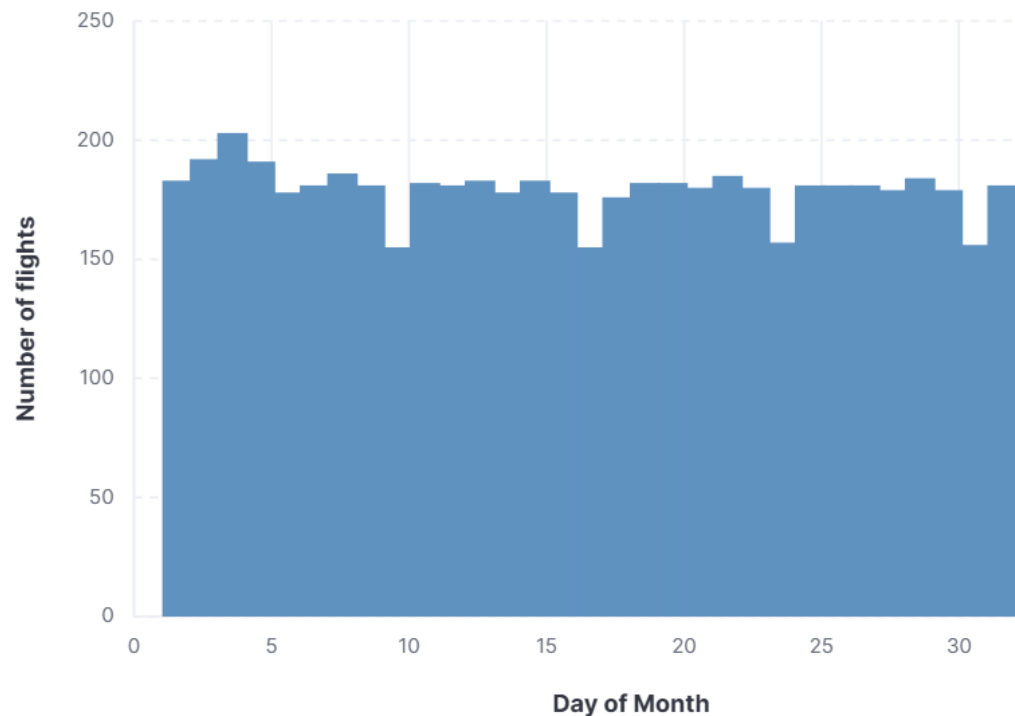- Nov =   9%
- Dec =   1%

Insight:

- The best trading months are (in this order): March, May, January and November.
- The weakest months are June and December.
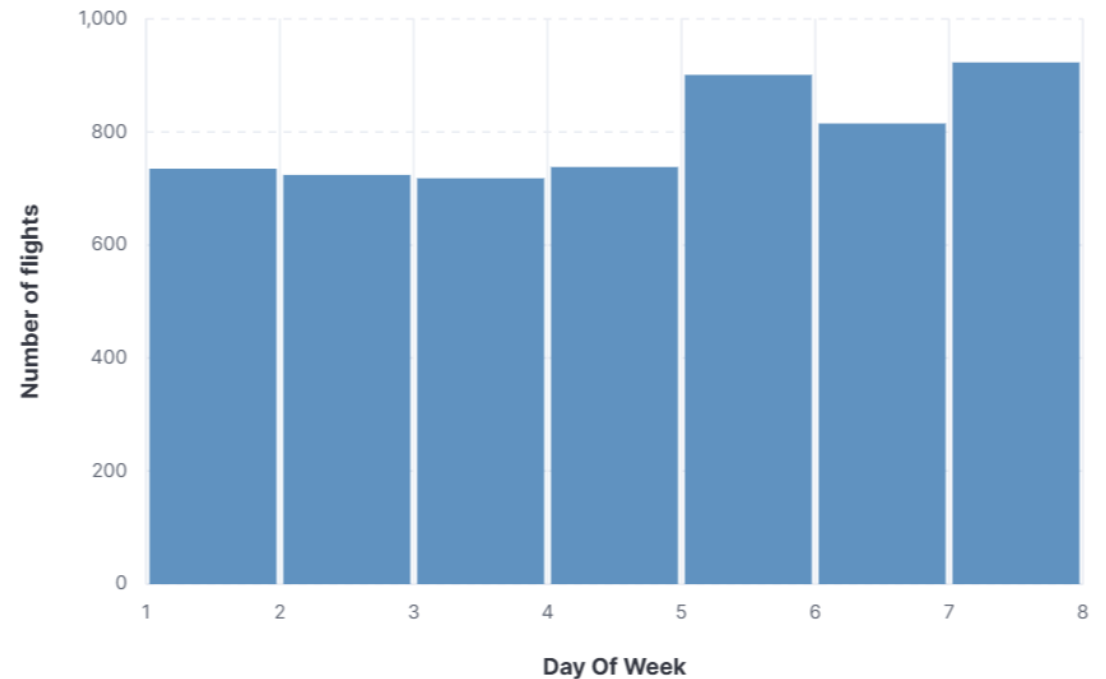

