



Van Nuys
*Los Angeles
World Airports*

NOISE MANAGEMENT PROGRAM

WHERE SOUND IDEAS TAKE FLIGHT

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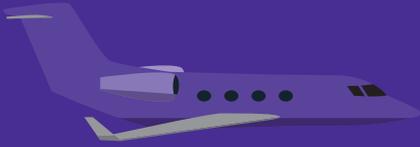
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VNY continues our work to reduce aircraft noise for area residents, and to provide meaningful response to the community on noise-related issues.

As a major economic engine in the San Fernando Valley and beyond, Van Nuys Airport (VNY) serves a vital role in promoting business and providing critical general aviation and emergency services.

With these benefits, though, come impacts – such as the impacts of noise on the areas adjacent to VNY. As not only an airport, but also as an important member of the San Fernando Valley community, VNY continues our work to balance the needs of aviation interests with those of local neighborhoods, to reduce aircraft noise for area residents, and to provide meaningful response to the community on noise-related issues.

Today, more resources than ever are being dedicated and developed to minimize the impacts associated with airport operations. VNY's noise management program, with a full-time noise officer dedicated to addressing airport noise issues, illustrates our community response efforts as well as our continued diligence toward achieving effective noise reduction at the source.

A COORDINATED EFFORT

VNY is a general aviation airport in the Los Angeles World Airports (LAWA) transportation system that includes Los Angeles International Airport (LAX) and LA/Ontario International Airport (ONT). To administer our noise management program and community response efforts, we effectively pool our resources, including technical staff that oversees LAWA's noise management branch office with the full support of the public and community relations, airfield operations, and administrative staff.

COMPLIANCE WITH NOISE STANDARDS

After developing and instituting aggressive noise abatement policies and programs, VNY is the first LAWA airport to achieve full compliance with the California Code of Regulations Title 21 Noise Standards. This milestone means the airport has achieved a zero noise impact area, allowing it to operate without obtaining a variance from the state. VNY's noise compliance strategy includes two major elements:

1. Reduce noise at the source, and
2. Reduce noise for the receiver.

Reducing noise at the source is accomplished through both formal and informal noise abatement policies and procedures, as well as changes in overall airport operations and a transition to quieter jets.

Major improvements also are made by soundproofing homes within the airport's noise impact boundary. Read on for details on VNY's noise compliance strategy initiatives.

A NOISE BRIEFING

Noise is commonly defined as unwanted sound, though it is a relative term, because tolerance for noise varies from person to person.

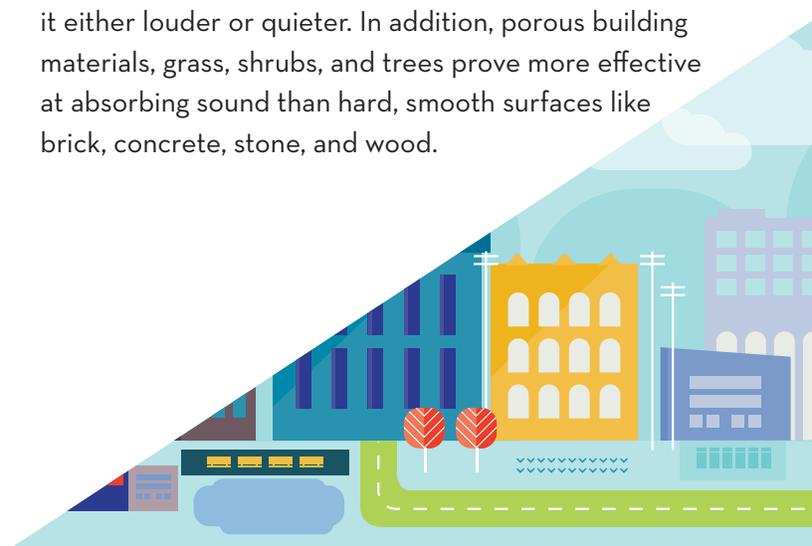
Sound is transmitted from vibrating objects to the ear by pressure waves that spread from the source like

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ocean waves and travel through the air. Sound involves three elements: loudness, frequency, and time pattern.

