DCA | FLY QUIET PROGRAM

Ronald Reagan Washington National Airport

METROPOLITAN WASHINGTON AIRPORTS AUTHORITY

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Executive Summary

Aircraft noise is a nationwide concern that continues to grow as air travel expands and more people live near airport flight paths and other areas exposed to aircraft noise. While advances in aircraft manufacturing have significantly reduced aircraft noise output in recent years, it remains an issue for many communities.

The Washington, D.C., region is the second-busiest airspace in the United States after the New York City area, and Ronald Reagan Washington National Airport's main runway is the busiest in America. The region also has several government-enforced "no-fly" zones near Reagan National and its flight paths – including land around the U.S. Capital and National Mall, the White House and the vice president's residence. These factors make the region's airspace uniquely complicated, particularly at DCA with more than 840 daily takeoffs and landings in a densely populated urban area. Aircraft noise impacts also are affected by conditions including weather, terrain and background noise.

Reagan National's efforts to help mitigate the impacts of aircraft noise on surrounding communities began in the 1960s when jets began replacing less noisy propeller-driven planes. This 'Fly Quiet Program' outlines DCA's noise-related policies, procedures, activities and history. A key component of the program is the Metropolitan Washington Airports Authority's Noise Information Office, which serves Reagan National and Washington Dulles International airports. Its activities include managing systems that track flights and monitor noise; providing the public with extensive data and detailed reports on noise-related issues; explaining noise-related issues to the public and answering questions from citizens and government officials; facilitating airport-sponsored public meetings related to aircraft noise; and administering this "Fly Quiet" program.

The program's key components include:

- FAA-published arrival and departure procedures designed to mitigate aircraft noise impacts.
- The DCA Nighttime Noise Rule, which levies financial penalties on flights that fail to comply with noise standards between 10 p.m. and 7 a.m.
- Airport regulations to limit aircraft engine run-ups and other on-the-ground testing that could produce noise impacting nearby communities.
- Requests to airlines to limit the scheduling of flights during the nighttime hours from 10 p.m. to 7 a.m.
- Requests to airlines and pilots to refrain from requesting early turns from flight paths that could put planes over densely populated areas, particularly during the nighttime hours.
- Requests to airlines to use their quietest aircraft whenever practical in the DCA market, particularly during the nighttime hours.
- A network of noise monitors and flight-tracking systems that allow the public to monitor noise levels in relation to specific flights at specific locations and to track historic aircraft noise trends along key flight paths.
- A system to gather aircraft noise complaints from the public with online tools to analyze complaint data. The Airports Authority regularly forwards noise complaints to the FAA and airlines for their information and reports them to the public.

- A Noise Information Office to gather and manage data on noise-related matters and engage with key stakeholders and the general public to increase their understanding of noise-related issues.
- Facilitation of the DCA Community Noise Working Group, a citizens advisory panel representing 15 local communities along flight paths across Virginia, Maryland and the District of Columbia to engage with airlines and the FAA and their subject-matter experts to recommend potential ways to reduce aircraft noise impacts.
- Regular reporting of noise-related data, including airline fleet mix trends, DCA commercial aircraft and airline operations per day and hour, runway usage, Nighttime Noise Rule compliance, complaint statistics, noise-monitor readings and activities of the DCA Community Noise Working Group.
- Regulatory limitations and physical characteristics of the airport that prevent larger, and often louder, airplanes from using DCA (including short asphalt runways that limit aircraft size and weight; proximity to federal no-fly zones that keep aircraft away from parts of Washington, D.C., 'slot and perimeter' rules that keep larger planes serving long-haul and international destinations out of DCA).
- Proactive efforts to discourage additional flights at DCA and other legislative or regulatory changes that could increase aircraft noise impacts.

Introduction

Aircraft noise is a concern across the nation and worldwide. As air travel has expanded, the population also has increased, with more people living near airports and flight paths, thereby exposing nearby residents to the impacts of aviation noise. While technological advances in aircraft manufacturing and engine production have significantly reduced aircraft noise in recent decades, jets flying overhead still produce noise from their engines and airframes, which can be disturbing to residents near airports, especially those along frequently used flight paths. While no laws or regulations govern the noise output of airplanes in flight, and aircraft are not equipped with 'volume controls' to regulate their noise output, many segments of the aviation industry – including airports, airlines and government regulators – work with communities and local governments to mitigate the impacts of aircraft noise.

At Reagan National Airport (DCA) near Washington, D.C., several noise-mitigation initiatives are in place to help mitigate noise impacts. This 'Fly Quiet Program' for DCA outlines the airport's policies, procedures and activities aimed at mitigating noise impacts; educating the public on the scientific, technical, operational and legal aspects of aircraft noise; and providing information to the public regarding aircraft noise.

Key components of the DCA Fly Quiet Program include:

- **FAA-published arrival and departure procedures designed to mitigate aircraft noise impacts.**
- **The DCA Nighttime Noise Rule, which levies financial penalties on flights that fail to comply with noise standards between 10 p.m. and 7 a.m.**
- **Airport regulations to limit aircraft engine run-ups and other on-the-ground testing that could produce noise impacting nearby communities.**

- **Requests to airlines to limit the scheduling of flights during the nighttime hours from 10 p.m. to 7 a.m.**
- **Requests to airlines and pilots to refrain from requesting early turns from flight paths that could put planes over densely populated areas, particularly during the nighttime hours.**
- **Requests to airlines to use their quietest aircraft whenever practical in the DCA market, particularly during the nighttime hours.**
- **A network of noise monitors and flight-tracking systems that allow the public to monitor noise levels in relation to specific flights at specific locations and to track historic aircraft noise trends along key flight paths.**
- **A system to gather aircraft noise complaints from the public with online tools to analyze complaint data. The Airports Authority regularly forwards noise complaints to the FAA and airlines for their information and reports them to the public.**
- **A Noise Information Office to gather and manage data on noise-related matters and engage with key stakeholders and the general public to increase their understanding of noise-related issues.**
- **Facilitation of the DCA Community Noise Working Group, a citizens advisory panel representing 15 local communities along flight paths across Virginia, Maryland and the District of Columbia to engage with airlines and the FAA and their subject-matter experts to recommend potential ways to reduce aircraft noise impacts.**
- **Regular reporting of noise-related data, including airline fleet mix trends, DCA commercial aircraft and airline operations per day and hour, runway usage, Nighttime Noise Rule compliance, complaint statistics, noise-monitor readings and activities of the DCA Community Noise Working Group.**
- **Regulatory limitations and physical characteristics of the airport that prevent larger, and often louder, airplanes from using DCA (including short asphalt runways that limit aircraft size and weight; proximity to federal no-fly zones that keep aircraft away from parts of Washington, D.C.; 'slot and perimeter' rules that keep larger planes serving long-haul and international destinations out of DCA).**
- **Proactive efforts to discourage additional flights at DCA and other legislative or regulatory changes that could increase aircraft noise impacts.**

Background

In terms of air traffic and the noise associated with it, the Washington, D.C., region is uniquely complicated. It is the second-busiest airspace in the United States after the New York City area, and Reagan National's main runway is the busiest in America. The Washington region has several restricted "no-fly" zones near Reagan National Airport and its flight paths – including land around the U.S. Capital and National Mall, the White House and the vice president's residence – which are strictly enforced by the U.S. Secret Service, the Federal Aviation Administration and other government agencies. Reagan National, located just across the Potomac River from downtown Washington, is also situated in a densely populated area, subject to noise from more than 800 daily takeoffs and landings.

Aircraft noise impacts can be affected by varying conditions in the air as well as on the ground. Factors in the air – including humidity, cloud cover, temperature, precipitation and wind speed and

direction – can affect personal perceptions of aircraft noise. On the ground, factors such as tall buildings, foliage, background noise from vehicles and construction equipment, and terrain, including hillsides and valleys, can also have an effect. To help address public concerns about aircraft noise, the Metropolitan Washington Airports Authority, which operates Reagan National Airport, maintains a Noise Information Office that engages with the community on noise-related issues at Reagan National and Dulles International airports.

The Noise Information Office also facilitates meetings of the Reagan National Airport Community Noise Working Group, in which representatives of communities along DCA flight paths in Virginia, Maryland and the District of Columbia meet regularly with officials of the airlines, the Federal Aviation Administration and their subject-matter experts to discuss potential ways to mitigate the impacts of aircraft noise on nearby residents.

The group has presented several recommendations since its formation in 2015. The FAA has implemented recommendations that have been deemed compatible with the agency's safety standards and related criteria.

DCA Aircraft Noise Abatement History

Washington National Airport (later renamed Ronald Reagan Washington National Airport) opened in 1941 on an island covering just over 1 square mile along the Virginia side of the Potomac River, having been relocated from a nearby site to make room for construction of the Pentagon. At that time – when surrounding communities were less densely populated, commercial aviation was in its infancy, and most planes were propeller-driven – there were few public complaints regarding aircraft noise. When jets began dominating commercial air service in the 1960s, their noise quickly led to numerous complaints, prompting the Federal Aviation Administration, which operated the airport at the time, to create flight procedures designed to mitigate noise impacts. Working with local governments across the Washington region, the FAA instituted a policy to concentrate most of DCA's flight paths over the Potomac River. The policy aimed to keep aircraft flying over water as much as practical and avoid flying over more densely populated areas.

As demand for air travel expanded, DCA, because of its small size and limited runway capacity, was unable to handle the growing number of flights that airlines wanted to operate in the Washington region. To manage the growth in aviation, the increasing congestion at DCA and the noise that accompanied additional flights, Congress created the DCA "slot and perimeter rules" to limit the number of flights at the airport and move larger airplanes and longer-distance flights to the newly built Washington Dulles International Airport. Dulles (or IAD). In contrast to DCA, Dulles covered an area of about 18 square miles, giving it far greater flight capacity and room to grow in a less-heavily populated area. However, DCA, due to its proximity to downtown Washington, has remained popular with airlines and their passengers.

In the ensuing years, the population along the rivers near DCA grew, along with complaints about airplane noise. Residents began calling on the government to reduce noise impacts. In response, the Metropolitan Washington Council of Governments, which includes representatives from political jurisdictions across the National Capital Region, asked the FAA in the mid-1970s to test a policy of dispersing jet traffic over a broader area rather than focusing all DCA flights along the river. However, intense outcry from communities beneath the newly dispersed overflights led to a return

to the river-corridor approach and departure paths. The political fallout prompted the FAA to install noise-monitoring devices along DCA's flight paths, making DCA one of the first airports in the nation to have a permanent noise-monitoring system. As the population continued to grow, noise complaints from riverside residents increased, prompting another "scatter test" in 1984 to spread DCA's flights over a broader area. Once again, an overwhelmingly negative public reaction led to a return to the river flight-path policy.

In another action to mitigate jet noise, Congress authorized the DCA Nighttime Noise Rule in the early 1980s. The rule identified the loudest jets, based on FAA calculations of their expected noise output, and fined them if they were operating at DCA between 10 p.m. and 7 a.m. Over the years, as aircraft manufacturers made jets progressively quieter, fewer aircraft types were found to violate the rule, which carries fines of up to $5,000 per violation.

In the mid-1980s, Congress transferred management of DCA and Dulles airports from the FAA to the newly established Metropolitan Washington Airports Authority, which retained the DCA Nighttime Noise Rule and, over the next 15 years, performed two studies that confirmed the local communities' preference for the policy of keeping DCA flights more over water and less over land as a way of limiting aircraft noise exposure to fewer residential areas. Since then, advancements in aviation technology have refined the ability of aircraft using DCA to follow the river more closely.

Around 2015 at DCA, the FAA implemented its "NextGen" technology, which replaced much of the traditional ground-based radar navigation with satellite technology. NextGen concentrated flight paths more tightly, reducing the impact of aircraft noise in many places but intensifying it in others. As a result, noise complaints significantly increased from communities along the more-concentrated flight corridors. In response, the FAA, which has sole jurisdiction over flight paths, asked the Metropolitan Washington Airports Authority to organize a group of representatives from the most significantly affected communities to seek consensus on potential ways to mitigate noise impacts. The resulting Reagan National Airport Community Noise Working Group, which began in October 2015, comprises representatives from 15 communities, five in each of the jurisdictions of Virginia, Maryland and the District of Columbia, as well as representatives of airlines serving DCA. The group's regular meetings include consultations with subject-matter experts from the FAA and the Metropolitan Washington Airports Authority's Noise Information Office.

Key Milestones in DCA Aircraft Noise Mitigation Efforts

1960s – Jet aircraft begin serving DCA, resulting in noise complaints. In response, the FAA establishes a community-recommended policy of routing planes along the Potomac River to avoid more densely populated areas.

1966 – Perimeter Rule established to control congestion at DCA and move larger/louder planes and longer-distance flights to Dulles. The original perimeter of 650 miles from Washington was expanded to 1,250 miles by Congress in the mid-1980s to allow more long-distance flights at DCA.

1972 – FAA establishes a DCA Noise Information Office, one of the first in the nation.

1976 – FAA, in reaction to public requests, tests a policy of dispersing jet traffic over a broader area rather than focusing all DCA flights along the river. Intense outcry from communities beneath the newly dispersed overflights results in a return to the river-corridor flight paths.

1978 – FAA installs noise-monitoring devices along DCA's flight paths, making DCA one of the first airports in the nation to have a permanent noise-monitoring system.

1982 – Congress authorizes the FAA to establish the DCA Nighttime Noise Rule to limit DCA operations of louder aircraft between 11 p.m. and 7 a.m.

1984 – FAA launches another "scatter test" to spread DCA's flights over a broader area. Once again, overwhelmingly negative public reaction results in a return to the river flight-path policy.

1987 – FAA transfers management and operation of DCA to the newly formed Metropolitan Washington Airports Authority, which also operates Dulles International Airport. The new Airports Authority retains the DCA's Noise Information Office, noise monitoring system, and Nighttime Noise Rule.

1989 – The Airports Authority submits its first Part 150 study to the FAA for review, which is approved in 1990.

1995 – The Airports Authority installs airfield noise abatement signs at both ends of Runway 01/19 (*Departure end of Runway 01 shown below*)

1996 – The Metropolitan Washington Airports Authority launches one of the first aircraft noise and flight tracking systems, which links captured noise events to flight operations and publishes noise monitoring data in quarterly reports. This upgrade also includes the ability to enter aircraft noise complaints into an online database developed by the Authority.

2004 – The Airports Authority submits its first Part 150 Update to the original 1989 study to the FAA for review, which is approved in 2008.

2008 – Metropolitan Washington Airports Authority completes the replacement of all permanent noise monitors and modifies its noise complaint system to accommodate online filing of complaints by the public.

2010 – The Metropolitan Washington Airports Authority publishes its first Annual Noise Report, becoming one of the first U.S. airports to produce a regular report that documents the airport fleet mix, runway use, noise complaint statistics and noise-related data, while also providing other noise-related information and data for public use.

2014 – The Metropolitan Washington Airports Authority sends letters to all airlines serving DCA, requesting the elimination of MD-80 class aircraft, the loudest commercial jets flying at the time, from their schedules at DCA. All airlines comply over the ensuing months.

2014 – Responding to a Metropolitan Washington Airports Authority request, US Airways modifies an arrival procedure to move planes over the Potomac River and away from D.C. neighborhoods near the Georgetown Reservoir. *Additional information and graphics are on pages 12 and 13 (Figures 1-4).*

2014 – Responding to a Metropolitan Washington Airports Authority request, the FAA modifies two DCA arrival procedures to move planes that had been flying over neighborhoods in Virginia, Maryland and the District of Columbia to more closely follow the Potomac River. *Additional information and graphics can be found on pages 14-16 (Figures 5-10) and 17-19 and page 21 (Figures 11-16 and 19).*

2015 – At the FAA's request, the Metropolitan Washington Airports Authority establishes the Reagan National Airport Community Noise Working Group to provide a discussion forum on DCA aircraft noise issues and to consult with the FAA, airlines and their subject-matter experts in recommending potential noise mitigation actions. The Airports Authority's role is to facilitate and manage the administrative aspects of the group's public meetings.

2015 – Metropolitan Washington Airports Authority's Noise Information Office becomes the first in the nation to upgrade its noise monitor and flight tracking system with the Aircraft Noise Event Extraction Methodology ("ANEEM") technology, allowing more precise identification of flights in relation to noise-monitor readings.

2018 – Metropolitan Washington Airports Authority modifies its noise complaint system to receive noise complaints via smartphone applications and a third-party device called "the button."

2018 – Metropolitan Washington Airports Authority Noise Information Office becomes the first in the nation to develop an online dashboard to allow public access and analysis of aircraft noise complaint data.

2020 – At the working groups request, the north flow west-bound departure procedure is modified to reduce overflights of residential land outside the Capital Beltway. *Additional information and graphics are on page 20 (Figures 17 and 18).*

2024 – FAA publishes the new GPS Runway 19 arrival procedure designed with community input and to maximize flight time over the Potomac River while reducing flight time over populated communities. *Additional information and graphics are on pages 33 through 34 (Figures 21 and 22)*

The Reagan National Airport Fly Quiet Program

Reagan National Airport's longstanding and ongoing effort to mitigate the impacts of aircraft noise on surrounding communities has several components, all of which must be compatible with the FAA's top priority of safety. The program's key components include:

1. **The Potomac River Flight Corridor**
2. **Noise Abatement Features of Arrival and Departure Procedures**
3. **The DCA High Density (Slot) and Perimeter Rules and Runway Limitations**
4. **The DCA Nighttime Noise Rule**
5. **DCA Regulations Limiting Airfield Engine Run-ups**
6. **The Airports Authority's Noise Information Office**
7. **Public Noise Complaint System and Online Analysis Capability**
8. **Flight Path and Noise Monitoring Systems**
9. **DCA Community Noise Working Group**
10. **Public Online Portal to Access and Analyze Flight and Noise Data**
11. **The Airports Authority's Annual Noise Report**
12. **Communications with / Recommendations to Airlines**
13. **Analysis of Airport and Airline Operational Data and Online Information**

Each of these components is explained in the following sections.

(1) The Potomac River Flight Corridor

Summary: *The Potomac River flight corridor is designed to mitigate aircraft noise impacts by keeping planes over water to the extent possible, thereby avoiding heavily populated areas. For noise mitigation and other purposes, most DCA arrivals and departures follow this path, which is under the jurisdiction of FAA Air Traffic Control.*

Background: Efforts to address noise impacts associated with aircraft operations at DCA predate the formation of the Metropolitan Washington Airports Authority in the 1980s, when the FAA managed the airport. Jet aircraft flying at that time were categorized as "Stage 1," based on Federal Aviation Administration Regulation "Part 36 – Noise Standards," and were significantly louder than the airliners operating today. To address public concerns about the newly introduced noise levels from these aircraft, the FAA created flight procedures for DCA (the National Departure and Visual Arrival procedures for north and south flow operations) to maximize the amount of time arriving and departing aircraft spent over the Potomac River and reduce their time over densely populated land.

Despite these actions and the gradual transition from Stage 1 to newly developed Stage 2 aircraft, which were about half as loud as Stage 1, communities along and near the Potomac River called for additional efforts to reduce the noise impacts. In response, the Metropolitan Washington Council of Governments (COG) requested that the FAA conduct a test dispersing jet traffic over communities in Virginia, Maryland and the District of Columbia, rather than concentrating all traffic along the river.

This activity, called a “scatter test,” was conducted in 1976. Communities under the new flight paths that were being tested soon demanded that the test be stopped. The community and political reaction to this test prompted the FAA to install a noise monitoring system along DCA’s flight paths.

Continuing complaints prompted the FAA to conduct a second scatter test in 1984, with more extensive public outreach than the 1976 effort. Again, the overwhelming public response was to keep flights along the river corridor. Environmental documents pertaining to the 1984 test can be found HERE.

Shortly after the Metropolitan Washington Airports Authority assumed operations of DCA in 1987, it conducted a study under Part 150 of newly created FAA regulations, the results of which were submitted to the FAA in 1989. FAA Part 150, officially titled "Airport Noise Compatibility Planning," is a set of regulations that guides airports in developing noise and land-use compatibility plans. These plans, also known as Part 150 studies, are voluntary but provide a framework for airports to address aircraft-noise issues and improve land-use compatibility in surrounding communities. The study’s recommendations noted the local community preference for keeping flight paths in the Potomac River corridor and supporting the DCA Slot and Perimeter and Nighttime Noise rules.

Between 1989 and 2001, communities near the Potomac River expressed an interest in newer technologies that could help maximize flight time over water and minimize time over land. Historically, this had been accomplished by using a flight procedure called the “328-degree radial outbound” for planes departing to the north, and the “182-degree radial” procedure for those departing to the south (also called the “National Departure Procedure”) or by using visual arrival procedures that required pilots to follow the river.

Because of bends in the Potomac River north of DCA, planes following the straight-line 328-degree radial procedure still flew over some populated land areas. And, because newer aircraft climbed at steeper angles than earlier planes, pilots often could not see the river below them. In response to these evolutions and community requests, the Airports Authority conducted an update to the DCA Part 150 study in 2004. The update’s primary recommendation was to develop a curved north flow departure procedure using the latest technology to increase flight time over water and reduce flight time over land.

Between 2011 and 2024, the preference for the over-water flight paths was confirmed with several community-requested modifications to DCA flight procedures:

A. **The LAZIR departure procedure (2011 and 2014) resulting from the 2004 Part 150.**

(All FAA instrument departure procedures, which provide electronic navigational guidance and instructions to pilots, have five-letter names. LAZIR was named after Bob Lazir, who, as the DCA Air Traffic Control Tower’s operations manager, was the driving force behind this procedure’s creation.)

B. **At the Airports Authority’s request, US Airways modified its special southbound arrival Runway 19 procedure to avoid the D.C. Palisades neighborhood and more closely follow the Potomac River to Runway 19. *(Figures 1-4 on pages 12 and 13).***

(Airlines may create their own electronic and visual arrival procedures if they are in compliance with all applicable federal regulations and are approved by the FAA. These airline-created procedures are referred to as "specials." US Airways had a special arrival to Runway 19 that, before the procedure's modification, had been putting arriving aircraft directly over the Palisades neighborhood in Washington, D.C.)

C. **The River Visual 19 procedure was modified in 2015 to remove the ground tracks over McLean, Virginia, parts of Maryland inside the Capital Beltway, and the D.C. Palisades and Foxhall neighborhoods, which were under the flight path of the original approach. To keep aircraft more over the river, the RNP AR approach was added as the instrument backup, and the LDA approaches were removed (2015). It was modified again in 2024 to remove the FERGI waypoint, display the new DARIC waypoint location, and add GPS RWY 19 as the required instrument backup. *(Figures 5-10 and 19 on pages 14-16 and 21)***

(A visual procedure requires the pilot to follow a defined path on the ground. Before December 2015, the River Visual approach to Runway 19 had three flight-path options: one over land in Virginia (148 degree heading), one over land in Maryland and D.C., and one over the Potomac River. In December 2015, this procedure, at the request of the Airports Authority, was modified to remove the two flight paths over land and leave only the over-water flight path.)

D. **At the Airports Authority's request, the FAA modified the RNP-AR Runway 19 approach procedure in 2015 to fly over the Potomac River inside the beltway rather than over McLean, Virginia, and again in 2024 to remove the FERGI waypoint and show the new DARIC waypoint location which was moved over more noise compatible land. *(Figures 11-16 on pages 17-19)***

(Waypoints are locations that aircraft use for navigation purposes. RNP-AR stands for "required navigation performance, authorization required" and is a modern electronic approach that requires pilots to be trained to fly it with special onboard equipment.)

Before 2015, this arrival procedure routed airplanes over residential areas of McLean, Virginia. In 2015, at the request of the Airports Authority, this overland path was replaced by an over-water flight path inside the beltway. In 2024, the RNP-AR procedure underwent another modification in response to a request from the DCA Community Noise Working Group. This modification removed the FERGI waypoint, located near the TPC Avenel Golf Club near Potomac, Maryland, as the initial approach fix and made the DARIC waypoint, which is inside the Capital Beltway near CIA Headquarters in McLean, Virginia, the initial approach fix after relocating it approximately a quarter mile to the southwest. These changes enable air traffic control to vector aircraft to the DARIC waypoint, thereby reducing the previously higher levels of air traffic concentration between the FERGI and DARIC waypoints. Relocating DARIC reduced the number of aircraft over Maryland's Cabin John, Glen Echo and Brookmont communities, as well as other Maryland communities outside the Capital Beltway.

