

HELD UP & LET DOWN: Why New York Area Airports Face Chronic Delays

BRIEF

Flight delays inconvenience passengers, cost billions in lost productivity, increase carbon emissions, and leave visitors with a bad impression of both the airport and the city it serves. And in spite of their national significance, New York area airports are some of the most delayed in the country.

In fact, LaGuardia, JFK and Newark rank 29th, 28th and 24th, respectively, out of 29 of the nation's biggest airports, for on-time arrival performance in 2015, with only 65 percent of flights arriving on time at LaGuardia, the only airport to score below 70.

This report looks at the primary causes of delays for flights arriving at New York area airports, which include the National Aviation System (NAS), late-arriving aircrafts, air carriers, extreme weather, security; the role of air traffic volume in causing delays; and the history of airport delays in the region. The first half of the report focuses on arrival delays for 2015, from January to April, while the second half compares historical data from 2012 to 2014.

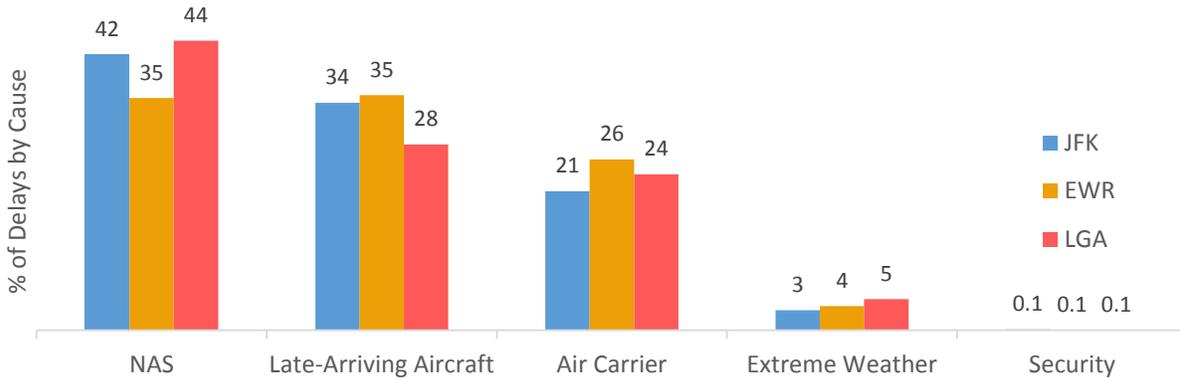
The report also makes a series of recommendations to help reduce delays, including prioritizing the full roll out of NextGen in the New York airspace first, expanding the physical airport infrastructure, exploring the creation of an independent Air Traffic Control Office to manage the airspace and NextGen implementation, and reforming the slot system at JFK, LaGuardia and New York.

AIRPORT DELAYS

Over 315,000 flights arrive at New York area airports every year, and yet roughly one in four is delayed. There are five primary causes of these delays, although the top three account for over 95 percent of delays overall, namely the airspace, compounded delays and air carriers. (See Glossary for further clarification of terms.)

- 1 Collectively, the biggest cause of delays so far this year is the National Aviation System (NAS), accounting for over 40 percent of delays at JFK and LaGuardia, and 35 percent at Newark. The NAS refers to the national airspace, meaning this type of delay is attributable to congestion in the skies.
- 2 The next leading cause of delays is 'late-arriving aircraft,' which is when a previous flight delays the arrival or takeoff of the flight in question, frequently as a consequence of airspace congestion. These late arrivals with a knock-on effect are responsible for roughly a third of all delays at the region's airports.
- 3 Air carrier delays, like maintenance, crew issues, and baggage loading, are the third largest cause of delays, accounting for between one fifth and a quarter of all delays. More minor causes of delays are extreme weather and security setbacks, which combined represent under five percent of all delays. (See Chart 1)