At airports, the bulk of noise comes from aircraft. The noise you hear during takeoffs mainly results from the aircrafts' engines. Arrival noise is a combination of the interaction of the airframe with the atmosphere and from the whine developed by engine compression. Certain types of non-jet aircraft arrivals generate noise from their propellers as well. The type of engine on an aircraft plays the biggest role in affecting the level of noise you hear from it in flight, though ground noise (such as the running of engines during maintenance) and other sources also contribute.

In addition, some non-aircraft factors do impact the level of airport-related noise. Warmer temperatures usually decrease sound levels compared to cooler temperatures. However, when there is a temperature inversion (cooler air near the ground and warmer air higher up), the sound is bent down toward the ground, resulting in louder noise levels. Humidity also affects the level of sounds; increasing humidity increases sound levels. Wind direction and speed also affect whether sound goes toward or away from a specific area, making it either louder or quieter. In addition, porous building materials, grass, shrubs, and trees prove more effective at absorbing sound than hard, smooth surfaces like brick, concrete, stone, and wood.



VNY's ongoing noise reduction efforts include the mandatory Noise Abatement and Curfew Regulation, the Non-Addition Rule, and the Noisier Aircraft Phaseout. Voluntary programs consist of the "Fly Friendly" (Quiet Jet Departure), No Early Turn, and Helicopter Route and Altitude Deviation programs.



In addition, VNY utilizes the latest, state-of-the-art noise monitoring system, plus provides the community with tools to track flights and communicate with the airport about noise concerns. Our main goals include:

- To successfully monitor and provide assistance to abate noise at VNY;
- To achieve effective noise reduction at the source through ongoing pilot education and counseling;
- To provide meaningful noise response to the community; and
- To research ways for improving noise management through studies reviewed by the Federal Aviation Administration (FAA).

Our LAWA noise management branch office tracks all arrivals and departures at VNY with the same technology used by the FAA to monitor air traffic. If an operation deviates from any of our mandatory or voluntary noise abatement programs, the aircraft owner/operator or appropriate enforcement authority is notified. These “deviation notification” letters serve as educational tools for counseling individual pilots, and provide information on the date, time, route used, and a computer “snapshot” of the operation flight track.

NOISE ABATEMENT AND CURFEW REGULATION

This program prohibits aircraft generating departure noise level equal to or above 74 decibels (per Federal Aviation Advisory Circular Regulation 36-3) from departing the airport between the hours of 10 p.m. and 7 a.m. Aircraft with a noise standard rating of Stage 3 are not affected by the curfew until 11 p.m. Therefore, Stage 3 aircraft with a departure noise level below 74 decibels, and Stage 4 aircraft are not affected by the curfew at all.

Exempt from the curfew are helicopters, medical emergency flights, military aircraft, and government-operated aircraft for emergency purposes. Additionally, run-ups for engine maintenance activity are allowed only between 7 a.m. and 7 p.m. in designated areas.

Adopted originally as an ordinance of the Los Angeles City Council in 1981 and amended in November 1997, the regulation includes fines for violations ranging from \$750 to \$3,500, and a provision that may prevent violators from using the airport for up to three years.

THE NON-ADDITION RULE

To further address and balance the concerns of airport neighbors and tenants, enforcement of the Non-Addition Rule became effective on January 1, 2002. The Non-Addition Rule, an amendment to the existing VNY Noise Abatement and Curfew Ordinance, prohibits any additional Stage 2 aircraft (older aircraft) with noise levels exceeding 77dBA (a unit of decibel measurement) from being based at VNY subject to certain exceptions. Specifically, aircraft owners who “grandfathered” aircraft through 2005 could continue to operate them until the end of 2010, when these aircraft fell under the rule’s restricted status.

