

SANTA MONICA AIRPORT NOISE MANAGEMENT PROGRAM



CALENDAR YEAR 2014 ANNUAL REPORT



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Santa Monica™

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**SANTA MONICA MUNICIPAL AIRPORT
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I. INTRODUCTION

This report has been prepared in an effort to inform the Airport Commission and our community regarding Santa Monica Airport's Noise Management Program. The report provides a summary of Noise Management Staff activity, aircraft operations and violations of the City of Santa Monica's Aircraft Noise Ordinance during calendar year 2014.

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 reduce 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 per the City's Aircraft Noise Abatement Code. Violations may result in the imposition of fines and/or exclusion from 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 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 emergencies.
- OPERATIONAL LIMITATIONS
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 FLIGHT PATHS

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) LIMITATIONS

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 (30) thirty minutes. Additionally, the APU is considered an engine start and shall comply with the Airport's curfew restrictions.

- REVERSE THRUST USE

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

- INSTRUMENT FLIGHT RULES (IFR) ENGINE START PROCEDURES

In an effort to minimize holding time between engine start and departure, fixed-wing turbine aircraft are requested to obtain an expected departure release time from Air Traffic Control prior to starting-up or taxiing to the IFR Hold Area at the end of the runway.

- IFR HOLD AREA PROCEDURES

Fixed-wing turbine aircraft are requested to hold approximately 200 feet from either end of the runway while awaiting departure clearance 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 recommendation to route helicopters approaching Santa Monica Airport from the north or south at or above 900 feet, rather than on runway heading with fixed-wing aircraft.

- 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 2014, 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, website, and through *PublicVue* flight tracking system. 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 2014, 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 on the Airport, as well on the Airport's Website.

AIRCRAFT MANUFACTURER OUTREACH

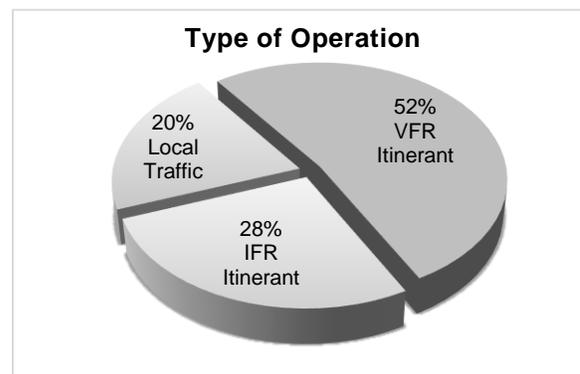
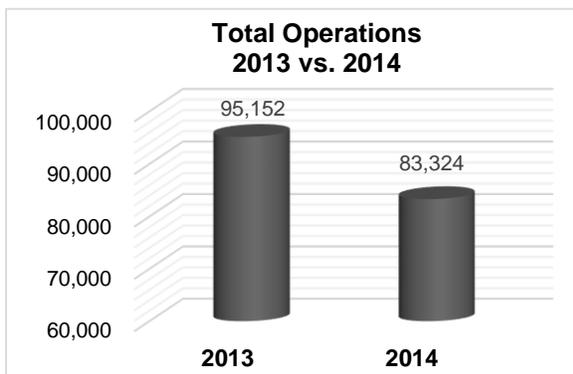
Most aircraft, with the exception of those on the “List of Banned Aircraft”, are capable of meeting the Airport’s maximum allowable noise level with changes in pilot technique and/or operating weight. Aircraft manufacturers and the National Business Aircraft Association publish general noise management procedures that are compatible with the majority of noise management requirements nationwide. However, these procedures have proven incompatible under certain 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 still exceed the maximum noise level of 95.0 dBA Single Event Noise Exposure Level.

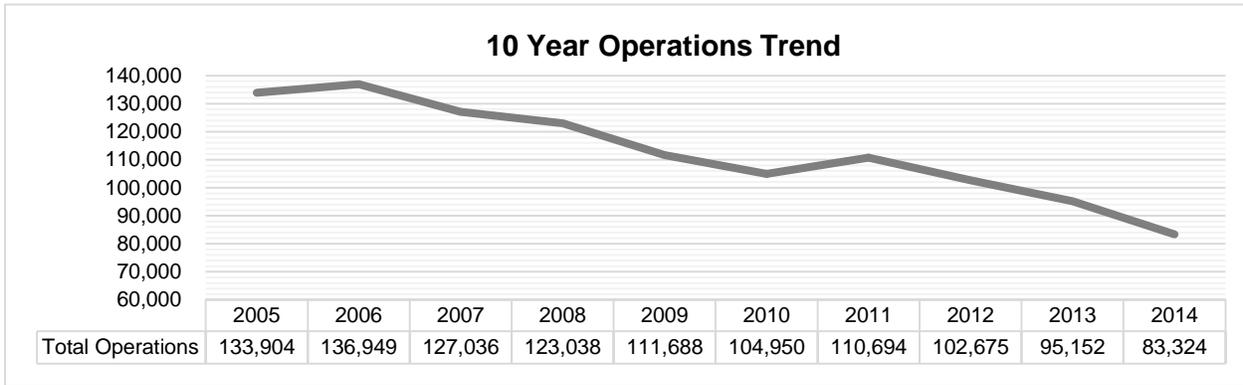
III. AIRCRAFT OPERATIONS DATA

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 Noise Management System.

