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From Takeoff Troubles to Late Landings: Understanding Alaska Airline Delays

This dashboard dives deep into Alaska Airlines' flight performance, uncovering when, where, and why delays occur. We explore airport-specific trends, causes of disruptions, seasonal impact, and high-performing terminals — turning delay data into insight-driven solutions.

*Let's uncover **which airports face consistent challenges**, which ones shine, and what Alaska Airlines can do to improve on-time arrivals.*



Delay Overview

Reason Breakdown

Performance

Summary



Where Delays Happen

Home

Delay Overview

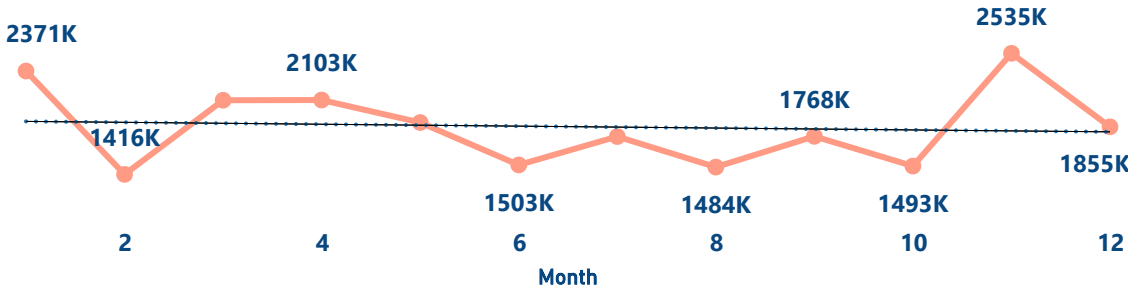
Reason Breakdown

Performance



This bar chart shows **which airports** have the most total delay time.

- **Dallas Fort Worth (1.16M min)** and **Chicago O'Hare (1M min)** top the list, both being major U.S. hubs.
- These findings suggest a need for **resource scaling, slot optimization, and enhanced coordination** at these high-volume airports.



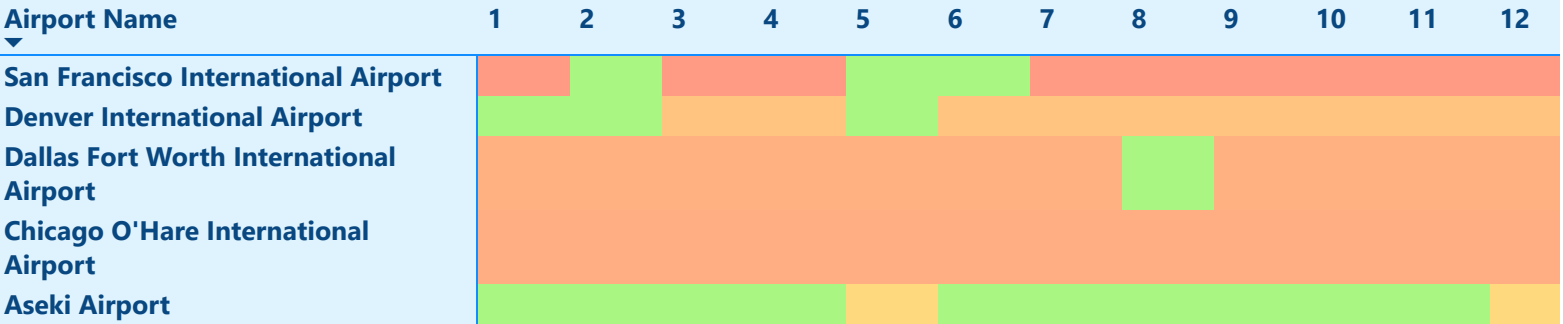
This line chart show how **total delay minutes fluctuate month over month**, with an indication of growth/decline compared to previous months.