Trend of flights per month
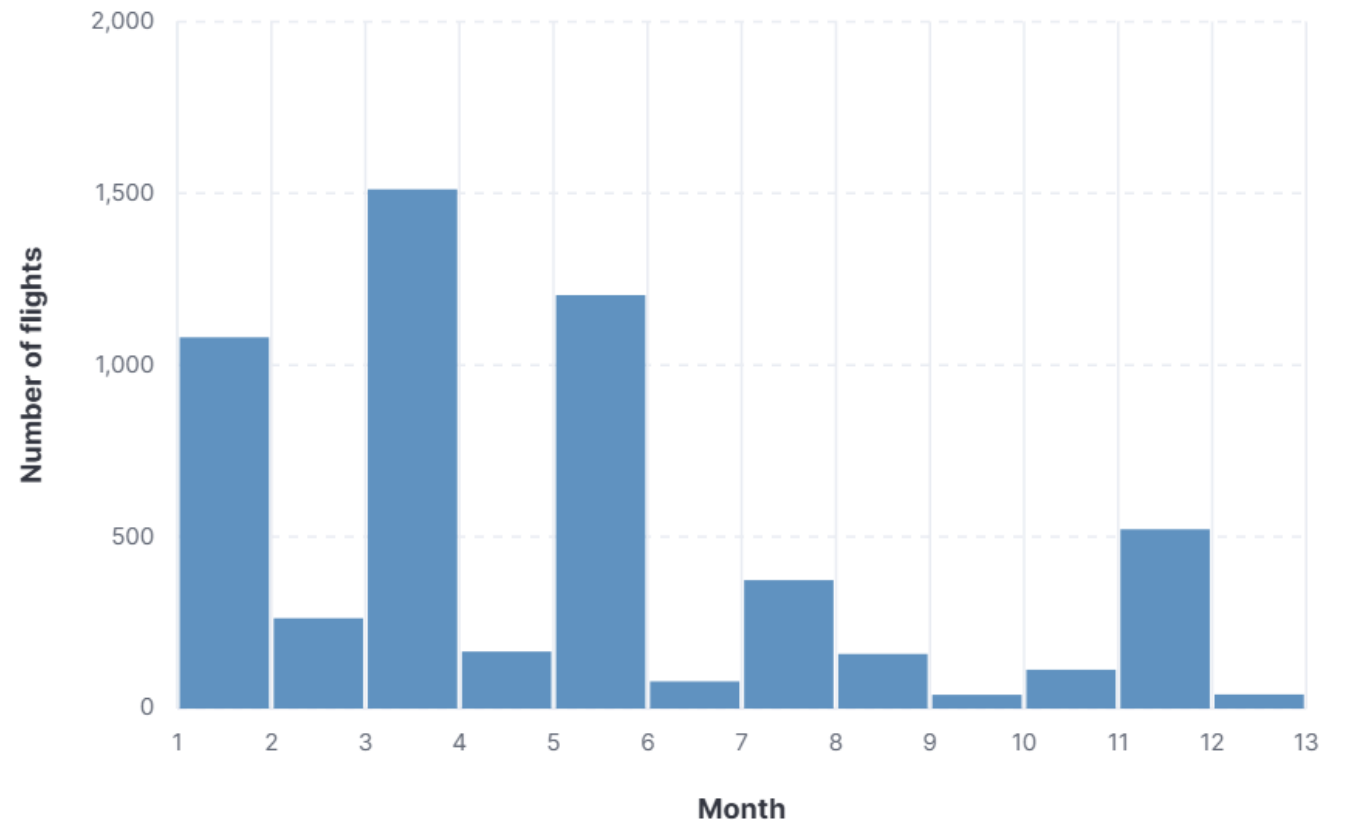
Overall trend of booking and service