The Non-Addition Rule also prevents non-based Stage 2 aircraft with noise levels exceeding 77dBA from being parked, tied down, or hangared at the airport for more than 30 days in any calendar year subject to exceptions for major maintenance, repair, and refurbishment. Fines for violation of the rule have the same penalty structure as the Noise Abatement and Curfew Regulation.

NOISIER AIRCRAFT PHASEOUT

In a move independent of the Non-Addition Rule, but which supersedes it, in late 2009 the Los Angeles City Council approved a new ordinance with a timeline for a phaseout of noisier aircraft at VNY. The ordinance prohibits operation of aircraft with certified takeoff noise levels of 85 dBA or higher starting in 2009 (there were no affected operations at this level). It moved to 83 dBA in 2011, and goes to 80 dBA in 2014, and then to 77 dBA in 2016.



FLY FRIENDLY: QUIET JET DEPARTURE PROGRAM

This program lessens noise in the local community by having pilots agree to use predetermined, recommended procedures to reduce jet departure noise. Under the voluntary program that began in 1994, pilots agree to:

- Use noise abatement techniques as established in manufacturers' operating manuals or the National Business Aviation Association Noise Abatement Program;
- Make every effort within adequate safety margins to abide by the proper noise-reducing techniques;
- Actively participate in the monitoring program by working with airport staff and others to research any residential complaints regarding one of their flights; and
- Work with airport staff and the Van Nuys Airport Association to support and encourage other jet operators to participate in the program.

A noise monitor near the south end of the runways measures departure sound levels, and noise management staff analyze this data on a daily basis. Aircraft owners and operators are notified in writing when they exceed criterion noise levels.

In January 2012, VNY updated the Quiet Jet Departure program to include new not-to-exceed target noise levels for specific aircraft types and to expand the number of aircraft included. The new noise levels are based on 10 years of aircraft noise data and affect the noisiest 5% of jet departures from VNY.

In addition, the updated program includes an annual "Friendly Flyer" award for operators that achieve outstanding compliance with the VNY Fly Friendly Program. The award winners are determined using the following criteria: at least 60 southbound jet departures during the previous calendar year; no violations of the Noise Abatement & Curfew Regulation Ordinance,

Non-Additional Rule Ordinance, and the Noisier Aircraft Phase-out Ordinance; as well as achieving 99% or greater compliance with the voluntary No Early Turn and the Quiet Jet Departure (Fly Friendly) Programs. Twenty general aviation operators received the inaugural Friendly Flyer Award in May 2013 for their outstanding compliance during calendar year 2012.

NO EARLY TURN PROGRAM

With 24-hour monitoring, this program detects pilots who turn too early after departure and subsequently fly over adjacent residential areas. The VNY noise management branch office notifies pilots (other than those specifically instructed to turn early by air traffic control) of operations conducted contrary to this program. The No Early Turn Program educates aircraft owners/operators of airport noise abatement procedures to reduce the impact of departures on airport neighbors.

HELICOPTER ROUTE AND ALTITUDE DEVIATION PROGRAM

This program notifies helicopter owners/operators of arrival and departure operations that deviate from established FAA routes. Once again, the program uses the notification process as a tool to:

- Request compliance with established routes and altitude minimums,
- Maximize awareness of the airport environment and noise issues, and
- Minimize flight and noise impacts in nearby residential areas, especially during curfew hours.

Although the FAA has no minimum altitude restrictions for helicopters, it does have agreements from VNY-based operators to follow established routes and recommended altitude minimums. VNY also continues to work with the FAA and helicopter operators to address additional ways to reduce noise.



