

Los Angeles Area Helicopter Noise Coalition

Citizens seeking relief from helicopter noise – A problem for more than 40 years

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Docket No. FAA-2021-0037

LAHelicopterNoise.org

Office of Environment and Energy
Federal Aviation Administration, DOT

Chair
Richard Root
Founder, Citizens for
Quiet Helicopters
(Torrance)

Re: Comments on Docket No. FAA-2021-0037
Overview of FAA Aircraft Noise Policy and Research Efforts:
Research Activities to Inform Aircraft Noise Policy

Treasurer
Dave Garfinkle
Tarzana Property Owners
Association

Thank you for the opportunity to comment on this issue. These comments are from the members of the Board of the Los Angeles Area Helicopter Noise Coalition. We are residents of various communities that have spent the past ten years working with the FAA, helicopter operators, and elected officials attempting to bring about a reduction in helicopter noise impacts in our neighborhoods.

Gerry Hans
Friends of Griffith Park

FAA NOISE STANDARDS

Donna Sievers
Bluff Heights (Long Beach)
Neighborhood Association

The results of the Neighborhood Environmental Survey show that many more people are highly annoyed by noise than previously thought. Previous studies done long ago found that only 12.3% of the population was highly annoyed by noise at DNL 65 dB which the FAA established as its threshold for significance. We now know that nearly 66% of the population is highly annoyed by aircraft noise at that level. Based on this new data, the FAA needs to lower its standard and reevaluate its policies and practices. In addition, DNL averages noise over a 24-hour period which tends to dilute severity where noise may be very annoying for shorter durations. In addition to DNL, the FAA needs to incorporate single-event metrics such as maximum noise (Lmax), Number-Above (NA), and Sound Equivalent Level (SEL) into its decision making, especially with respect to helicopter flyover noise.

Gerald A. Silver
Homeowners of Encino

Rudolph Whitcomb
Rolling Hills Estates

NEED STANDARD FOR HELICOPTER NOISE AWAY FROM AIRPORTS/HELIPORTS

The Neighborhood Environmental Survey dealt only with noise associated with airports, where aircraft arrive and depart. However, a great deal of neighborhood noise comes from helicopters which constantly fly low causing continuous noise wherever they go, including over noise sensitive areas far from any airport. (Noise-sensitive areas include residential, educational, health, and religious structures and sites, and parks, recreational areas, wilderness, wildlife refuges, and cultural and historical sites.) Moreover, noise from helicopters is generally considered more annoying than planes.

Wayne Williams
Van Nuys Airport
Citizens Advisory Council

BACKGROUND

In the Background Information of this Docket, the FAA notes *“In addition to airplane operations, the FAA is also examining the potential for helicopter noise abatement through changes in operational procedures. The FAA has partnered with the Volpe Center, the National Aeronautics and Space Administration, the Pennsylvania State University, and operator organizations to explore new ways to safely fly rotorcraft while also reducing noise through the Fly Neighborly Program.”* (A footnote refers readers to HAI’s [website](#).) However, the Fly Neighborly program is not new. It has existed for forty years. The current program is virtually the same as the one created by HAI in the early 1980’s. Moreover, it has serious flaws as explained below.

LAAHNC Input on Neighborhood Environmental Survey

Helicopter noise has been a problem for decades. In the late 1970s, concern was being expressed about helicopter noise by the general public and national authorities in a number of nations, including the USA. The FAA issued a Notice of Proposed Rulemaking (NPRM) outlining proposed noise certification procedures and limits. The industry, and the Helicopter Association International (HAI) in particular, felt that a better approach would be for the industry to develop voluntary guidelines to control the noise impact by operational means. After a number of FAA/industry meetings, in the fall of 1981, the FAA agreed to withdraw its initial NPRM with the understanding that the helicopter industry would develop new technology - creating quieter, more advanced equipment, and implement a voluntary noise abatement program. This resulted in the establishment of the HAI Fly Neighborly Program.

According to the FAA's latest General Aviation and Part 135 Activity Survey, in 2019 there were 10,199 active helicopters that flew approximately 3 million hours throughout the United States. Most likely, more hours are flown in the Los Angeles area than any other area of the nation. Virtually all of the helicopter hours in this area were flown below the altitude the FAA "recommends" for noise abatement (2000 feet above ground level). These flights produced wide noise footprints on the ground, much of it in noise sensitive areas. Unlike fixed wing, federal regulations do not require any minimum altitude for helicopters. Pilots decide how low to fly. They can fly low as 100 feet above ground level without violating any FAA regulation and they sometimes do so.

