

ITEM 4(a)

SANTA MONICA AIRPORT



CALENDAR YEAR 2016 ANNUAL OPERATIONS REPORT



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I. INTRODUCTION

This report has been prepared in an effort to inform the Airport Commission and the public regarding the Santa Monica Airport's Noise Management Program. The report provides a summary of aircraft operations, curfew operations, noise violations, and enforcement of the Santa Monica Noise Ordinance during calendar year 2016.

II. NOISE MANAGEMENT PROGRAM SUMMARY

In addition to responding to the community's noise concerns and enforcing the City's Aircraft Noise Abatement Code, which includes a maximum allowable noise limit, curfew hours and certain operational limitations, Airport staff has been involved in a variety of supplementary activities intended to mitigate the overall impact of aircraft operations on the residential areas surrounding the Airport.

NOISE MANAGEMENT OPERATIONAL PROCEDURES ENFORCED BY ORDINANCE

The following procedures and limitations are enforced through the Aircraft Noise Abatement Code, as stipulated in the Santa Monica Municipal Code. Violations may result in the imposition of fines and/or exclusion from operating at the Santa Monica Airport.

- **Maximum Noise Level**

A maximum noise level of 95.0 dBA Single Event Noise Exposure Level (SENEL), measured at noise monitor sites located 1,500 feet from each end of the runway. It is enforced 24 hours a day, 7 days a week.

- **Night Departure Curfew**

No takeoffs or engine starts, including auxiliary power unit (APU), are permitted between 11 p.m. and 7 a.m. Monday through Friday, or until 8 a.m. on weekends. Exceptions are only allowed for bona fide medical or public safety emergency.

- **Operational Limitations**

Training operations such as Touch-and-go, stop-and-go, and low approaches are prohibited on weekends, holidays, and weekdays from one-half hour after sunset until 7 a.m. the following day.

- **Helicopter Training**

Helicopter training is prohibited.

RECOMMENDED NOISE MANAGEMENT OPERATIONAL PROCEDURES

In addition, the following recommended procedures and limitations have been incorporated into the Airport's Fly Neighborly Program and included in the program's outreach materials:

- **Voluntary Arrival Curfew**

Although arrivals are permitted 24 hours a day, pilots are requested to avoid all operations between 11 p.m. and 7 a.m. Monday through Friday, or until 8 a.m. on weekends.

- **Visual Flight Rules (VFR) Departure Procedures**

Fixed-wing aircraft and helicopters departing to the west are requested to overfly the Penmar Golf Course and initiate northerly turns at the shoreline and southerly turns at Lincoln Boulevard. Departures to the east are requested to initiate turns at or after reaching the 405 Freeway.

- **Auxiliary Power Unit (APU) Limitation**

Many jet aircraft utilize APU's to provide electricity to aircraft systems prior to, or just after flight. For noise management purposes, pilots are requested to limit APU use to a maximum of thirty minutes. Additionally, the APU is considered an engine start and shall adhere to the Airport's curfew restrictions.

- **Reverse Thrust**

Because of the noise generated by aircraft utilizing reverse thrust upon landing, particularly during the night hours, the Airport recommends the use of reverse thrust be kept to a minimum as necessary for safety.

- **Instrument Flight Rules (IFR) Engine Start Procedures**

In an effort to minimize the holding time between engine start and departure, fixed-wing turbine aircraft are requested to coordinate the expected departure release time from Air Traffic Control and obtain clearance prior to engine start.

- **IFR Hold Area Procedures**

In order to mitigate taxing noise, fixed-wing turbine aircraft are requested to hold approximately 200 feet from each end of the taxiway while awaiting release from Air Traffic Control. A yellow sign and a yellow dashed line across the taxiway indicate the hold area.

- **Helicopter Arrival Procedures**

The Helicopter Letter of Agreement between the City of Santa Monica and the FAA was amended to reflect the Airport Working Group's recommendation to route helicopters approaching Santa Monica Airport at an altitude of 900 feet or above; perpendicular to the runway heading, rather than on the normal east-west runway heading.

- **Formation Flying**

Formation takeoffs and landing are prohibited. Formation flying within the FAA designated Class D Airspace surrounding the Airport is highly discouraged unless necessary for an emergency. Typically, Class D airspace surrounds an airport with an operating control tower; has a radius of 5 miles and extends from the surface to 2,500 feet above ground level. Radio contact with the control tower is required prior to entry.

COMMUNITY OUTREACH

During 2016, community outreach remained a central component of the Airport's Noise Management Program. In an effort to remain responsive to community concerns, the Noise Management Office is staffed during normal City business hours and staff can be reached via telephone, e-mail, and website. The Public can also self-investigate and report aircraft through the WebTrak flight tracking web portal.

Airport staff has continued to dedicate a considerable amount of time to the essential tasks of investigating and following up on all inquiries from local residents and businesses. Every effort is made to assure that each inquiry received is responded to in an expeditious manner. Inquiries from the community are extremely helpful for staff to better understand and respond to community concerns as well as to identify aircraft deviating from the recommended noise management procedures.

PILOT OUTREACH & EDUCATION

Throughout 2016, noise management staff continued an extensive pilot outreach program intended to educate the users of Santa Monica Airport on the Airport's Fly Neighborly Program. In addition to the day-to-day direct communication with, and education of aircraft operators, the program also includes the distribution of brochures that explains the program and operational limitations and procedures. These brochures are available at public locations throughout the Airport, as well as on the Airport's Website.