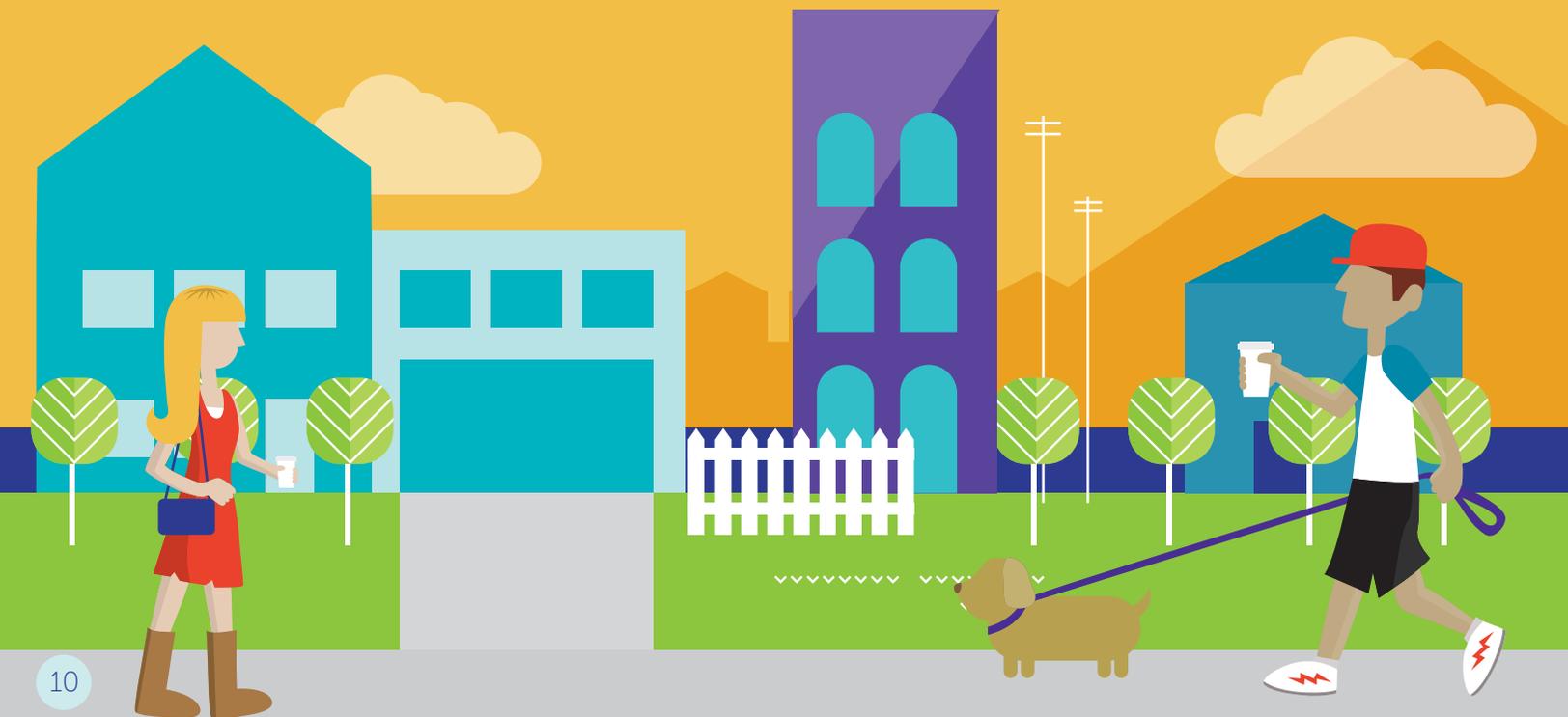
Our noise management and operations personnel regularly meet with pilots and aircraft operators who use the airport to educate them about noise programs, enhancing compliance with both mandatory and voluntary initiatives.



THE AIRCRAFT NOISE & OPERATIONS MONITORING SYSTEM (ANOMS) IS THE STATE-OF-THE-ART NOISE AND FLIGHT TRACK MANAGEMENT SYSTEM AT VNY.