The total number of aircraft operations (*an aircraft operation is defined as: one takeoff or one landing*) recorded during 2014 was 83,324; this is a decrease of approximately 12% from the recorded 95,152 operations in 2013.

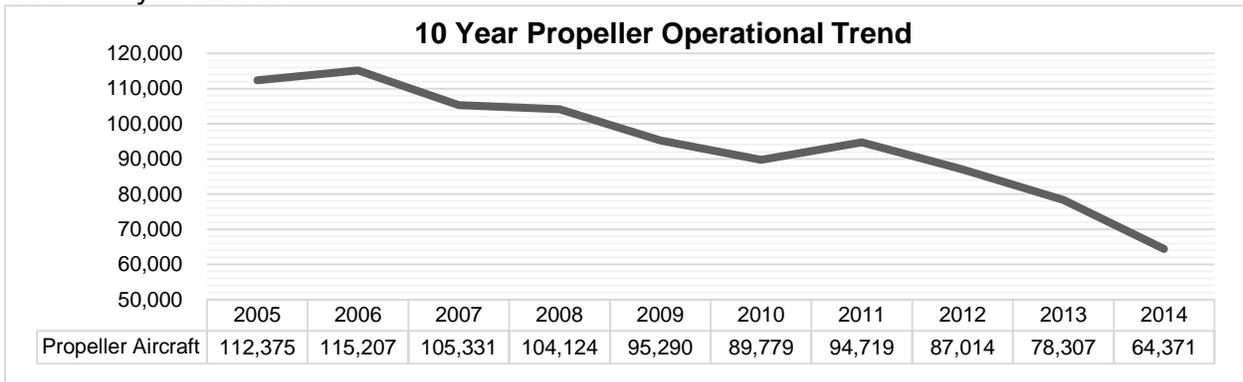
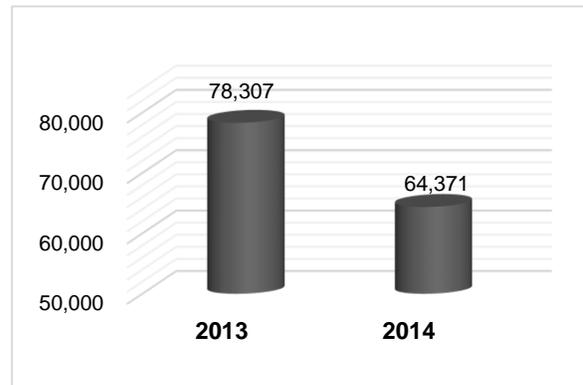
From the 83,324 annual operations, approximately 28% of the operations were instrument flights (IFR itinerant), 20% were local flights (VFR local operations), and 52% VFR itinerant flights. “Local Traffic” is defined as an aircraft that stayed within the Airport’s Class D controlled airspace, generally within 5 nautical miles of the airport or within the airport traffic pattern. “Itinerant or Transient Flights” either arrived from, or departed to, outside of the Class D controlled airspace.