Figure 1 - 2014 US Air Special Arrival Procedure

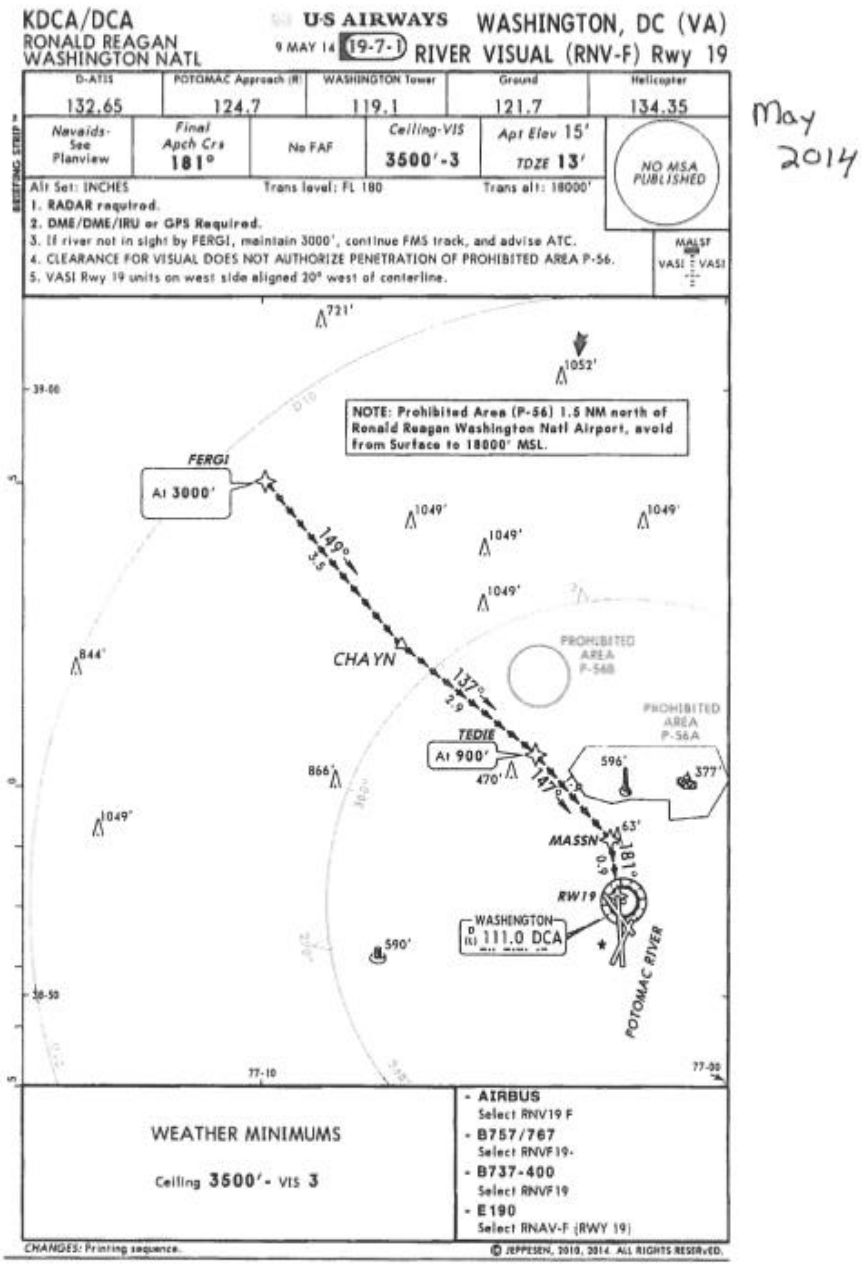


Figure 2 - 2014 USAir Special Arrival Flight Path

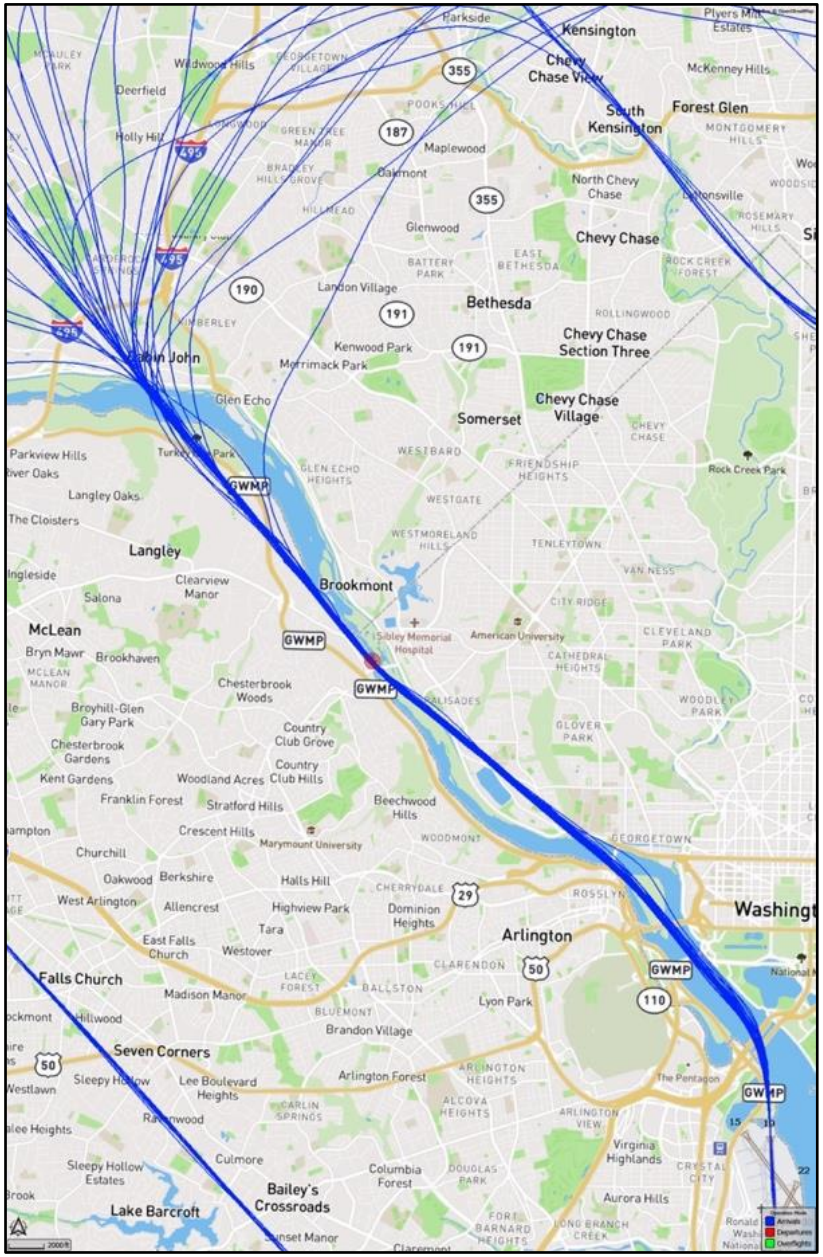


Figure 3 - 2015 Modified USAir Special Procedure Over Water

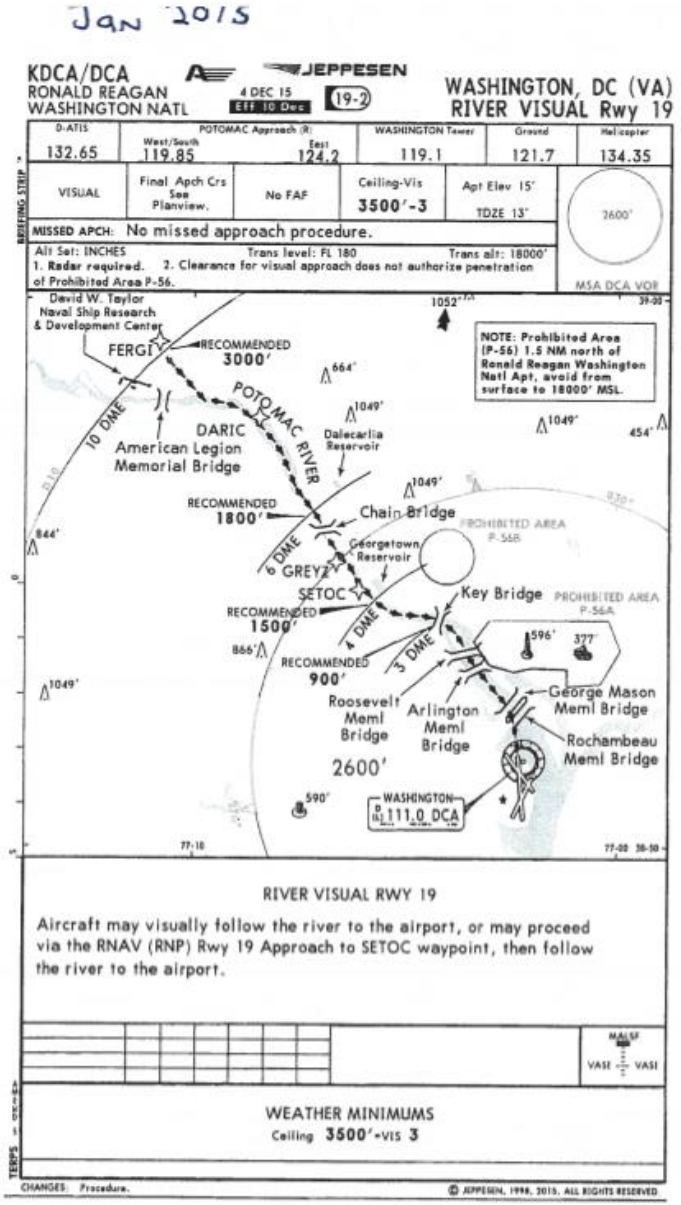


Figure 4 - 2015 Modified USAir Flight Path Over Water

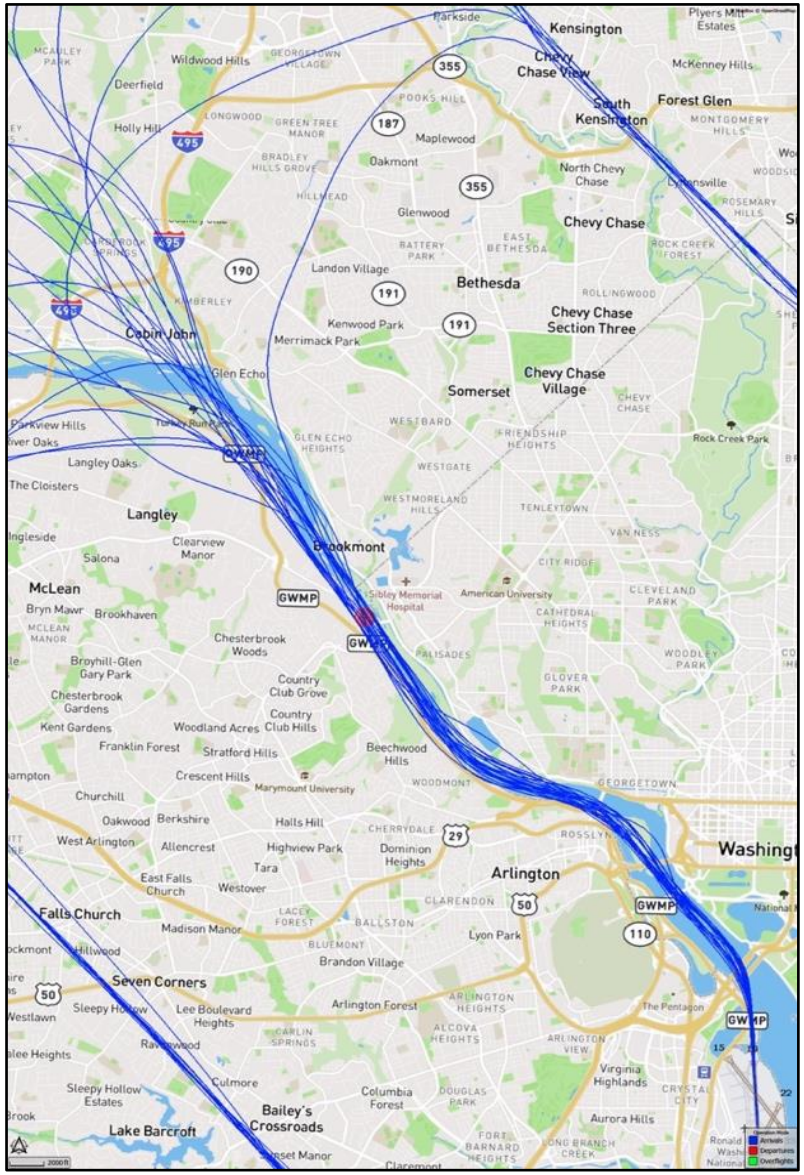


Figure 5 - 2014 River Visual 19 Procedure Over Land

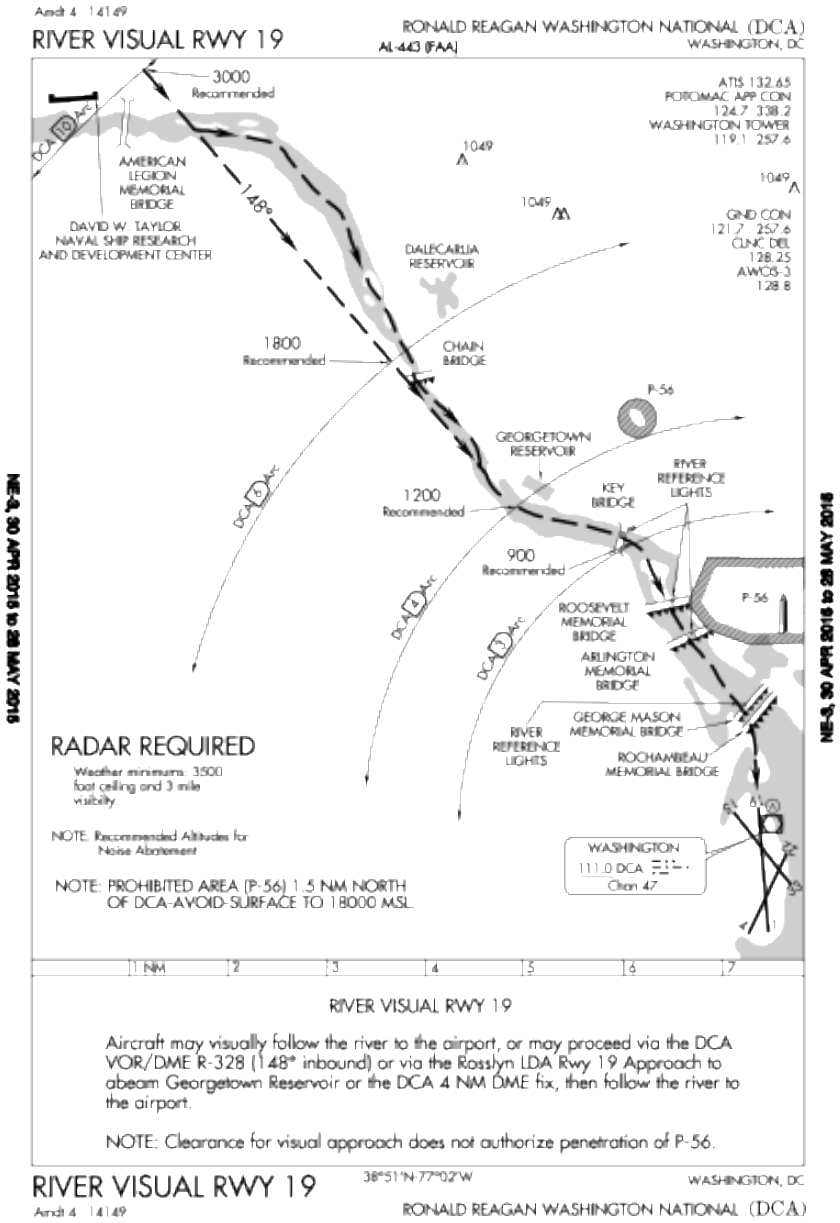


Figure 6 - 2014 River Visual 19 Flight Path Over Land

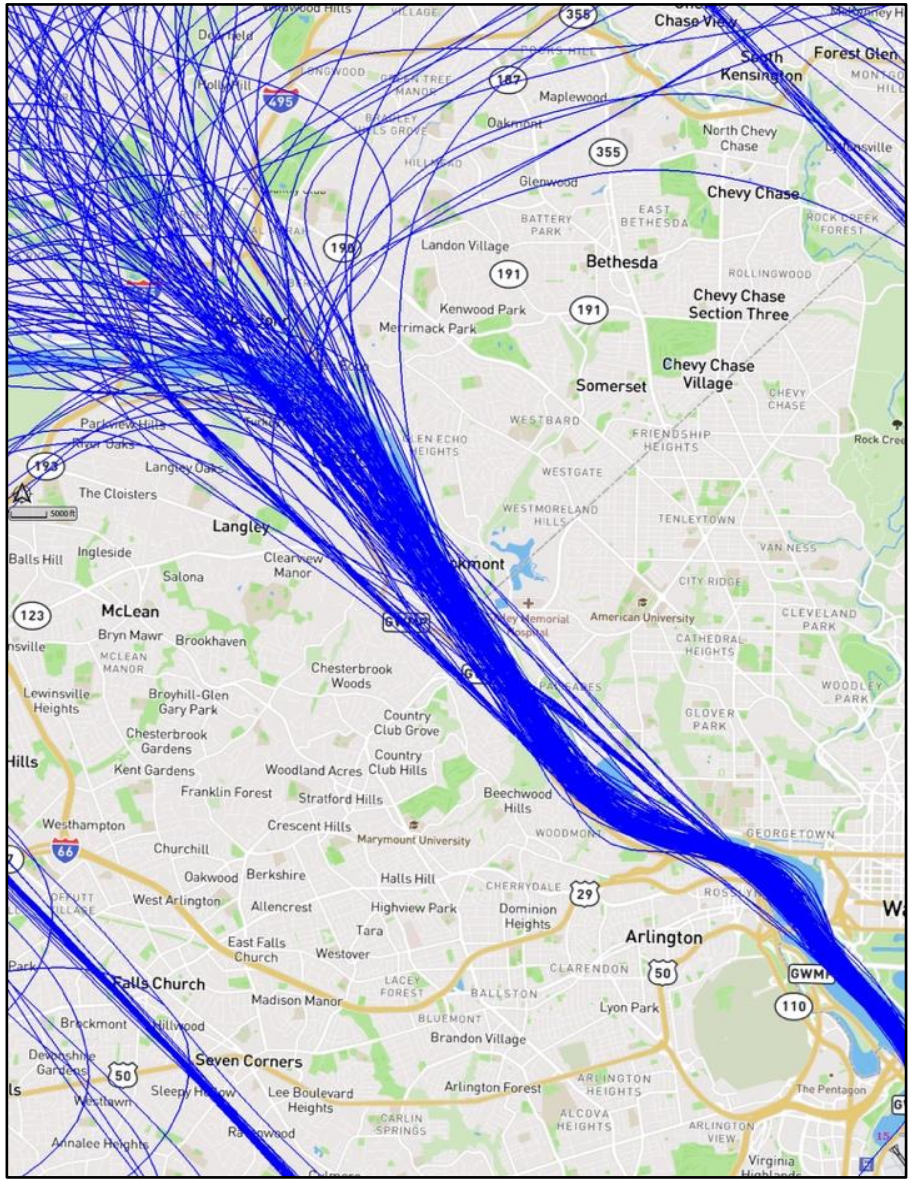


Figure 7 - 2015 Modified River Visual 19 Procedure Over Water

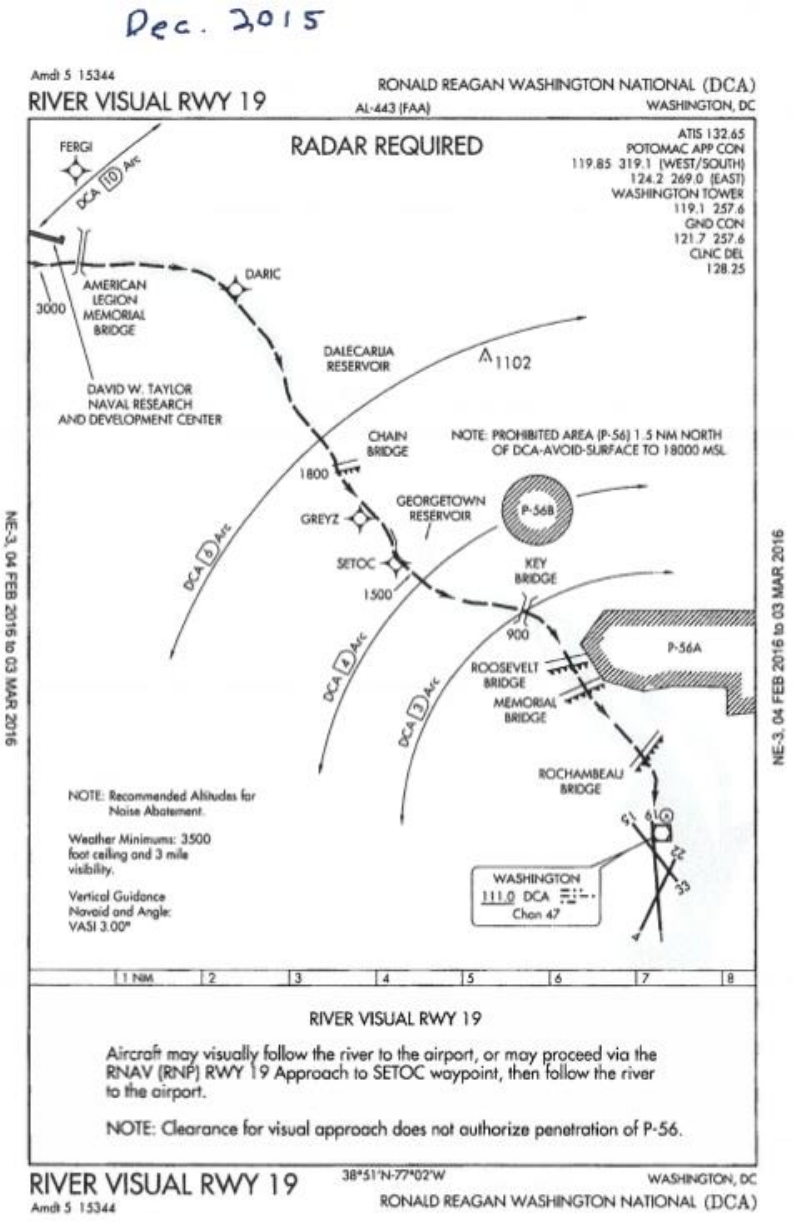


Figure 8- 2015 Modified River Visual 19 Flight Path Over Water

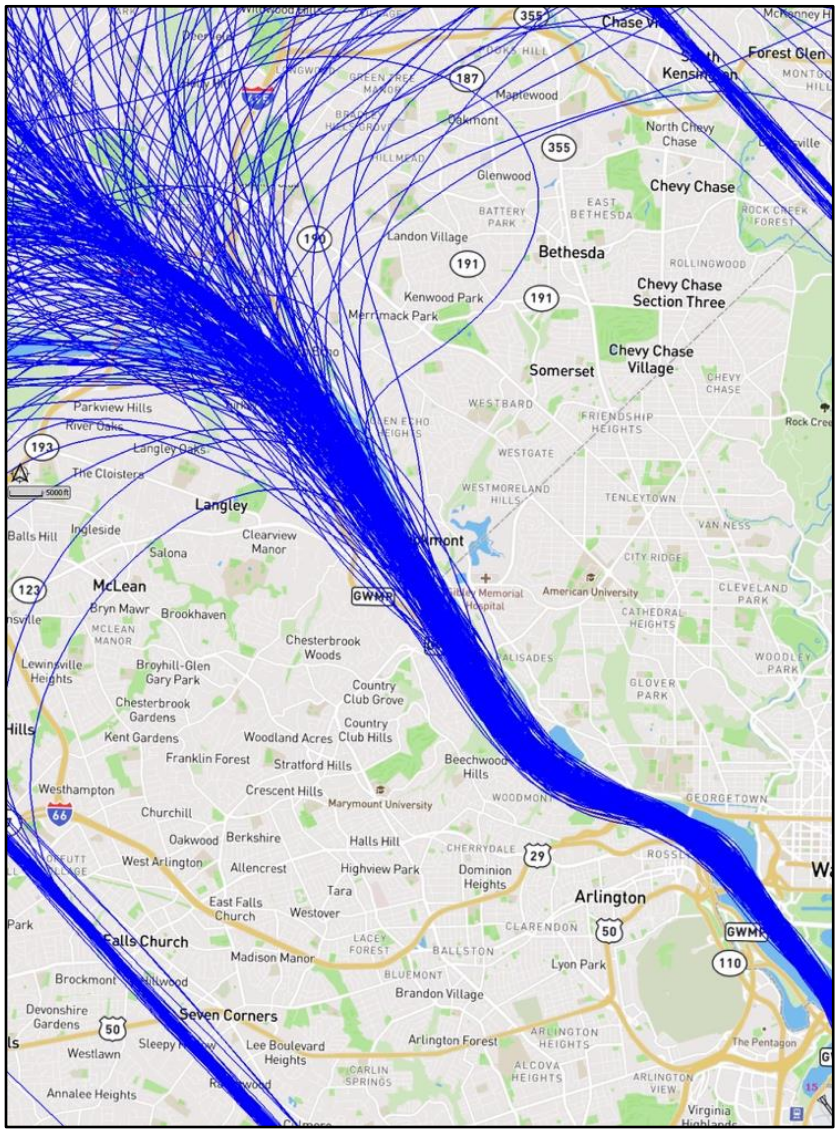


Figure 9 - 2024 River Visual 19 Procedure (FERGI Removed/DARIC Moved)

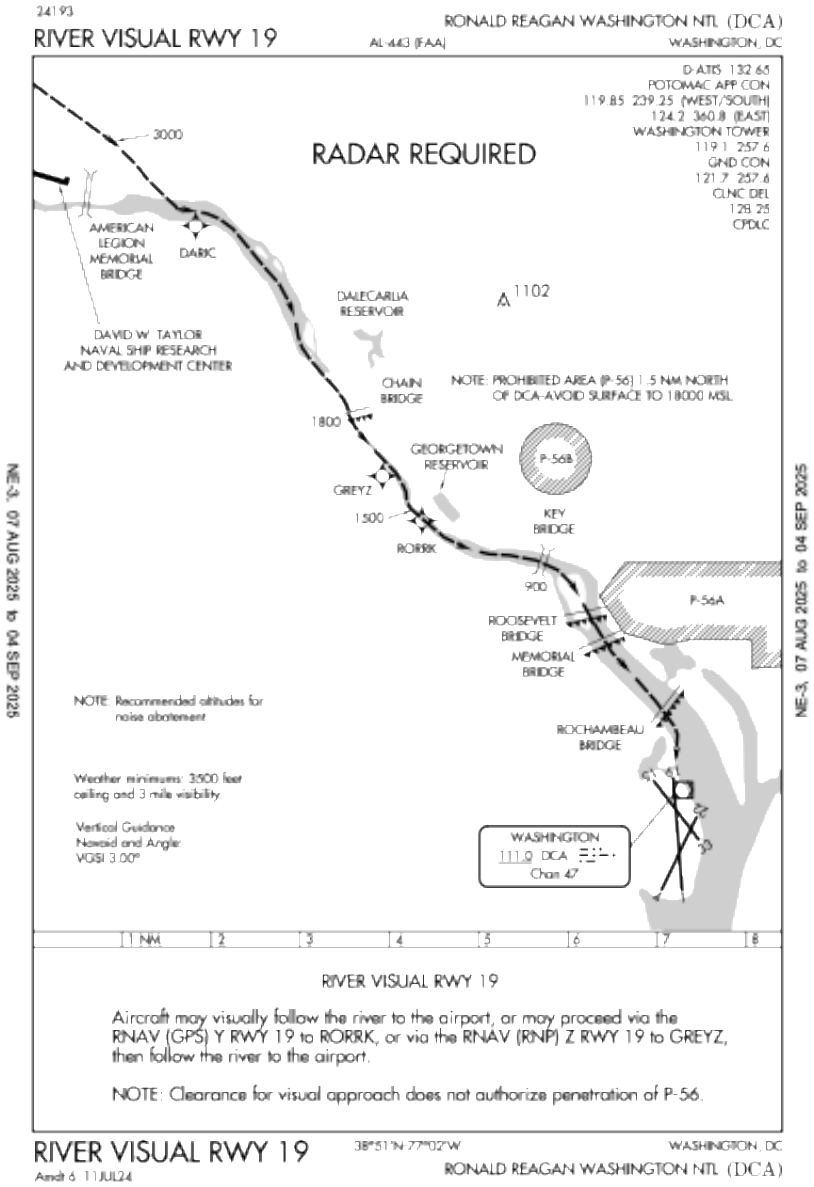


Figure 10 - 2024 River Visual 19 Flight Path (FERGI Removed/DARIC Moved)