AIRCRAFT MANUFACTURER OUTREACH

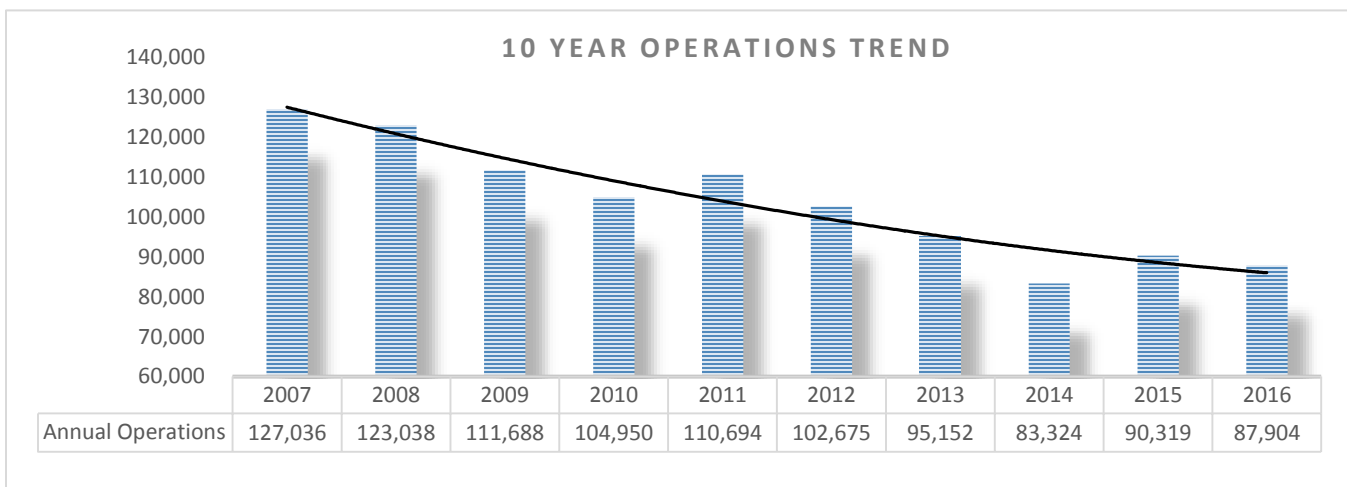
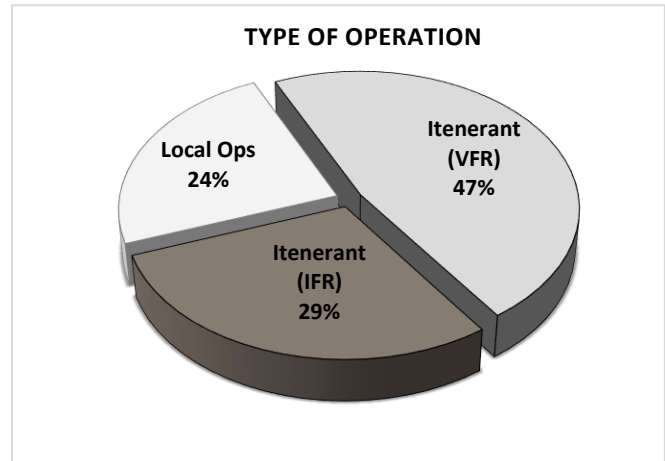
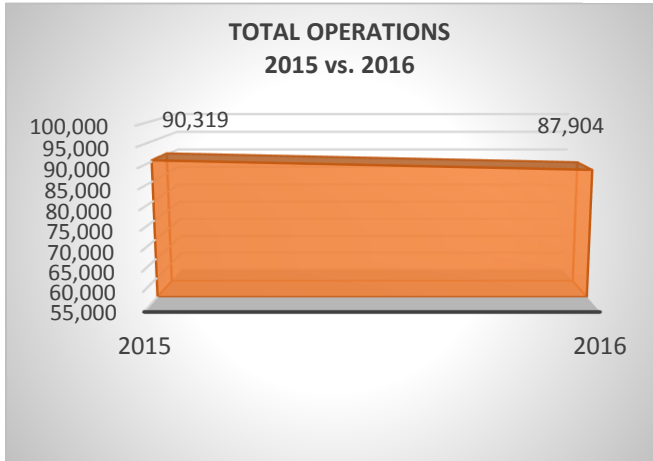
Most aircraft, with the exception of those on the "List of Banned Aircraft", are capable of meeting the Airport's maximum allowable noise level with changes in pilot technique and/or operating weight. Aircraft manufacturers and the National Business Aircraft Association publish general noise management procedures that are compatible with the majority of noise management requirements nationwide. However, these procedures have proven incompatible under most conditions at Santa Monica Airport. Therefore, it is possible that an owner/operator/pilot may utilize nationally accepted noise management procedures at Santa Monica Airport and inadvertently exceed the maximum noise level of 95.0 dBA Single Event Noise Exposure Level.

III. AIRCRAFT OPERATIONS DATA

The data presented in this section of the report originates from several sources including the Federal Aviation Administration Air Traffic Control Tower, the City's Landing Fee Program, and the Noise and Operations Management System.

TOTAL OPERATIONS

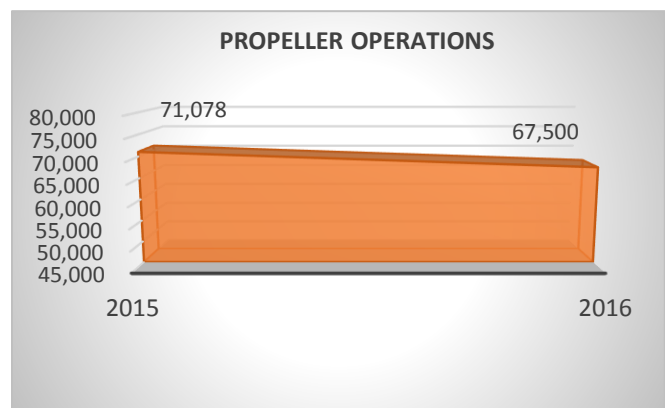
The total number of aircraft operations (an aircraft operation is defined as one takeoff or one landing) recorded during 2016 was 87,904; this represents a decrease of approximately 2.7% from the 90,319 operations recorded in 2015.

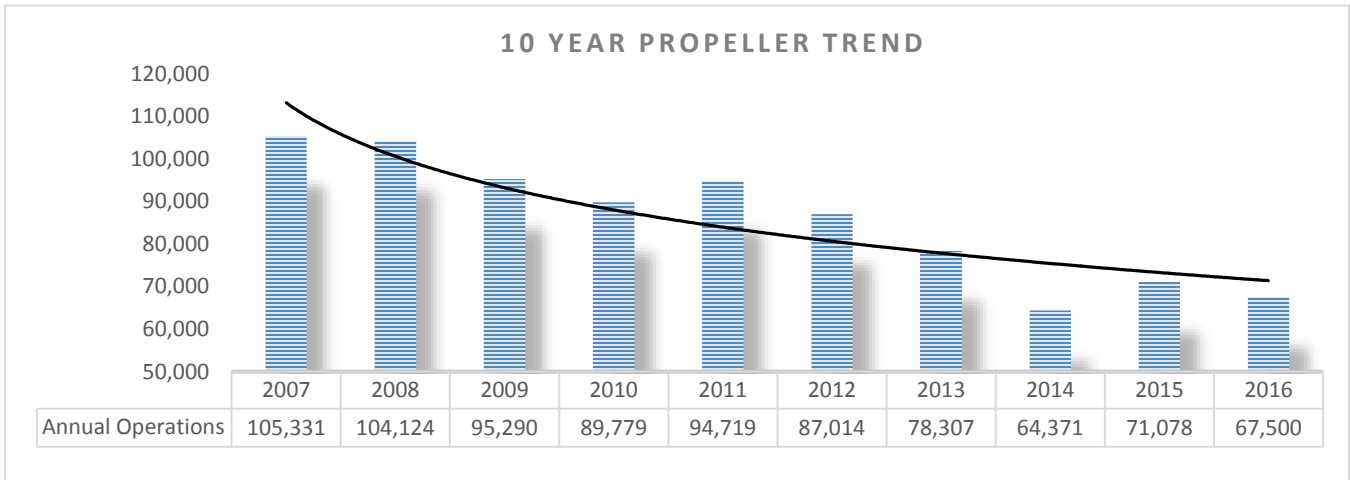


From the 87,904 annual operations, approximately 29% of the operations were instrument flights (IFR itinerant), 24% were local flights (VFR local operations), and 47% were VFR itinerant flights. “Local operations” is defined as an aircraft that stayed within the Airport’s Class D controlled airspace, generally within 5 nautical miles of the airport or within the airport traffic pattern. “Itinerant or Transient Flights” either arrived from, or departed to, another airport outside of the Class D controlled airspace.