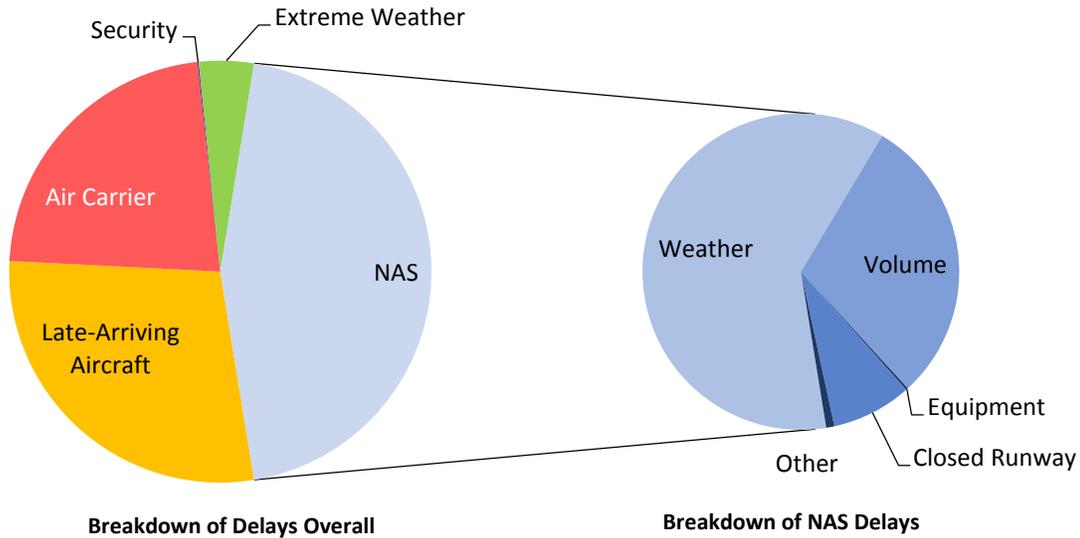
Chart 1: Arrival Delays at New York Area Airports in 2015, by Cause



THE AIRSPACE

The New York airspace is the most crowded in the nation, encompassing the states of New York and New Jersey, as well as parts of northern and eastern Pennsylvania. In fact, one-third of all flights nationwide depart, arrive or connect at one of the region’s three main hubs; LaGuardia, JFK and Newark Liberty. This high level of air traffic makes for a complex airspace that has become plagued by chronic delays.

Chart 2: Breakdown of Arrival Delays at New York Area Airports in 2015



This information helps shed light on New York’s primary cause of delays – the National Aviation System. These types of delays, however, can be further broken down into five main reasons; non-extreme weather conditions, air traffic volume, equipment problems, closed runways and other.

Weather Delays

There are two types of weather delays; extreme and non-extreme. Extreme weather is a primary cause of delays and comprises of severe weather patterns, such as blizzards and hurricanes. Non-extreme weather, however, falls under the NAS delay umbrella and consists of mild, regular weather patterns, such as rain and fog.

Non-extreme weather accounts for roughly two-thirds of NAS delays and 40 percent of arrival delays overall, making it the largest cause of NAS delays and a significant contributor to flight disruptions in the region. In other words, fairly regular and seemingly manageable weather conditions are causing serious problems for planes in the region.

Extreme weather, on the other hand, is responsible for under five percent of *all* arrival delays. In fact, severe weather delays affect less than one percent of all arrivals.

According to the Bureau of Transportation Statistics (BTS), weather-related delays coded under “NAS” are the type that could be reduced with corrective action by the regional authority or the Federal Aviation Administration (FAA).

Volume Delays

Heavy air traffic volume is the second greatest cause of NAS delays, accounting for one-third of NAS delays and 13 percent of delays overall. They occur when the level of traffic overtakes the airport’s capacity, resulting in flight delays. So far this year, over 3,500 arriving flights have been delayed due to air traffic. These findings speak to the high levels of traffic passing through the airspace and the repercussions of congestion.