The system integrates a variety of data including audio recordings of air traffic control tower frequencies, noise event data from noise monitoring terminals in the surrounding community, radar flight track data, curfew operations, and noise complaint logs. ANOMS provides noise management personnel with extensive query, analysis, reporting, display, and monitoring capabilities, and allows staff to perform key duties such as:

- Investigating noise complaints and preparing monthly reports.
- Monitoring aircraft operations for compliance with noise abatement procedures.
- Conducting noise analysis of aircraft arrival and departure procedures.
- Creating noise contour maps.
- Identifying areas that are impacted by aircraft noise.



VNY integrates a variety of sources to monitor noise and aircraft operations.



MEANINGFUL RESPONSE TO THE COMMUNITY

The continuing reduction of aircraft-related noise from VNY depends on more than just a technological approach – it also requires community involvement to continue the dialogue necessary for determining effective noise-related decisions. This is why VNY pledges to maintain an active role in developing programs and solutions together with the community – our neighbors.

NOISE COMPLAINT RESPONSE PROGRAM

Residents concerned about aircraft noise may contact VNY 24 hours a day, seven days a week by using the airport’s online form at <http://webtrak.bksv.com/vny> or phone line at (800) 560-0010.

Calls and e-mails are logged and the noise management staff investigates and responds to complaints (up to five per month per person) with letters when requested. This response includes any data found on the specific aircraft operation and information about whether the pilot deviated from any mandatory or voluntary noise abatement program. A monthly summary report of noise complaints is provided to VNY administration, operations, and public and community relations, as well as posted on the airport’s web site at www.lawa.org/vny.

INTERNET FLIGHT TRACKING SYSTEM

VNY’s Internet Flight Tracking System, called WebTrak, allows you to view the movement of flights and air traffic patterns within the San Fernando Valley, as well as in the western and northern portions of the greater Los Angeles area. Introduced in July 2009 as part of ANOMS to replace the previous system, WebTrak – available at <http://webtrak.bksv.com/vny> – shows flight identification,

aircraft type, altitude, and origin/destination airports. Real-time data in the Live mode is delayed 21 minutes (for security and system processing reasons). Historical data is viewed in the Replay mode and is available for the previous 90 days.

Key WebTrak features include:

- An integrated noise complaint form that allows residents disturbed by noise to select an operation that may be the cause and submit a complaint with the operation information automatically filled in;
- An improved map system that allows users to pan and zoom using the Map toolbar;
- Display of noise levels (in both the Live and Replay modes) from the numerous noise monitoring terminals around VNY;
- Use of an address locator that allows for self-investigation of noise complaints; and
- A new community locator tool that allows users to zoom in on communities in the immediate areas around the airport.

RESIDENTIAL SOUNDPROOFING

VNY helps those residents who live closest to the airport through its residential soundproofing program, which uses modifications such as insulation and double-paned windows to significantly reduce noise levels at residences. From 1999, when the program began, through its completion in October 2012, the airport spent nearly \$10 million soundproofing 779 dwellings – with participation strictly voluntary and at no cost to property owners.

VNY pledges to maintain an active role in developing programs and solutions together with the community - our neighbors.



NOISE TERMINOLOGY & DEFINITIONS

The following provides common terminology used when discussing airport and aircraft noise issues.