Trend of flights per day of the month

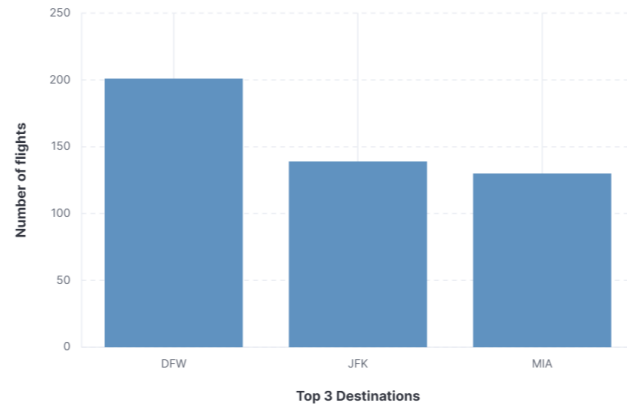**Insight:** The booking trend seems consistent throughout the month; however, there is a drop in sales every 7-9 days.
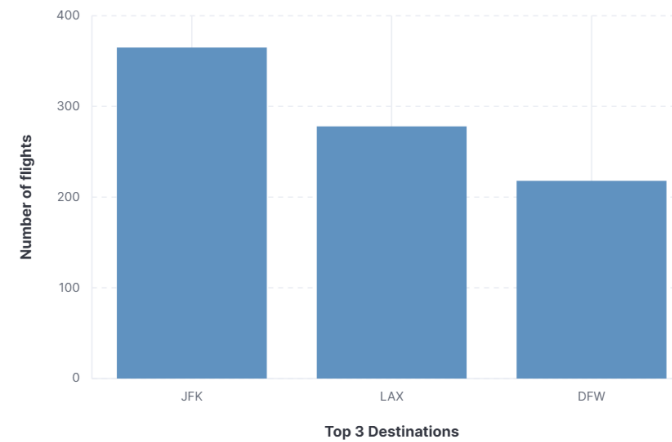
Trend of flights during the week