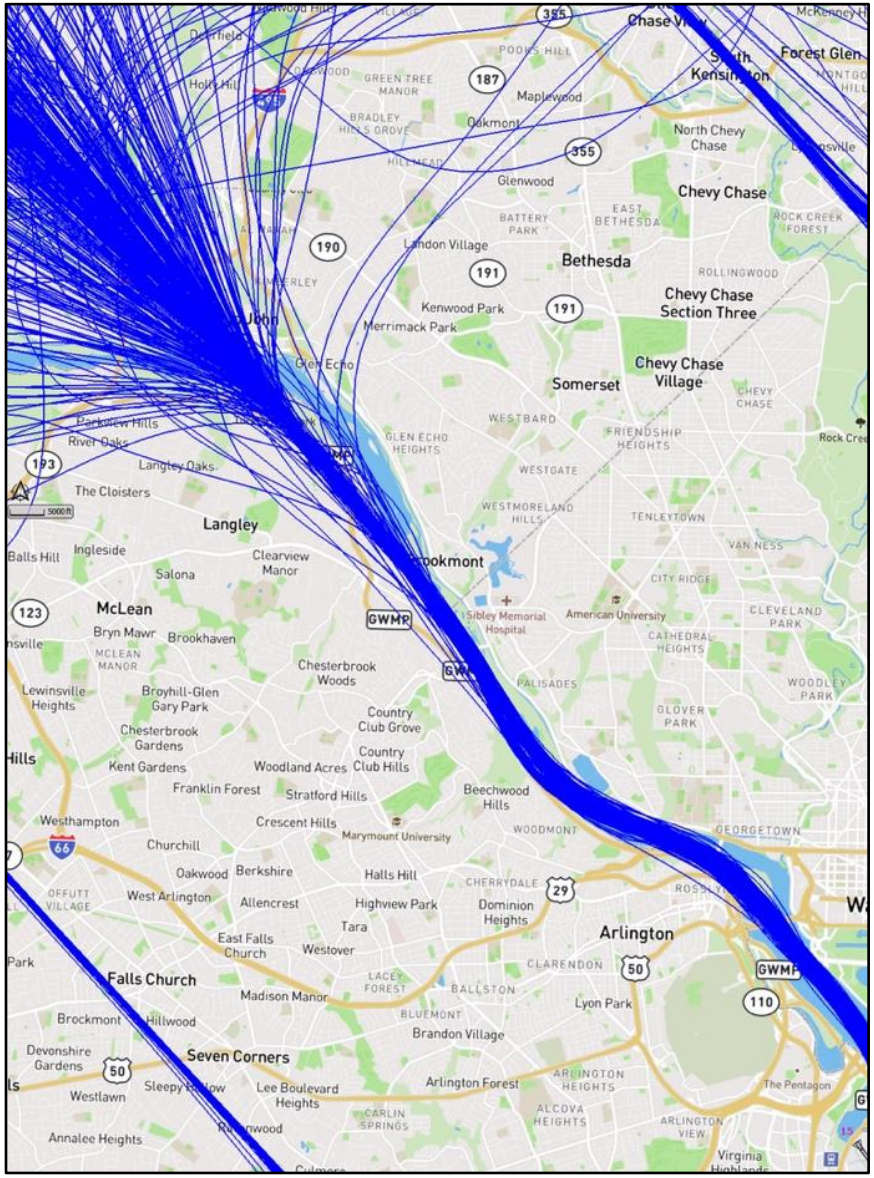


Figure 11 - 2014 RNP-AR Runway 19 Procedure Over Land

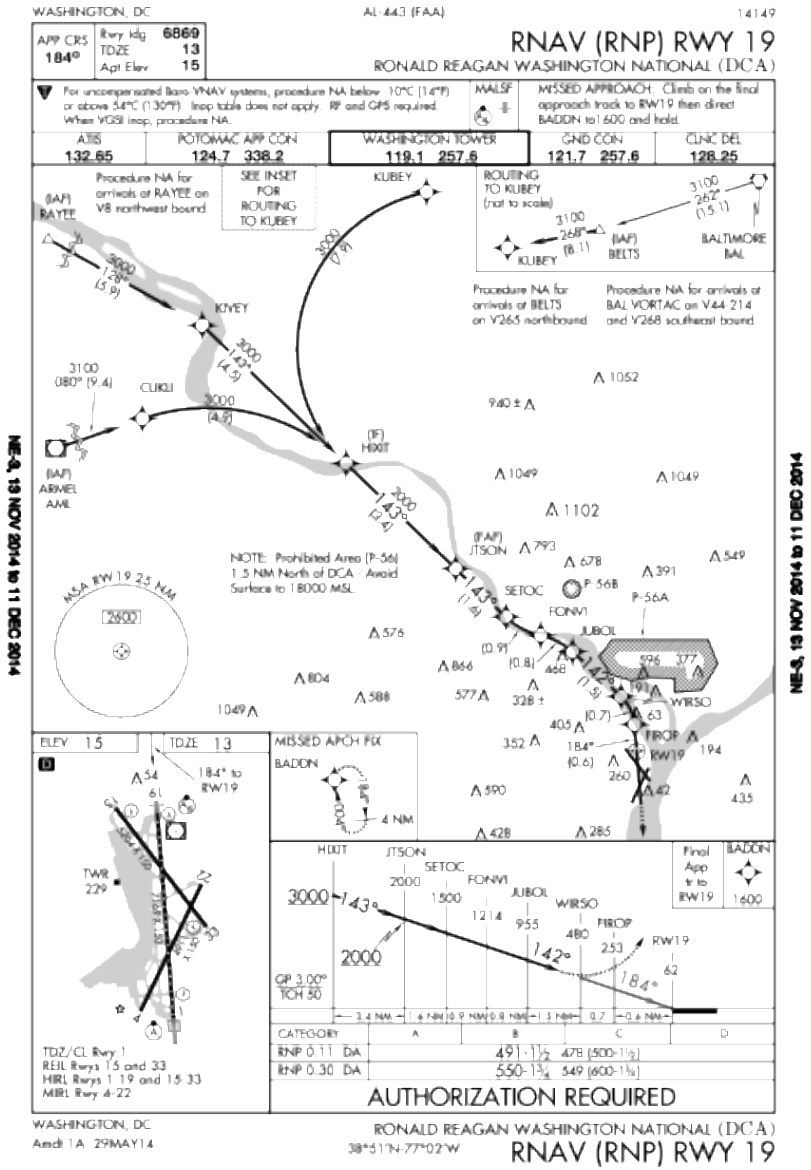


Figure 12 - 2014 RNP-AR Runway 19 Flight Path Over Land

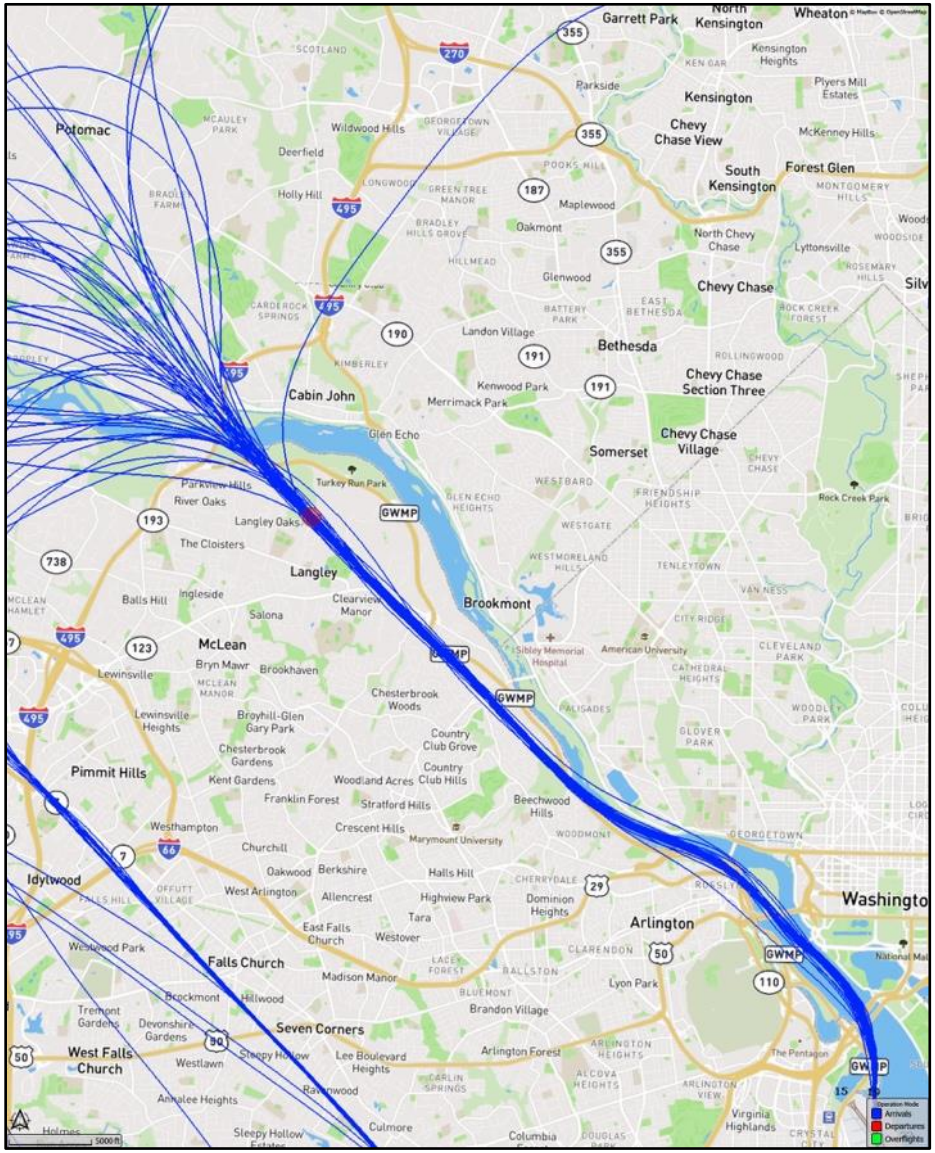


Figure 13 - 2015 Modified RNP-AR Runway 19 Procedure Over Water

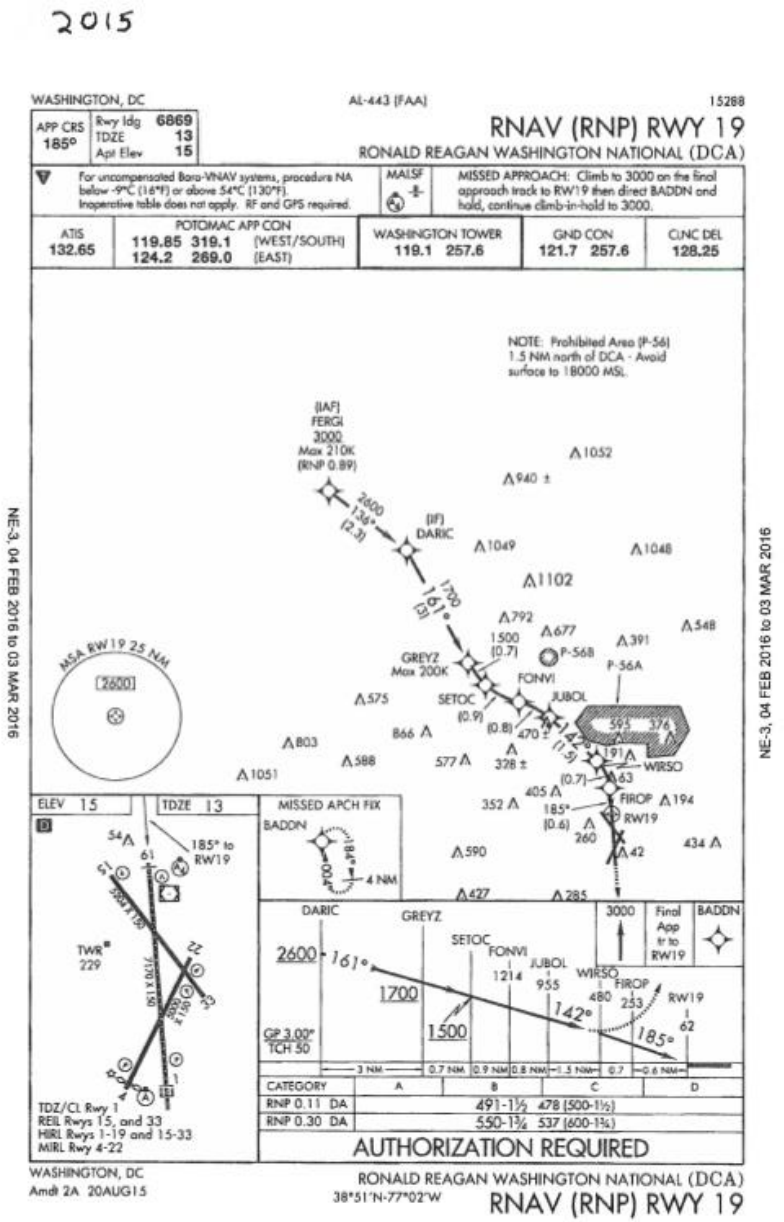


Figure 14 - 2015 Modified RNP-AR Runway 19 Flight Path Over Water

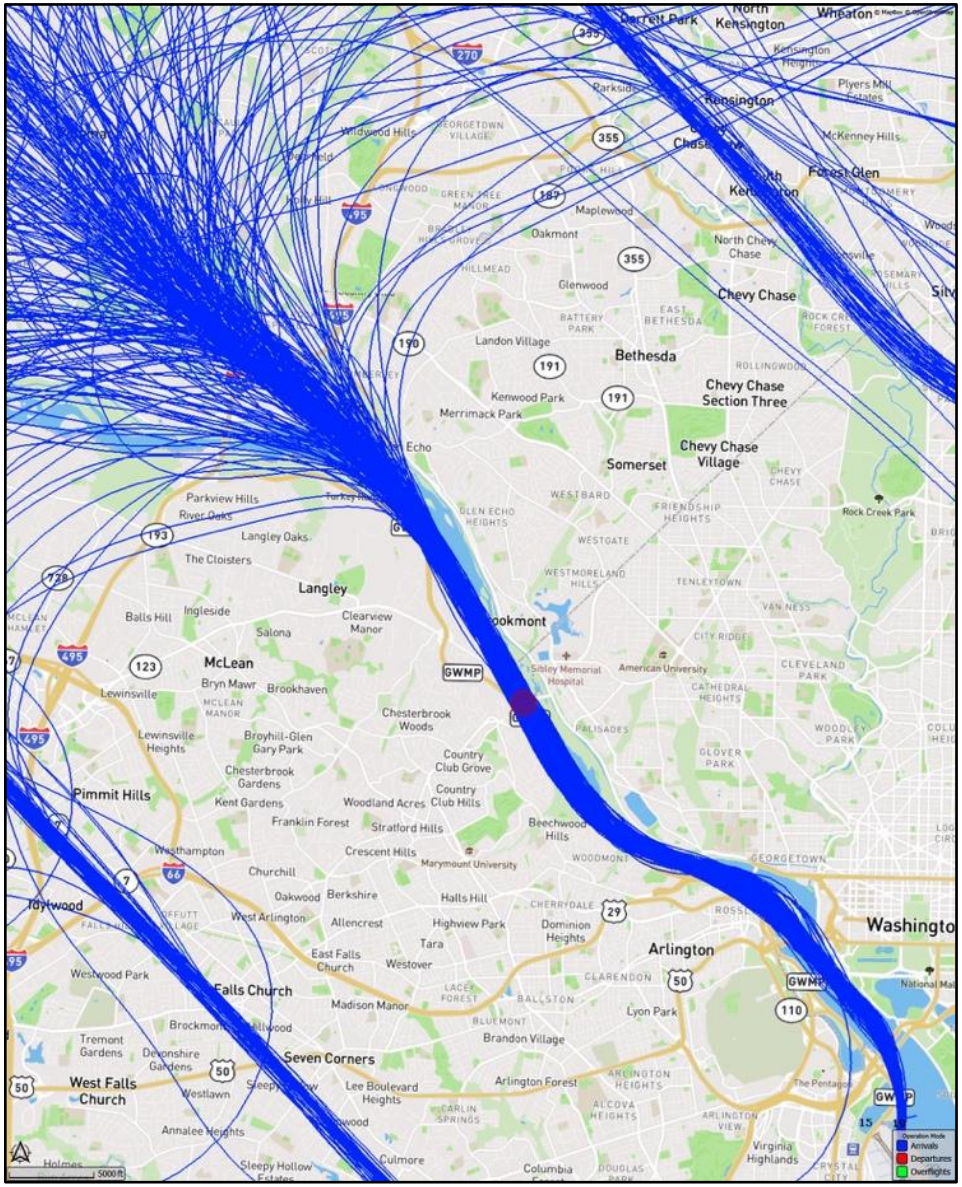


Figure 15 - 2024 Modified RNP-AR Runway 19 Procedure (FERGI Removed/New DARIC)

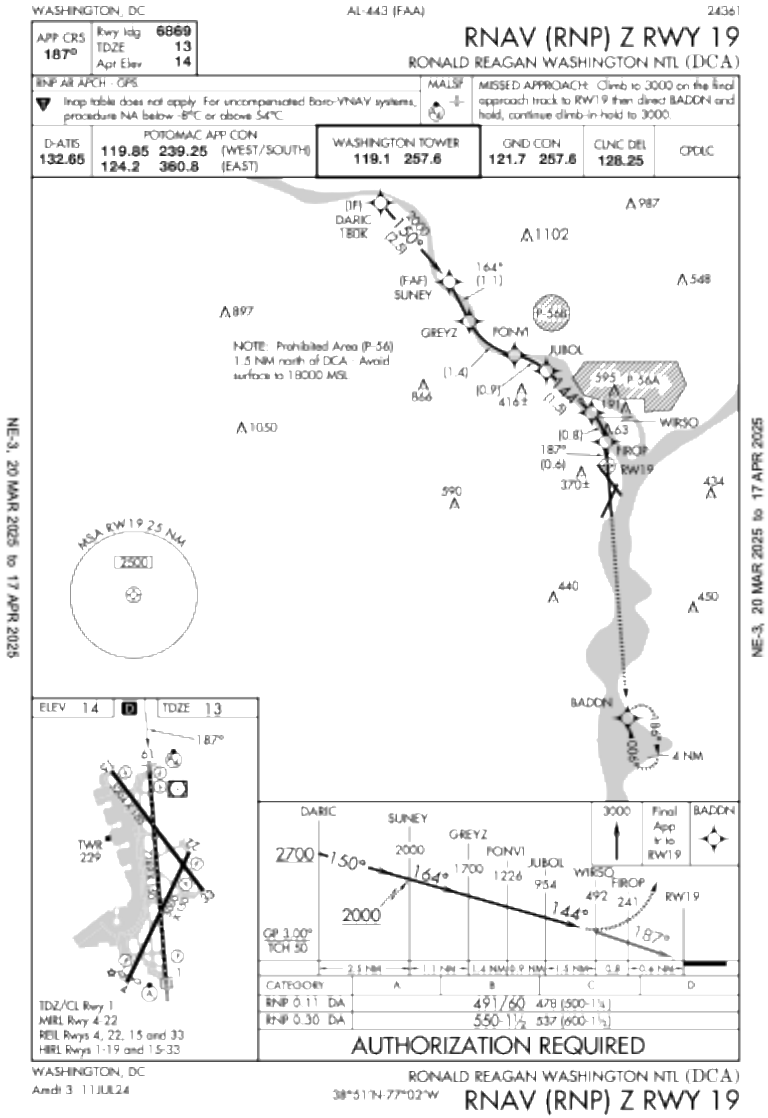
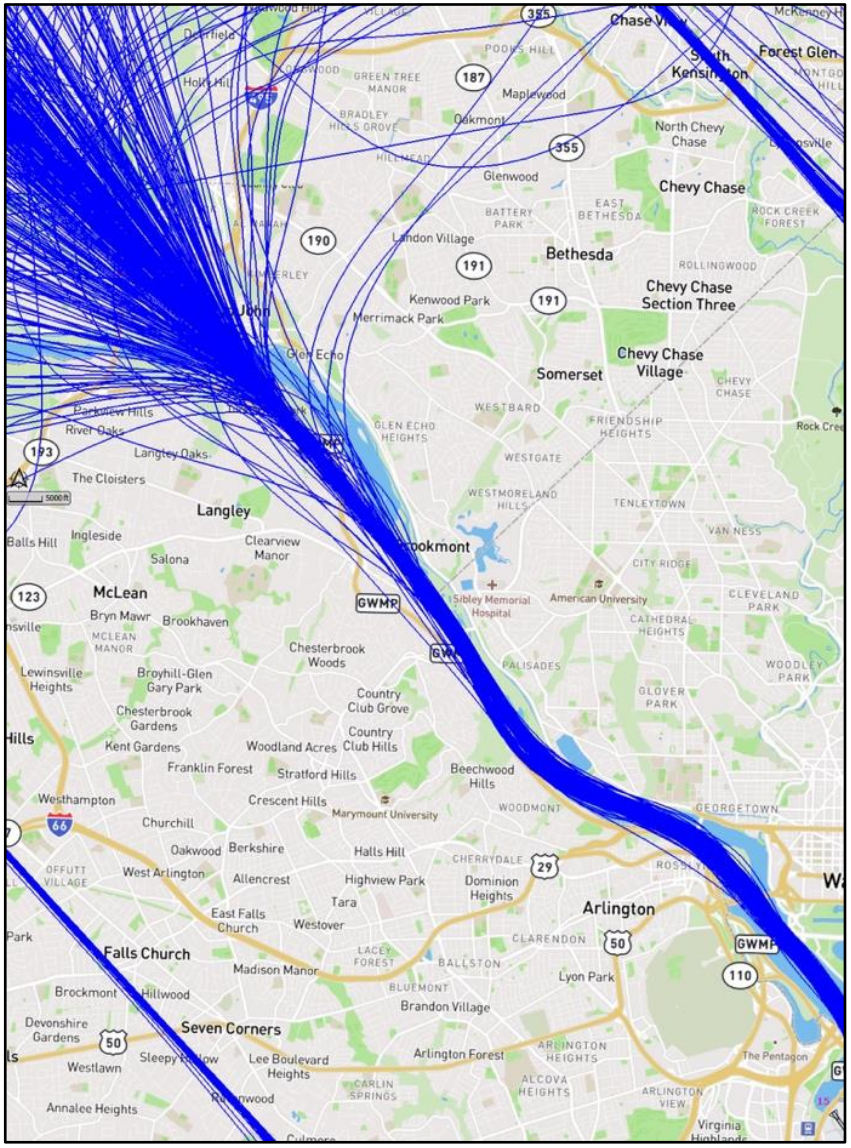


Figure 16 - 2024 Modified RNP-AR Runway 19 Flight Path (FERGI Removed/New DARIC)



E. **A westbound north flow standard instrument departure procedure was modified in 2020 to reduce flight time over densely populated communities.** ***(Figures 17 and 18)*** Before late 2020, when aircraft departed north, westbound traffic flew over residential areas outside the Capital Beltway, and about 1 mile north of the Potomac River. In early 2020, the DCA Community Noise Working Group requested that this flight path be modified so that westbound aircraft would fly over non-residential land, approximately a quarter mile north of the Potomac River. The FAA implemented this request.

Figure 17 - 2019 Westbound North Flow Departure Flight Path

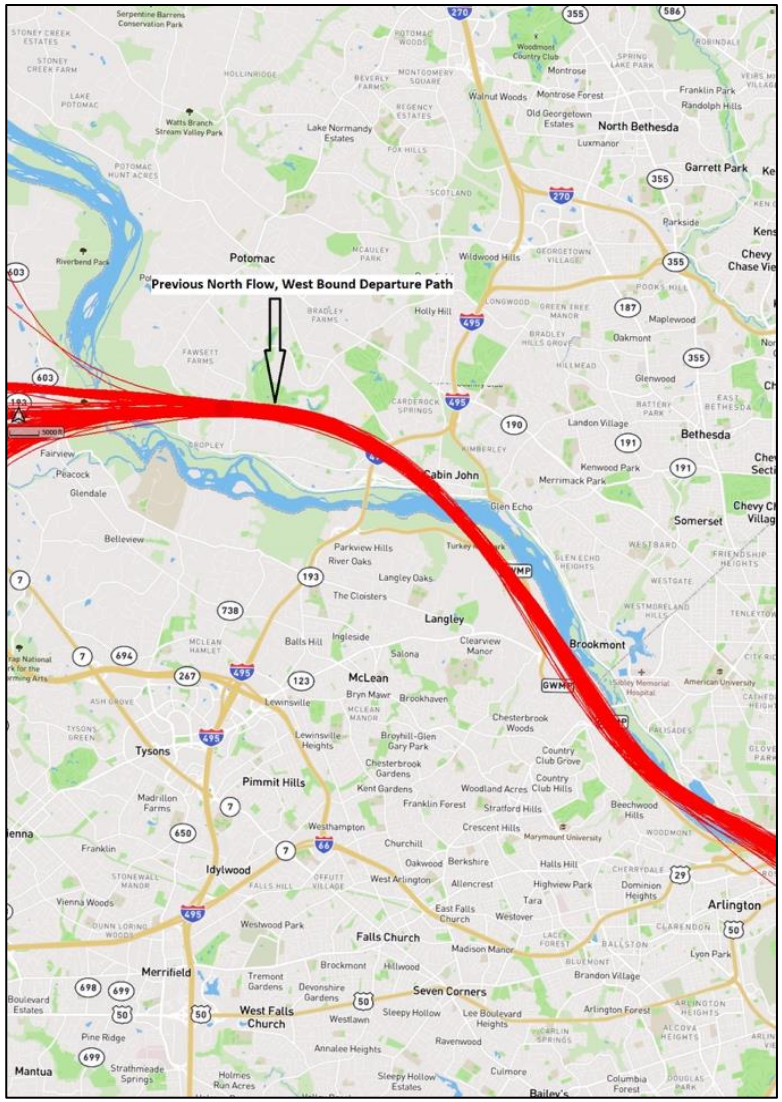


Figure 18 - 2020 Westbound North Flow Departure Flight Path

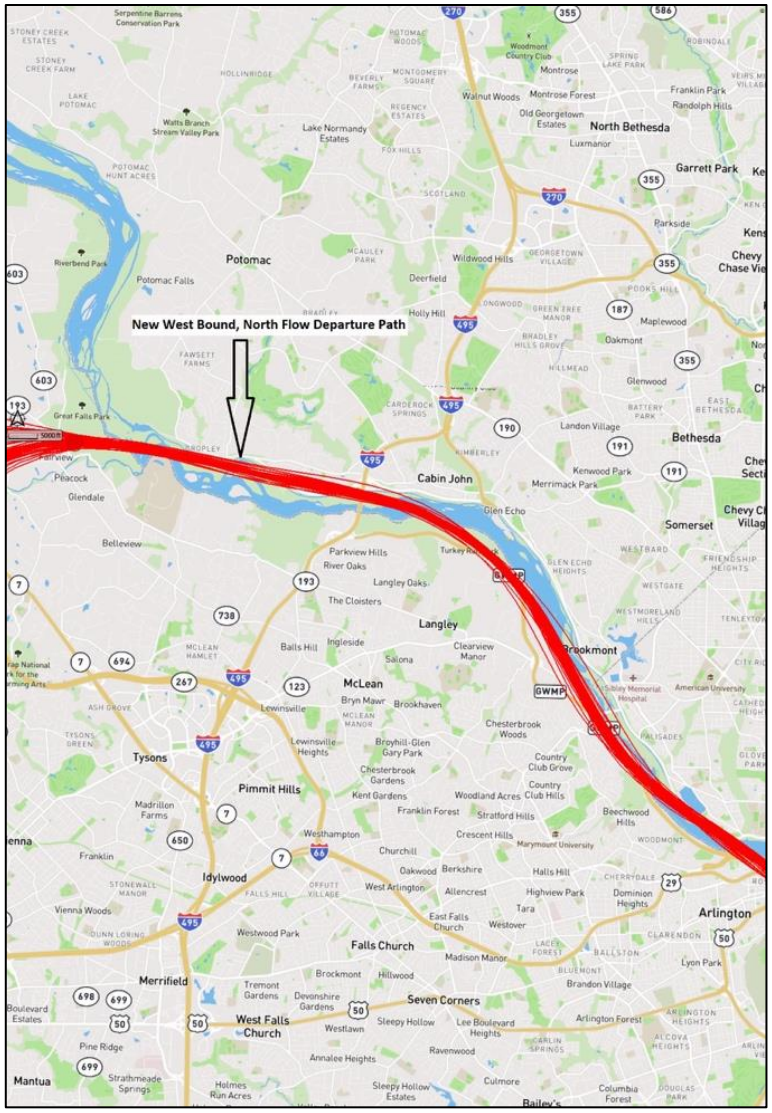
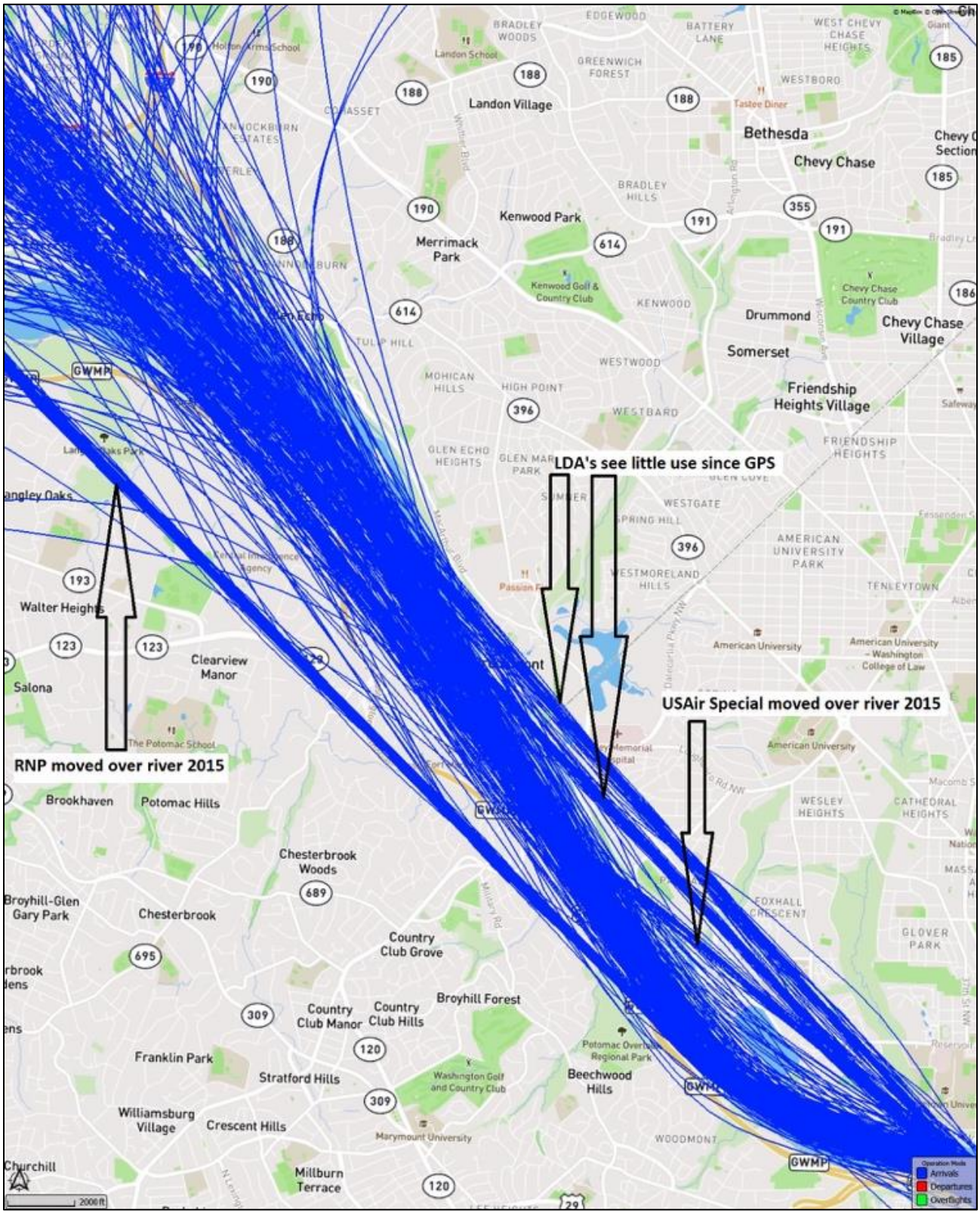


Figure 19 - Summary of Arrival Flight Paths Moved Over Water



(2) Noise Abatement Features of Arrival / Departure Procedures

Summary: *Most procedures that direct DCA aircraft arrivals and departures contain noise-abatement features, chiefly aimed at keeping aircraft more over water and less over heavily populated land as they approach or depart the airport. Most airport noise abatement procedures are recommendations with which aircraft operators are requested to comply voluntarily. However, DCA is one of the few airports with published noise-abatement procedures that are required. These procedures are under the jurisdiction of FAA Air Traffic Control.*

ARRIVAL PRODEDURES

There are five published approaches to Runway 01: four instrument approaches and one visual approach. (*Runways are numbered based on their compass headings.*)

A study by an outside consulting group hired by communities south of DCA and represented in the Community Noise Working Group was underway in 2025 to potentially increase the published altitude from 2,500 to 3,000 feet at the waypoint called KATRN, which is the initial approach fix for the four instrument arrival procedures to Runway 01.