Chart 3: Percentage of Total Delays Caused by Severe and Non-Severe Weather in 2015

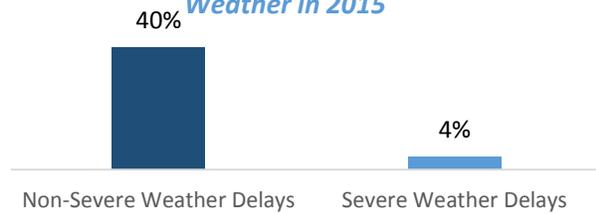


Table 1: The Number of NAS Arrival Delays Caused by Volume in 2015 at NY Area Airports

Airport	No. of Volume Delays	% of NAS Delays
JFK	830	22
LaGuardia	1,667	31
Newark	1,072	37

HISTORY OF DELAYS

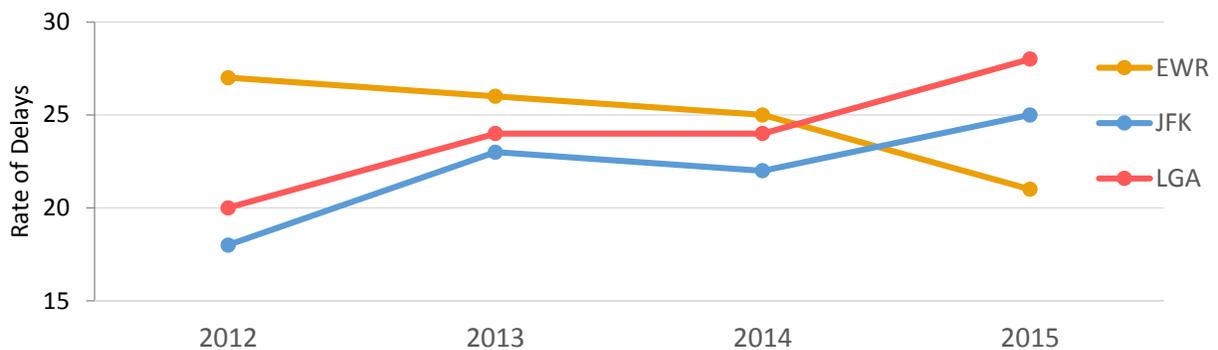
Congestion and delays have long been a problem for New York area airports; analysis of historical data shows that delays have held steady over the past three years, and in some cases, worsened.

Rate of Delays

Not only are delays continuing, but the rate at which they affect flights has not improved over the years either. At LaGuardia, for example, the rate of delays increased from 19 percent in 2012 to 28 percent in 2015. Similarly at JFK, the rate of delays has increased by seven percentage points, rising from 18 percent in 2012 to 25 percent in 2015.

Newark, on the other hand, has experienced a decrease in its rate of delays, dropping by six percentage points over the four year period, to 21 percent. However, Newark did have the highest rate of delays to being with, at 27 percent in 2012, and is the only airport of the three whose rate of delays did not drop below 20 percent at any point during the studied period.

Chart 3: Rate of Delays for Arriving Flights at NY-NJ Airports from 2012-2015



History of Congestion

Delays due to air traffic congestion are also nothing new. The heavy regional flight traffic has delayed roughly 27,000 flights since 2012, with the number of volume delays generally holding steady year in, year out at the three New York area airports.

In attempt to curb this sort of delay, the FAA imposed a cap on the number of flights allowed to fly in and out of the region’s airports. However, the slots have done little to address the congestion-related delays at their core and are fundamentally not a long term solution as they prevent New York area airports from meeting increases in demand.

In addition, these volume delays are also the result of the outdated air traffic control system currently in place, which relies on radar technology from the 1960s. As a result, processes take longer and the system is prone to delays.

RECOMMENDATIONS

With little to no change over the years, the delay problem plaguing New York and New Jersey airports has now become chronic. And what’s more, delays at these airports mean delays around the nation, as the high level of traffic passes through our airspace has a ripple effect across the nation.

Federal and local partners must act now and GGA is calling for the following reforms to not only reduce congestion and delays, but also improve the air traffic process overall for the region:

- 1. Bring NextGen to NY Airspace:** The continuance of airspace-related delays highlights the need for NextGen air traffic technology in the New York airspace to ease congestion, streamline departure and arrivals processes, and reduce delays both regionally and nationally. While there has been recent progress in bringing NextGen to the New York airspace, including bringing Data Comms to Newark to speed up communications between pilots and air traffic controllers, the vast majority of flights in our area do not use NextGen procedures. The FAA must now prioritize and expedite the full roll out of NextGen in New York to allow for more intensive and effective usage of existing capacity.
- 2. Expand Physical Infrastructure:** NY area airports have constrained physical capacity, which limits their ability to handle the large amounts of traffic they experience on a daily basis, as well as any inclement weather. By continuing and expediting Port Authority efforts to replace outdated terminals, add additional gates, and most important, extend runways, the airports could better accommodate more concurrent flight operations.