- Delay peaks in **January and November** may relate to **weather disruptions and holiday travel**.
- **February and mid-year months** see lower delay volumes, presenting opportunities to experiment with new policies or tech.



This map shows **where delays happen** most around the world.

- **North America and Australia** have the most delayed airports, meaning they face frequent disruptions.



This heatmap shows **month-wise delay trends** per airport using color-coded performance (**red** = high delay, **green** = on time), **which months have more delays at each airport**.

- For example, **Chicago O'Hare** shows high delays nearly all year, indicating a **systemic challenge**.
- **Aseki Airport** fluctuates widely, suggesting **event-based or unpredictable factors**.



Why Are Flights Getting Delayed

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Reason ● Carrier ● Late Aircraft ● NAS ● Security ● Weather

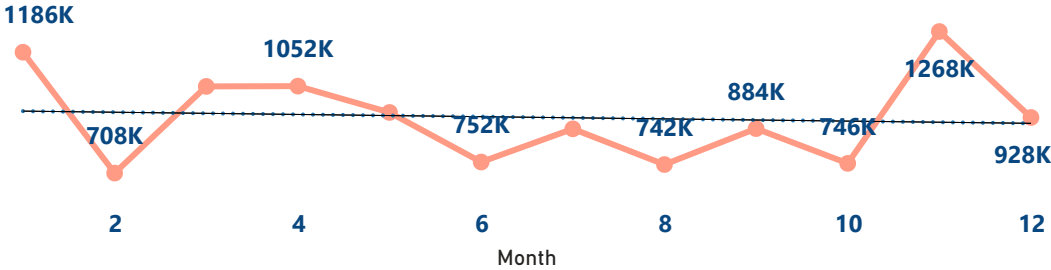


Identify major **airports and delay causes**.

- Newark has highest delays (82K mins), mostly due to late aircraft and carriers.

Solution:

- Focus on reducing turnaround times and optimizing aircraft scheduling at top airports.

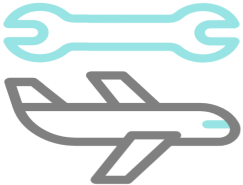
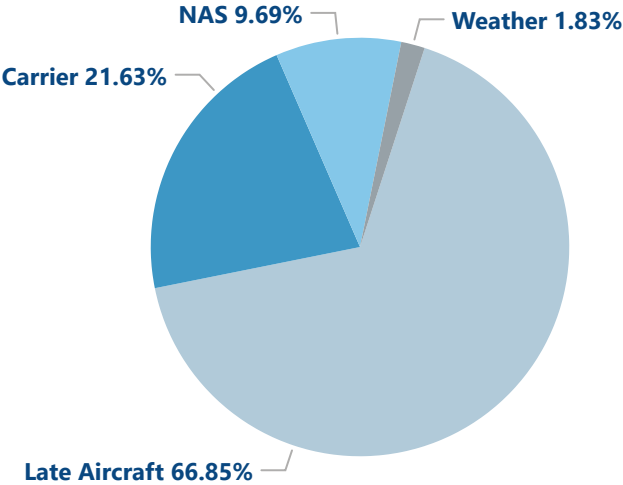


Track monthly trend of **late aircraft** delays.

- Peaks in January and November (1186K & 1268K mins), lowest in February.

Solution:

- Increase maintenance checks and buffer times during high-delay months.



Understand key **reasons for delays**.

- Late Aircraft is the top cause (66.85%), followed by Carrier (21.63%).

Solution:

- Airlines should optimize internal schedules and improve aircraft readiness.



Pinpoint airports with high **airline-related delays**.

- Denver (174K mins) and Atlanta (173K mins) lead in carrier delays.

Solution:

- Audit airline operations and ensure crew availability and flight readiness.