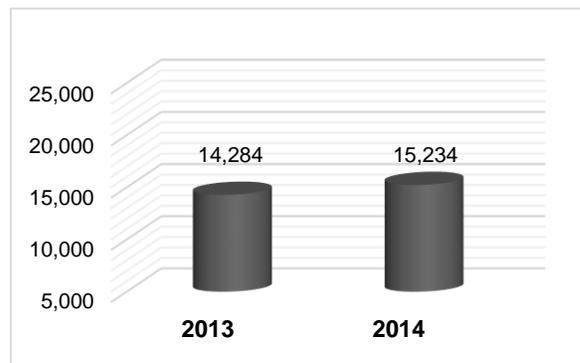
PROPELLER AIRCRAFT OPERATIONS

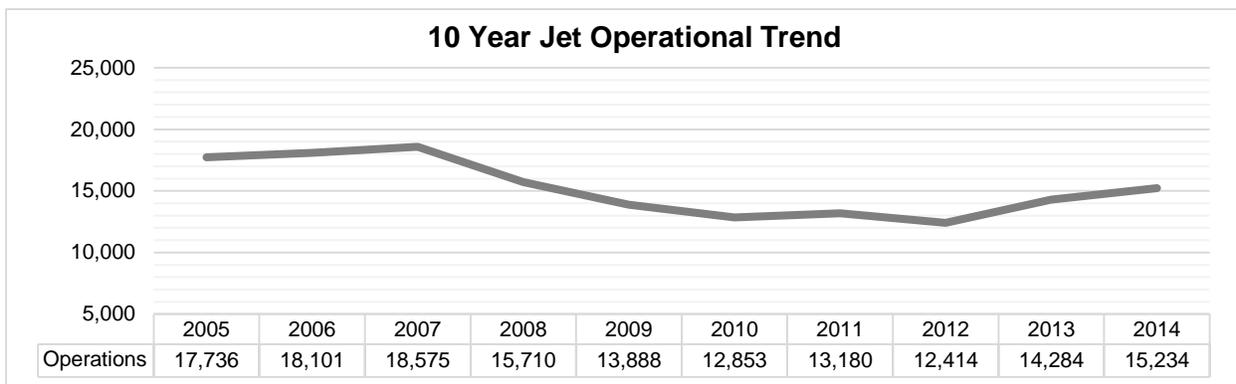
Approximately 64,371 of the total aircraft operations for 2014 were from propeller aircraft. Propeller aircraft represented 77% of the total operations. Annual propeller aircraft operations (single-engine, multi-engine, and turbo-prop) decreased by 18% compared to calendar year 2013.



JET AIRCRAFT OPERATIONS

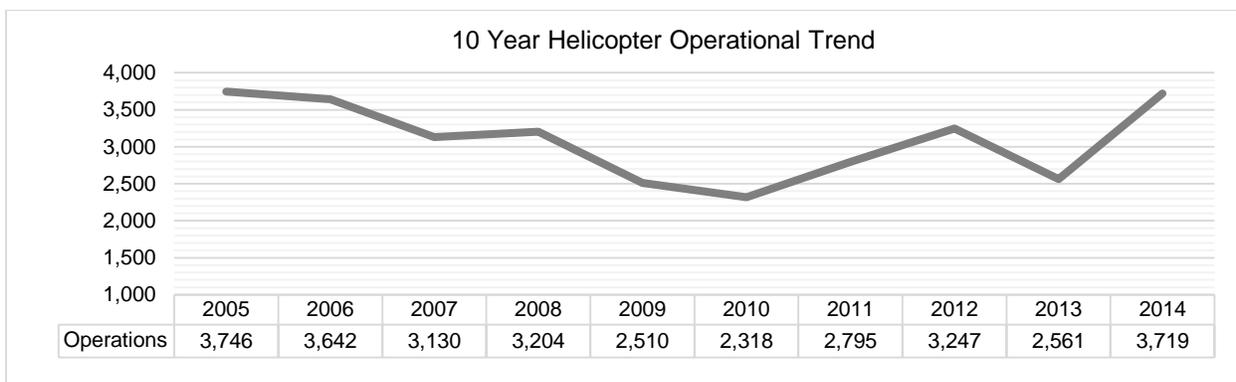
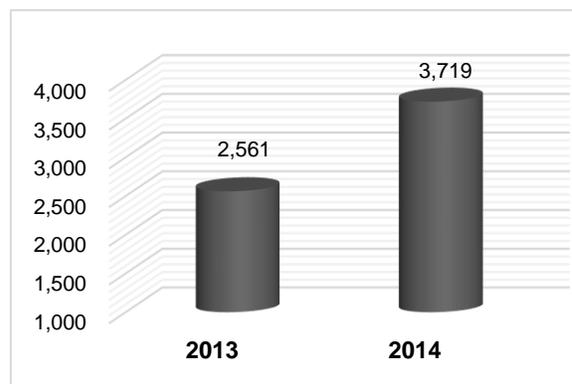
Approximately 15,234 of the total aircraft operations for 2014 were jet aircraft. In 2014, jets represented 18% of the total operations. Annual jet operations increased by 6.7% compared to calendar year 2013.





HELICOPTER OPERATIONS

Approximately 3,719 of the total aircraft operations for 2014 were helicopter operations. In 2014 helicopters represented 5% of the total operations. In 2014 annual helicopter operations increased by 45% compared to calendar year 2013.