There are five published approaches to Runway 19 (four instrument and one visual).

Instrument approaches are used when pilots are unable to see landmarks because of adverse weather conditions. Visual approaches can be used when pilots can see landmarks.

Two of the four instrument approaches (called RNP-AR and GPS) and the visual approach are noise-abatement procedures, as they are curved and have been modified to maximize flight time over water and minimize flight time over land. These efforts have made the RNP-AR, GPS and Visual approach flight paths difficult to distinguish from each other, as they are very similar.

The two older “localizer directional aid,” or “LDA,” procedures attempted to maximize flight time over water; however, they are straight lines, whereas the Potomac River is curved. Please see the graphic on page 21. With today’s ability to fly curved procedures, these are no longer considered noise-abatement procedures and are seeing decreased use since the new GPS Runway 19 procedure was published in July 2024.

(An LDA approach is a straight-line arrival procedure that does not align with the runway but does provide vertical and lateral guidance to pilots. They are intended to bring aircraft low enough and close enough to the airport to enable pilots to make a visual approach and landing.)

The LDA-Y is planned for decommissioning in early 2026, reducing the number of older non-noise abatement procedures from two to one.

Instrument approach procedures to Runways 15 and 33 are noise-abatement procedures, as they maximize flight time over water and minimize flight time over land.

There are no published approaches to Runway 04 and 22, because these runways are not used for arrivals.

Arrival Summary – Of the 12 published approach procedures to DCA, 10 (83 percent) are noise-abatement procedures. The only two non-noise abatement procedures account for about 4 percent to 8 percent of total arrivals. Between 92 percent and 96 percent of arrivals used noise-abatement procedures in 2024. With the removal of LDA-Y in early 2026, at least 96 percent of DCA arrivals are expected to use the published noise abatement procedures.

DEPARTURE PROCEDURES

There are 10 published instrument departure procedures for DCA, designed in part to maximize flight time over water and minimize flight time over land, thereby reducing noise impacts. One procedure, called National 8, is a conventional procedure that is a straight line with less noise-abatement impact. However, the National 8 procedure sees little use, as almost all aircraft fly the other nine "curved" procedures, which were designed to help mitigate noise impacts.

All these procedures are used for north and south flow operations, but are most effective at noise abatement during north flow. Work was underway in 2025 by a consultant enlisted by the DCA Community Noise Working Group, in coordination with the FAA, to propose adjustments to south flow departure procedures that would further help mitigate noise impacts.

All published DCA departure procedures contain the following language: "Pilots shall comply with Ronald Reagan National Airport noise abatement and Prohibited Area (P-56) avoidance procedures as defined in the Chart Supplemental Notices."

Departures summary: Between 60 and 65 percent of departures were flying noise abatement procedures in 2025, because the airport is in a south flow configuration between 35 and 40 percent of the year. Work was underway in 2025 to potentially change the south-flow procedures to maximize the time aircraft spend over water and minimize their time over land.

The DCA noise abatement procedures also are published in the Airport Facility Directory, an FAA document that provides critical information to pilots about airports. Below are the FAA's Noise Abatement Procedures and Special Notices for DCA:

RONALD REAGAN WASHINGTON NATIONAL AIRPORT (Chart Supplemental Notice)

NOISE ABATEMENT & PROHIBITED AREA (P-56) AVOIDANCE PROCEDURES

P-56 BEGINS APPROXIMATELY 1.5 NM NORTH OF THE DEPARTURE END OF RUNWAY 01-
SURFACE TO 18,000' MSL REMAIN CLEAR OF P-56 AT ALL TIMES

EXPECT THE PUBLISHED RNAV DEPARTURE PROCEDURE OR ATC INSTRUCTIONS FOR THE FOLLOWING NON-RNAV PROCEDURES

NORTHWEST: **Follow the Potomac River** until abeam the Georgetown Reservoir or the DCA 4 DME, then join the DCA 328 radial. Expect radar vectors at 10 DME. A left turn as soon as practicable, especially with a west wind, is required to maintain a ground track over the Potomac River and remain clear of P-56. If unable to maintain visual reference to the Potomac River, join the DCA 328 radial.

NORTHEAST: **Follow the Anacostia** River to 5 DME. A right turn as soon as practicable, especially with an east wind, is required to maintain a ground track over the Anacostia River and remain clear of **P-56.** Expect Radar Vectors at 5 DME. If unable to maintain visual reference to the Anacostia River, then join the OCA 070 radial.

SOUTH: **Follow the Potomac River** to 5 DME, then expect radar vectors. If unable to maintain visual reference to the Potomac River, then join the DCA 185 radial.

ARRIVAL PROCEDURES

LANDING NORTH: Weather conditions 3000/4 or better, **expect the Mount Vernon River visual approach.** Lower weather conditions, expect the advertised Instrument approach.

LANDING SOUTH: Weather conditions 3500/3 or better, **expect the River Visual RWY 19 Approach**. Lower weather conditions, expect the advertised Instrument approach.

(3) DCA High Density (Slot) and Perimeter Rules and Runway Limitations

Summary: *Federal regulations and physical constraints on the airport result in fewer flights and limitations on the size of aircraft, which help reduce aircraft noise. The federal Slot Rule limits the number of flights, and the noise more flights would produce, while the Perimeter Rule helps limit the number of larger and heavier planes, which can produce more noise than smaller aircraft. Additionally, DCA's shorter asphalt-paved runway limits the size and weight of aircraft that can use the airport. These factors help mitigate noise impacts by limiting the number and size of planes using DCA.*

Background: DCA's High Density Rule (or "Slot Rule") is a federal regulation established in 1969 (14 CFR §93.123) to manage congestion at five high-density airports, including DCA. A slot is a "reservation" or "permit" for an arrival or a departure. A "slot pair" is needed for a round-trip flight (one for takeoff and one for landing).

Unless otherwise authorized by FAA Air Traffic Control, Reagan National is limited to 60 slots/operations (arrivals and departures) per hour for specified aircraft classes between 6 a.m. and midnight:

- 37 slots are designated for mainline air carriers,
- 11 are designated for commuter or regional carriers,
- 12 are for general aviation (private or corporate aircraft).

The Perimeter Rule is a federal regulation established in 1966 when jet aircraft began operating at Reagan National. The initial Perimeter Rule limited non-stop service to/from DCA to 650 statute miles from the airport, with some exceptions for previously existing service beyond the limit.

By the mid-1980s, Congress had expanded DCA's perimeter for non-stop flights to 1,250 statute miles from Washington (49 U.S. Code § 49109) to allow more long-distance flights at DCA. Under the two-airport system operated by the Metropolitan Washington Airports Authority, Reagan National primarily serves as a "short-haul" airport. In contrast, Washington Dulles International serves as the region's "long-haul" growth airport because of its larger size, greater flight capacity and multiple longer runways.

As part of its DCA Fly Quiet effort, the Airports Authority actively discourages any proposals in Congress or regulatory agencies to add additional flights at DCA, especially beyond-perimeter flights, which, because of longer flight times, tend to arrive and depart in the early mornings or late evenings, usually with larger and heavier aircraft, which can produce more noise than smaller planes.

In 2024, the Perimeter Rule was challenged by a special-interest group called the Capital Access Alliance, which claimed that DCA was an "under-utilized" airport and, through intense lobbying and public-relations campaigns, called on Congress to order more flights at DCA and make more exceptions to the Perimeter Rule. During debate on the 2024 Federal Aviation Administration Reauthorization bill in Congress, a proposal backed by this group called for 28 new round-trip flights per day at DCA, mainly outside the perimeter. Efforts by the Washington-area congressional delegation, citing concerns about airport safety and congestion, were instrumental in reducing the number of additional daily DCA round-trip flights mandated by the FAA bill to five. The Airports Authority's position on this legislative proposal can be found here.

The Perimeter Rule also aligns with the limited physical capacity of DCA, which cannot accommodate the larger planes typically used for international and other long-distance flights. This is because DCA's main runway is relatively short by modern airport standards, measuring 7,169 feet, with even shorter crosswind runways. As a result, no aircraft larger than a Boeing 757 can land at DCA. This rules out DCA's use by wide-

body aircraft and other larger jets, which typically land at Dulles, with four long runways measuring between 9,400 and 11,500 feet. Additionally, DCA's runways are paved with asphalt, which could be damaged by heavier aircraft. Dulles Airport's stronger concrete runways can bear the greater weight of larger planes without sustaining damage. DCA's runways are paved with asphalt because much of its land is reclaimed from the adjacent Potomac River, making the ground too unstable for concrete. This situation prevents larger and heavier planes, which can make more noise than smaller aircraft, from using DCA.

(4) The DCA Nighttime Noise Rule

Summary: *DCA's Nighttime Noise Rule is one of the few legally enforceable regulations at a U.S. airport to mitigate aircraft noise impacts. It deters noisier aircraft from operating during the overnight hours by imposing monetary penalties on airlines whose flights violate specific noise-related standards between 10 p.m. and 7 a.m.*

Background: In March 1982, Congress authorized the Nighttime Noise Rule at DCA "to restrict operations between 10 p.m. and 7 a.m. to certain types of aircraft that the FAA has classified as relatively quiet."

This rule does not permit the FAA or the Metropolitan Washington Airports Authority to prohibit aircraft operations between 10 p.m. and 7 a.m.; however, it does empower the Airports Authority to impose fines of up to $5,000 on aircraft operators for flights that violate the rule.

In the early years of DCA, when there was very little demand for air travel between 10 p.m. and 7 a.m., few, if any, flights operated during those hours at DCA. This lack of late-night and early morning flight activity led some to mistakenly believe the airport had a curfew.

Flights can be out of compliance with the Nighttime Noise Rule if the aircraft's certified noise output, as determined by FAA Part 36 tests at the time of its manufacture, would exceed a certain level, which can increase with aircraft weight.

Over the decades, as aircraft and their engines have become quieter, the number of planes violating the Nighttime Noise Rule has decreased. Most fines levied today are due to heavier aircraft, which can result in noise levels that violate the rule.

Although some airports have voluntary restrictions on nighttime flight operations, they are generally not enforceable. DCA is one of the very few airports that can fine an airline for non-compliance with a noise-related rule. This is primarily because the DCA Nighttime Noise Rule was "grandfathered" from legislation enacted by Congress in 1990 that restricts airports from imposing noise-related restrictions on aircraft. The graphic below shows the information reported by the Airports Authority in its Annual Noise Report.

2024 DCA Nighttime Noise Rule Violations		
Airlines	# of Violations	Total of Accessed Civil Penalties
American	18	$90,000
Delta	2	$10,000
United	3	$15,000
Total	23	$115,000

(5) Airfield Engine Run-up Regulations

Summary: *Engine run-ups are tests conducted on the ground to ensure the proper functioning of aircraft engines. Run-ups can produce high noise levels that can impact communities adjacent to the airport. To avoid these noise disturbances, DCA regulations prohibit them during nighttime hours.*

Background: DCA Orders and Instructions DCA 2-4-1E "establishes times and areas for aircraft engine run-ups and checks … to minimize aircraft noise impacts on surrounding communities." Run-ups are maintenance-related tests to check the condition of the aircraft engines before a revenue flight. These tests can result in high noise levels in the immediate vicinity of the airport. To avoid excess noise near DCA, jet aircraft engine run-ups are mostly prohibited between 10 p.m. and 7 a.m. A number of airports restrict engine run-ups as part of their noise-abatement procedures.

(6) The Airports Authority's Noise Information Office

Summary: *The Metropolitan Washington Airports Authority's Noise Information Office serves as the Authority's subject-matter expert on aircraft noise, monitoring aircraft noise issues related to Reagan National and Dulles International airports, gathering noise-related data and complaints, engaging with the public on noise-related questions and administering the DCA Community Noise Working Group. The office helps the public understand the technical, legal, regulatory and scientific aspects of aircraft noise.*

Background: The Noise Information Office was established in 1972 when the Federal Aviation Administration operated DCA and has been in continuous operation for over 50 years. It was among the first noise information offices to be established at a U.S. airport. The Noise Information Office serves as the focal point for technical, political, regulatory and public engagement functions related to aircraft noise issues.

As the Authority's subject matter expert on aircraft noise, the Noise Information Office staff is responsible for:

- Communication with area residents, elected officials, government regulators, consultants, contractors, media representatives, airline management, internal and other stakeholders on subjects relating to aircraft noise. The office provides information on airline and flight operations, Air Traffic Control's published arrival and departure procedures, airport operations, noise monitors and their data and federal regulations pertaining to aircraft noise. (*The Noise Information Office does not speak for the FAA, airlines, or any entity other than the Metropolitan Washington Airports Authority.*)
- Operation and administration of the Aircraft Noise and Operations Management System, which includes flight track data, noise complaint collection, a public dashboard, noise monitors and the public flight track viewer (WebTrak).
- Administration of the DCA Community Noise Working Group's meetings and related activities, including facilitation of meetings, coordination of meeting agendas, production of meeting summaries and presentations and other information related to the group's meetings and recommendations.
- Production of the Airports Authority's Annual Noise Report.
- Management of the Airports Authority's noise information websites.
- Providing noise-related data collected by the Airports Authority to stakeholders as warranted.

(7) Public Noise Complaint System / Online Analysis Capability

Summary: *The Airports Authority operates a system to gather aircraft noise-related complaints from the public, forwards those complaints to the FAA and airlines and provides an online platform for accessing and analyzing noise complaints.*

Background: As a voluntary public service, the Airports Authority provides a platform for receiving aircraft noise complaints, which the Noise Information Office forwards to the FAA and airlines, and publishing related information, data and analysis in Aircraft Noise Reports.

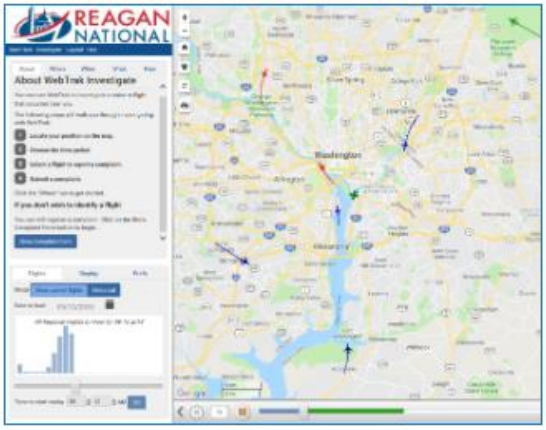
Noise Complaint Webpage:

How to Submit a Reagan National Aircraft Noise Complaint:
(Open in Google Chrome for Optimal Performance)

Mobile App*

Complaint Webform*

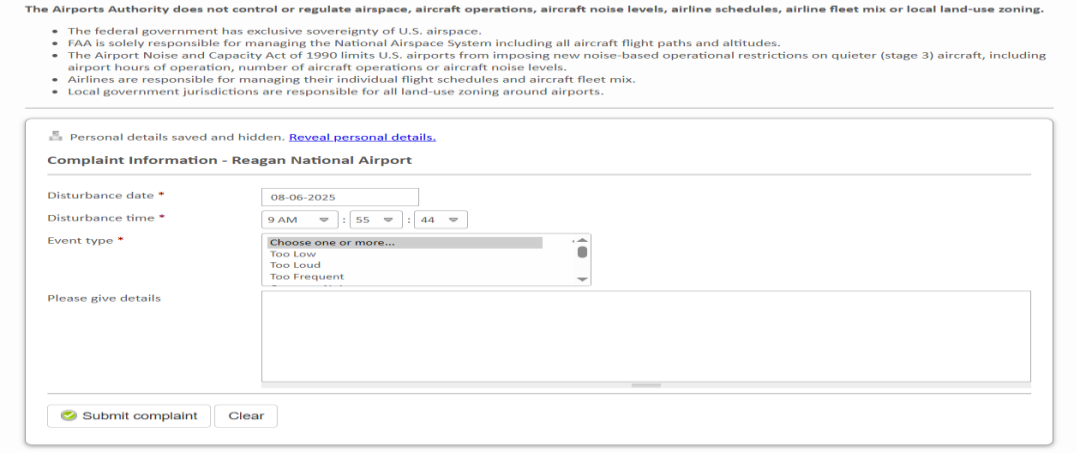
WebTrak*



Create an App Tile on Home Screen:

- iPhone
- Android

Noise Complaint Webform:



The Airports Authority does not control or regulate airspace, aircraft operations, aircraft noise levels, airline schedules, airline fleet mix or local land-use zoning.

- The federal government has exclusive sovereignty of U.S. airspace.
- FAA is solely responsible for managing the National Airspace System including all aircraft flight paths and altitudes.
- The Airport Noise and Capacity Act of 1990 limits U.S. airports from imposing new noise-based operational restrictions on quieter (stage 3) aircraft, including airport hours of operation, number of aircraft operations or aircraft noise levels.
- Airlines are responsible for managing their individual flight schedules and aircraft fleet mix.
- Local government jurisdictions are responsible for all land-use zoning around airports.

Personal details saved and hidden. Reveal personal details.

Complaint Information - Reagan National Airport

Disturbance date * 08-06-2025

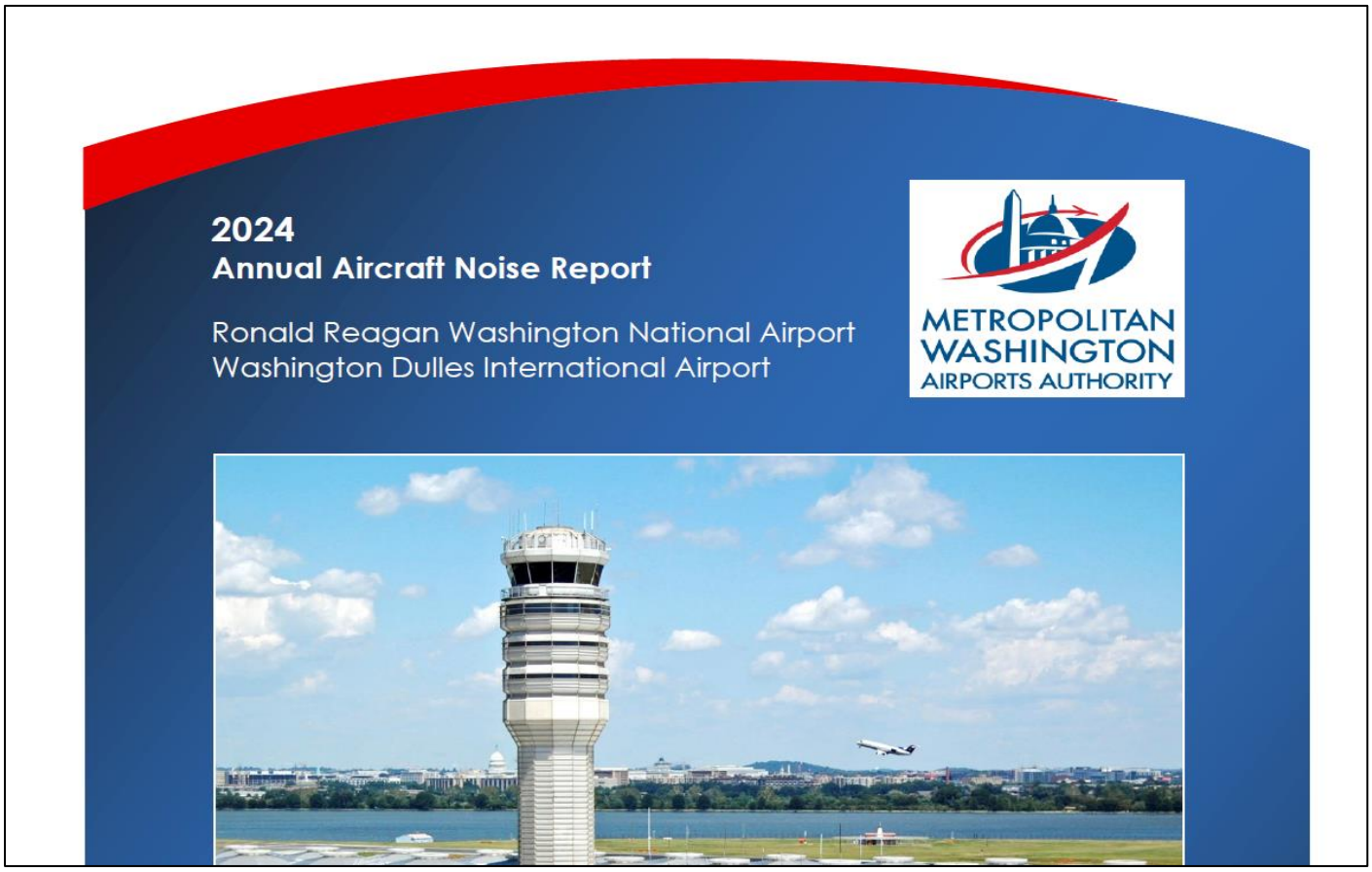
Disturbance time * 9 AM : 55 : 44

Event type * Choose one or more... / Too Low / Too Loud / Too Frequent

Please give details

Submit complaint | Clear

Annual Noise Report:

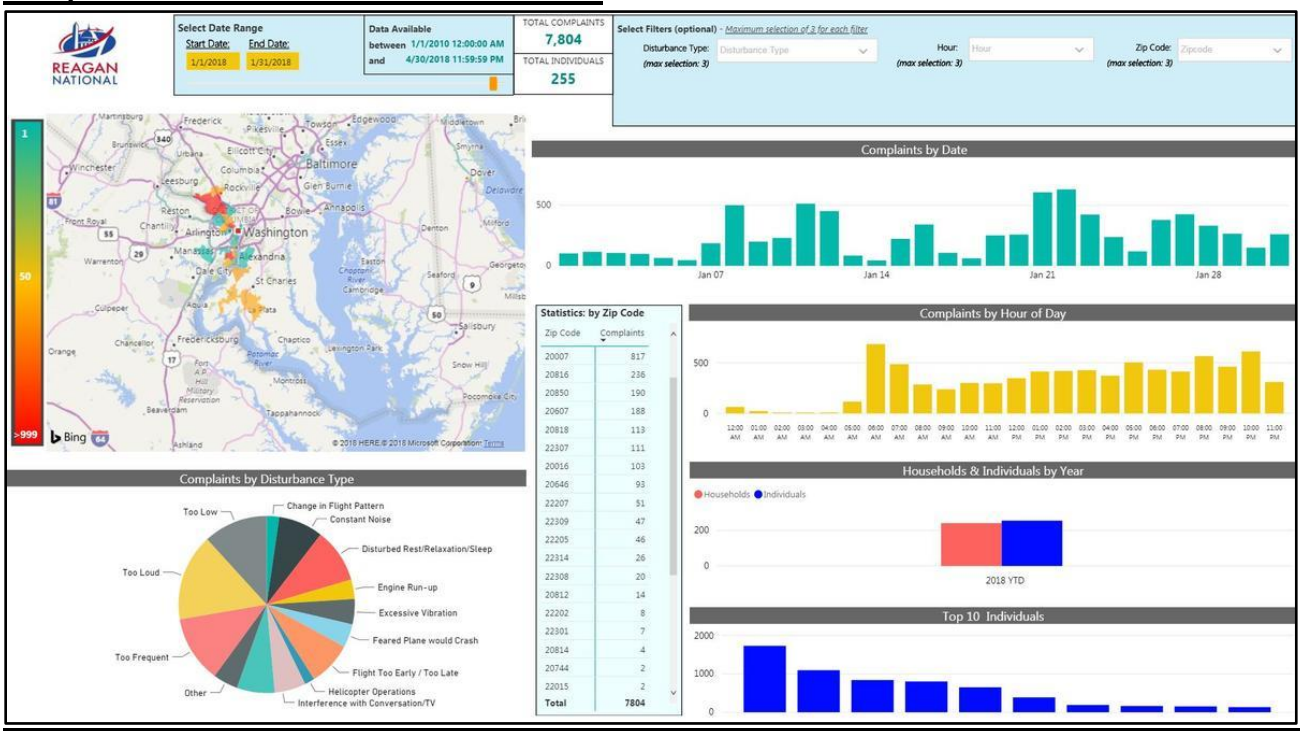


The Airports Authority also established and maintains the first and only interactive online dashboard to provide public with access to noise complaint data and the ability to analyze noise complaints (deleting any personal information). As of mid-2025, no other U.S. airport was offering this service. The Complaint Dashboard allows anyone to independently conduct preliminary research to ascertain information such as: complaints by date and hour, Zip Code heat maps and statistics tables, the number and general location of ***individuals*** and households filing complaints by date and frequency, and types of noise-related disturbances.

As technical advancements permit, the Airports Authority modifies its systems to enhance the public's ability to submit noise complaints in various ways, including online submissions (2008), a smartphone application (2018) and a third-party device called "the button" (2018). Complaint data is shown above but with personal information removed. Instructions on how to submit a complaint can be found HERE.

An illustration of the Complaint Dashboard is on the next page and instructions on its use are in the provided link.