Insight: The booking trend seems consistent throughout the week, with an obvious increase on flights booked over the weekend.
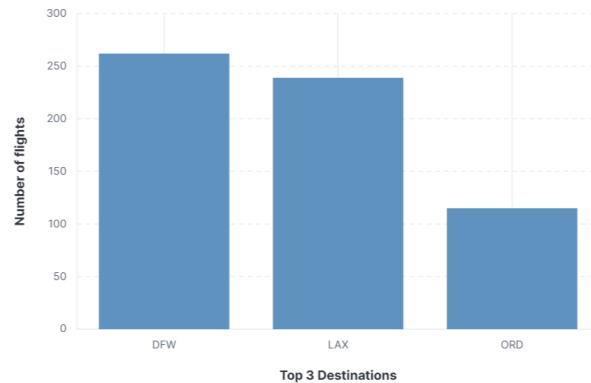
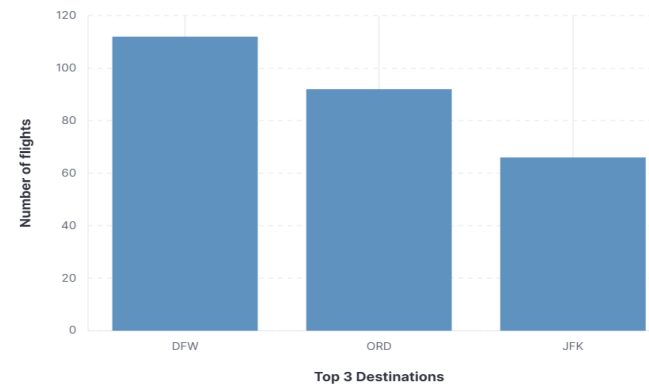# Top destinations in the busiest months

Insight:

- **Dallas is the busiest – and most popular – destination during the busiest months.**
- **New York (JFK) is the second busiest destination.**
- **Los Angeles is the third most popular destination.**

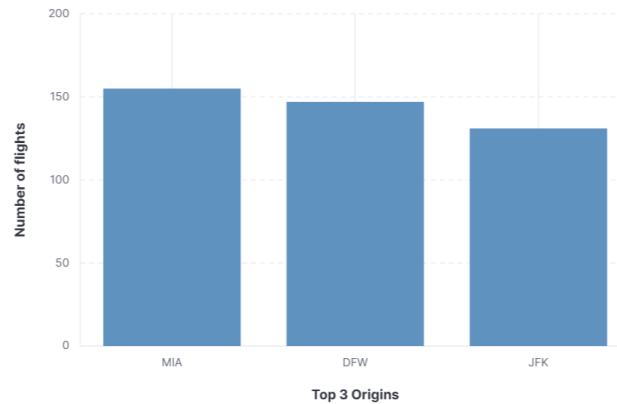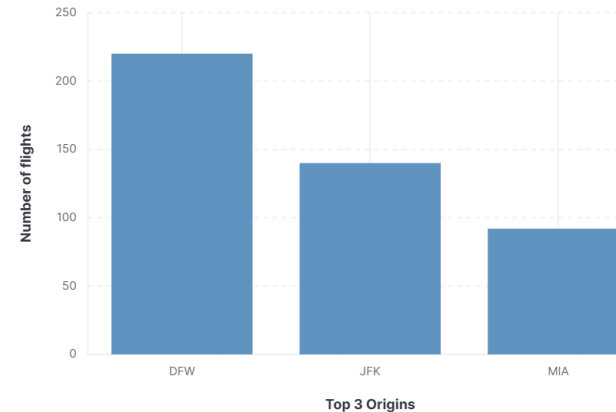**NOTE: it is worth – for next year's study – to gather data about the passengers' reason for flight (personal or business?). It is intriguing that Dallas would be much more popular than Los Angeles (vacation) or New York (vacation/business).**
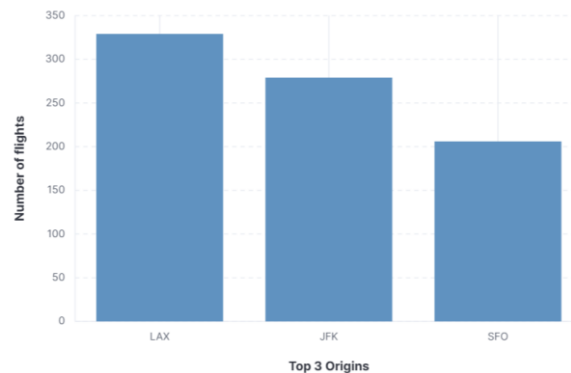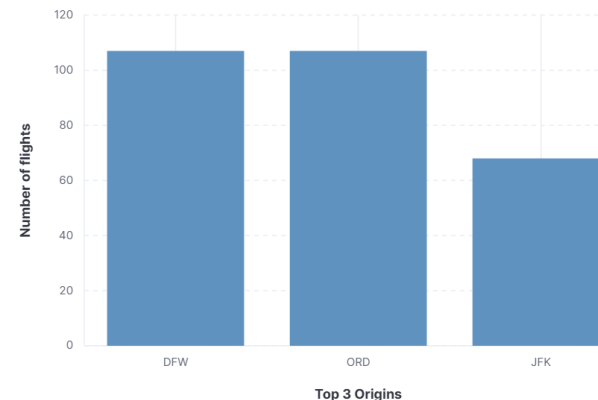
Busiest airports in the busiest months