PROPELLER AIRCRAFT OPERATIONS

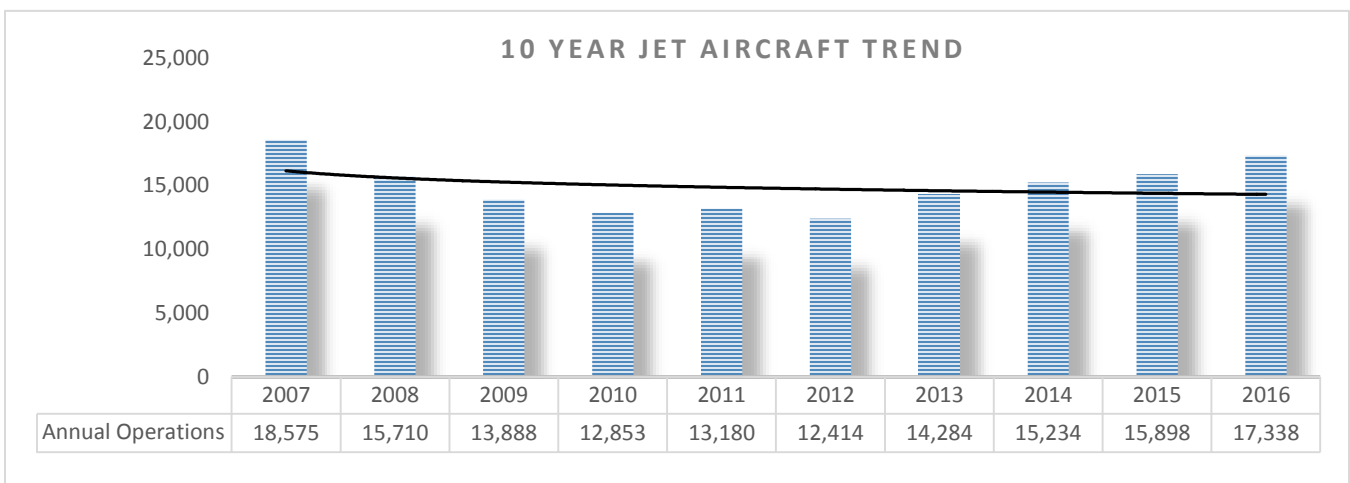
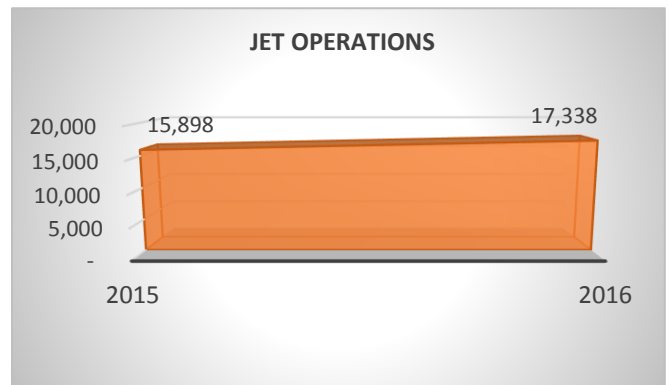
Approximately 67,500 of the total aircraft operations for 2016 were from propeller aircraft. Propeller aircraft represented 76.5% of the total operations. Annual propeller aircraft operations (single-engine, multi-engine, and turbo-prop) decreased by 5% compared to calendar year 2015. From the total propeller operations recorded, approximately 5,933 were by turboprop aircraft.





JET AIRCRAFT OPERATIONS

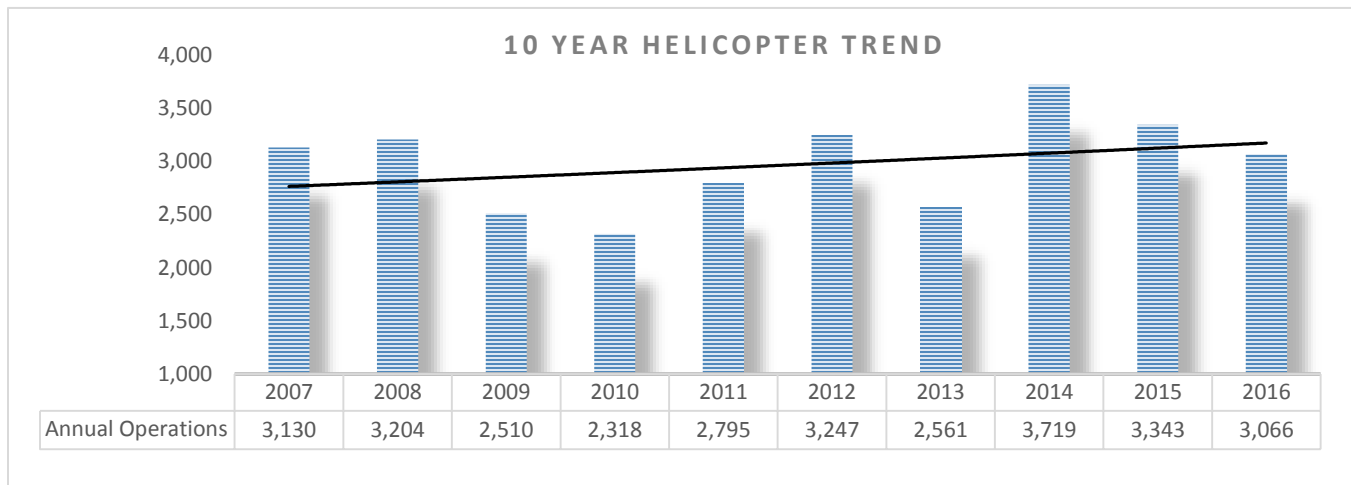
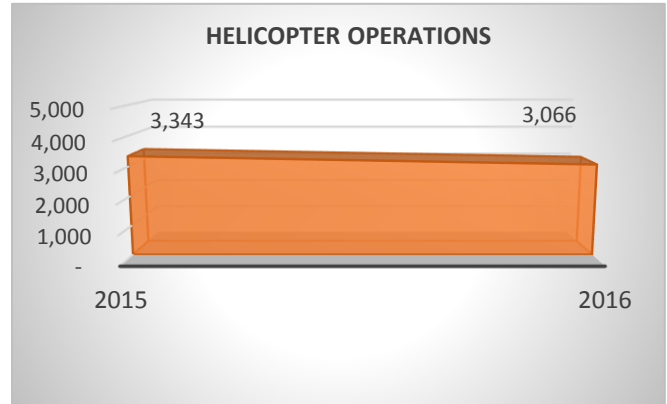
Approximately 17,338 of the total aircraft operations for 2016 were jet aircraft. In 2016, jets represented approximately 20% of the total annual operations. During calendar year 2016, jet operations increased by 9% compared to calendar year 2015.