Complaint Dashboard Tutorial Information:



(8) Flight Path and Noise Monitoring Systems

Summary: *The Airports Authority operates a system of stationary noise monitors along the main flight paths around DCA to track noise trends. The monitors provide general information and are not intended for any regulatory uses.*

Background: The Airports Authority operates a network of permanent aircraft noise monitors along DCA's key flight paths. These monitors have been in place, largely in the same locations, for many years to track historical trends in aircraft noise. *Due to the numerous variables influencing aircraft noise perceptions on the ground (such as weather, terrain, construction noise and traffic noise), data from noise monitors are provided for general information only and are not used for any regulatory or enforcement purposes*.

The first generation of noise monitoring equipment recorded loud sound levels normally associated with aircraft but lacked the capability of matching "noise events" with specific flights. Noise readings at that time also frequently included sounds from sirens, construction, lawn equipment, vehicles and other non-aviation sources and could not be accurately attributed to aircraft operations.

A monitor-based "noise event" is determined by examining three factors: the background noise level, the amount of time (duration) of the detected noise, and the difference between the background noise level and the loudest one-second of noise during the duration. All three of these criteria are programmed into the monitor, and the monitor, in essence, "looks" for noise above the background level for more than a programmed amount of time. The earlier system, called the Aircraft and Noise Operations Monitoring System, or ANOMS, did not have flight tracking or noise complaint capabilities, as technologies to monitor these factors did not yet exist.

The ANOMS system was upgraded five times between 1978 and 2025, including two replacements of the noise monitors, the addition of flight track data, the merging of flight track data and noise monitor data, noise complaint data and a more precise noise-identification system called the Aircraft Noise Event Extraction Methodology, called “ANEEM.”

The ANEEM system is far superior at determining the source of the noise detected by the monitor compared with monitor-based event detection. In 2015, the Metropolitan Washington Airports Authority became the first U.S. airport system to implement ANEEM, developed by the Australian company EMS Bruel & Kjaer, to more precisely identify and classify the source of noise events (community/aircraft/mixed). Unlike earlier systems, ANEEM does not solely rely on the noise monitor readings to detect an aircraft noise event. During noise data post-processing, ANEEM cross-references flight-track databases to identify aircraft in the vicinity of the noise monitor whenever a noise monitor reading rises above the background noise level.

Aircraft-dominated noise events are identified and correlated by comparing aircraft position data with predicted noise levels for that aircraft, using FAA noise certification data. ANEEM provides a more accurate detection methodology for distinguishing aircraft noise from other noise sources experienced in neighboring communities.

It is important to clarify that the “total noise” experienced at a noise monitor is unaffected by the choice of a noise-event detection methodology. ANEEM enhances the accuracy of the noise source classification process, which is beneficial for tracking aircraft noise. ANEEM noise-event counts will be higher than counts generated by the earlier systems, because ANEEM can identify noise events involving quieter aircraft and separate them from higher background noise levels. However, the “total noise” experienced at the noise monitor is consistent with the earlier systems.

(9) DCA Community Noise Working Group

Summary: *The DCA Community Noise Working Group is a citizens’ advisory panel representing communities that are impacted by aircraft noise. The group regularly engages with subject-matter experts from the Airports Authority, airlines and the FAA, as well as consultants hired by local governments, to discuss noise issues and explore potential ways to mitigate noise impacts. Since its inception in 2015, the group has recommended several modifications to flight paths and procedures. The FAA has implemented several of the group’s recommendations after confirming their compatibility with safety standards and other relevant criteria*.

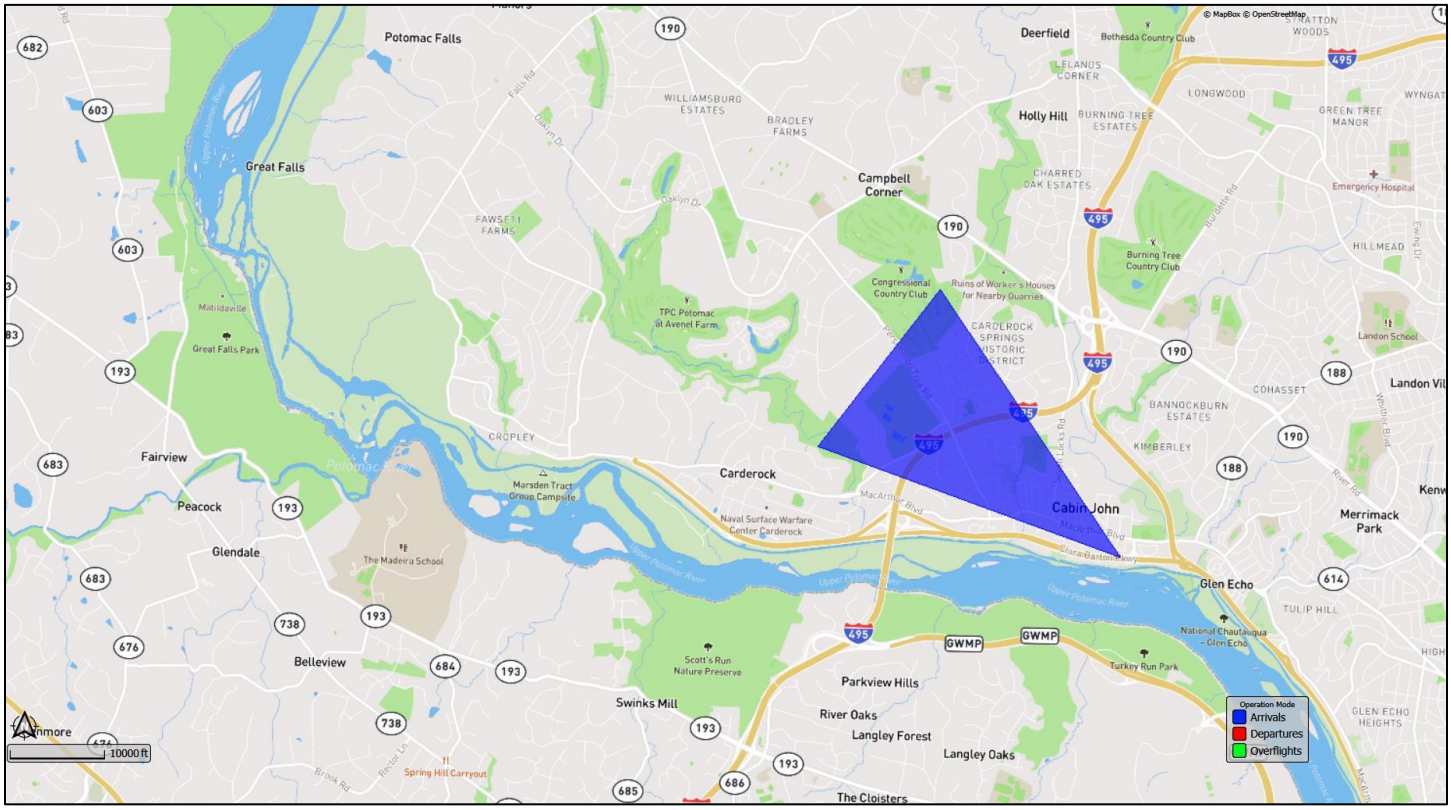
Background: At the request of the FAA, the Airports Authority established the Reagan National Community Noise Working Group in October 2015 to engage broad-based community participation in discussions to identify potential aircraft noise mitigations and make recommendations to the FAA. The DCA Working Group interacts regularly with the FAA and its subject-matter experts to discuss potential ways to modify and/or design flight procedures or other factors that could mitigate the impacts of aircraft noise without compromising the FAA’s top priority of safety.

The FAA regularly provides its subject-matter experts to meet with the Working Group on various topics related to aircraft noise. Additionally, the FAA has provided the DCA Working Group with in-depth tours of the DCA Air Traffic Control Tower and the Potomac TRACON Air Traffic Control facilities. These tours have provided Working Group members with a first-hand opportunity to see Air Traffic Control at work in a real-time environment, which has provided group members a better understanding of the complex nature of ensuring all aircraft are properly separated and sequenced in the highly congested D.C.-area airspace.

The DCA Working Group's accomplishments from 2015 through mid-2025 include:

- Modified LAZIR north flow departure procedure to maximize flight time over water in 2016/2017. (In 2021, the U.S. Secret Service adjusted the waypoint ADAXE by 800 feet west to address penetrations into the P56 federal "no fly" zone).
- Successfully recommended that the Airports Authority:
    - Make its online noise complaint form easier to use,
    - Allow for the selection of multiple noise-complaint criteria,
    - Create a mobile phone application for filing noise complaints, and
    - Allow residents to use a commercial third-party "Button" device to submit complaints (2017-2018).
    - Develop a Fly Quiet Program for Reagan National Airport.
- Successfully recommended that the FAA modify procedures involving westbound north flow departures to keep planes more over water and less over land as they follow the Potomac River corridor in December 2020. *(See Figures 17 and 18 on page 20)*
- Successfully recommended that American Airlines install vortex generators on its A320-type aircraft.
- Successfully recommended the FAA Automated Terminal Information Service (a radio broadcast providing information to pilots approaching an airport) not advertise LDA arrival procedures to arriving pilots to reduce the use of the LDA procedures that overfly the Maryland and D.C. communities inside the Capital Beltway (2022).
- Worked with a consultant and FAA subject-matter experts (2021-2023) to create the Terminal Area Arrival Concept, which has reduced the concentration of air traffic in parts of Bethesda, Maryland, associated with south flow arrival operations. *(See Figure 20 on page 32)*
- Worked with FAA subject-matter experts and a consultant to create a new GPS instrument approach to runway 19 so more aircraft in bad weather could be over the Potomac River (2016-2024). *(See Figure 21 on page 33)*
- Worked with FAA subject-matter experts and a consultant to introduce "track variability" or "dispersion" in south flow arrivals by removing the FERGI waypoint from instrument approach procedures, allowing Air Traffic Control to vector planes to the new location of the DARIC waypoint (2024-2025). *(See Figures 9 and 10 on page 16, Figures 15 and 16 on page 19, and Figure 21 on page 33)*
    - Before this modification, the published south flow arrival approach procedures had FERGI as the initial approach fix, resulting in a high concentration of flight activity between FERGI and DARIC.
- Began work, which was underway in 2025, related to south flow departures and north flow arrivals (2024-2025).

Figure 20 - TAA Polygon Location



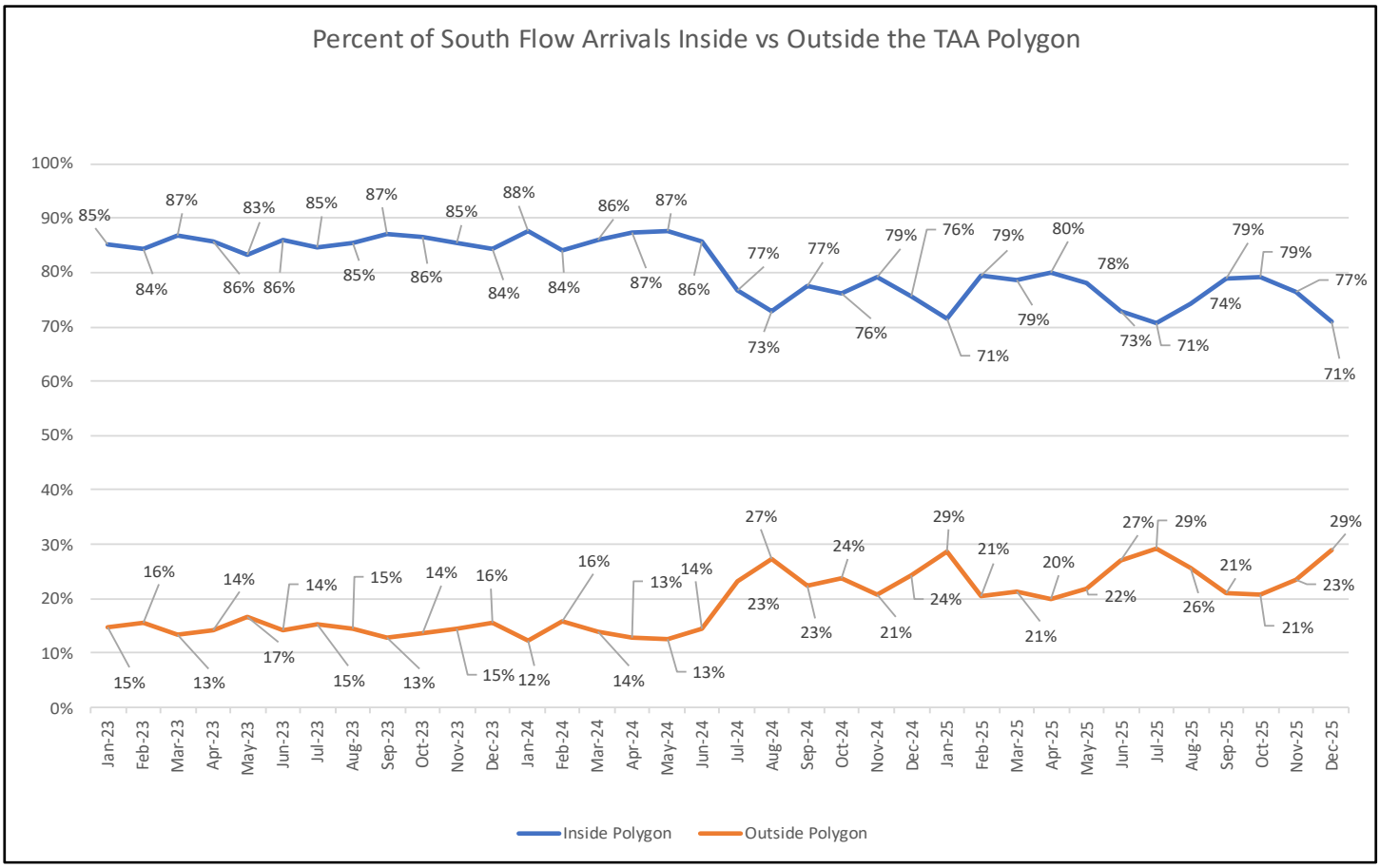


Figure 21 - 2024 New GPS Runway 19 Arrival Procedure (Reduced Use of LDA Arrivals/More Over Water/FERGI Removed and New DARIC)

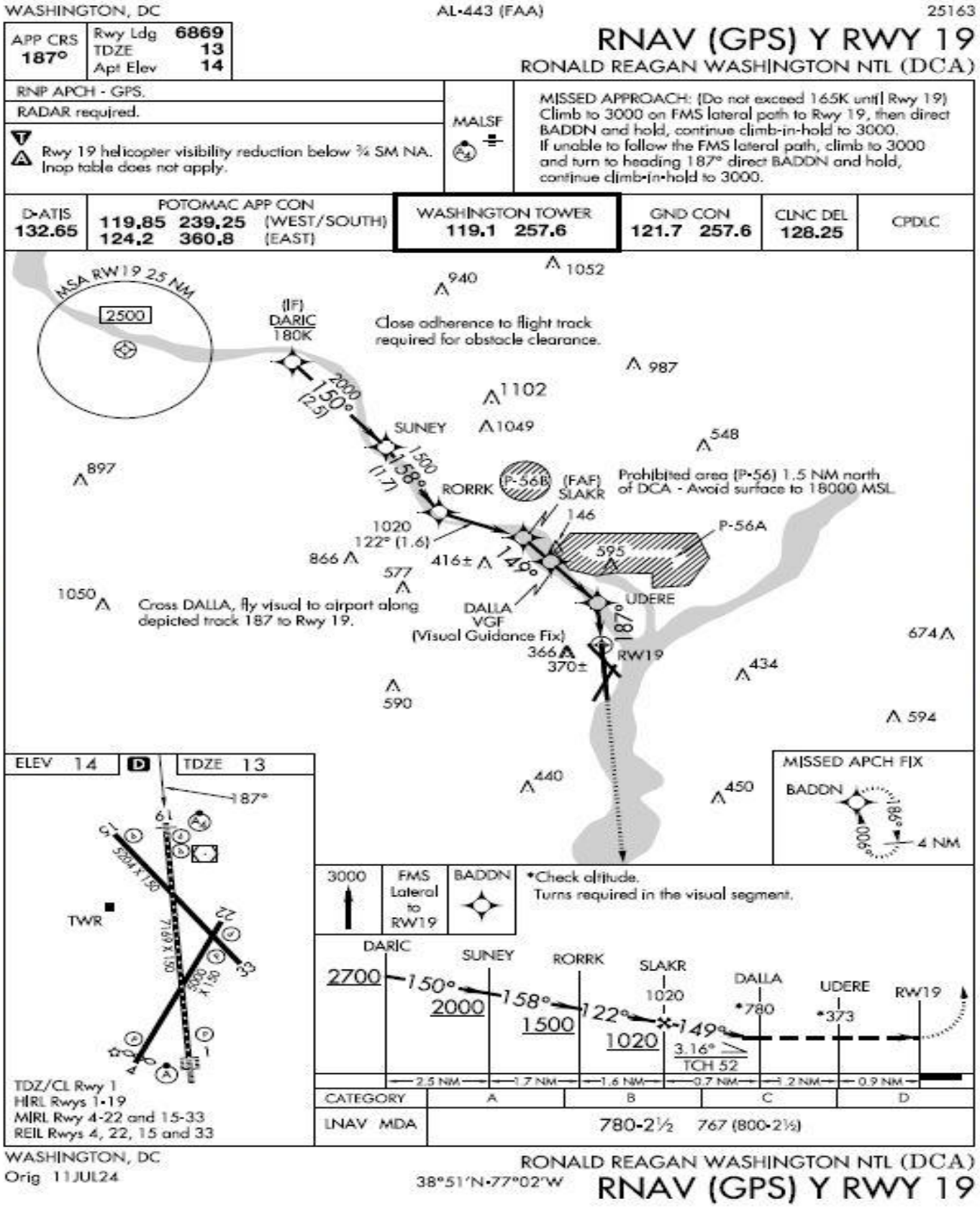
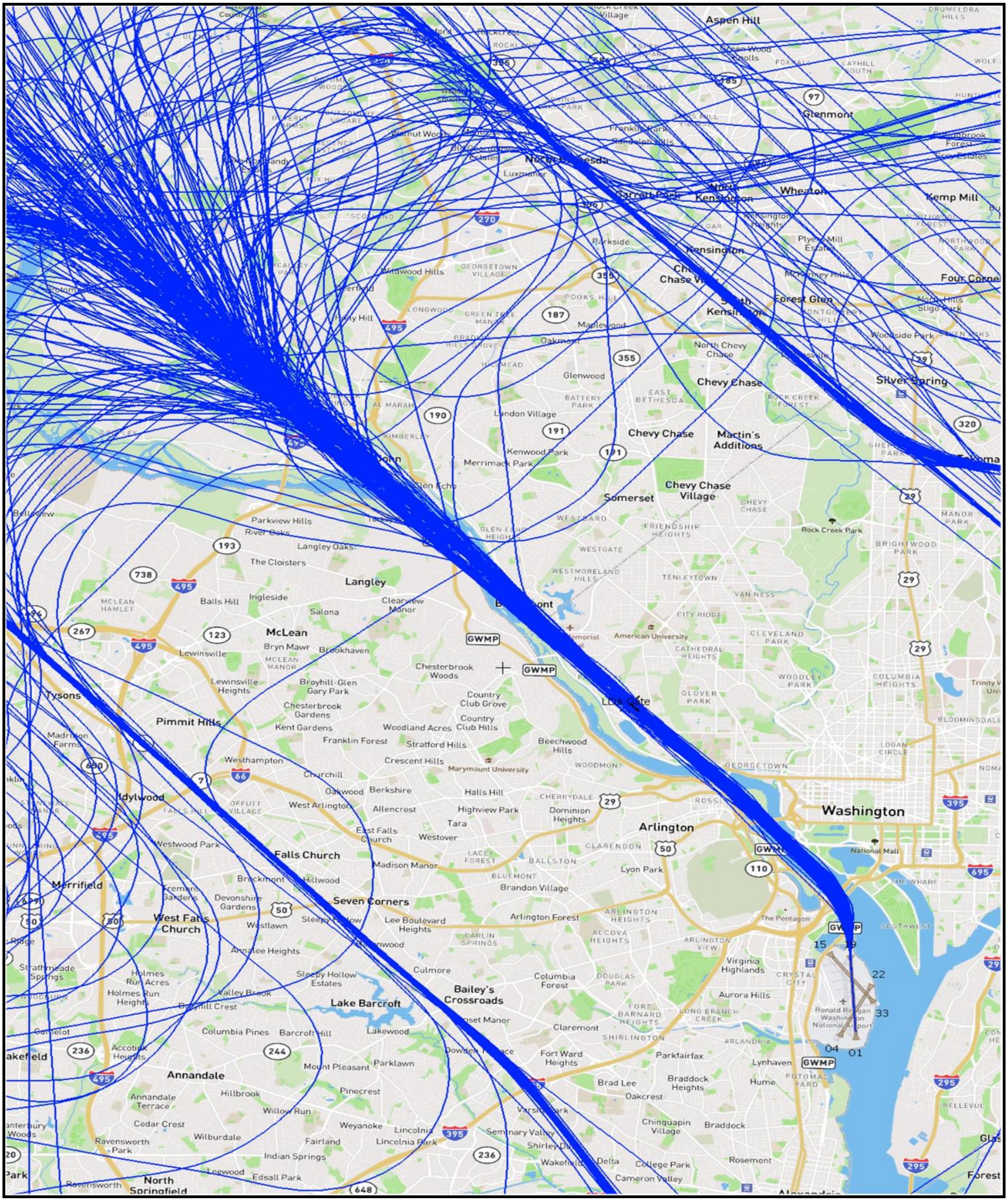
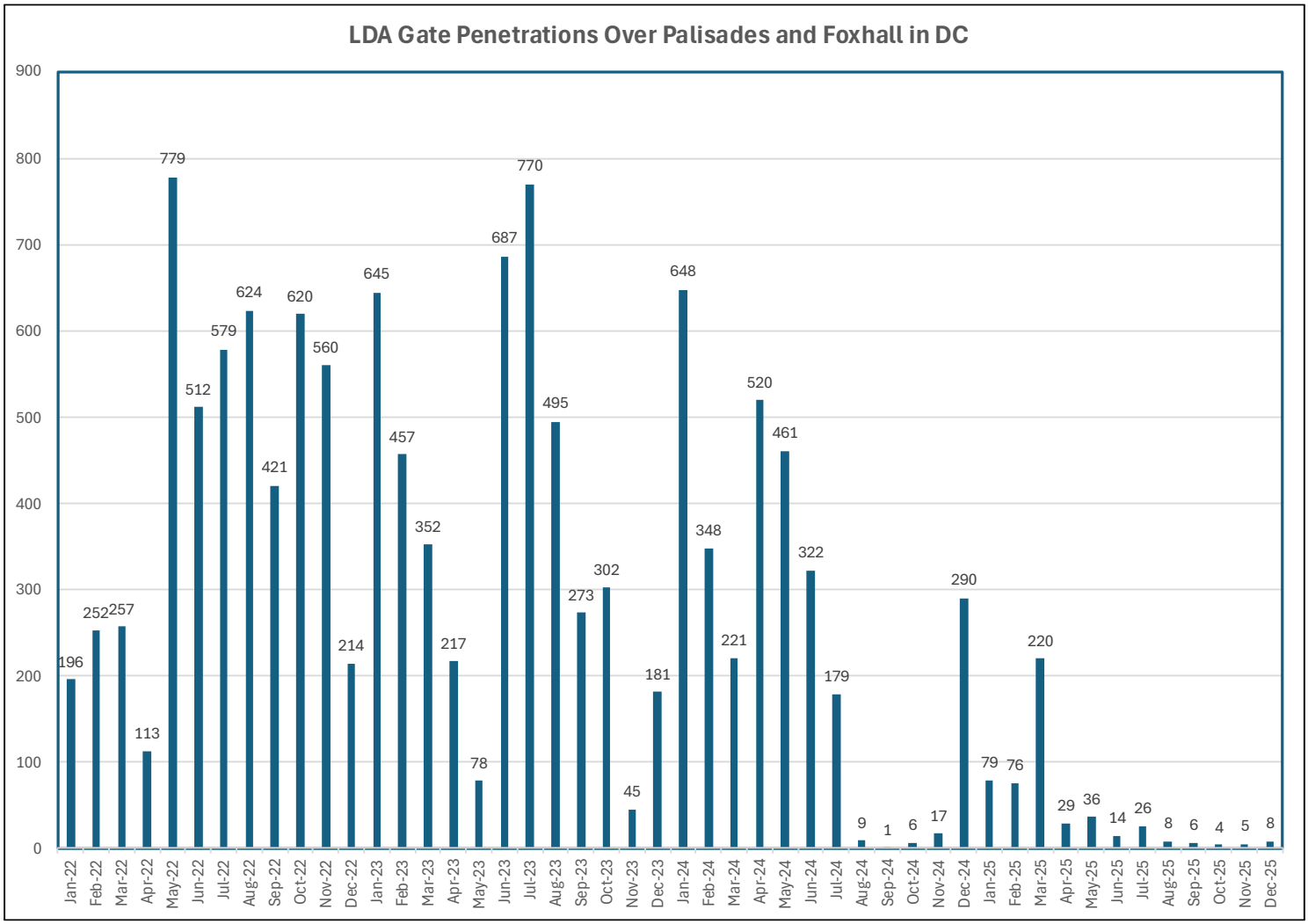


Figure 22 - Over Land LDA Arrival Procedure Flight Path



This graph documents the reduced use of the overland south flow LDA arrival procedures shown in Figure 22 on the previous page resulting from aircraft using the GPS procedure published in July 2024.



In addition, the Working Group has recommended that the FAA investigate the feasibility of other actions, which the FAA has deemed unworkable because of safety or other concerns. They include:

- Balancing the north/south flow split from 65/35 to 50/50,
- Implementing NADP-1 at DCA,
- Raising minimum crossing altitudes at several navigation waypoints associated with high use arrival and departure procedures, and
- Creating dispersion for published arrivals and departure procedures.

(10) Public Online Portal to Access/Analyze Flight and Noise Data

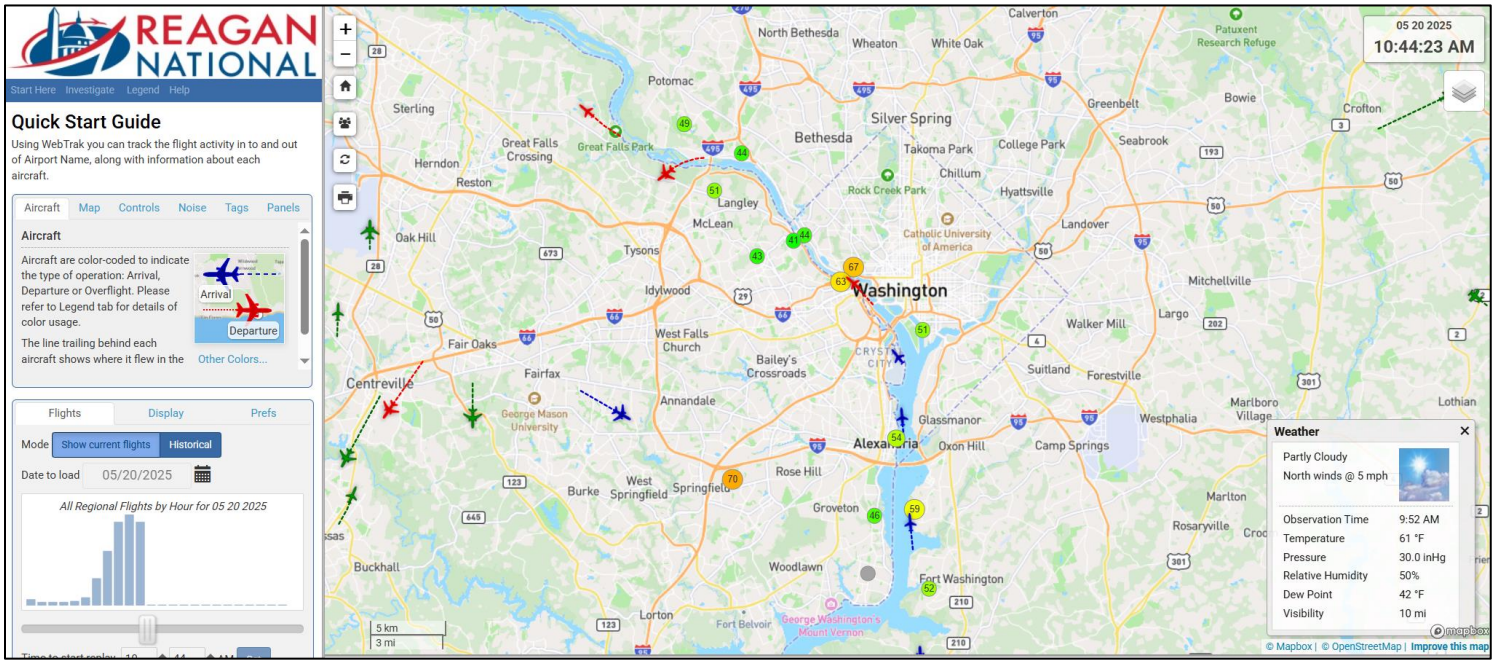
Summary: *In addition to providing information on noise complaints, the Airports Authority has developed an online portal that allows the public to access and analyze data on flight tracks and noise-monitor readings. This portal allows tracking and monitoring of flights from DCA and their noise impacts along flight paths.*

Background: The Airports Authority publishes its noise monitor data and monthly summaries for aircraft noise monitors around DCA and IAD. This data can be downloaded in Excel to enable the public to examine the data in the method of their choosing. An example of the data provided is below.