3. **Create Independent Air Traffic Control Office:** As evidenced by the delayed national rollout of NextGen, the FAA has struggled to keep pace with the new and expanding needs of the growing air industry. Considering the creation of an independent Air Traffic Control Office that is funded by user fees rather than the general federal budget, would remove air movements from year-to-year budget battles and provide more certainty and accountability in the roll out of new technologies and management of the airspace.
4. **NY Airport Delay Council:** A special council of industry and outside experts should be appointed to monitor and report on the on-time performance of airports within the New York airspace, generating biannual reports to highlight progress made and the best avenues to improve the delay situation.
5. **Slot Reform:** The FAA needs to review the slot rules that have been in place since 2008 to establish their level of efficacy and outline possible reforms that will increase capacity and accountability at New York-New Jersey airports, including raising the total number of slots available and increasing transparency around slot ownership and usage.

METHODOLOGY

Data from the Bureau of Transportation Statistics (BTS) was used to compile on-time arrival performance statistics for the three major New York area airports; JFK, Newark, and LaGuardia. Data was then analyzed to give the total number of delays. The percentage of flights affected was determined using flight operations statistics from Port Authority Air Traffic Reports.

According to BTS, there are five causes of delays; Air Carrier, Extreme Weather, Late Arriving Aircraft, Security, and National Aviation System (NAS) delays. NAS delays are further broken down, also by BTS, comprising of five types of delays; Closed Runway, Equipment, Volume, Weather, and Other.

Additionally, delay estimates in this study are likely conservative because studies show airlines frequently reduce the appearance of delays by padding their schedules. However, it is difficult to know the exact extent to which schedule inflation affects delay reporting.

GLOSSARY

Air Carrier	Delays due to circumstances within airline control, such as maintenance, crew problems, aircraft cleaning, baggage loading, fueling, etc.
Closed Runway	Classified under the NAS delay category, this refers to delays caused by purposefully closed runways, due to construction, maintenance, etc.
Equipment	Classified under the NAS delay category, this refers to technical breakdowns in the NAS, such as computer glitches.
Extreme Weather	Significant meteorological conditions (actual or forecasted) that, in the judgment of the carrier, delays or prevents the operation of a flight, such as tornados, blizzards or hurricanes.
Late-Arriving Aircraft	A previous flight with same aircraft arrived late, causing the present flight to depart late.

National Aviation System (NAS)	Delays attributable to the National Aviation System that refer to a broad set of conditions, such as non-extreme weather conditions, airport operations, heavy traffic volume, and air traffic control.
Other	Classified under the NAS delay category, this refers to all other possible causes of delay in the National Aviation System that are not weather, volume, equipment, and closed runway.
Security	Delays caused by evacuation of a terminal or concourse, re-boarding of aircraft because of security breach, inoperative screening equipment and/or long lines in excess of 29 minutes at screening areas.
Volume	Classified under the NAS delay category, volume delays are those that occur because the amount of air traffic exceeds the airport's capacity.
Weather (Non-Extreme)	Classified under the NAS delay category, this refers to delays caused by the type of weather that slows the operations of the system but does not prevent flying.

APPENDIX

Table 2.1: Number and Percentage of Causes of Arrival Delays at JFK Airport

CAUSE OF DELAYS AT JFK		YEAR			
		2015 (YTD)	2014	2013	2012
Air Carrier Delay	No. of Delays	1,821	5,158	5,388	4,476
	% of Delays	21	25	22	28
Extreme Weather Delay	No. of Delays	180	575	613	477
	% of Delays	3	4	3	3
Late-Arriving Aircraft Delay	No. of Delays	2,693	6,486	7,607	5,514
	% of Delays	34	33	33	38
NAS Delays	No. of Delays	3,780	9,997	11,876	6,515
	% of Delays	42	39	41	31
Security Delay	No. of Delays	13	37	52	34
	% of Delays	0.1	0.1	0.2	0.1
Total Delayed Arrivals	No. of Scheduled Flights	33,633	100,550	111,349	97,102
	No. of Delayed Arrivals	8,487	22,253	25,536	17,016
	% of Total Flights	25	22	23	18