HELICOPTER OPERATIONS

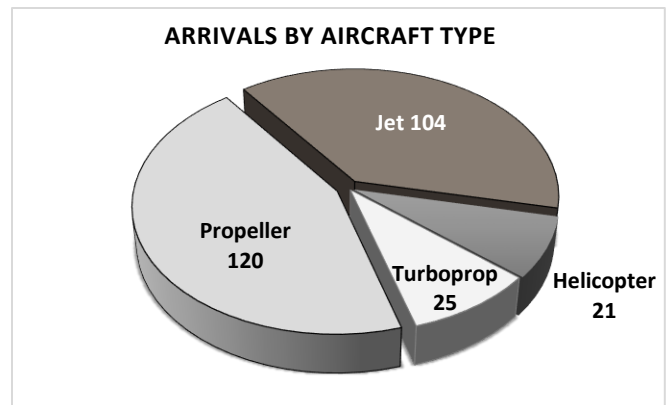
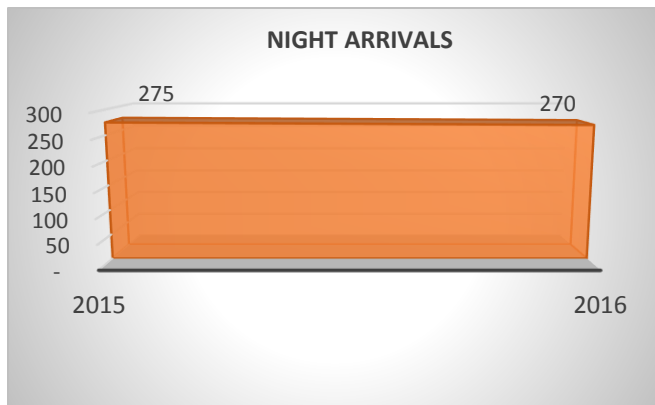
Santa Monica Municipal Code (SMMC) 10.04.04.100 (b) prohibits helicopter flight training operations at Santa Monica Airport.

Approximately 3,066 of the total aircraft operations during calendar year 2016 were helicopter operations. In 2016, helicopters represented approximately 3.5% of the total annual operations. In 2016, annual helicopter operations decreased by approximately 8% compared to calendar year 2015.



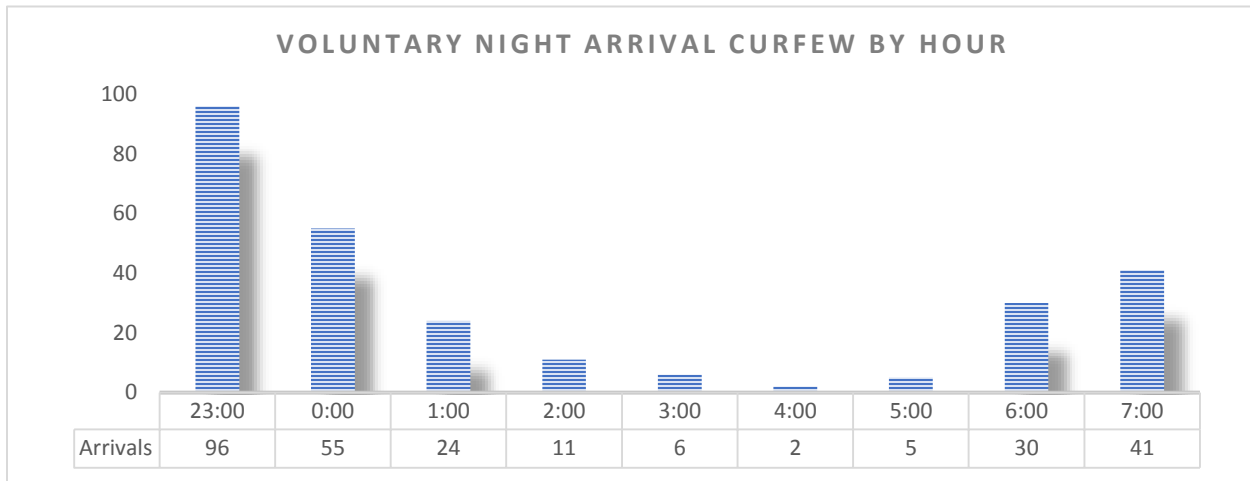
IV. VOLUNTARY NIGHT ARRIVAL CURFEW

Although arrivals are permitted 24 hours a day, pilots are requested to comply with the Airport’s Voluntary Night Arrival Curfew and avoid arriving between 11:00 p.m. and 7:00 a.m. weekdays, and 11:00 p.m. to 8:00 a.m. on weekends. In an effort to improve compliance with the Airport’s voluntary night arrival curfew, all of the operators that arrived during these hours are counseled by staff to comply with the voluntary arrival curfew in the future. The majority of arrivals during the Voluntary Night Arrival Curfew were by propeller aircraft (single-engine and turbo-prop).



For calendar year 2016, Airport Staff logged a total of 270 arrivals during the Voluntary Night Curfew hours, a decrease of 2% compared to the 275 arrivals recorded in 2015.

The graph below depicts the number of Voluntary Arrival Curfew arrivals by hour during 2016. The majority of arrivals (62%) occurred during the first and last hour of the Voluntary Arrival Curfew.



V. CURFEW VIOLATIONS

Santa Monica Airport enforces a departure curfew that prohibits engine start-ups and departures during specific nighttime hours. The Santa Monica Municipal Code (SMMC) Section 10.04.04.080(b) states:

No aircraft shall be started, run-up, or depart the Airport between the hours of 11:00 p.m. and 7:00 a.m. Mondays through Fridays nor between 11:00 p.m. and 8:00 a.m. Saturdays and Sundays, except in case of bona fide medical or public safety emergency, with the consent of the Airport Director or, in his or her absence, the Watch Commander of the Police Department.