Insight:

- **Although never the first on the list, New York (JFK) is the most popular in the list for the top 3.**
- **It is followed by Dallas and Miami as second busiest.**
- **Los Angeles is the least popular in this list, together with San Francisco.**

NOTE: Although it appears only once in the list, Los Angeles in first among the top 3 for March. It is worth investigating what causes people to travel from this airport at this time of the year, so AeroFlight can use this information for their business strategy.

Data questions for specific dates

3 Busiest airports for 1st Sunday of March 2020

JFK **30.43%**

LAX **43.48%**

DFW **26.09%**
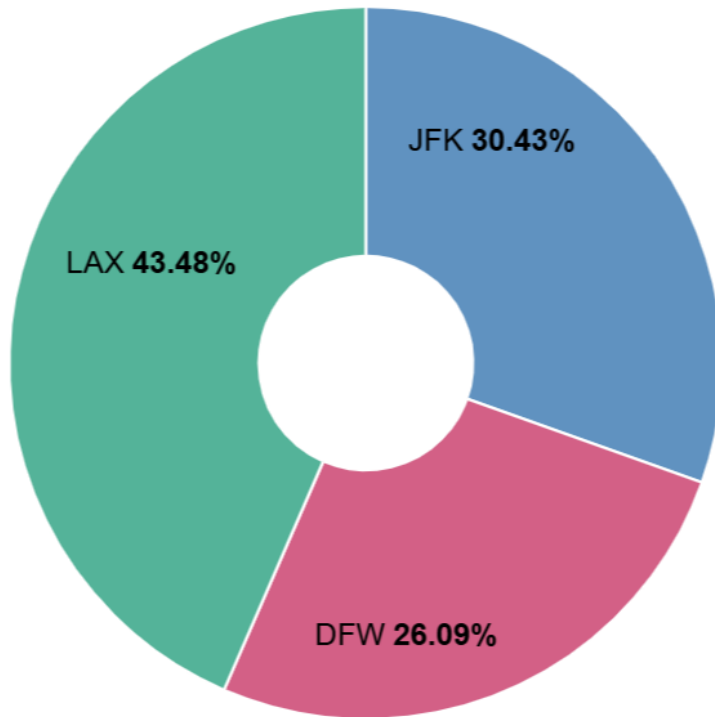
Top 3 destinations for 2nd Saturday of May 2020