Table 2.2: Number and Percentage of Causes of Arrival Delays at LAGUARDIA Airport

CAUSE OF DELAYS AT LAGUARDIA	YEAR			
	2015 (YTD)	2014	2013	2012

Air Carrier Delay	No. of Delays	2,315	5,588	4,695	3,957
	% of Delays	24	25	20	23
Extreme Weather Delay	No. of Delays	375	911	833	617
	% of Delays	5	5	4	5
Late-Arriving Aircraft Delay	No. of Delays	2,663	6,798	6,585	4,622
	% of Delays	28	28	27	26
NAS Delays	No. of Delays	5,351	12,147	13,129	10,136
	% of Delays	44	43	48	47
Security Delay	No. of Delays	11	15	22	13
	% of Delays	0.1	0	0	0
Total Delayed Arrivals	No. of Scheduled Flights	38,112	106,952	104,660	99,373
	No. of Delayed Arrivals	10,715	25,459	25,264	19,345
	% of Total Flights	28	24	24	20

Table 2.3: Number and Percentage of Causes of Arrival Delays at NEWARK Airport

CAUSE OF DELAYS AT NEWARK		YEAR			
		2015 (YTD)	2014	2013	2012
Air Carrier Delay	No. of Delays	1,893	5,404	5,773	6,115
	% of Delays	26	20	18	22
Extreme Weather Delay	No. of Delays	575	723	721	1,735
	% of Delays	4	3	3	6
Late-Arriving Aircraft Delay	No. of Delays	2,261	8,438	10,038	9,328
	% of Delays	36	32	34	32
NAS Delays	No. of Delays	2,889	12,787	15,163	15,409
	% of Delays	35	45	45	40
Security Delay	No. of Delays	6	11	31	25
	% of Delays	0.1	0	0.1	0
Total Delayed Arrivals	No. of Scheduled Flights	35,715	110,221	120,675	120,534
	No. of Delayed Arrivals	7,624	27,363	31,726	32,612
	% of Total Flights	21	25	26	27

ABOUT GGA

Global Gateway Alliance (GGA) was established to address the major challenges facing the metropolitan region's airports and related infrastructure that, if left unaddressed, will serve as a major impediment to the long-term growth of New York City and surrounding areas. By harnessing the expertise of leaders in business, government, academia, labor and other sectors, we seek to tackle these challenges head-on and serve as the leading advocate in an effort to improve our airports and facilitate the continued

growth of the region. For more information regarding the Global Gateway Alliance, please visit www.globalgatewayalliance.org. Follow GGA on Twitter @GGA_NYNJ and 'Like' the organization on Facebook at <http://on.fb.me/UsqxGw>.

GGA's board of directors includes: **Joseph Sitt** (Chairman), CEO, Thor Equities; **Stuart Appelbaum** (Vice President), President of the Retail, Wholesale and Department Store Union; **Angelo Genova**, Founding Partner at Genova Burns Giantomasi Webster and a former New Jersey Commissioner of the Port Authority; **Chris Giamo**, Regional President for TD Bank; **David Hopkins**, Senior Director of Aviation at the New York City Economic Development Corporation; **Jared Kushner**, Owner of Kushner Properties and the New York Observer; **George Miranda**, Teamsters' International Vice President; **Mitchell Moss**, Henry Hart Rice Professor of Urban Policy and Planning at the Robert F. Wagner Graduate School of Public Service at New York University; **William Rudin**, CEO of Rudin Management Company, Inc. and Chairman of ABNY; **Joseph Spinnato**, President of the Hotel Association of New York City; **Alvin S. Trenk**, Chairman and CEO of Air Pegasus Corp; **Peter Ward**, President of the Hotel Trades Council on New York; **Tom Wright**, Executive Director of the Regional Plan Association; **Kathryn Wylde**, President of the Partnership for New York City, and **Tim Zagat**, Co-Founder and Co-Chair of Zagat Survey.