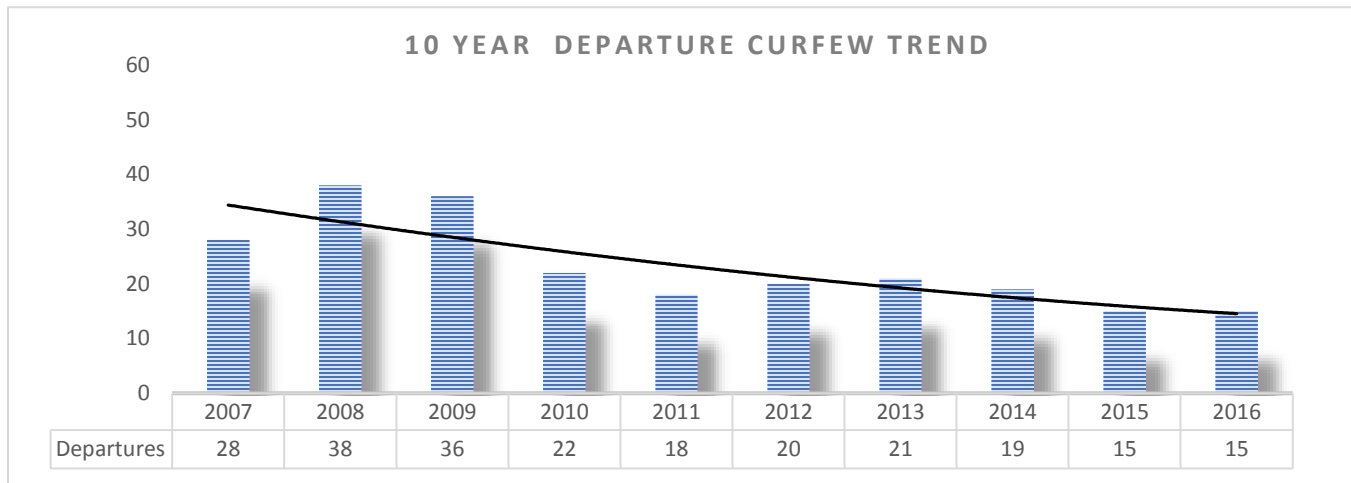
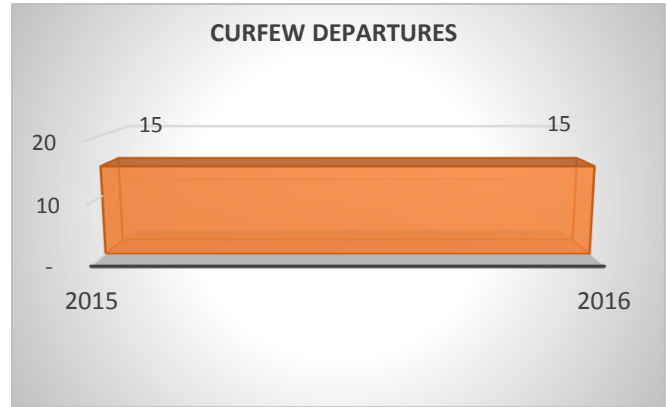
Certain types of operations are exempt from Santa Monica Airport’s curfew restrictions per California Public Utilities Code §21662.4. It exempts emergency aircraft flights for: medical purposes, law enforcement, fire-fighting, military, or other persons who provide emergency flights for medical purposes from local ordinances adopted by a city, county, or city and county, whether general law or chartered, that restrict flight departures and arrivals to particular hours of the day or night. In 2011 this Section of the PUC added language to exempt Aircraft or equipment used during a medical emergency, or emergency personnel and first responders involved in treating the medical emergency, for the purpose of returning to its base of operation.

In 2016 the majority of the curfew departures were by Lifeguard or Law enforcement aircraft. The term “Lifeguard” is used to identify air ambulance flights operating on missions of an urgent medical nature

(first call to an accident scene, carrying patients, organ donors, organs, or other urgently needed lifesaving medical material) in order to receive priority routing by the Air Traffic Control.

For calendar year 2016, Airport Staff logged a total of 15 curfew departures, which is the same number reported in 2015. Although most departures were exempted under the lifeguard or law enforcement provision, 3 departures were found in violation of the Santa Monica Municipal Code.

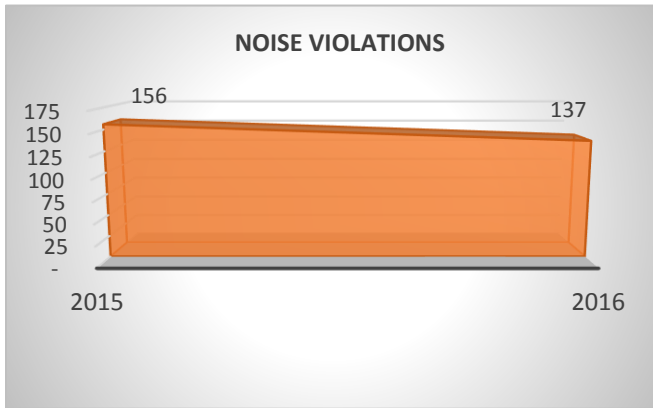
In addition to the curfew departure violations, staff issued 2 violations to operators who used an Auxiliary Power Unit (APU) and/or performed an engine start prior to the end of the curfew.



VI. NOISE VIOLATIONS

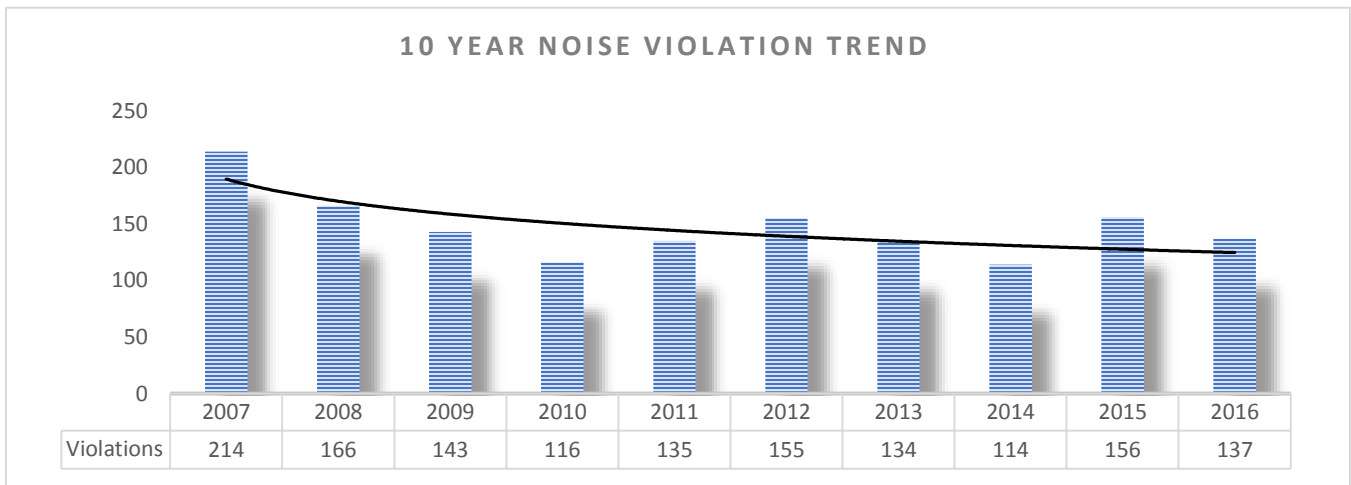
Santa Monica Airport also enforces a maximum noise limit as approved by City Ordinance adopted in 1985. The Santa Monica Municipal Code section 10.04.04.060 states:

“No aircraft shall exceed a Single Event Noise Exposure Level (SENEL) of 95.0 dBA as measured at the Airport Noise Measuring Stations existing on January 1, 1985.” The only Remote Monitoring Stations (RMS) that can be used for the enforcement of the 95.0 dBA SENEL are RMS 1 and RMS 2. These monitors are located 1,500 feet from each end of the runway. (See Attachment A for the RMS locations and Attachment B for the definition of SENEL).



During 2016, staff logged a total of 137 noise violations, a decrease of 12% from the 156 noise violations recorded during calendar year 2015.

Of the 87,904 aircraft operations recorded during 2016, 99.8% were in compliance with Santa Monica Airport’s Noise Ordinance. The noise violations listed in the graph were registered at RMS sites 1 or 2 and do not include exempted law enforcement or medical emergency operations.



VII. NOISE ORDINANCE & ENFORCEMENT PROCEDURES

Consistent with the Santa Monica Municipal Code, Noise Management staff establishes contact with the owner, operator, or pilot of each aircraft exceeding the 95.0 dBA SENEL nose limit. Once the owner or operator of a given aircraft has been contacted and informed of a noise violation, they are given an opportunity to implement compliant and compatible procedures that meet the strict noise requirements of the Airport. This is done as part of staff’s investigation of the initial violation and as part of our continuing education and outreach program in order to educate pilots on the Airport’s Noise Management Program. Most first time offenders are not aware that their aircraft can exceed the 95 dBA limit. Staff promotes the utilization of safe, compatible and effective noise abatement procedures, and informs all operators of the penalties imposed for repeated or willful violations.

Most aircraft are capable of meeting the 95.0 dBA maximum SENEL limit with changes in pilot technique or aircraft operating weight. The goal of the Santa Monica Airport’s Noise Management Program is to communicate methods or techniques that will lower aircraft noise levels, therefore minimizing the impact of aircraft operations on the surrounding community.

Noise Violations by Aircraft Type

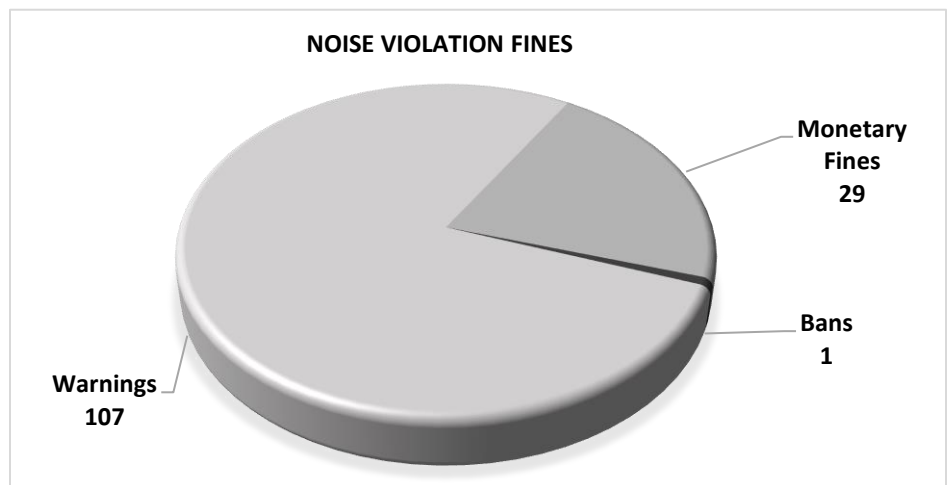
Because jet aircraft comprise such a majority of the noise violations, staff focuses their efforts on working with manufacturers and operators of jet aircraft in order to develop and implement safe and compliant procedures. In addition, staff has also worked extensively with operators of non-jet aircraft, particularly those prone to higher noise levels, in an effort to further reduce noise violations and increase compatibility with the surrounding residential areas.

Noise Limit Structure (Fines & Bans)

The first violation results in a warning, subsequent violations result in a series of escalating fines and/or exclusion from the Airport. During 2016, 79% of the 137 noise violations were first time violations.

Noise Management staff maintains a list of aircraft that are unable to meet the maximum noise level of 95.0 dBA SENEL. These “Listed Aircraft” shall be permanently excluded from operating at Santa Monica Airport after one violation of the noise limit. “Listed Aircraft” mainly include several ex-military turbine and piston aircraft as well as a number of older Stage II business jets including the Lear 20 series, the Gulfstream II & III series, and the early Sabreliner series.

During 2016, 29 aircraft were issued monetary fines and 1 aircraft was banned from the Airport as a result of violations of the 95.0 dBA SENEL maximum noise limit. The adjacent graph depicts the quantity of aircraft that were fined and/or restricted from Santa Monica Airport during the year.



As of December 14, 2003, the following prescribed amendments to the Santa Monica Municipal Code SMMC sections 10.04.04.040, 10.04.04.050, and 10.04.04.055 are being enforced as approved by the Santa Monica City Council on October 23, 2003:

1. Civil penalties for violations of the Noise Code may be imposed on each pilot, aircraft owner, and operator jointly or severally.
2. Initial penalty for a repeat or willful violation shall be two thousand dollars (\$2,000.00).
3. The penalty for a violation following the initial civil penalty shall be five thousand dollars (\$5,000.00).

4. The penalty for a violation following the second civil penalty shall be ten thousand dollars (\$10,000.00).
5. After imposition of the maximum fine of \$10,000.00, subsequent violations shall, after a hearing, result in a suspension of Airport privileges for six months and, following that, revocation of privileges or permits.

VIII. AIRCRAFT DEVIATIONS

Santa Monica Airport requests that fixed-wing aircraft and helicopters arriving and departing under Visual Flight Rules (VFR) follow certain recommended flight paths in order to reduce the overall impact on the surrounding communities.

Westerly departing fixed-wing aircraft are requested to make a 10 degree turn at the end of the Runway and over-fly the Penmar Golf Course and, if leaving the area, make right turns at the shoreline. If aircraft are returning to the Airport after departure, they are requested to turn left at Lincoln Boulevard and fly at the prescribed pattern altitude of 1,400 feet Mean Sea Level (MSL). Aircraft departing easterly (runway 3) are requested not to initiate turns until reaching the San Diego 405 Freeway.