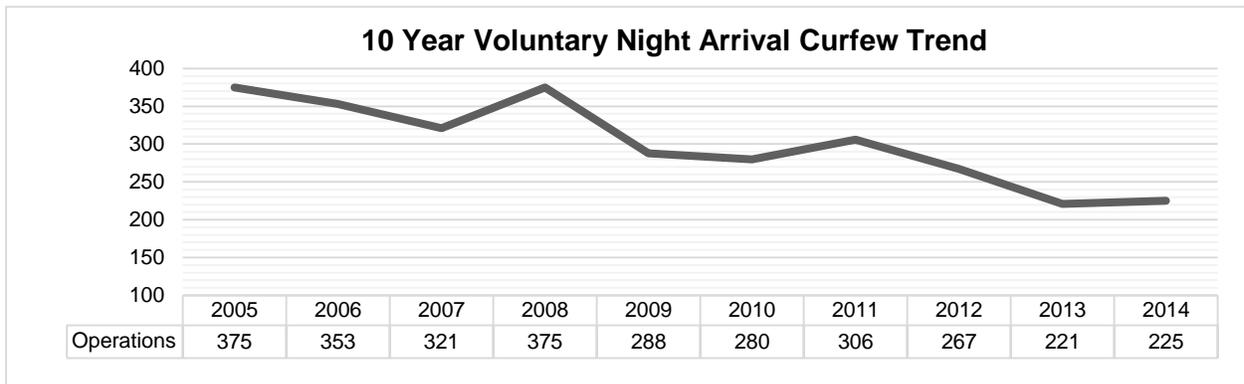
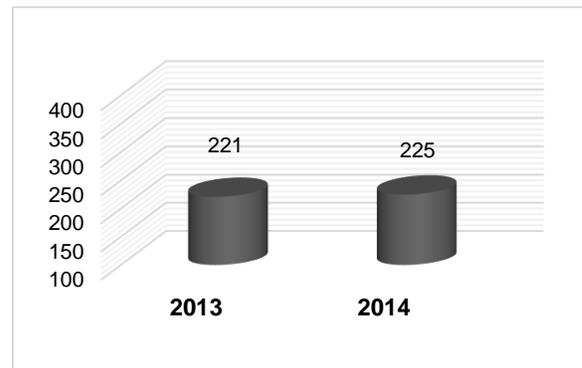
Note: Santa Monica Municipal Code (SMMC) 10.04.04.100 (b) prohibits helicopter flight training operations at Santa Monica Airport.

IV. VOLUNTARY NIGHT ARRIVAL CURFEW

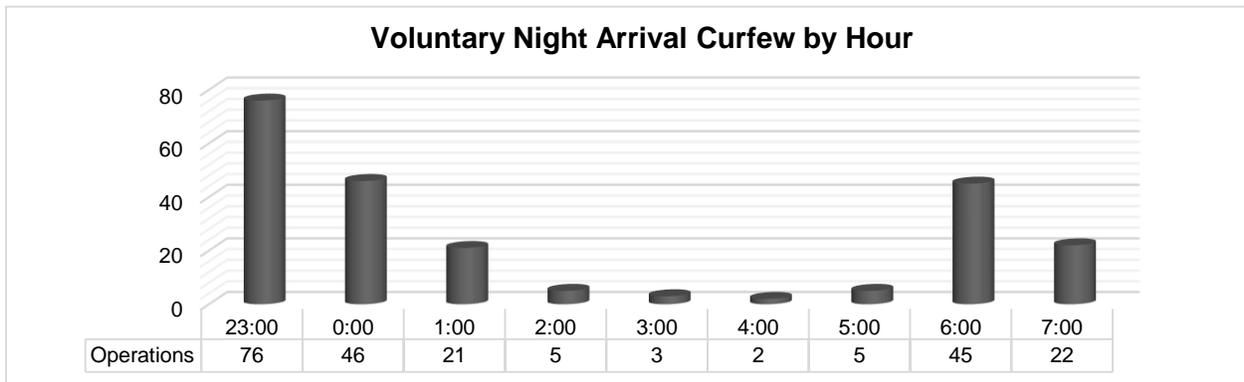
Although arrivals are permitted 24 hours a day, pilots are requested to comply with the Airport's Voluntary Night Arrival Curfew by not arriving between 11:00 p.m. and 7:00 a.m. weekdays, and 11:00 p.m. to 8:00 a.m. on weekends. In an effort to improve compliance with the Airport's voluntary night arrival curfew, all of the operators that

arrived during these hours are counseled by staff to comply with the voluntary arrival curfew in the future.

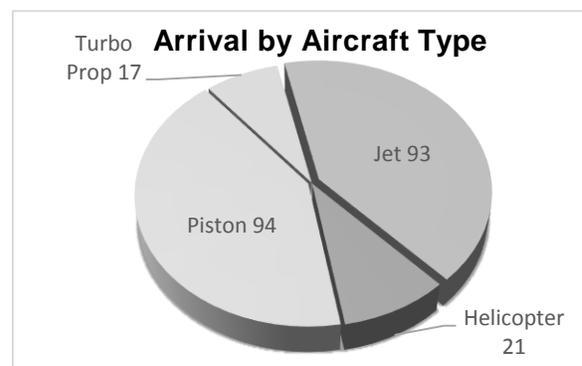
For calendar year 2014, Airport Staff logged a total of 225 arrivals during the Voluntary Night Curfew hours, an increase of 2% compared to the 221 arrivals recorded in 2013.



The graph below depicts the number of Voluntary Arrival Curfew arrivals by hour during 2014. The majority of arrivals (64%) occurred during the first or last hour of the Voluntary Arrival Curfew.