Noise Monitor #	2016	% Time Online	Total Leq	Aircraft						Community					Mixed					Background (non-event)
				D_{NL}	Leq	# Events	Min Lmax	Modal Lmax	Max Lmax	Leq	# Events	Min Lmax	Modal Lmax	Max Lmax	Leq	# Events	Min Lmax	Modal Lmax	Max Lmax	Leq
2	Jan	99.9	51.8	50.6	48.3	8,491	50.7	60	85.3	43.2	6,285	52.4	58	93.7	36.5	108	55.0	68	91.4	47.6
2	Feb	99.9	53.1	52.3	49.7	9,188	50.3	64	82.7	45.3	8,425	51.9	58	91.3	37.1	173	57.5	66	83.9	48.6
2	Mar	99.8	53.6	53.7	50.9	11,454	51.0	64	86.0	43.4	5,969	52.3	58	91.9	37.1	192	54.7	66	83.1	48.9
2	Apr	99.9	53.9	53.4	50.5	10,692	50.6	64	83.4	45.5	8,186	52.3	58	91.3	38.5	180	57.6	72	80.9	49.6
2	May	99.7	55.5	54.1	51.3	11,853	50.8	64	80.1	49.2	9,214	52.3	58	100.7	38.8	143	56.6	68	95.2	51.2
2	Jun	99.8	58.3	55.1	51.7	11,584	50.7	64	85.2	50.3	10,118	52.2	58	99.7	42.2	181	55.9	67	95.4	56.0
2	Jul	99.7	54.6	54.7	51.3	11,701	51.0	64	87.6	46.6	7,594	52.3	56	95.9	39.7	117	56.3	70	88.1	49.9
2	Aug	99.7	57.3	54.0	50.7	11,926	50.6	64	79.7	52.8	7,861	52.3	58	96.6	41.3	110	55.2	74	91.7	53.3
2	Sep	99.7	54.3	53.2	50.1	11,407	51.0	64	81.3	44.3	4,907	52.0	58	90.8	38.2	78	57.3	70	89.3	51.3
2	Oct	99.7	53.5	52.7	50.0	11,415	50.4	62	79.6	44.0	6,175	52.4	58	86.3	37.4	118	55.1	66	84.8	49.6
2	Nov	99.7	54.3	52.5	50.0	10,664	50.4	62	83.0	46.8	7,824	52.2	58	85.7	39.2	121	51.5	74	88.6	50.6
2	Dec	99.7	53.6	52.5	49.6	10,098	50.4	62	82.2	45.9	6,897	52.2	58	90.2	41.6	134	54.4	72	85.0	49.3
3	Jan	99.9	49.9	40.9	39.2	1,943	50.4	56	79.4	44.9	10,527	52.3	56	87.3	35.2	212	54.0	62	85.4	47.4
3	Feb	99.9	50.6	42.8	40.9	2,454	50.3	58	79.8	46.0	12,942	52.5	58	85.9	31.2	233	54.4	62	79.9	47.9
3	Mar	99.8	51.5	43.6	41.8	2,638	50.5	58	86.2	44.7	10,791	52.5	58	88.2	36.1	395	54.4	62	86.5	49.7
3	Apr	99.9	53.2	42.8	40.9	2,359	50.5	58	79.3	48.9	15,939	52.4	58	85.6	41.2	505	51.0	60	85.0	50.3
3	May	99.7	54.8	45.0	42.9	3,266	50.1	60	83.1	49.8	15,493	52.3	58	90.0	43.8	405	54.8	62	85.6	52.1
3	Jun	99.7	53.5	44.9	42.4	3,291	50.2	58	82.8	49.2	17,346	52.3	58	88.8	38.4	504	54.9	60	85.4	50.7
3	Jul	92.1	53.4	44.7	41.8	3,138	50.4	56	83.9	49.7	11,746	52.3	58	89.2	40.0	425	53.4	62	86.7	49.9
3	Aug	99.8	54.1	43.8	41.5	3,834	50.2	58	81.2	49.8	14,127	52.1	58	99.9	44.3	499	54.5	62	99.7	50.8
3	Sep	99.7	53.0	43.7	41.8	3,664	50.3	58	82.4	48.5	12,029	52.1	58	92.1	38.4	284	56.3	62	90.2	50.3
3	Oct	99.7	56.6	43.6	42.0	3,250	50.4	58	82.1	54.0	17,180	52.3	58	87.2	44.0	509	55.0	63	83.8	52.1
3	Nov	99.8	52.0	42.5	40.9	2,405	50.3	58	82.1	47.1	15,366	52.3	58	86.5	36.2	356	52.5	62	84.9	49.6
3	Dec	99.7	55.8	42.3	40.6	2,199	50.2	58	84.6	50.6	16,267	52.2	58	89.2	37.3	217	54.1	62	84.8	54.0

The Airports Authority also provides the public with an online flight-tracking system called WebTrak, which can be used to view current and historical flight operations. This application also displays the noise monitor locations and the noise readings from these locations during aircraft flyovers, enabling the public to monitor flights and their noise output at key points along flight paths.

Webtrak Graphic



(11) The Airports Authority's Annual Aircraft Noise Report

Summary: *To provide the public with a broad spectrum of information regarding aircraft noise, the Airports Authority's Noise Information Office publishes an annual report on the Authority's websites. This publication contains data and explanations of noise-related issues during the previous calendar year.*

Background: The Annual Aircraft Noise Reports provide information and analysis of flight operations, noise-monitoring data and noise complaint statistics for Reagan National and Dulles International airports. The Airports Authority does not control or regulate airspace, aircraft operations, aircraft noise levels, airline schedules, airline fleet mix or local land-use zoning. The Authority's Annual Noise Reports contain information including:

- Runway use by arrivals and departures;
- Daily average operation counts per hour;
- Nighttime noise rule history, enforcement and violations;
- Noise monitor program, locations and data;
- Aircraft fleet mix; and
- Noise complaint statistics.

(12) Communications with / Recommendations to Airlines

Summary: *The Airports Authority communicates with airlines periodically to convey information or requests regarding aircraft noise and to encourage compliance with noise-abatement procedures and provides a publicly available annual report to airlines on compliance with Fly Quiet Program requests and related metrics.*

Background: Because no laws or regulations govern or regulate the noise output of commercial airplanes in flight, most airport "Fly Quiet" programs consist mainly of requests for airlines and pilots to follow voluntary guidelines designed to help mitigate the impacts of aircraft noise on nearby communities. Because all airports are different in terms of physical characteristics and business conditions, these voluntary efforts differ at each airport. At Reagan National, airlines and pilots are encouraged to:

- Follow the river flight corridors, as required in the published FAA arrival and departure procedures, remaining mindful of the procedures' noise-abatement features.
- Limit the scheduling of flights between 10 p.m. and 7 a.m. (hours covered by the Nighttime Noise Rule).
- Avoid requesting unnecessary "early turns" from departure flight paths that would take planes over heavily populated areas.
- Avoid engine run-ups at the airport.
- Follow airfield instruction signs and other guidance regarding noise abatement.

The Airports Authority, as part of its Annual Noise Report, will provide operational data related to the DCA Fly Quiet Program's requests. This report informs the public of compliance with the program and encourages continued efforts to mitigate aircraft noise. The report will include data on fleet mix changes, Nighttime Noise Rule violations, late-night and early morning flights and schedules, nighttime aircraft types and noise mitigation initiatives and activities.

Additionally, when events or conditions warrant, the Airports Authority relays community and airport concerns to the airlines serving DCA. Examples include letters in 2014 asking airlines to eliminate the MD80-class aircraft, which were among the loudest flying at the time, from the DCA market. Letters in recent years also

have reminded airlines of the Nighttime Noise Rule and discouraged the scheduling of flights during the "quiet hours" between 10 p.m. and 7 a.m.

To help ensure airline awareness of noise-related issues and concerns, two voting members of the DCA Community Noise Working Group represent airlines that operate at DCA, including an employee of American Airlines, which operates the majority of DCA's flights.

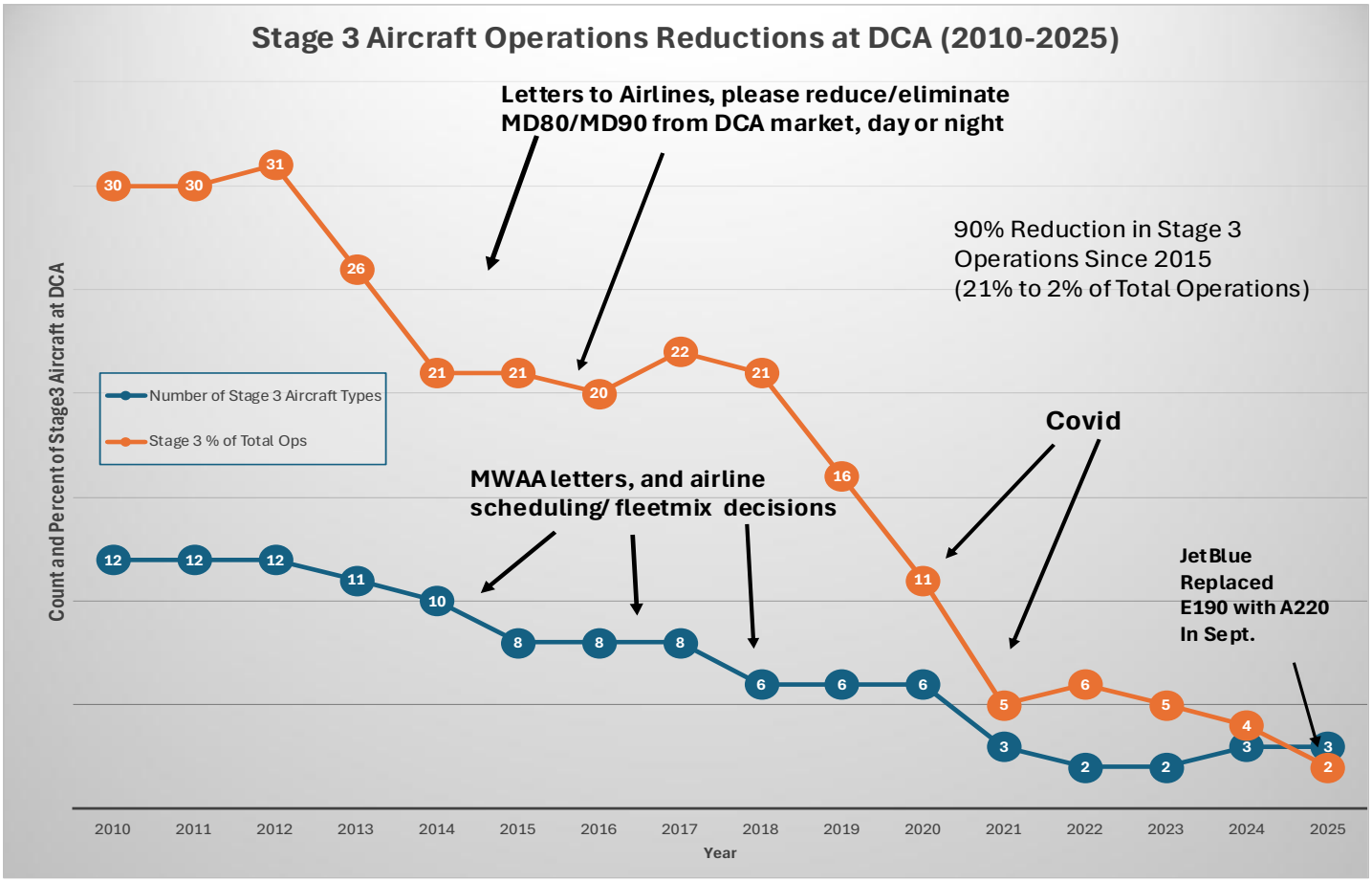
In response to increasing complaint volumes regarding specific noise-related issues, the Airports Authority relays community concerns to airline management for their consideration and potential action. The DCA Community Noise Working Group also may formulate recommendations and requests to the airlines serving DCA and communicate with airlines through its interactions with the group's two airline representatives.

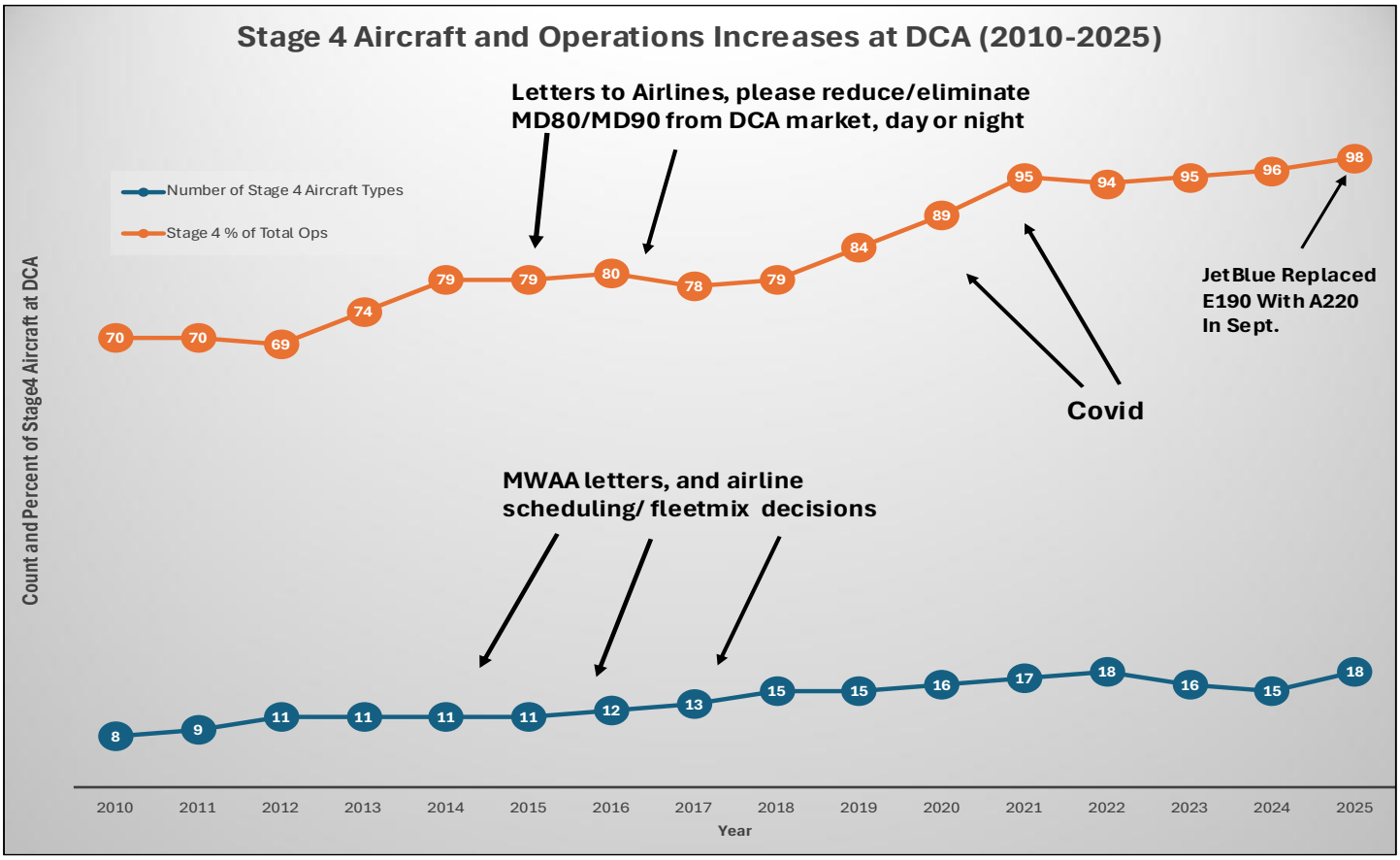
(13) Analysis of Airport and Airline Operational Data and Online Information

Summary: *The Airports Authority publishes noise-related information on its websites to provide the public with additional ways to understand and monitor aircraft noise issues. Airlines serving DCA have steadily replaced older and louder aircraft with newer and quieter planes. The Airports Authority's Noise Information Office tracks and reports on changes in the airline fleet mix at DCA and publishes this information in its Annual Noise Report. Upgrading airline fleets to quieter planes helps reduce noise impacts.*

Background: The Airports Authority publishes information on the DCA airline fleet in its Annual Noise Report. In addition, the following additional fleet-mix information will be published quarterly in the noise information section of the DCA website: Airline fleet mix by day (7 a.m. to 10 p.m.) and night (10 p.m. to 7 a.m.) on individual airlines. Annual average operations per hour are documented in the Annual Report and quarterly on the website by airline, and by night / day. Examples of additional data to be published on the website are illustrated below. In addition to the subject areas previously noted, the Airports Authority's noise information website includes data and statistics on a number of aircraft noise-related topics, which include:

- Noise monitoring systems and noise monitor data
- North and south flow graphics
- Flight track density plots, including quarterly data on concentration of flight activity
- Part 150 studies
- Historical reports from the Government Accountability Office and other agencies
- Airport diagram

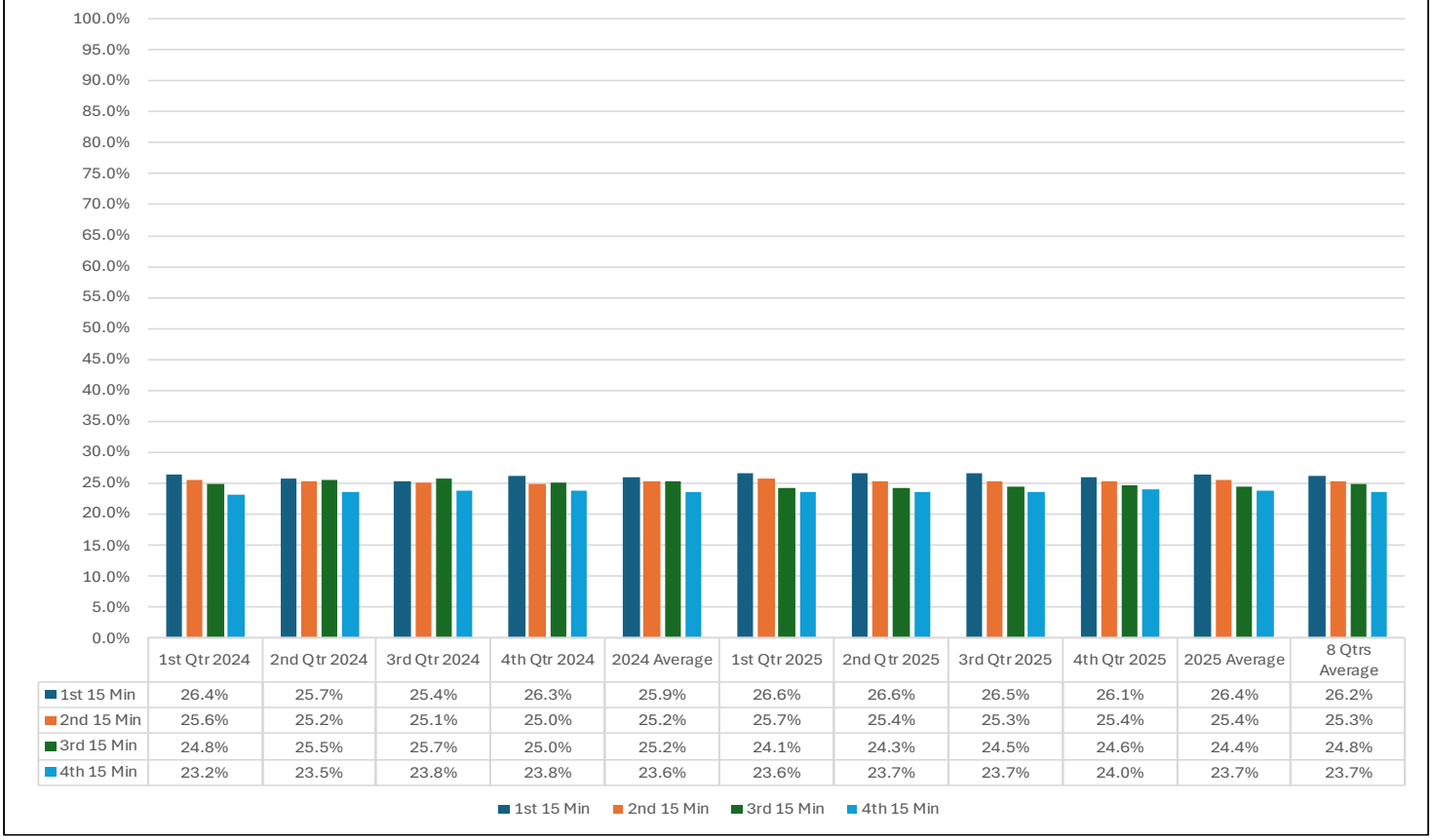

Stage 3 Aircraft Operations Reductions at DCA (2010-2025)
Letters to Airlines, please reduce/eliminate MD80/MD90 from DCA market, day or night
90% Reduction in Stage 3 Operations Since 2015 (21% to 2% of Total Operations)
Number of Stage 3 Aircraft Types
Stage 3 % of Total Ops
Covid
MWAA letters, and airline scheduling/ fleetmix decisions
JetBlue Replaced E190 with A220 In Sept.
Count and Percent of Stage3 Aircraft at DCA
30 30 31 26 21 21 20 22 21 16 11 5 6 5 4 2
12 12 12 11 10 8 8 8 6 6 6 3 2 2 3 3
2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Year


Stage 4 Aircraft and Operations Increases at DCA (2010-2025)
Letters to Airlines, please reduce/eliminate MD80/MD90 from DCA market, day or night
Number of Stage 4 Aircraft Types
Stage 4 % of Total Ops
JetBlue Replaced E190 With A220 In Sept.
Covid
MWAA letters, and airline scheduling/ fleetmix decisions
Count and Percent of Stage4 Aircraft at DCA
70 70 69 74 79 79 80 78 79 84 89 95 94 95 96 98
8 9 11 11 11 11 12 13 15 15 16 17 18 16 15 18
2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024 2025
Year

16 Year Airport Fleet Mix

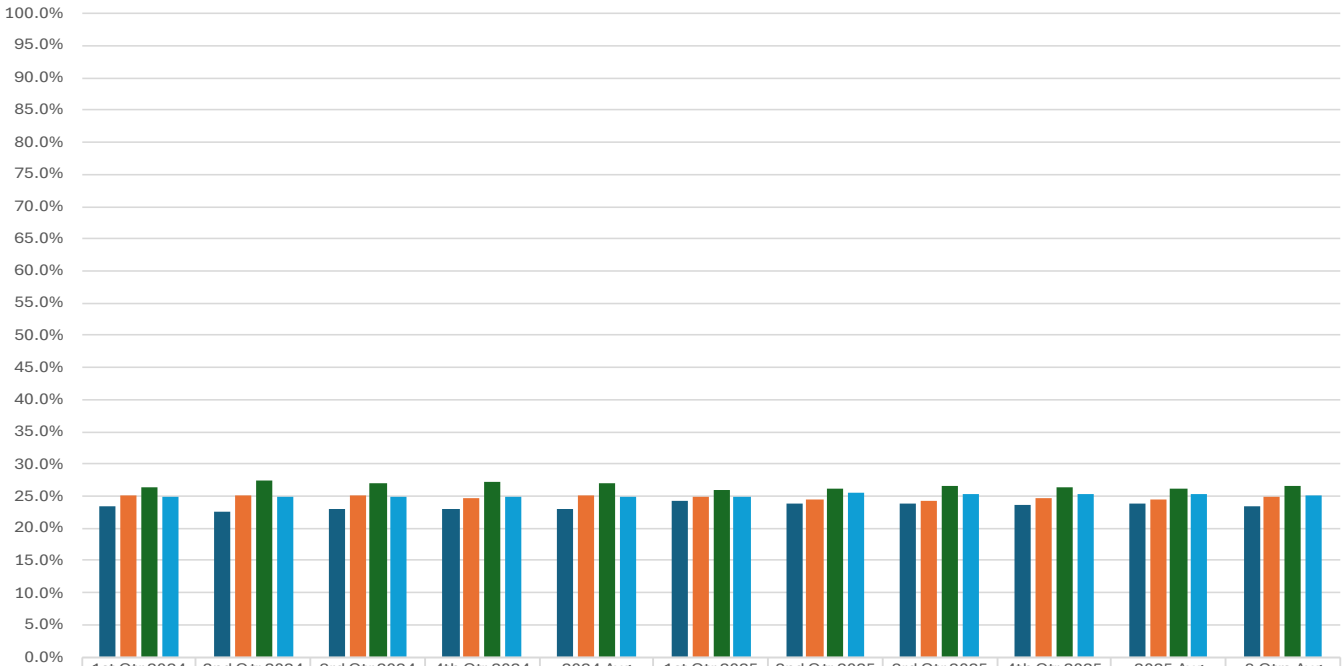
Aircraft Type	FAA Stage	AC Type	AC Category	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
CRJ7	4	Bombardier CRJ-700	Regional Jet	2.7%	4.7%	3.1%	1.6%	2.0%	3.2%	8.4%	7.9%	7.4%	8.8%	11.5%	16.3%	17.3%	18.6%	21.8%	23.2%
A319	4	Airbus A319-100 Series	Airline Jet	16.0%	14.4%	14.6%	15.4%	14.5%	14.4%	12.1%	9.8%	9.2%	8.4%	10.9%	10.4%	10.9%	12.6%	12.3%	11.8%
E75S	4	Embraer ERJ175 short wing	Regional Jet										0.1%	0.8%	5.1%	7.1%	8.8%	11.4%	10.9%
B738	4	Boeing 737-800 Series	Airline Jet	7.0%	6.5%	8.2%	9.8%	11.1%	12.8%	10.3%	9.3%	10.3%	9.6%	9.9%	7.7%	7.1%	9.2%	9.5%	9.2%
CRJ9	4	Bombardier CRJ-900	Regional Jet	1.1%	2.0%	1.6%	2.3%	2.1%	2.1%	3.6%	4.7%	3.3%	2.8%	2.3%	6.0%	11.2%	11.3%	8.7%	9.0%
B737	4	Boeing 737-700 Series	Airline Jet	2.1%	2.5%	2.3%	2.5%	6.4%	13.5%	13.6%	12.0%	10.0%	11.7%	13.0%	9.9%	10.1%	8.0%	7.5%	7.0%
A320	4	Airbus A320-200 Series	Airline Jet	4.0%	4.6%	6.7%	7.6%	6.1%	5.6%	5.0%	5.5%	5.4%	5.5%	6.9%	6.0%	6.5%	6.2%	6.9%	5.4%
B38M	4	Boeing 737-8	Airline Jet									0.2%	0.2%		1.5%	1.1%	2.4%	3.8%	5.0%
E170	4	Embraer ERJ170-LR	Regional Jet	19.2%	19.1%	22.0%	26.1%	27.8%	25.0%	22.8%	22.3%	26.6%	27.9%	21.2%	12.6%	14.1%	10.6%	4.6%	5.0%
E75L	4	Embraer ERJ175 long wing	Regional Jet							0.1%	1.0%	1.8%	1.6%	2.5%	11.5%	3.4%	2.5%	5.3%	4.8%
A21N	4	Airbus A321-NEO	Airline Jet									0.1%	0.6%	3.0%	3.0%	2.1%	1.9%	1.6%	2.1%
A321	4	Airbus A321-200 Series	Airline Jet			0.2%	1.1%	0.4%	0.9%	2.2%	4.5%	4.4%	6.1%	5.3%	3.5%	2.1%	2.2%	1.9%	1.9%
BCS3	4	Airbus A220-300	Airline Jet																1.7%
E190	3	Embraer ERJ190	Regional Jet	1.0%	4.0%	5.2%	5.0%	7.5%	11.7%	10.6%	9.1%	9.2%	10.6%	5.9%	3.1%	5.2%	4.3%	3.2%	1.3%
A20N	4	Airbus A320-NEO	Airline Jet									0.1%	0.4%	0.9%	0.6%	0.6%	0.6%	0.6%	0.6%
B752	3	Boeing 757-200 Series	Airline Jet	2.1%	1.9%	2.9%	1.7%	1.2%	0.7%	0.7%	0.5%	0.8%	0.9%	0.6%	0.7%	0.6%	0.3%	0.3%	0.3%
B753	3	Boeing 757-300 Series	Airline Jet							0.3%	0.4%	0.5%	0.3%	0.1%				0.2%	0.2%
GLF6	4	Gulfstream G650ER	GA Jet								0.1%	0.1%		0.0%	0.0%	0.1%	0.1%	0.1%	0.1%
GLF5	4	Gulfstream G550	GA Jet		0.1%	0.2%	0.2%	0.1%	0.2%	0.2%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%	0.1%
BCS1	4	Airbus A220-100	Airline Jet												0.4%	0.2%	0.0%		0.1%
HELO	UNK	Helo/UNK Type	Helicopter			0.1%	0.1%	0.2%	0.9%	1.2%	0.6%	0.2%	0.2%	0.3%	0.1%	0.1%	0.1%	0.1%	0.1%
UNK	UNK	#N/A	NA	17.7%	16.5%	9.7%	7.2%	8.2%	0.4%	0.6%	0.2%			0.1%					
CRJ1	3	Canadair Regional Jet 100	Regional Jet	3.9%	1.5%	0.6%	0.1%												
MD82	3	McDonald Douglas MD88	Airline Jet	2.2%	1.5%	1.3%	1.9%	1.0%											
MD83	3	McDonald Douglas MD83	Airline Jet	1.2%	1.4%	0.9%	0.6%	0.2%											
MD90	3	McDonald Douglas MD90	Airline Jet	0.5%	1.6%	1.9%	2.5%	3.1%	2.7%	2.5%	0.9%								
MD88	3	McDonald Douglas MD88	Airline Jet	2.6%	3.0%	1.7%	2.7%	1.5%	2.2%	1.7%	0.2%								
B734	3	Boeing 737-400 Series	Airline Jet	3.8%	2.7%	2.1%													
E135	3	Embraer ERJ135-LR	Regional Jet	6.0%	3.7%	4.3%	4.3%	1.8%	0.2%										
E145	3	Embraer ERJ145	Regional Jet	4.9%	5.8%	7.0%	3.7%	2.1%	1.9%	2.3%	9.5%	9.5%	2.6%	3.5%	1.3%				
E45X	3	E145 long range	Regional Jet	0.2%	0.3%	0.6%	0.3%	0.6%	1.1%	0.9%	0.7%	0.6%	1.1%	0.8%					
B712	3	Boeing 717-200 Series	Airline Jet	1.9%	2.2%	2.8%	3.2%	2.1%	0.3%	0.9%	0.7%	0.1%	0.4%	0.4%					
% Stage 3				30.1%	29.5%	31.3%	25.9%	21.1%	20.9%	19.9%	21.9%	20.7%	15.9%	11.2%	5.1%	5.8%	4.6%	3.6%	1.9%