Helicopters are requested to adhere to the same departure paths as fixed-wing aircraft. However, arriving helicopters are requested to avoid the flow of other arriving fixed-wing aircraft and enter mid-field at or above 900 feet MSL and execute a 270° descending turn to the runway. The descent should be made over the Airport or business park to the runway.

It is important to note that there are certain situations when aircraft deviate from the requested flight path procedures and they are as follows:

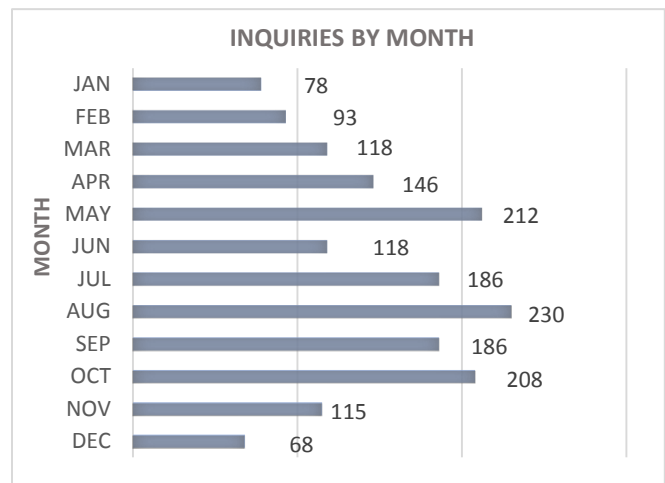
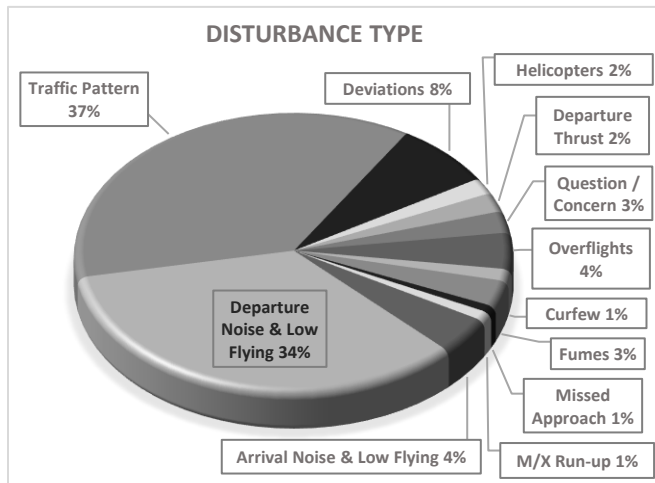
1. All instrument (IFR) departures must fly a defined track that is controlled by the Federal Aviation Administration (FAA). Instrument departures generally fly the runway heading and do not offset to over fly the Penmar Golf Course.
2. Instructions may be issued by the FAA Air Traffic Control Tower for safety of flight operations. For example, departing aircraft may occasionally be instructed to turn early to clear the area for faster departing IFR traffic behind.
3. Meteorological conditions may require a pilot to deviate from the procedures in order to comply with Federal Aviation Administration Regulations that for example, require that pilots remain clear of clouds.

Throughout 2016, Airport staff spent many hours monitoring aircraft operations to ensure compliance with the requested noise management procedures. Additionally, airport staff was informed of possible aircraft deviations from the requested flight paths by members of the surrounding communities and by

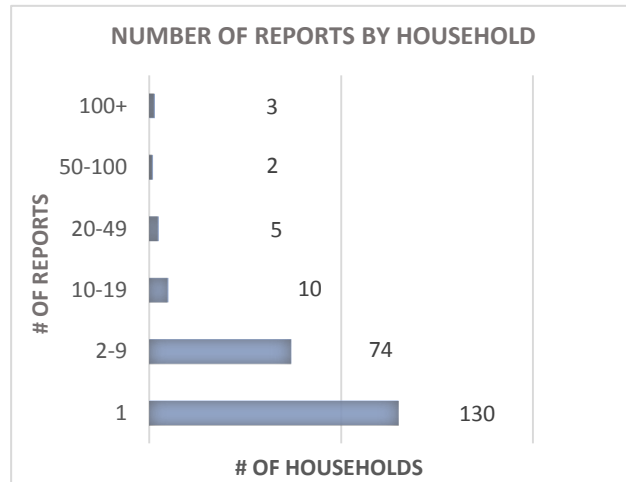
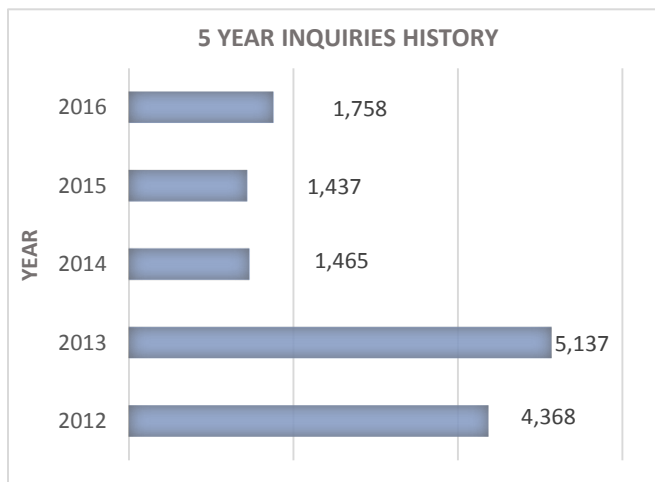
Public Services Officers, who are present at the Airport 24 hours a day, 7 days a week. Airport staff made every effort to contact aircraft operators identified as deviating from the requested flight paths and educated the pilots about the proper noise management procedures.

IX. COMMUNITY INQUIRIES

During 2016, Airport Noise Management staff received a total of 1,758 inquiries from 224 different residences. Inquiries were investigated and proper actions were taken in accordance with the Municipal Code and the Airport’s “Fly Neighborly Program”. The following charts provide a breakdown of the complaints received during 2016.