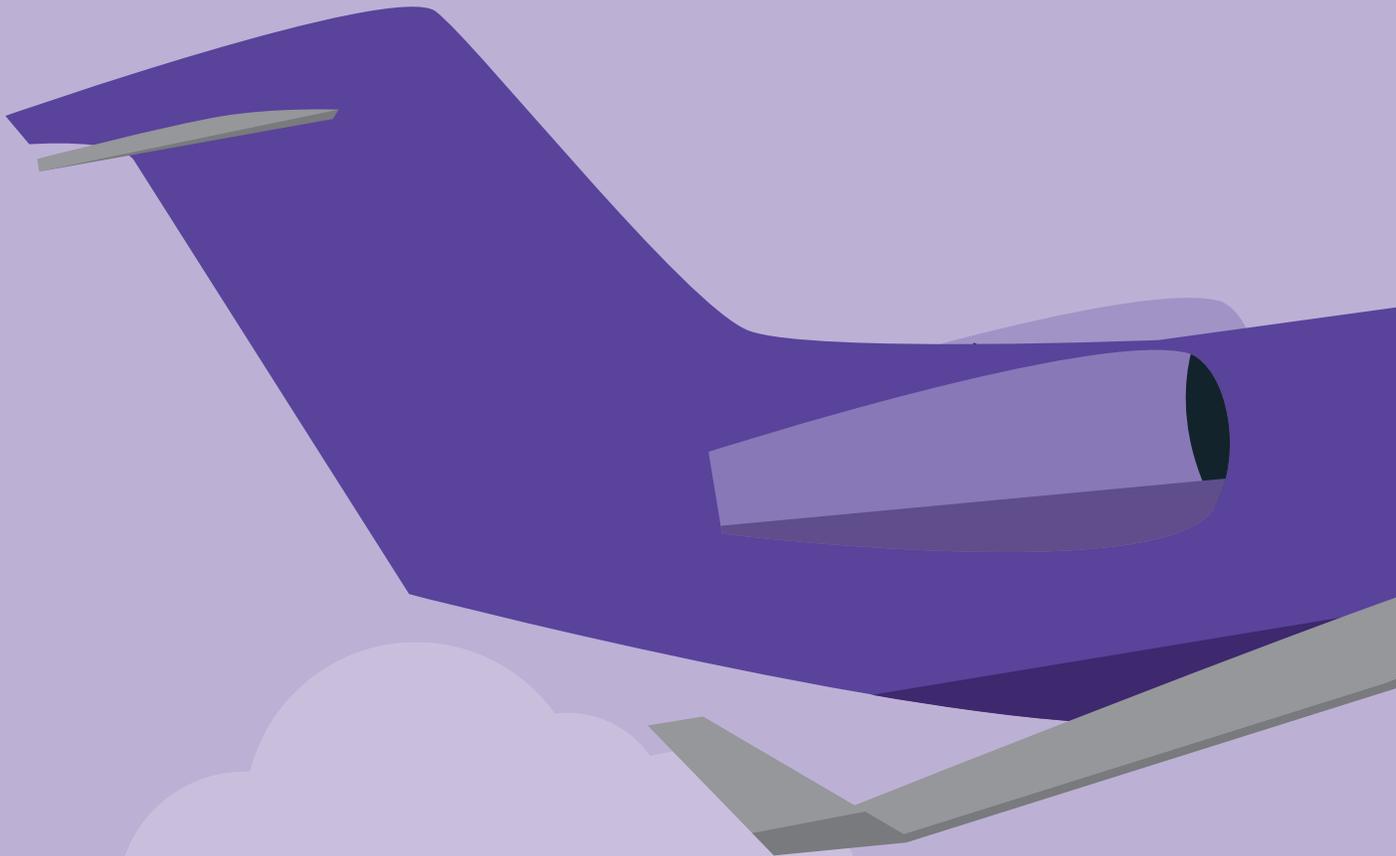
Community Noise Equivalent Level (CNEL):

The computed average noise level for an area over a 24-hour period, with extra weight given to noise produced during evening and nighttime hours. The annual CNEL average is the number used by the state to administer noise regulations. Areas where the average annual noise is equal to or greater than 65 decibels are called “65 CNEL” areas.

Decibel (dB): The standard unit used to express noise levels. The dB measures the magnitude or intensity of sound through a range of sound pressure levels that can be heard by the human ear. Most people perceive a 10 dB increase as a doubling of loudness, meaning that 75 dB usually seems twice as loud as 65 dB.