LAX **33.33%**

DFW **50%**

ORD **16.67%**
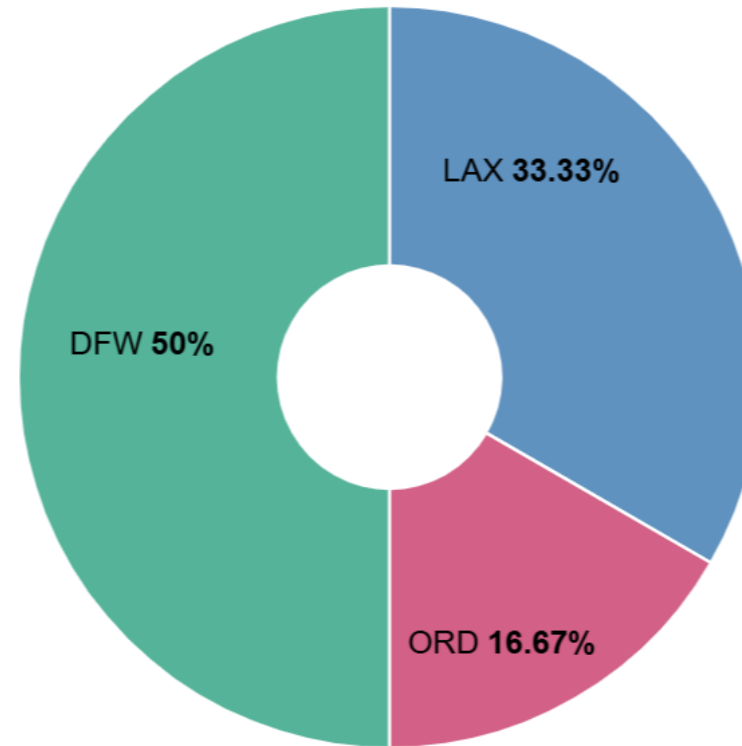
Insight:

- **The overall trend for busiest airports (in March 2020, DFW-JFK-MIA) differs from this particular date. It is worth breaking down the busiest months into weeks, to check for the trend of behaviour.**
- **However, the trend for top destinations matches exactly that of the overall trend for that month. Still, it is worth drilling down into weeks to check for the pattern.**

Are Aeroflight services delivered on time?