Percent of Total Operations in15 Minute Increments per Hour



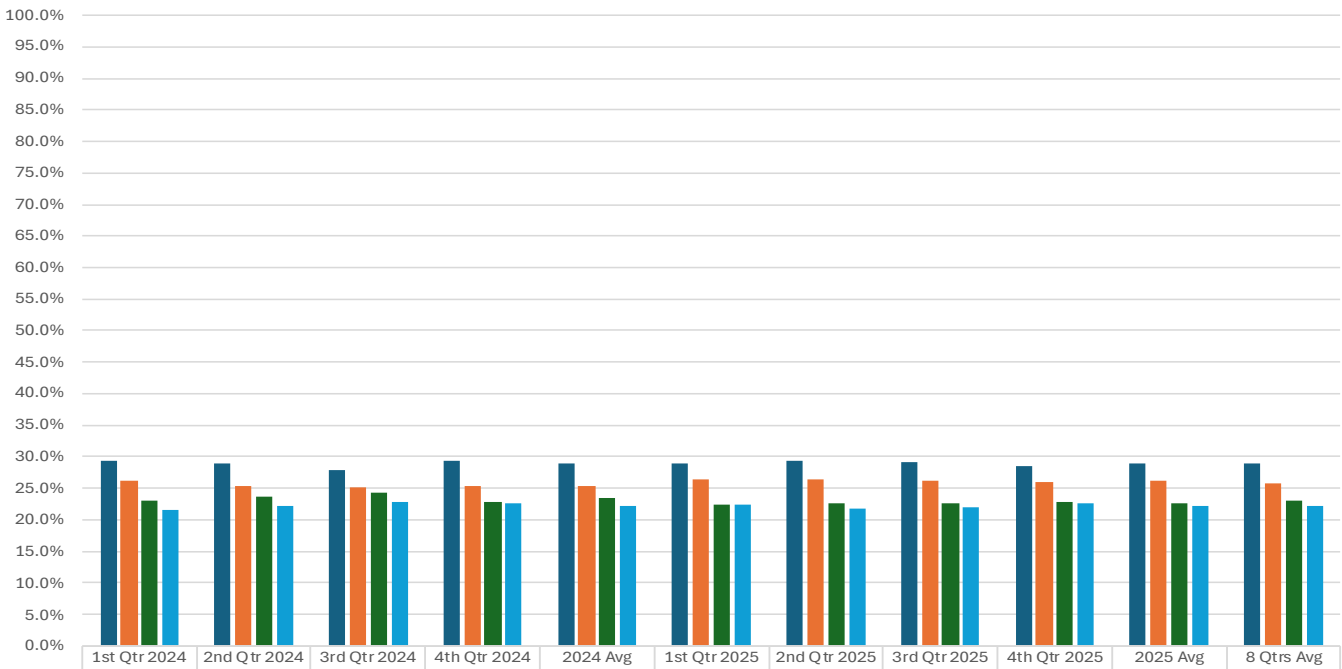
	1st Qtr 2024	2nd Qtr 2024	3rd Qtr 2024	4th Qtr 2024	2024 Average	1st Qtr 2025	2nd Qtr 2025	3rd Qtr 2025	4th Qtr 2025	2025 Average	8 Qtrs Average
1st 15 Min	26.4%	25.7%	25.4%	26.3%	25.9%	26.6%	26.6%	26.5%	26.1%	26.4%	26.2%
2nd 15 Min	25.6%	25.2%	25.1%	25.0%	25.2%	25.7%	25.4%	25.3%	25.4%	25.4%	25.3%
3rd 15 Min	24.8%	25.5%	25.7%	25.0%	25.2%	24.1%	24.3%	24.5%	24.6%	24.4%	24.8%
4th 15 Min	23.2%	23.5%	23.8%	23.8%	23.6%	23.6%	23.7%	23.7%	24.0%	23.7%	23.7%

Percent of Arrival Operations in 15 Minute Increments per Hour



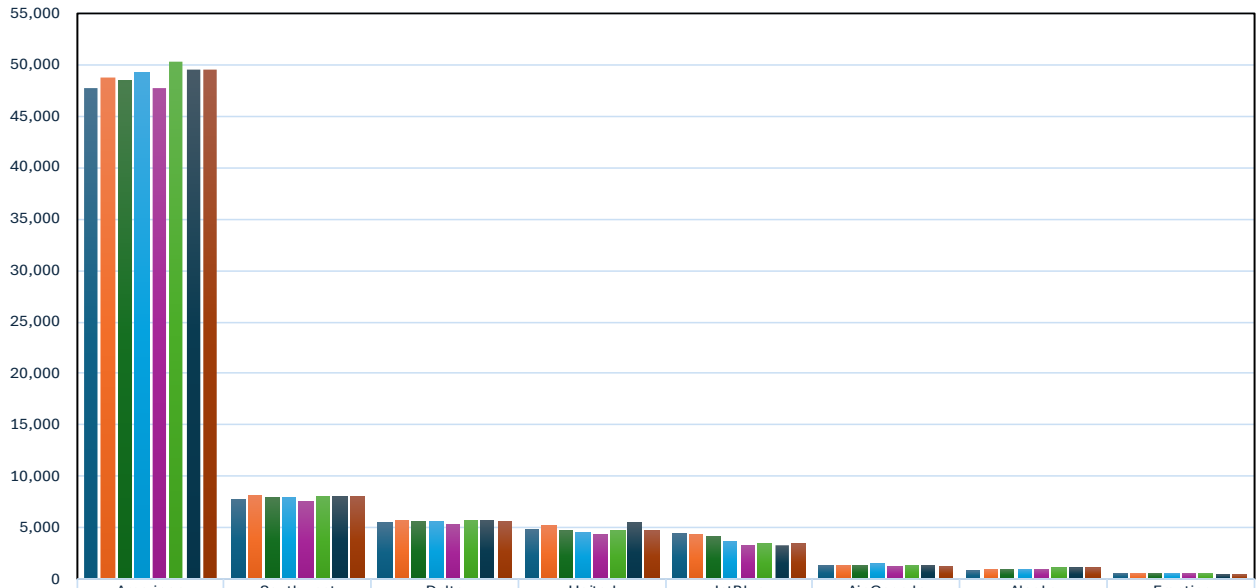
	1st Qtr 2024	2nd Qtr 2024	3rd Qtr 2024	4th Qtr 2024	2024 Avg	1st Qtr 2025	2nd Qtr 2025	3rd Qtr 2025	4th Qtr 2025	2025 Avg	8 Qtrs Avg
1st 15 Min ARR	23.5%	22.5%	22.9%	23.1%	23.0%	24.2%	23.8%	23.8%	23.6%	23.8%	23.4%
2nd 15 Min ARR	25.1%	25.2%	25.1%	24.7%	25.0%	24.9%	24.5%	24.3%	24.7%	24.6%	24.8%
3rd 15 Min ARR	26.5%	27.4%	27.1%	27.3%	27.0%	26.0%	26.2%	26.6%	26.3%	26.3%	26.6%
4th 15 Min ARR	25.0%	24.9%	24.9%	25.0%	24.9%	24.9%	25.6%	25.4%	25.4%	25.3%	25.1%

Percent of Departure Operations in 15 Minute Increments per Hour



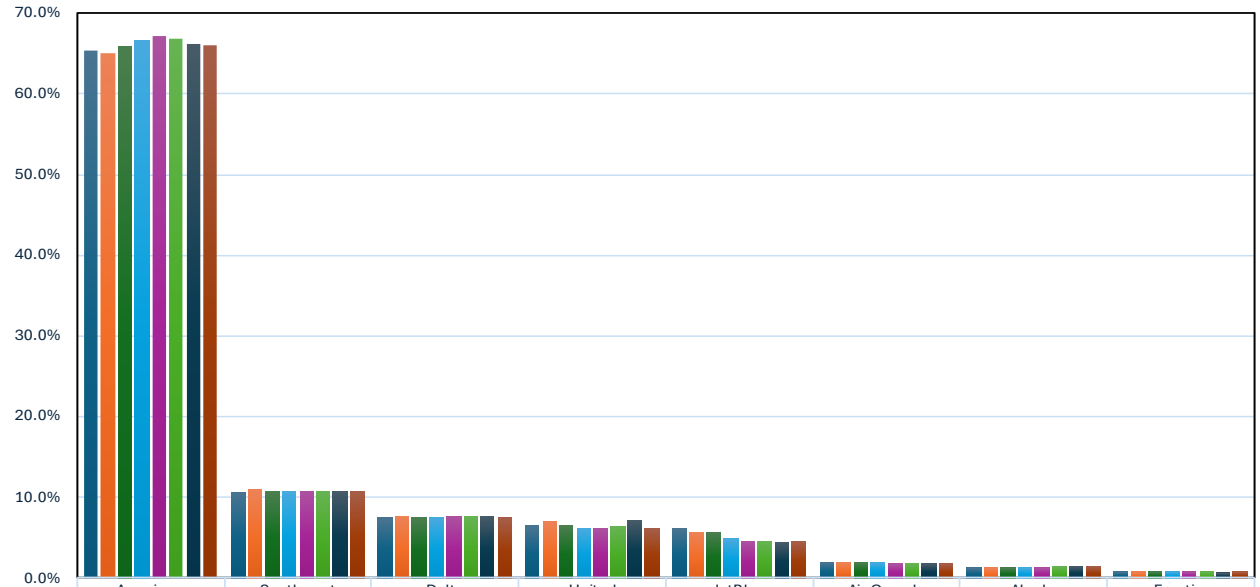
	1st Qtr 2024	2nd Qtr 2024	3rd Qtr 2024	4th Qtr 2024	2024 Avg	1st Qtr 2025	2nd Qtr 2025	3rd Qtr 2025	4th Qtr 2025	2025 Avg	8 Qtrs Avg
1st 15 Min DEP	29.3%	28.8%	27.8%	29.4%	28.8%	29.0%	29.4%	29.2%	28.5%	29.0%	28.9%
2nd 15 Min DEP	26.1%	25.3%	25.1%	25.2%	25.4%	26.4%	26.3%	26.3%	26.1%	26.3%	25.8%
3rd 15 Min DEP	23.1%	23.7%	24.4%	22.8%	23.5%	22.3%	22.5%	22.6%	22.9%	22.6%	23.0%
4th 15 Min DEP	21.5%	22.2%	22.8%	22.6%	22.3%	22.3%	21.8%	22.0%	22.6%	22.2%	22.2%

Count of Total Operations Per Airline By Quarter (Who's Flying)



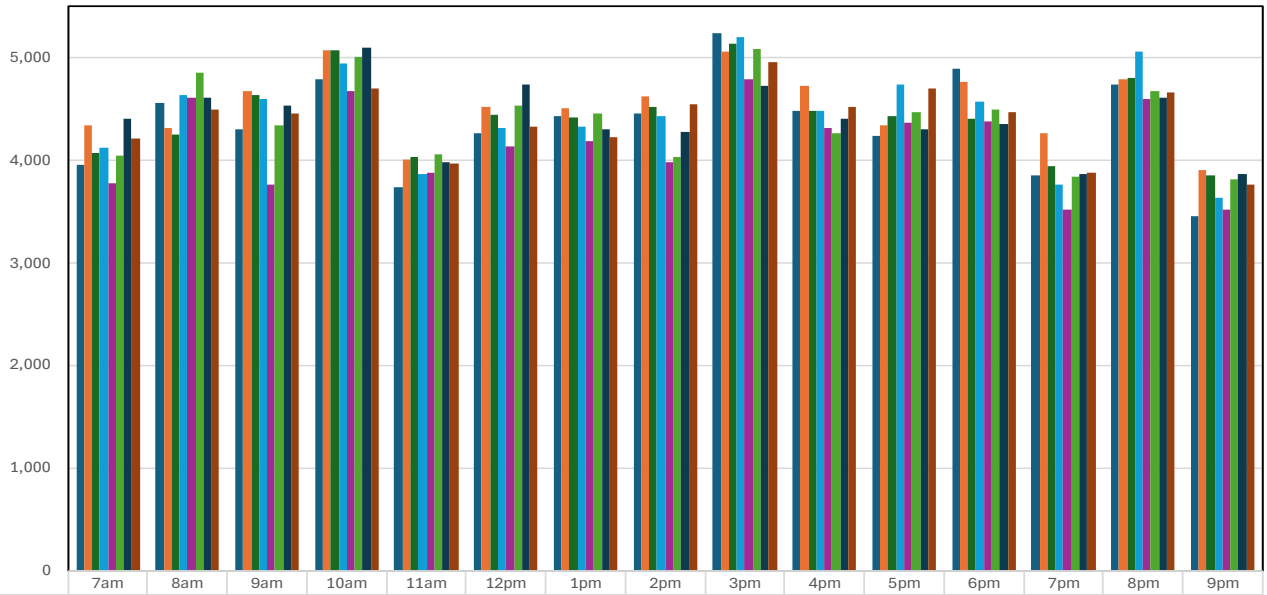
	American	Southwest	Delta	United	JetBlue	Air Canada	Alaska	Frontier
1st Qtr 2024	47,815	7,747	5,428	4,772	4,483	1,414	902	545
2nd Qtr 2024	48,730	8,149	5,708	5,231	4,319	1,408	908	536
3rd Qtr 2024	48,594	7,967	5,545	4,758	4,175	1,367	914	545
4th Qtr 2024	49,344	7,953	5,561	4,603	3,616	1,434	909	554
1st Qtr 2025	47,704	7,586	5,390	4,367	3,262	1,252	911	529
2nd Qtr 2025	50,352	8,058	5,788	4,757	3,414	1,345	1,092	522
3rd Qtr 2025	49,594	8,045	5,770	5,418	3,244	1,301	1,089	497
4th Qtr 2025	49,575	8,060	5,632	4,680	3,381	1,251	1,098	498

Percent of Total Operations Per Airline By Quarter (Who's Flying)



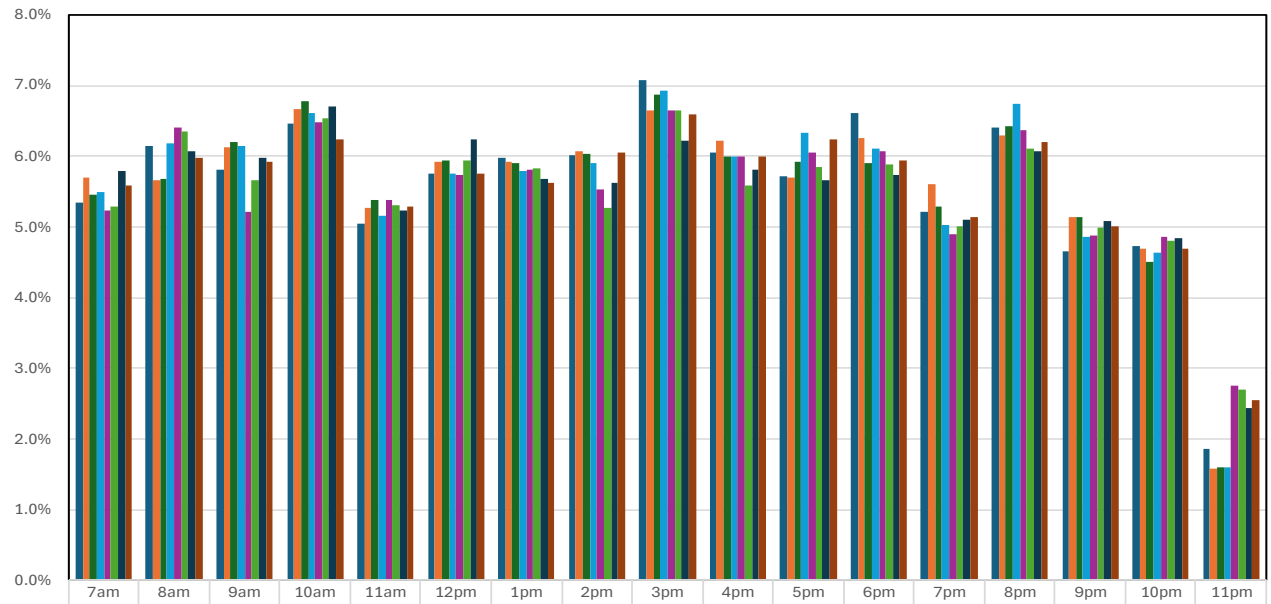
	American	Southwest	Delta	United	JetBlue	Air Canada	Alaska	Frontier
1st Qtr 2024	65.4%	10.6%	7.4%	6.5%	6.1%	1.9%	1.2%	0.7%
2nd Qtr 2024	65.0%	10.9%	7.6%	7.0%	5.8%	1.9%	1.2%	0.7%
3rd Qtr 2024	65.8%	10.8%	7.5%	6.4%	5.7%	1.9%	1.2%	0.7%
4th Qtr 2024	66.7%	10.8%	7.5%	6.2%	4.9%	1.9%	1.2%	0.7%
1st Qtr 2025	67.2%	10.7%	7.6%	6.2%	4.6%	1.8%	1.3%	0.7%
2nd Qtr 2025	66.8%	10.7%	7.7%	6.3%	4.5%	1.8%	1.4%	0.7%
3rd Qtr 2025	66.2%	10.7%	7.7%	7.2%	4.3%	1.7%	1.5%	0.7%
4th Qtr 2025	66.0%	10.7%	7.5%	6.2%	4.5%	1.7%	1.5%	0.7%

Count of Total Operations by Hour Per Quarter (When Planes Fly (7 a.m. to 10 p.m.)



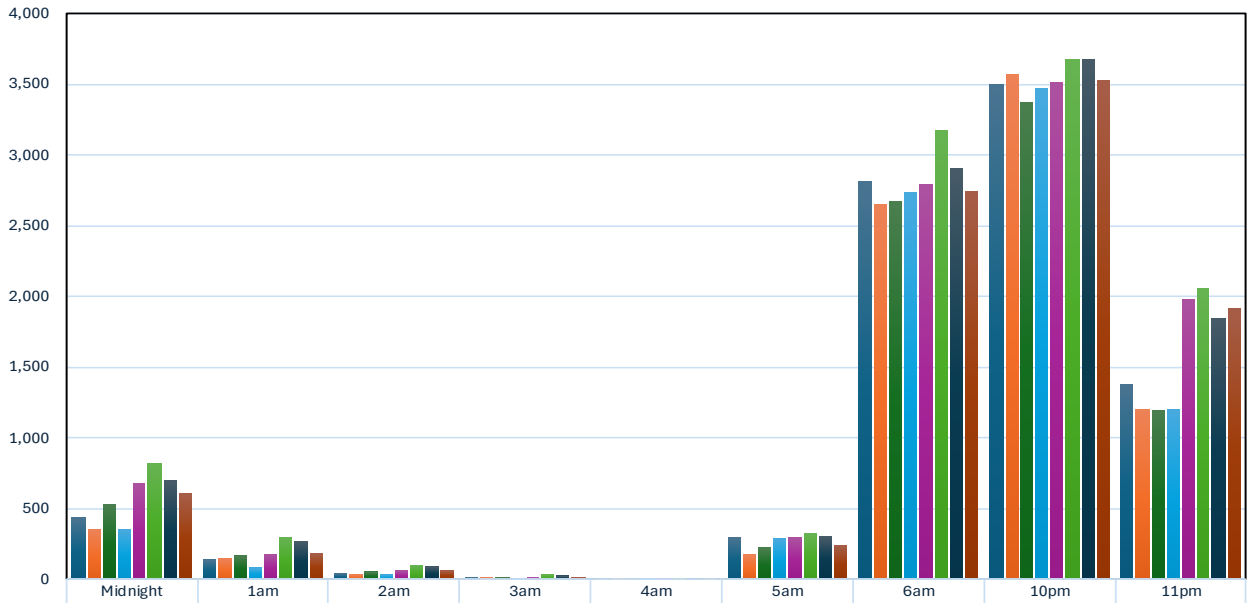
	7am	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm
1st Qtr 2024	3,962	4,557	4,298	4,786	3,741	4,268	4,433	4,461	5,237	4,484	4,242	4,894	3,857	4,745	3,450
2nd Qtr 2024	4,337	4,313	4,671	5,078	4,010	4,515	4,511	4,621	5,066	4,728	4,340	4,770	4,261	4,796	3,909
3rd Qtr 2024	4,075	4,246	4,637	5,073	4,030	4,449	4,415	4,515	5,137	4,482	4,433	4,410	3,948	4,809	3,848
4th Qtr 2024	4,122	4,633	4,601	4,950	3,868	4,312	4,334	4,431	5,199	4,488	4,740	4,578	3,764	5,058	3,638
1st Qtr 2025	3,771	4,614	3,759	4,675	3,876	4,131	4,186	3,985	4,789	4,321	4,364	4,379	3,522	4,594	3,521
2nd Qtr 2025	4,048	4,856	4,339	5,010	4,055	4,540	4,457	4,032	5,085	4,269	4,469	4,501	3,840	4,676	3,817
3rd Qtr 2025	4,402	4,617	4,537	5,095	3,977	4,741	4,309	4,272	4,729	4,410	4,297	4,352	3,869	4,610	3,865
4th Qtr 2025	4,208	4,500	4,451	4,698	3,973	4,326	4,232	4,549	4,958	4,518	4,700	4,468	3,873	4,666	3,770

Percent of Total Ops by Day Hour Per Quarter (When Planes Fly (7 a.m. to 10 p.m.)



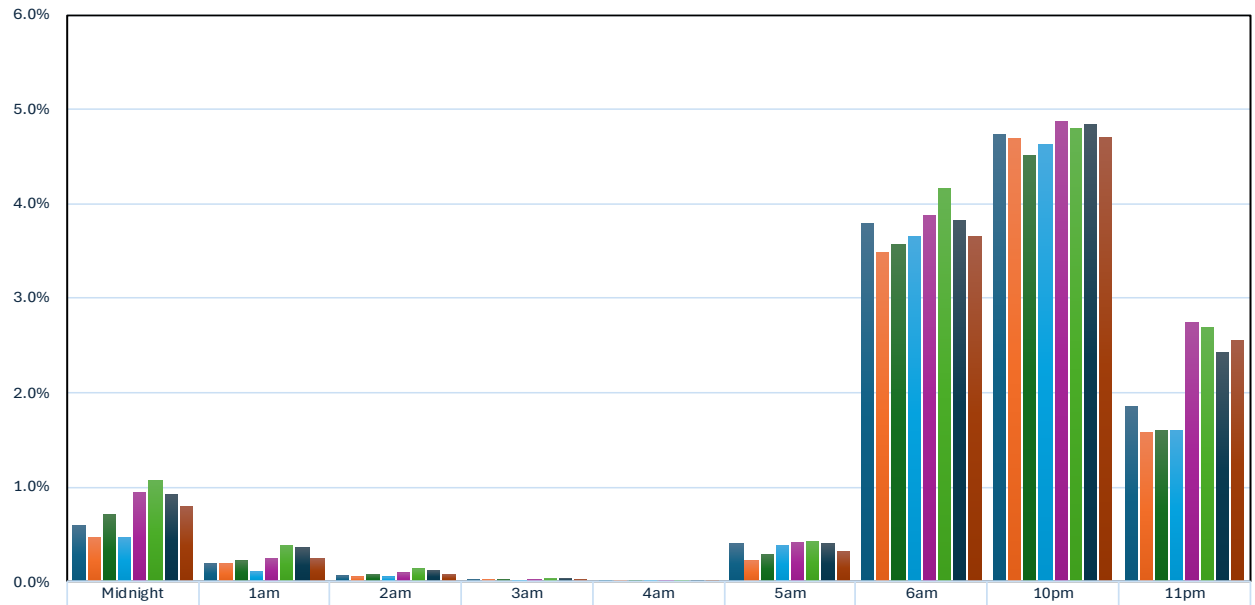
	7am	8am	9am	10am	11am	12pm	1pm	2pm	3pm	4pm	5pm	6pm	7pm	8pm	9pm	10pm	11pm
1st Qtr 2024	5.4%	6.2%	5.8%	6.5%	5.1%	5.8%	6.0%	6.0%	7.1%	6.1%	5.7%	6.6%	5.2%	6.4%	4.7%	4.7%	1.9%
2nd Qtr 2024	5.7%	5.7%	6.1%	6.7%	5.3%	5.9%	5.9%	6.1%	6.7%	6.2%	5.7%	6.3%	5.6%	6.3%	5.1%	4.7%	1.6%
3rd Qtr 2024	5.5%	5.7%	6.2%	6.8%	5.4%	6.0%	5.9%	6.0%	6.9%	6.0%	5.9%	5.9%	5.3%	6.4%	5.1%	4.5%	1.6%
4th Qtr 2024	5.5%	6.2%	6.1%	6.6%	5.2%	5.8%	5.8%	5.9%	6.9%	6.0%	6.3%	6.1%	5.0%	6.8%	4.9%	4.6%	1.6%
1st Qtr 2025	5.2%	6.4%	5.2%	6.5%	5.4%	5.7%	5.8%	5.5%	6.7%	6.0%	6.1%	6.1%	4.9%	6.4%	4.9%	4.9%	2.7%
2nd Qtr 2025	5.3%	6.3%	5.7%	6.5%	5.3%	5.9%	5.8%	5.3%	6.6%	5.6%	5.8%	5.9%	5.0%	6.1%	5.0%	4.8%	2.7%
3rd Qtr 2025	5.8%	6.1%	6.0%	6.7%	5.2%	6.2%	5.7%	5.6%	6.2%	5.8%	5.7%	5.7%	5.1%	6.1%	5.1%	4.8%	2.4%
4th Qtr 2025	5.6%	6.0%	5.9%	6.2%	5.3%	5.8%	5.6%	6.0%	6.6%	6.0%	6.2%	5.9%	5.2%	6.2%	5.0%	4.7%	2.6%

Count of Total Ops Per Night Hour by Quarter, (When Planes Fly - 10 p.m. to 7 a.m.)