Decibel A Scale (dBA): The sound pressure level using a “weighting filter” that correlates to the human ear’s sensitivity to various frequencies.

FAA: Federal Aviation Administration, the government agency with the primary responsibility for the safety of civil aviation.



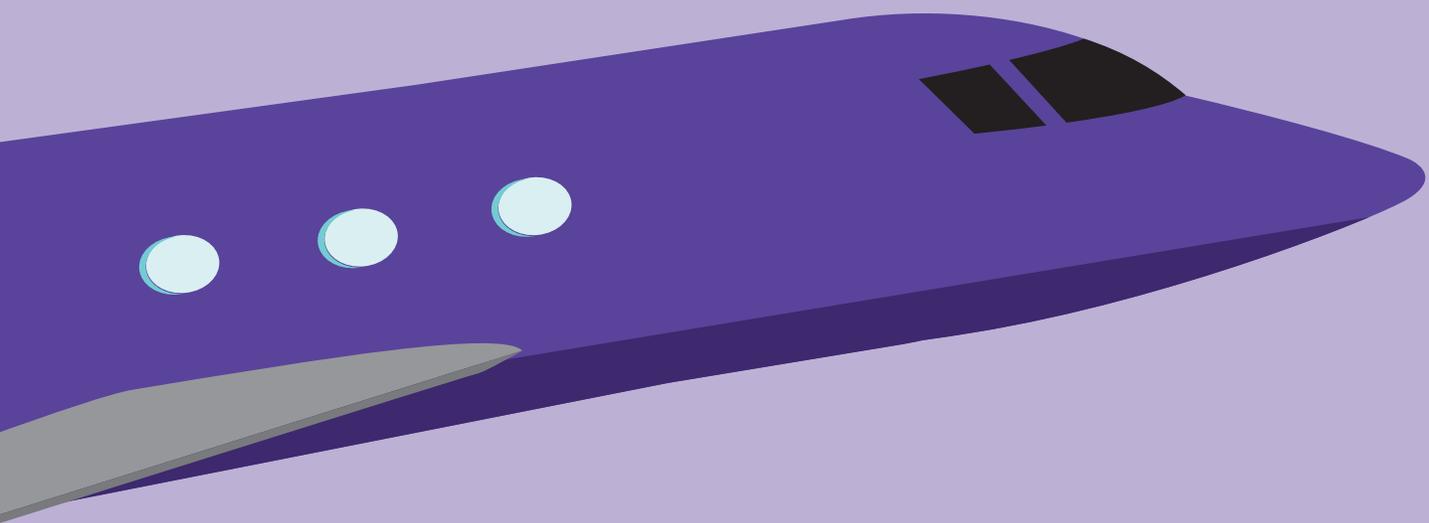
Noise Contour: A computer-generated map representing a line of equal noise value. Areas considered to be within an airport's noise-impact boundary are those within the 65 CNEL contour.

Noise Impact Area: The area within the noise impact boundary composed of "incompatible land uses," such as residences, schools, and churches that have not been soundproofed.

Noise Impact Boundary: Defined as the annual average 65 dB CNEL noise contour, with the CNEL being a measurement of the annual average of the daily CNEL sound levels.

Run-Ups (or Engine Run-Ups): A mechanical testing of an engine on the ground, akin to revving up a car engine. VNY only permits run-ups for engine maintenance activity between 7 a.m. and 7 p.m. in designated areas.

Stage 1, 2, 3, and 4 Aircraft: The sound levels from aircraft as categorized by the FAA, with Stage 1 the loudest and Stage 4 the quietest.





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VNY'S NOISE MANAGEMENT PROGRAM RESOURCES

- 24-Hour Community Response Line:
(800) 560-0010
- Noise Management Program Information:
www.lawa.org/vny
- WebTrak Internet Flight Tracking System:
<http://webtrak.bksv.com/vny>