How many flights arrived late?
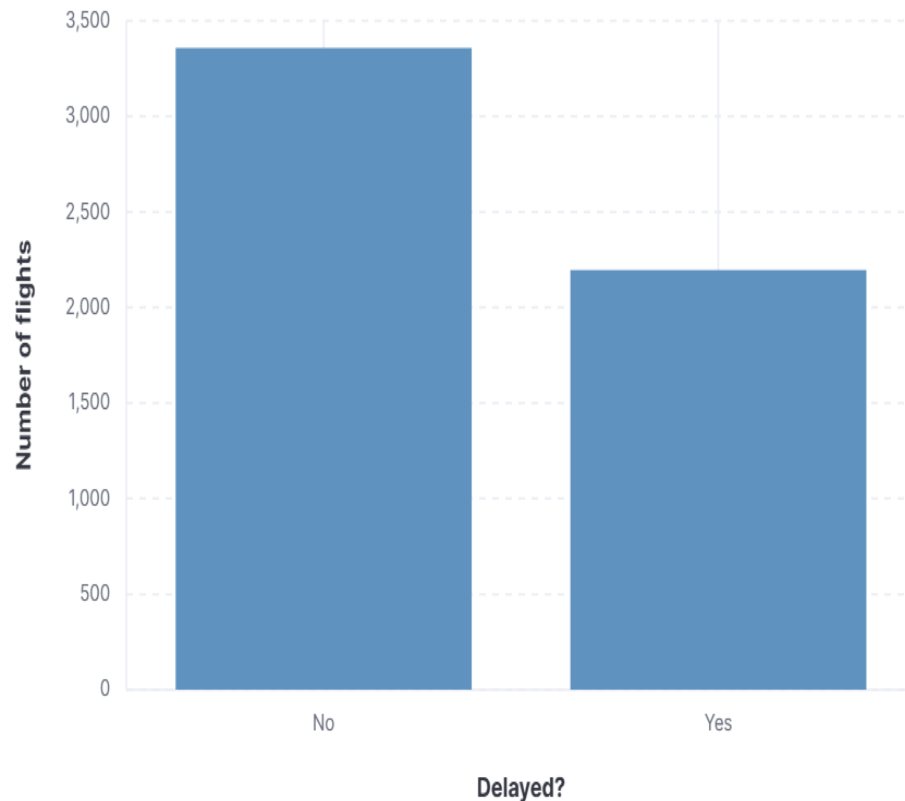

How many flights departed late?
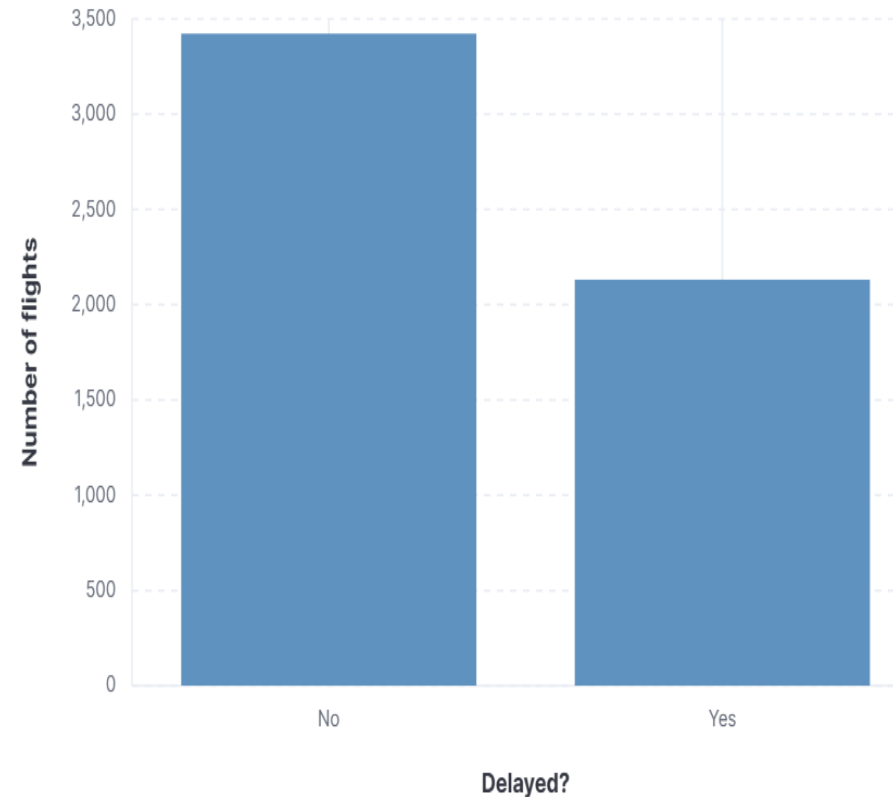
Insight:

- Around **40%** of all AeroFlight's flights arrived after the declared arrival time. The average delay was of 15 minutes.
- Around **39%** of all Aeroflight's flights departed after the declared departure time. The average delay was of 29 minutes.
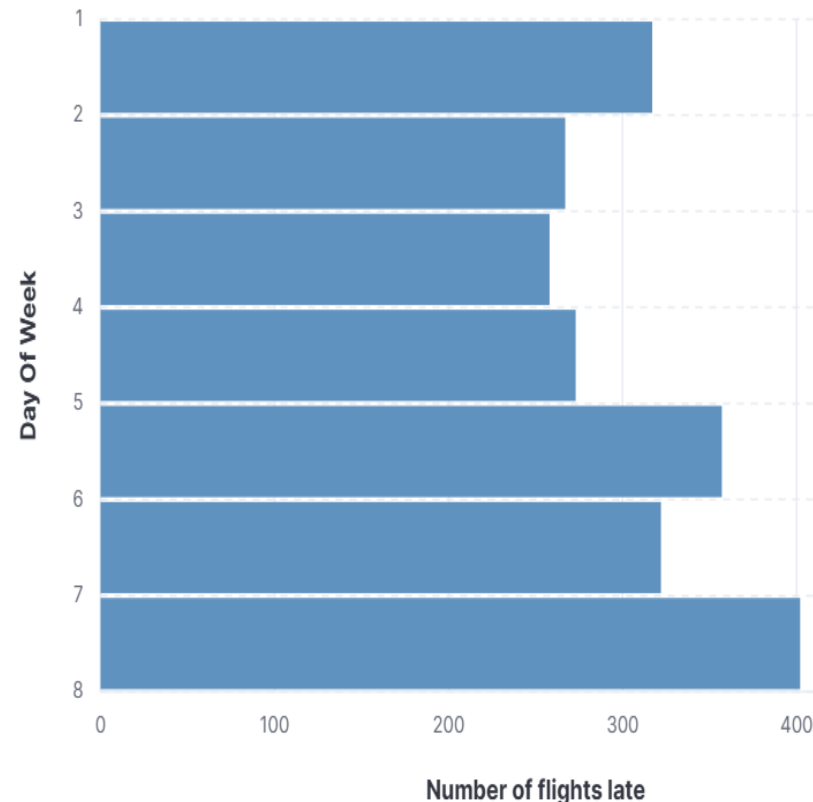
NOTE: it is worth checking the reasons behind this delay, for both legal consequences or simply to improve customer satisfaction.