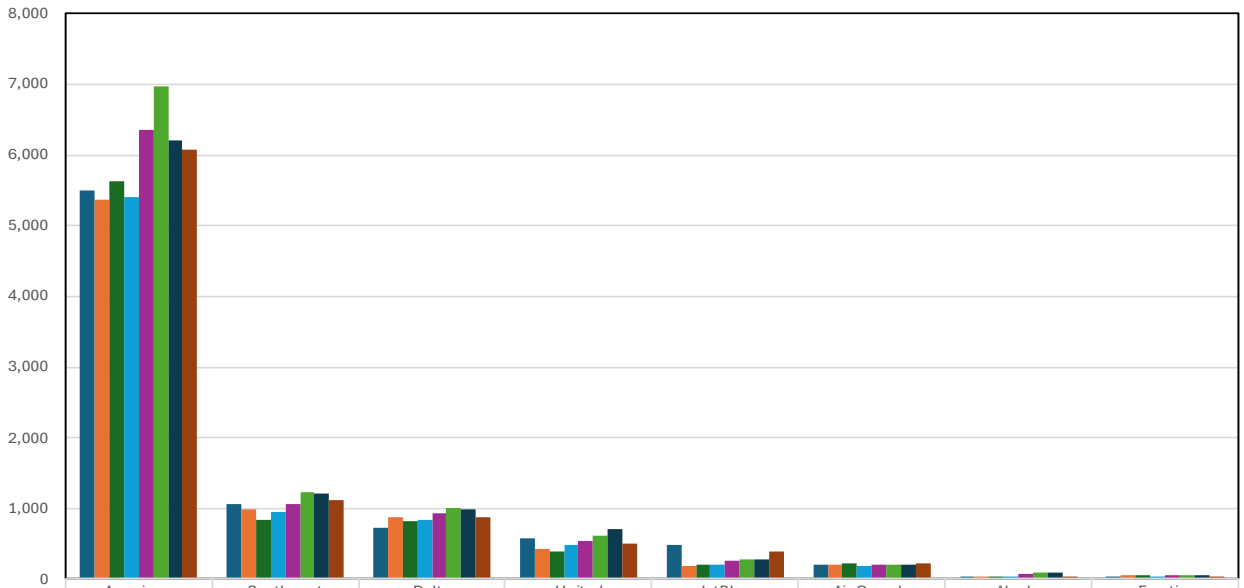
	Midnight	1am	2am	3am	4am	5am	6am	10pm	11pm
1st Qtr 2024	439	138	49	14	7	296	2,815	3,499	1,377
2nd Qtr 2024	357	148	38	16	5	172	2,652	3,570	1,202
3rd Qtr 2024	533	165	57	20	2	219	2,667	3,373	1,198
4th Qtr 2024	352	85	35	11	3	287	2,740	3,475	1,204
1st Qtr 2025	683	177	63	15	6	300	2,795	3,507	1,979
2nd Qtr 2025	823	293	103	32	12	328	3,177	3,676	2,058
3rd Qtr 2025	695	272	91	26	9	308	2,902	3,677	1,845
4th Qtr 2025	601	182	64	18	4	243	2,749	3,534	1,918

Percent of Total Ops Per Night Hour by Quarter (When Planes Fly - 10 p.m. to 7 a.m.)



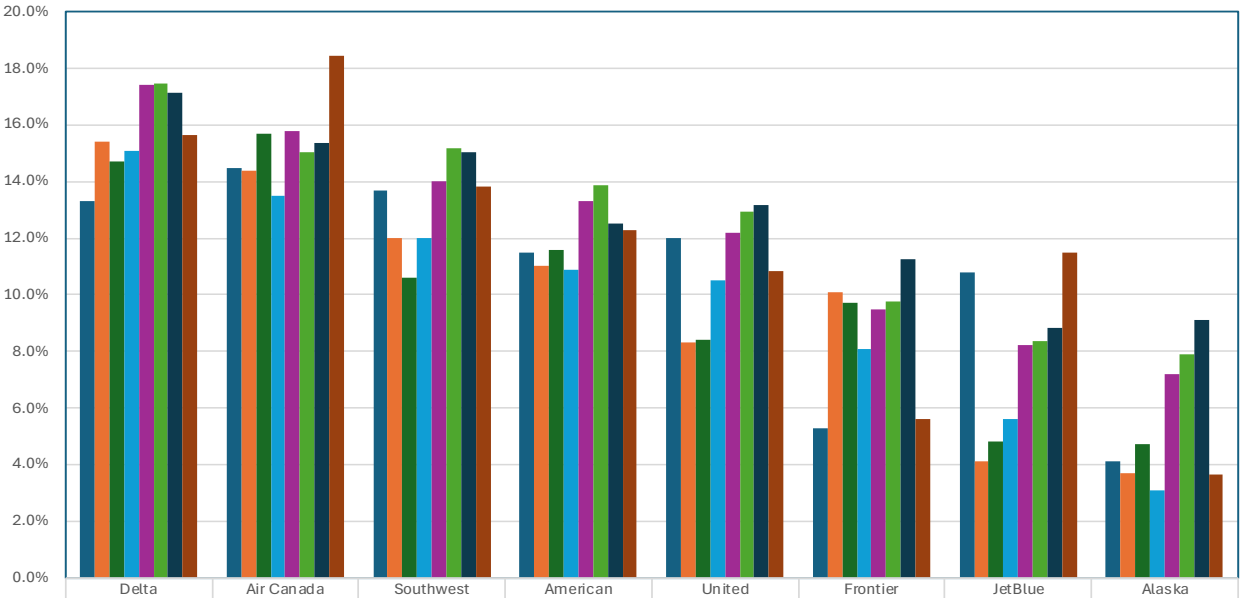
	Midnight	1am	2am	3am	4am	5am	6am	10pm	11pm
1st Qtr 2024	0.6%	0.2%	0.1%	0.0%	0.0%	0.4%	3.8%	4.7%	1.9%
2nd Qtr 2024	0.5%	0.2%	0.0%	0.0%	0.0%	0.2%	3.5%	4.7%	1.6%
3rd Qtr 2024	0.7%	0.2%	0.1%	0.0%	0.0%	0.3%	3.6%	4.5%	1.6%
4th Qtr 2024	0.5%	0.1%	0.0%	0.0%	0.0%	0.4%	3.7%	4.6%	1.6%
1st Qtr 2025	0.9%	0.2%	0.1%	0.0%	0.0%	0.4%	3.9%	4.9%	2.7%
2nd Qtr 2025	1.1%	0.4%	0.1%	0.0%	0.0%	0.4%	4.2%	4.8%	2.7%
3rd Qtr 2025	0.9%	0.4%	0.1%	0.0%	0.0%	0.4%	3.8%	4.8%	2.4%
4th Qtr 2025	0.8%	0.2%	0.1%	0.0%	0.0%	0.3%	3.7%	4.7%	2.6%

Count of Night Operations (10 p.m. to 7 a.m.) by Airline



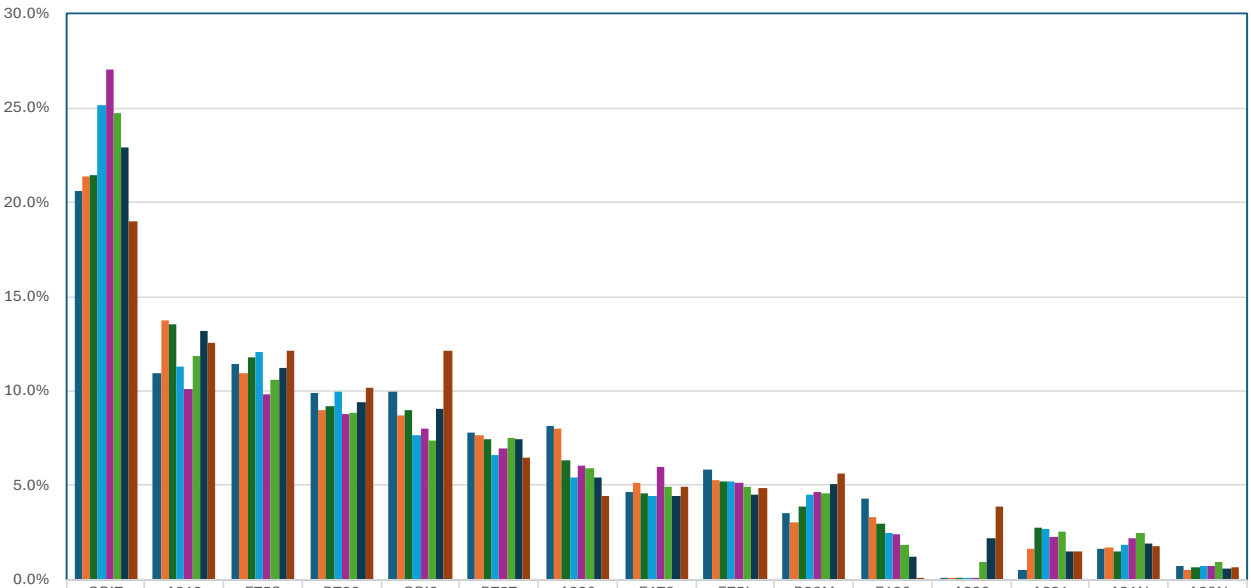
	American	Southwest	Delta	United	JetBlue	Air Canada	Alaska	Frontier
1st Qtr 2024	5,499	1,058	720	571	484	205	37	29
2nd Qtr 2024	5,361	980	877	434	177	203	34	54
3rd Qtr 2024	5,634	844	815	399	201	214	43	53
4th Qtr 2024	5,401	957	838	482	201	193	28	45
1st Qtr 2025	6,357	1,064	939	533	266	198	66	50
2nd Qtr 2025	6,975	1,222	1,010	615	285	202	86	51
3rd Qtr 2025	6,211	1,211	989	714	286	200	99	56
4th Qtr 2025	6,081	1,113	881	507	388	231	40	28

Percent of Night Operations (10 p.m. to 7 a.m.) vs Total Operations by Airline



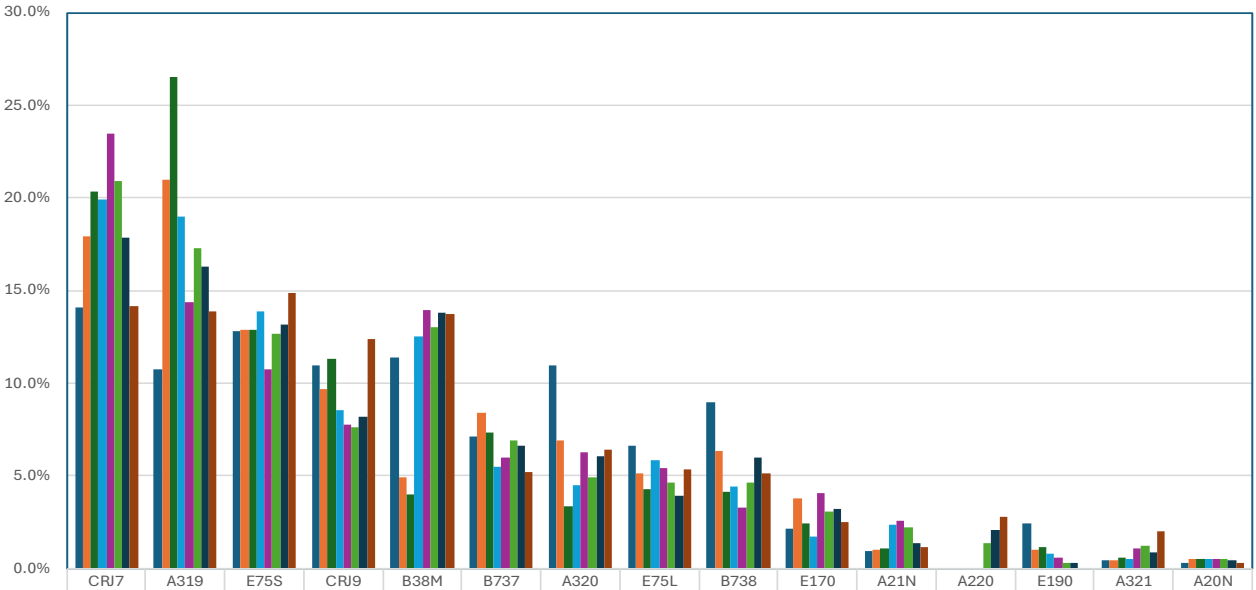
	Delta	Air Canada	Southwest	American	United	Frontier	JetBlue	Alaska
1st Qtr 2024	13.3%	14.5%	13.7%	11.5%	12.0%	5.3%	10.8%	4.1%
2nd Qtr 2024	15.4%	14.4%	12.0%	11.0%	8.3%	10.1%	4.1%	3.7%
3rd Qtr 2024	14.7%	15.7%	10.6%	11.6%	8.4%	9.7%	4.8%	4.7%
4th Qtr 2024	15.1%	13.5%	12.0%	10.9%	10.5%	8.1%	5.6%	3.1%
1st Qtr 2025	17.4%	15.8%	14.0%	13.3%	12.2%	9.5%	8.2%	7.2%
2nd Qtr 2025	17.4%	15.0%	15.2%	13.9%	12.9%	9.8%	8.3%	7.9%
3rd Qtr 2025	17.1%	15.4%	15.1%	12.5%	13.2%	11.3%	8.8%	9.1%
4th Qtr 2025	15.6%	18.5%	13.8%	12.3%	10.8%	5.6%	11.5%	3.6%

24 Hour Day Aircraft Types (Percent per Quarter)



	CRJ7	A319	E75S	B738	CRJ9	B737	A320	E170	E75L	B38M	E190	A220	A321	A21N	A20N
1st Qtr 2024	20.6%	10.9%	11.4%	9.9%	10.0%	7.8%	8.2%	4.6%	5.9%	3.5%	4.3%	0.1%	0.5%	1.6%	0.7%
2nd Qtr 2024	21.4%	13.7%	11.0%	9.0%	8.7%	7.7%	8.0%	5.1%	5.2%	3.0%	3.3%	0.1%	1.6%	1.7%	0.5%
3rd Qtr 2024	21.5%	13.5%	11.8%	9.2%	9.0%	7.4%	6.3%	4.5%	5.2%	3.9%	2.9%	0.0%	2.7%	1.5%	0.6%
4th Qtr 2024	25.2%	11.3%	12.1%	9.9%	7.7%	6.6%	5.4%	4.5%	5.2%	4.5%	2.5%	0.0%	2.7%	1.8%	0.7%
1st Qtr 2025	27.0%	10.1%	9.8%	8.8%	8.0%	6.9%	6.1%	5.9%	5.1%	4.7%	2.4%	0.0%	2.3%	2.2%	0.7%
2nd Qtr 2025	24.7%	11.9%	10.6%	8.8%	7.3%	7.5%	5.9%	4.9%	4.9%	4.6%	1.9%	0.9%	2.6%	2.5%	0.9%
3rd Qtr 2025	22.9%	13.2%	11.2%	9.4%	9.0%	7.4%	5.4%	4.4%	4.5%	5.0%	1.2%	2.2%	1.5%	1.9%	0.6%
4th Qtr 2025	19.0%	12.6%	12.1%	10.2%	12.1%	6.5%	4.4%	4.9%	4.9%	5.6%	0.0%	3.9%	1.5%	1.8%	0.6%

Night Aircraft Types (Percent per Quarter)



	CRJ7	A319	E75S	CRJ9	B38M	B737	A320	E75L	B738	E170	A21N	A220	E190	A321	A20N
1st Qtr 2024	14.1%	10.7%	12.8%	10.9%	11.4%	7.1%	11.0%	6.6%	9.0%	2.1%	0.9%	0.0%	2.5%	0.5%	0.3%
2nd Qtr 2024	17.9%	21.0%	12.9%	9.7%	4.9%	8.4%	6.9%	5.1%	6.3%	3.8%	1.0%	0.0%	1.0%	0.4%	0.5%
3rd Qtr 2024	20.3%	26.5%	12.9%	11.3%	4.0%	7.3%	3.4%	4.3%	4.1%	2.5%	1.1%	0.0%	1.2%	0.6%	0.5%
4th Qtr 2024	19.9%	19.0%	13.9%	8.5%	12.5%	5.5%	4.5%	5.9%	4.4%	1.7%	2.3%	0.0%	0.8%	0.5%	0.5%
1st Qtr 2025	23.5%	14.4%	10.8%	7.7%	13.9%	6.0%	6.2%	5.4%	3.3%	4.0%	2.5%	0.0%	0.6%	1.1%	0.5%
2nd Qtr 2025	20.9%	17.3%	12.7%	7.6%	13.1%	6.9%	4.9%	4.6%	4.7%	3.1%	2.3%	1.4%	0.3%	1.2%	0.5%
3rd Qtr 2025	17.9%	16.3%	13.1%	8.2%	13.8%	6.6%	6.1%	3.9%	6.0%	3.2%	1.4%	2.1%	0.3%	0.9%	0.5%
4th Qtr 2025	14.2%	13.9%	14.9%	12.4%	13.7%	5.2%	6.4%	5.4%	5.2%	2.5%	1.2%	2.8%	0.0%	2.0%	0.3%

			DCA Aircraft Type NIGHT PERCENT by Airline per Quarter							
			1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
	A/C Type	Stage	2024	2024	2024	2024	2025	2025	2025	2025
American	CRJ7	4	12.9%	16.5%	18.9%	18.2%	22.4%	19.5%	16.4%	12.8%
	E75S	4	12.8%	12.9%	12.9%	13.9%	10.7%	12.5%	13.1%	14.0%
	A319	4	8.3%	14.8%	19.1%	12.6%	8.3%	12.1%	11.3%	9.9%
	B38M	4	4.2%	1.2%	0.5%	4.5%	6.7%	6.2%	6.5%	6.3%
	E75L	4	6.6%	5.1%	4.3%	5.8%	5.4%	4.5%	3.9%	5.3%
	CRJ9	4	6.8%	5.9%	7.6%	4.5%	4.3%	4.1%	4.4%	9.2%
	E170	4	2.1%	3.8%	2.4%	1.7%	4.0%	3.0%	3.2%	2.5%
	A21N	4	0.9%	1.0%	1.0%	2.2%	2.3%	1.7%	1.0%	1.1%
	B738	4	6.5%	3.0%	1.5%	2.1%	1.7%	2.2%	2.1%	1.9%
	A320	4	2.5%	1.7%	0.5%	0.5%	1.0%	0.5%	1.7%	1.2%
	A321	4	0.1%	0.2%	0.1%	0.2%	0.3%	0.6%	0.3%	1.1%
SWA	B38M	4	6.5%	3.3%	3.3%	6.4%	5.6%	5.2%	5.3%	6.5%
	B737	4	5.3%	7.5%	5.8%	4.4%	5.0%	5.7%	5.9%	4.7%
	B738	4	0.5%	1.3%	1.2%	0.9%	0.7%	0.9%	1.1%	0.8%
Delta	A319	4	1.7%	5.8%	7.1%	6.1%	5.2%	4.5%	4.3%	3.9%
	A320	4	4.9%	3.5%	1.2%	2.3%	2.9%	2.8%	3.6%	3.6%
	CRJ9	4	1.7%	1.4%	1.2%	1.7%	1.4%	1.5%	1.8%	1.6%
	A321	4	0.0%	0.1%	0.3%	0.1%	0.4%	0.4%	0.2%	0.4%
	A21N	4	0.0%	0.0%	0.0%	0.1%	0.1%	0.4%	0.1%	0.0%
	B752	3	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%
	A220	5	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
	B738	4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	B739	4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
United	B38M	4	0.8%	0.5%	0.3%	1.6%	1.6%	1.5%	1.9%	1.0%
	CRJ7	4	1.2%	1.4%	1.5%	1.7%	1.1%	1.2%	1.5%	1.4%
	B737	4	1.8%	0.9%	1.6%	1.1%	1.0%	1.2%	0.7%	0.4%
	A319	4	0.7%	0.4%	0.3%	0.3%	0.9%	0.5%	0.7%	0.1%
	A320	4	0.6%	0.6%	0.4%	0.1%	0.4%	0.6%	0.4%	0.5%
	B738	4	1.5%	1.6%	0.8%	1.1%	0.3%	0.7%	1.9%	2.0%
	A21N	4	0.0%	0.0%	0.0%	0.0%	0.1%	0.1%	0.2%	0.0%
	B753	3	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	E75L	4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
JetBlue	A320	4	2.8%	1.0%	1.1%	1.5%	1.9%	0.9%	0.3%	1.1%
	E190	3	2.5%	1.0%	1.2%	0.8%	0.5%	0.2%	0.1%	0.0%
	A321	4	0.3%	0.2%	0.1%	0.2%	0.3%	0.2%	0.3%	0.3%
	A220	5	0.0%	0.0%	0.0%	0.0%	0.0%	1.3%	2.0%	2.8%
Air Canada	CRJ9	4	2.4%	2.5%	2.6%	2.4%	2.1%	1.9%	2.1%	1.6%
	E75S	4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%
	E170	4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	CRJ2	4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
								0.0%		
Alaska	B738	4	0.4%	0.4%	0.5%	0.3%	0.6%	0.8%	0.9%	0.4%
	B38M	4	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%
	B739	4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	B39M	4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Frontier	A20N	4	0.3%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.3%
	A320	4	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%
	A21N	4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%
	A321	4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

			DCA Aircraft Type PERCENT by Airline per Quarter							
			1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
	A/C Type	Stage	2024	2024	2024	2024	2025	2025	2025	2025
American	CRJ7	4	18.5%	19.1%	19.2%	23.0%	25.1%	23.4%	20.7%	17.1%
	E75S	4	11.3%	10.9%	11.6%	12.0%	9.7%	10.6%	11.2%	11.4%
	A319	4	8.3%	10.6%	10.5%	8.4%	6.7%	9.2%	10.0%	9.0%
	E170	4	4.6%	5.1%	4.5%	4.4%	5.9%	4.9%	4.4%	4.8%
	B738	4	6.6%	5.4%	5.2%	5.6%	5.3%	5.2%	5.2%	5.8%
	E75L	4	5.6%	5.0%	5.1%	5.0%	4.9%	4.9%	4.5%	4.7%
	CRJ9	4	6.7%	5.4%	5.8%	4.4%	4.8%	4.1%	5.8%	9.6%
	A21N	4	1.3%	1.3%	1.2%	1.4%	1.6%	1.5%	1.2%	1.4%
	B38M	4	0.9%	0.7%	1.1%	1.0%	1.4%	1.3%	1.6%	1.3%
	A320	4	1.4%	1.2%	1.1%	1.0%	1.2%	1.0%	1.2%	1.3%
	A321	4	0.2%	0.4%	0.6%	0.4%	0.7%	0.8%	0.6%	0.5%
SWA	B737	4	7.2%	7.1%	6.7%	6.0%	6.2%	6.6%	6.4%	5.6%
	B38M	4	2.1%	2.0%	2.2%	2.7%	2.6%	2.4%	2.4%	3.4%
	B738	4	1.3%	1.8%	1.9%	2.0%	1.9%	1.7%	2.0%	1.9%
Delta	A319	4	1.5%	1.9%	2.0%	2.0%	2.3%	1.5%	2.1%	2.6%
	A320	4	3.5%	2.7%	1.6%	1.4%	2.0%	2.3%	2.4%	1.9%
	CRJ9	4	1.5%	1.5%	1.4%	1.3%	1.4%	1.4%	1.4%	1.3%
	A321	4	0.2%	0.9%	1.9%	2.0%	1.2%	1.5%	0.6%	0.7%
	A21N	4	0.3%	0.4%	0.2%	0.3%	0.3%	0.6%	0.4%	0.3%
	B752	3	0.3%	0.3%	0.2%	0.2%	0.3%	0.2%	0.4%	0.5%
	A220	5	2.0%	1.0%	0.0%	0.0%	0.0%	0.1%	0.4%	0.2%
	B738	4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	B739	4	0.0%	0.0%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%
United	CRJ7	4	1.9%	2.3%	2.2%	2.0%	1.8%	1.3%	2.1%	1.8%
	A319	4	1.0%	1.2%	0.9%	0.8%	1.1%	1.1%	1.1%	0.9%
	A320	4	1.4%	1.7%	1.0%	0.7%	0.9%	1.1%	0.9%	0.5%
	B737	4	0.5%	0.5%	0.7%	0.5%	0.7%	1.0%	1.0%	0.9%
	B38M	4	0.5%	0.3%	0.5%	0.6%	0.6%	0.9%	0.9%	0.8%
	B738	4	0.7%	0.5%	0.8%	1.0%	0.3%	0.5%	0.7%	1.1%
	B753	3	0.2%	0.1%	0.1%	0.2%	0.2%	0.1%	0.1%	0.2%
	E75L	4	0.2%	0.3%	0.1%	0.1%	0.2%	0.0%	0.0%	0.1%
	A21N	4	0.0%	0.0%	0.1%	0.1%	0.2%	0.3%	0.3%	0.1%
JetBlue	E190	3	4.3%	3.3%	2.9%	2.5%	2.3%	1.8%	1.2%	0.0%
	A320	4	1.7%	2.2%	2.5%	2.2%	2.0%	1.5%	0.9%	0.7%
	A321	4	0.1%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%	0.3%
	A220	5	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	1.8%	3.6%
Air Canada	CRJ9	4	1.7%	1.8%	1.8%	1.9%	1.7%	1.8%	1.7%	1.1%
	E75S	4	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.6%
	E170	4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	CRJ2	4	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Alaska	B738	4	1.2%	1.2%	1.2%	1.1%	1.2%	1.4%	1.3%	1.3%
	B38M	4	0.0%	0.0%	0.1%	0.1%	0.1%	0.1%	0.1%	0.2%
	B739	4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	B39M	4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Frontier	A20N	4	0.7%	0.5%	0.6%	0.7%	0.7%	0.6%	0.6%	0.6%
	A320	4	0.1%	0.2%	0.1%	0.0%	0.1%	0.1%	0.1%	0.1%
	A21N	4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
	A321	4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%