Which Airports Perform Best or Worst

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Delay Overview

Reason Breakdown

Performance

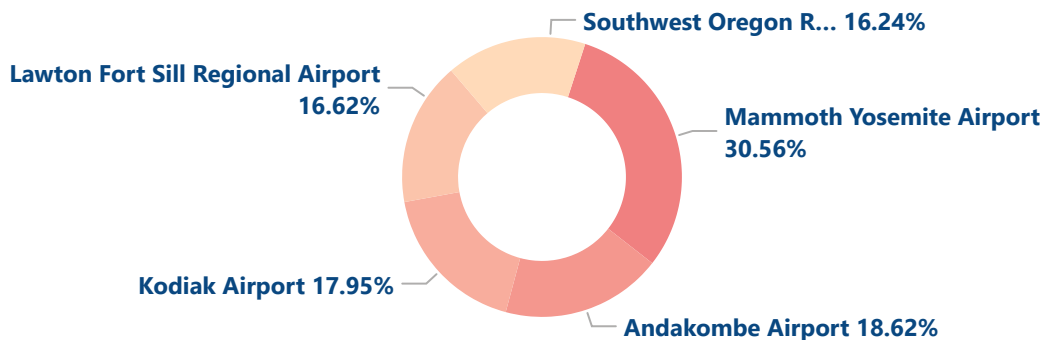


Identify which airports consistently cause the **most delay per flight**.

- Marquette Sawyer leads with 89 mins avg delay; others exceed 60 mins.

Possible Solution:

- Investigate ground operations, staffing, and weather conditions at top offenders.



Highlight airports with **highest cancellation rates**.

- Mammoth Yosemite tops at 30.56%; rest range 16–18%.

Solution:

- Review infrastructure, weather challenges, and maintenance schedules.



Showcase airports with high **on-time performance**.

- Mobile Downtown & Pitt-Greenville achieved 100% on-time performance.
- Benchmark best practices and apply them to low-performing airports.



Airport Name	1	2	3	4	5	6	7	8	9	10	11	12
San Francisco International Airport	High Delay	On Time	High Delay	High Delay	On Time	On Time	On Time	High Delay	High Delay	High Delay	High Delay	High Delay
Denver International Airport	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time
Dallas Fort Worth International Airport	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time
Chicago O'Hare International Airport	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time
Aseki Airport	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time	On Time

Spot seasonal **delay patterns across airports** (red = high delay, green = on time)

- Delays spike in winter and late summer across major airports.

Solution:

- Prepare seasonal action plans and optimize scheduling during peak delay months

Dashboard Summary: Alaska Airlines Delay Analysis

Objective

This dashboard analyzes delay trends for Alaska Airlines to uncover where, when, and why delays occur. It highlights airport-specific patterns, seasonal variations, and root causes, turning flight data into actionable operational insights.

Key Findings

- **Top Delayed Airports:** **Dallas Fort Worth, Chicago O'Hare, Denver, San Francisco, and Newark** lead in total delay minutes.
- **Primary Delay Reason:** "Late Aircraft" accounts for over **66%** of all delays.
- **Peak Delay Months:** January and November show significant spikes, likely due to **weather** and **holiday travel**.
- **Best Performing Airports:** **Mobile Downtown** and **Pitt-Greenville reported 100% on-time** performance.
- **Highest Cancellation Rate:** Mammoth Yosemite Airport with **30.56%** flight cancellations.
- **Worst Average Delay:** Marquette Sawyer Airport with **89 minutes** per delayed flight.

Recommendations & Action Points

- **Improve Aircraft Turnaround:** Focus on faster maintenance and readiness to reduce "Late Aircraft" issues.
- **Optimize Scheduling at Major Hubs:** Scale resources and streamline operations at high-volume airports.
- **Seasonal Planning:** Allocate extra buffers and contingency plans during **January & November**.
- **Benchmark High Performers:** Study operational best practices from top-performing airports.
- **Reduce Carrier-Related Delays:** Conduct airline audits and ensure proper staffing and flight preparedness.
- **Investigate High Cancellations:** Review weather impact and infrastructure limitations at high-cancel airports.