The majority of arrivals during the Voluntary Night Arrival Curfew were by propeller aircraft (single-engine and turbo-prop). A more detailed breakdown is depicted in the following chart.



V. CURFEW VIOLATIONS

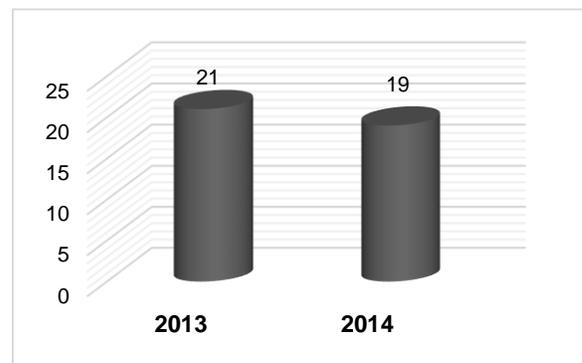
Santa Monica Airport enforces a departure curfew that prohibits engine start-ups and departures during specific nighttime hours. The Santa Monica Municipal Code (SMMC) Section 10.04.04.080(b) states:

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.

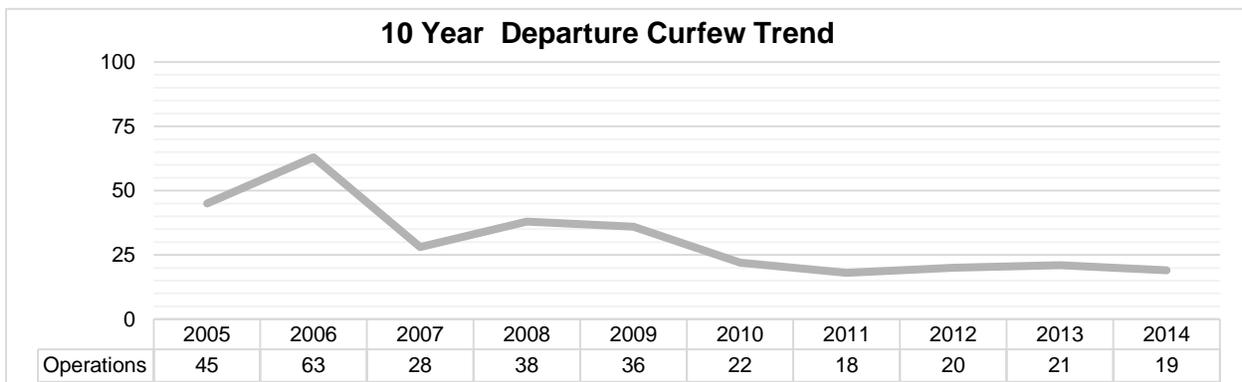
Certain types of operations are exempt from Santa Monica Airport's curfew restrictions per California Public Utilities Code §21662.4. It exempts emergency aircraft flights for: medical purposes, law enforcement, fire-fighting, military, or other persons who provide emergency flights for medical purposes 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 2014 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 2014, Airport Staff logged a total of 19 curfew departures, a 10% decrease from the 21 curfew departures during 2013. Of all departures, only 1 was found in violation of the Santa Monica Municipal Code.



In addition to the curfew departures, in 2014 staff issued 9 violations to operators who used an Auxiliary Power Unit (APU) and/or performed an engine start during curfew hours.



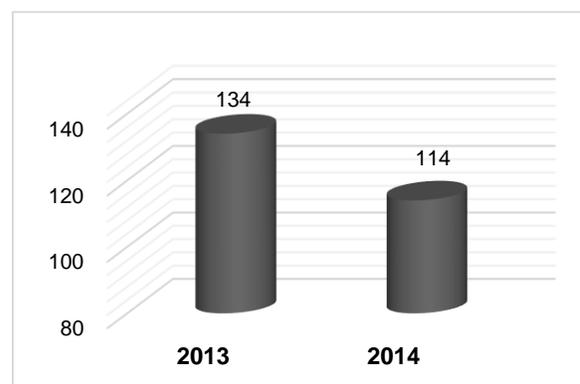
VI. NOISE VIOLATIONS

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:

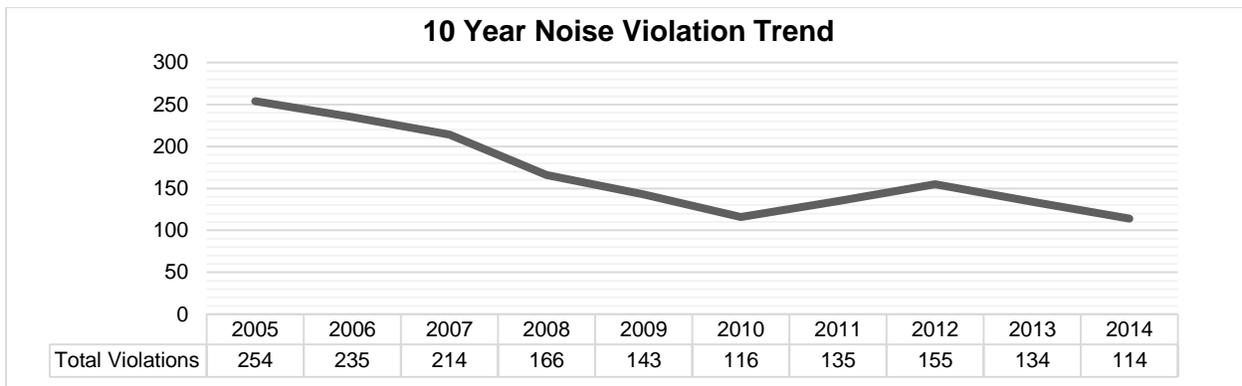
“No aircraft shall exceed a Single Event Noise Exposure Level (SENEL) of 95.0 dBA as measured at the Airport Noise Measuring Stations existing on January 1, 1985.” The only Remote Monitoring Stations (RMS) that can be used for the enforcement of the 95.0 dBA SENEL are RMS 1 and RMS 2. These monitors 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 2014, staff logged a total of 114 noise violations, a decrease of 15% from the 134 noise violations recorded during calendar year 2013.

Of the 83,324 aircraft operations recorded during 2014, 99.9% 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 exempt medical emergency operations.



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 Violation Enforcement Procedures

Consistent with the Santa Monica Municipal Code, Noise Management staff establishes contact with the owner/operator/pilot of each aircraft exceeding the 95.0 dBA SENEL nose limit. This is done as part of staff's investigation of the violation and as part of our continuing education and outreach program in order to educate them on the Airport's Noise Management Program. Staff requests the utilization of safe, compatible and compliant operating procedures, and informs all operators of the penalties imposed for repeat or willful violations.

For the majority of first-time violations, Airport staff makes contact with the owner, operator and/or pilot prior to their return. Once the owner/operator/pilot was contacted and informed of a violation, they are given an opportunity to implement compliant and compatible procedures.

The first violation results in a warning and subsequent violations result in a fine and/or restriction from the Airport. During 2014, 83% of the 114 noise violations were first time 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 Limit Structure (Fines & Bans)

Extensive outreach and counseling by Airport staff with pilots routinely results in compliance with the maximum noise level of 95.0 dBA SENEL. However, if successive violations occur without progressive attempts at compliance, and after considering all relevant factors including the willfulness, severity and frequency of violations and the use of safe noise management operating procedures, and it is assured that the violation was not related to extraneous factors beyond the pilot's control such as loss of power, avoiding other aircraft, or unusual weather conditions, aircraft can be fined and/or restricted from operating at Santa Monica Airport.

In accordance with the Santa Monica Municipal Code, Airport 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 current military and ex-military turbine and piston aircraft as well as a number of older business jets including the Lear 20 series, Gulfstream II & III series, and early Sabreliner business jet aircraft.

During 2014, 19 aircraft were issued monetary fines and 1 was banned from the airport as a result of violations of the 95.0 dBA SENEL maximum noise limit. The chart below depicts the quantity of aircraft that were fined and/or restricted from Santa Monica Airport during the year.

Fine	2013	%	2014	%
Warning	105	78%	94	82%
\$2,000	25	19%	17	15%
\$5,000	1	1%	2	2%
\$10,000	0	0%	0	0%
Banned	3	2%	1	1%
Total	134	100%	114	100%

Noise Violation Warnings, Fines & Aircraft Bans 2013-2014 Comparison

VII. NOISE ORDINANCE & ENFORCEMENT PROCEDURES

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 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). Fixed-wing aircraft departing towards the east 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.

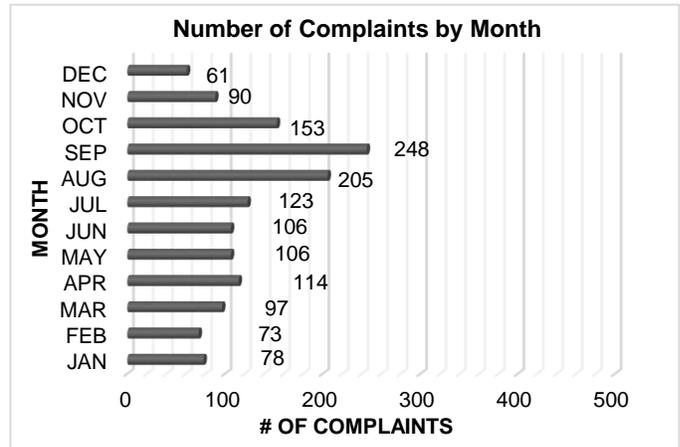
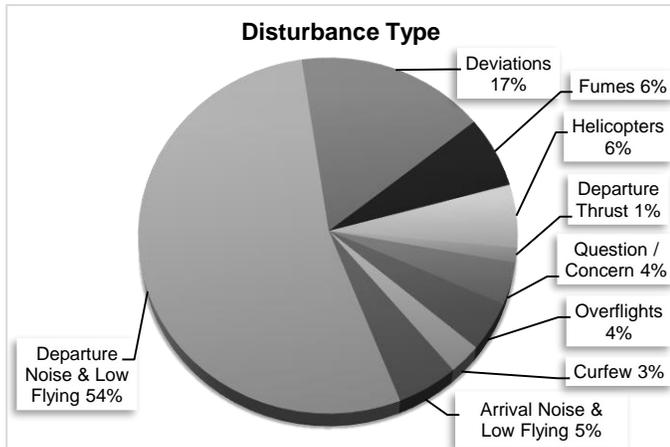
It is important to note that there are certain situations when aircraft deviate from the requested flight path procedures and they are as follows:

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.

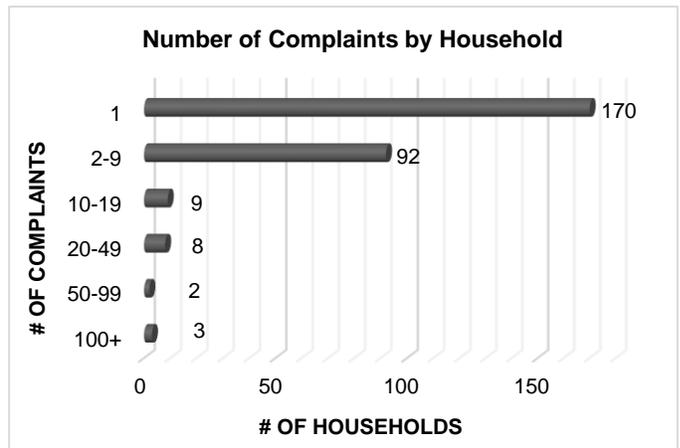
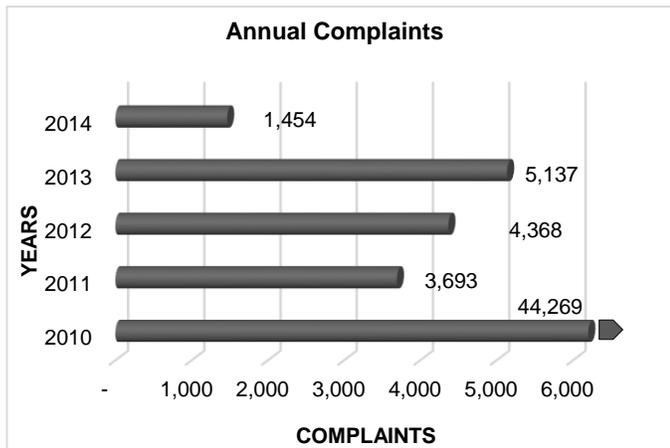
Throughout 2014, Airport staff spent many hours monitoring aircraft operations to ensure compliance with the requested noise management procedures. Additionally, airport staff was informed of possible aircraft deviations from the requested flight paths by members of the surrounding communities and by 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. Additionally, staff conducts Certified Flight Instructor classes with our local flight schools. The goal is to continually educate our local flight instructors about our “Fly Neighborly Program” and in turn pass on what they learned to their students.

IX. COMMUNITY COMPLAINTS

During 2014, Airport Noise Management staff received a total of 1,454 inquiries from 284 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 2014.