Arrival and delay trends – weekly visualisation

Weekly trend of lateness - departures
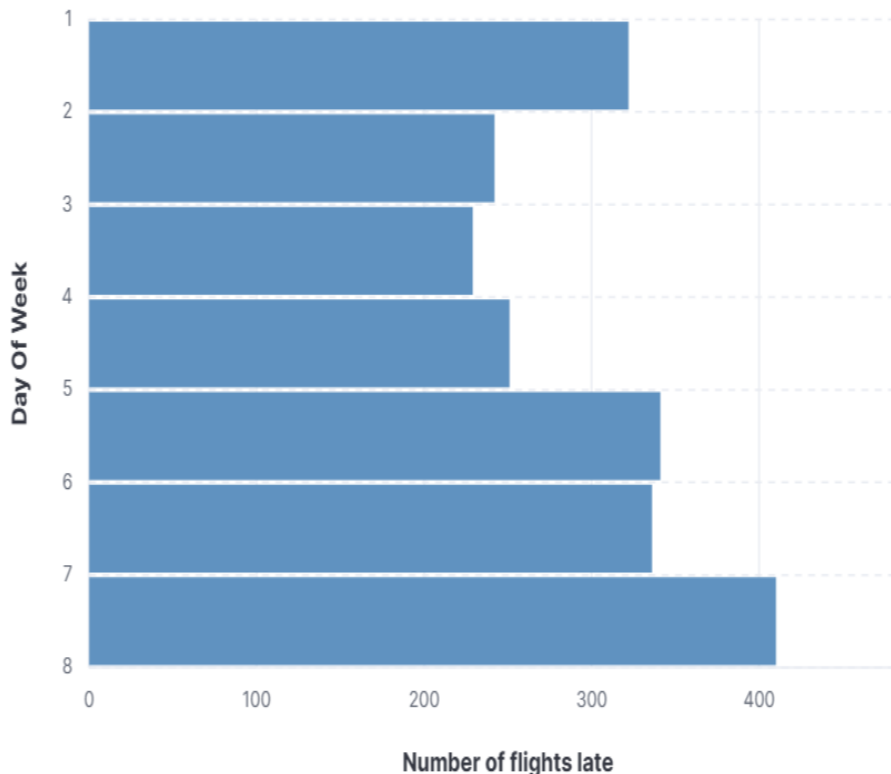
Weekly trend of lateness - arrivals

Insight:

- **In both departure and arrival delays, there is a clear pattern: their numbers are relatively lower mid-week and start to rise towards the weekend, especially on Sundays. This might explain why Monday also has a higher number of delays: it is possible that Aeroflight has a backlog of technical issues on Sunday and take a little longer to solve them.**

- **There is a noticeable different regarding Fridays and Saturdays, when it comes to delays: while their proportions are almost equal regarding departures, Saturday presents a considerable lower number of delays for arrivals. This might indicate that leaving late is not the only reason for late arrivals.**

Thank you!