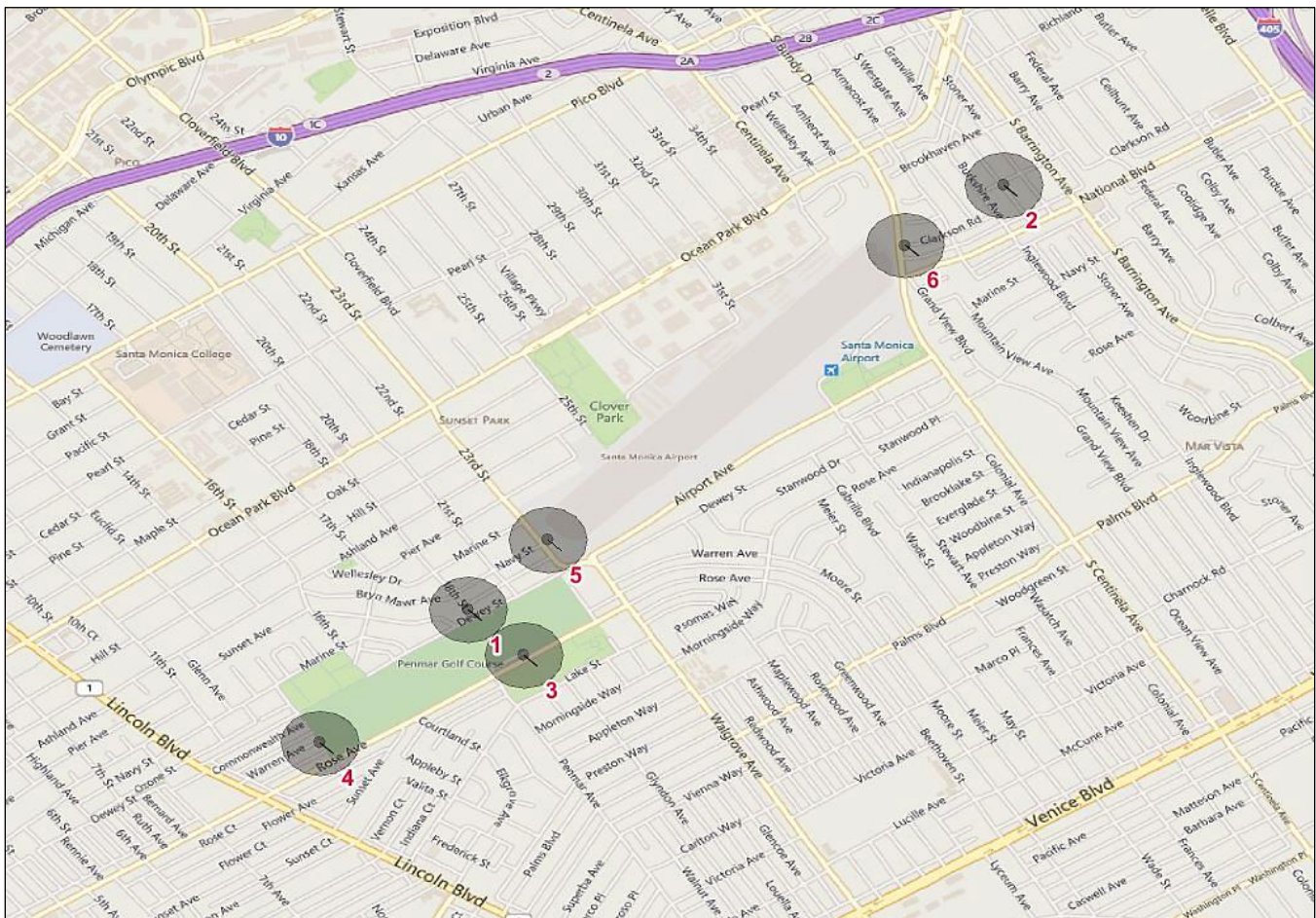
Note: Staff incorporates citizen complaints into the various categories depicted in the chart above.



ATTACHMENT A

Location of Remote Noise Monitoring Stations (RMS)

- RMS – 1 18th Street, Between Dewey Street & Navy Street, Santa Monica
- RMS – 2 Sardis Street and Granville Street, West Los Angeles
- RMS – 3 Penmar Golf Course, 1233 Rose Avenue, Venice
- RMS – 4 West end of Penmar Golf Course on Warren Avenue, Venice
- RMS – 5 23rd Street & Navy Street, Santa Monica
- RMS – 6 Bundy Ave & Clarkson Road/Ct, West Los Angeles



Note: ONLY Remote Monitoring Stations 1 & 2 are used for the Enforcement of the 95.0 dBA Single Event Noise Exposure Level (SENEL) maximum allowable noise level.

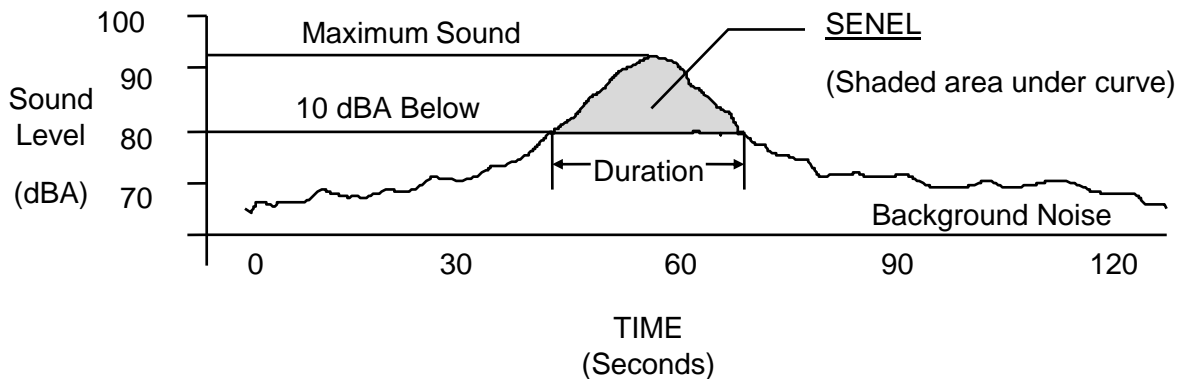
ATTACHMENT B

Definition of Single Event Noise Exposure Level (SENEL)

As a result of an agreement between the City of Santa Monica and the FAA, an Airport Ordinance was established setting a maximum noise level of 95.0 dBA Single Event Noise Exposure Level (SENEL) measured at noise monitor sites 1,500 feet from each end of the runway.

As an aircraft approaches each noise monitor, the sound of the aircraft begins to rise above the threshold level. The closer the aircraft gets, the louder it is until the aircraft is at its closest point directly overhead. As the aircraft passes, the noise level decreases until the sound settles below the threshold level. Such a history of a flyover is plotted in the graph below. The highest noise level reached during the flyover is called the “Maximum Noise Level”, or LMax. Referring to the same graph, the area within 10 dB of the LMax is the area from which the SENEL is computed. This metric takes into account the maximum noise level and the duration of the event. The SENEL value is always higher than the LMax value for aircraft events.

Single Event Noise Exposure Level (SENEL)



A-WEIGHTED SOUND LEVEL (dBA) – The sound pressure level in decibels as measured on a sound level meter using the A-Weighted filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear. It is a numerical method of rating human judgment of loudness.