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

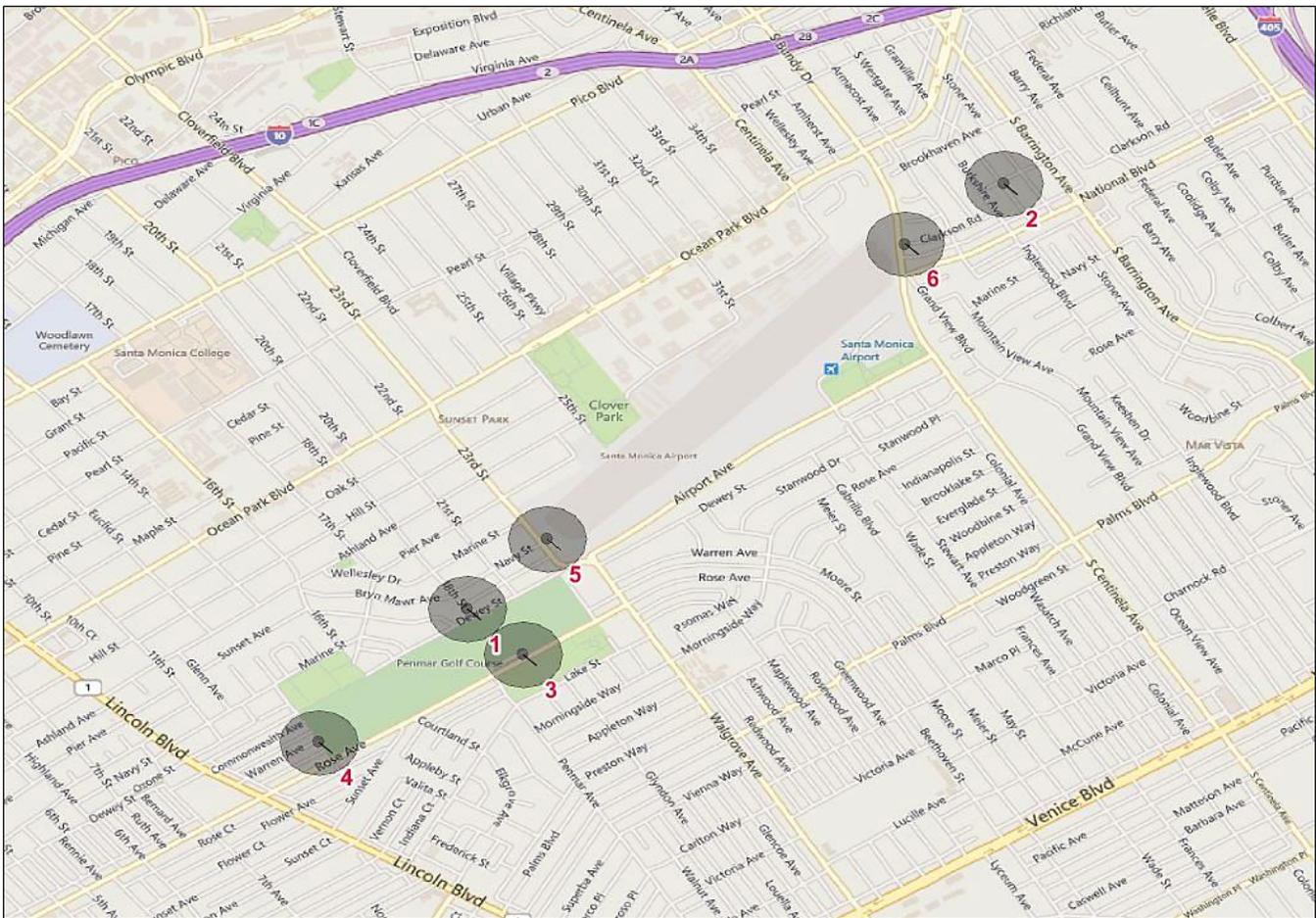


Note: Out of the 44,269 complaints recorded in 2011; 41,862 were associated with Federal Aviation Administration 250 degree heading test.

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



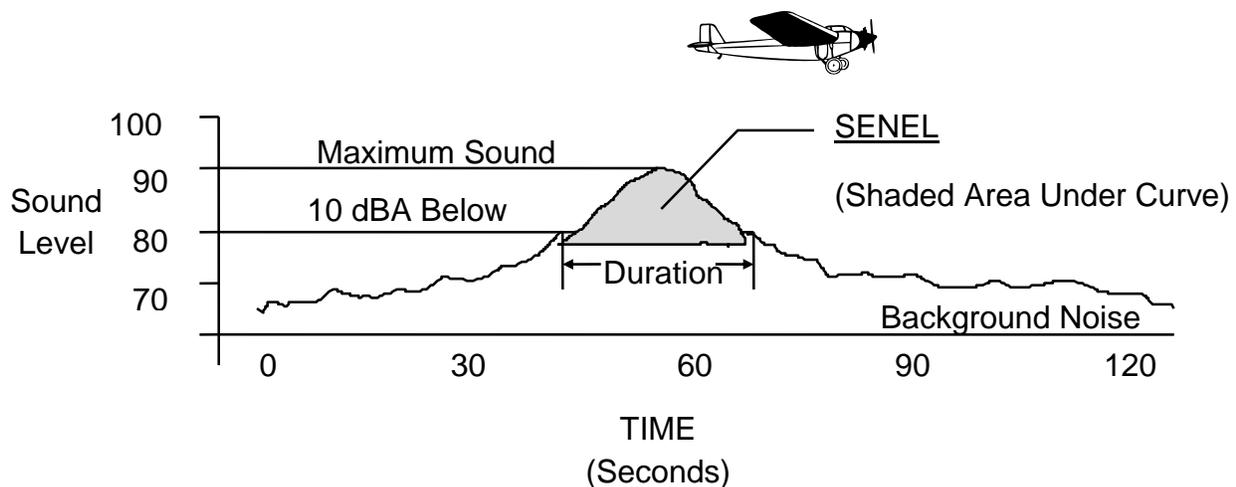
Note: ONLY Remote Monitoring Stations 1 & 2 are used for the Enforcement of the 95.0 dBA Single Event Noise Exposure Level (SENEL) maximum allowable noise level.

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.



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.