Now, forty years after the industry established its Fly Neighborly Program, the problems still exist today. Obviously, the industry's attempt at voluntary measures has not resolved the problem.

Voluntary measures have been tried without success. Voluntary offshore routes are good examples. For several years, the North Shore Helicopter Route in Long Island was voluntary and there was widespread non-compliance. Compliance was not achieved until it was made mandatory. Similarly, in 2016, the FAA established voluntary offshore routes in Los Angeles County hoping to get them to fly farther offshore to reduce noise. These routes only request that pilots fly 750 feet offshore over the Pacific Ocean. However, data shows that after five years of effort, there has been no change from the way pilots flew before the route was established. Some pilots continue to fly as little as 300 feet high, over the heads of people in the water and on the beach.

Moreover, in Los Angeles County, many helicopter pilots ignore their own industry's voluntary guideline to fly at least 1000 feet above ground level. Some pilots say it is not safe to fly above 1000 feet AGL because they would be in the same airspace as fixed wing and at greater risk of a mid-air collision. Yet, some pilots can and do fly above 1,000 feet AGL. Helicopters fly as fast as some fixed wing and pilots have better visibility from helicopter cockpits. They should be able to share the same airspace as fixed wing. The airspace accommodates more and more aircraft every day. It is the FAA's job to make sure they can do so safely. New technology, such as collision avoidance systems and ADSB-In should greatly reduce the risk of collisions and allow for better use of the airspace.

EXISTING NOISE GUIDELINES FOR HELICOPTERS

DNL of 65 dB is the only noise standard the FAA uses, primarily in connection with land use planning and noise mitigation measures near airports, or take-off and landing patterns associated with airports. However, it is not appropriate for use in otherwise tranquil areas far removed from any airport. Using that standard allows helicopters to take peacefulness from quiet areas until they end up sounding like airports.

Multiple Inconsistent Guidelines for Helicopter Noise and Altitude

HAI does use a single-event noise metric in its Fly Neighborly Program. It bases its voluntary noise abatement guidelines on the assertion that 65 dB max is an "acceptable" level of noise on the ground. Based on that standard, it developed recommended minimum altitudes for helicopters when "necessary" to fly over noise-sensitive areas. The HAI *Fly Neighborly Guide* (Third Edition, 1993) states that "*to be compatible with the generally accepted criterion of 65 dB(A) max for flyover of noise-sensitive areas, light/small helicopters should fly at altitudes no less than 1,000 feet AGL.*" (AGL is Above Ground Level.) No basis is stated for the 65 dB criterion nor is there any explanation as to who finds that standard "acceptable." How can the industry claim 65 dB of noise on the ground is acceptable when it did not ask the impacted community? Acoustics experts say noise begins to impair the ability to hear outdoor speech at 60 dB. Is it acceptable to interfere with outdoor speech? Furthermore, many local jurisdictions limit "general" noise in residential neighborhoods to as low as 50-55 dB. 65 dB of noise in noise-sensitive areas is not neighborly.

LAAHNC Input on Neighborhood Environmental Survey

In 2005, the helicopter industry modified its recommendation when HAI published its Helicopter Noise Abatement Training Program. That program recognized that *“the acceptable level of noise differs between low and high ambient noise environments.”* The training program contained a chart which indicated that, in a low ambient noise area, a small helicopter should fly above 1000 feet AGL to keep noise on the ground to below 65 dB. However, no specific noise criterion or numerical altitude guidance was given. (See **ATTACHMENT 1** on Page 5).

Currently, the HAI website shows a new [Fly Neighborly Program](#) *“created by the FAA and endorsed by HAI.”* The Introduction states that the program is supported by HAI, National Aeronautics and Space Administration (NASA), the Department of Transportation Volpe Center, and the FAA. It includes suggested en-route altitudes, including 1000 feet AGL for small helicopters (See **ATTACHMENT 2** on Page 6). However, unlike the 2005 training program, no recommendation is made for helicopters to fly higher than 1000 feet AGL over “low ambient noise areas.” Apparently, HAI has reverted to its general standard of 65 dB max regardless of the ambient noise level on the ground over which helicopters fly. The Introduction also states that the list of recommended altitudes is consistent with FAA Advisory AC 91-36D (See **ATTACHMENT 3** on Pages 7&8). However, AC 91-36D recommends that all aircraft fly at least 2000 feet AGL for noise abatement (twice as high as recommended by HAI for small helicopters). So, the statement that the guidelines are consistent is not accurate. In fact, the guidelines are very different.

Current FAA Certified Noise Levels for Commonly Used Helicopters

The most commonly used small helicopter is the Robinson R44. The FAA’s aircraft Noise Levels for U. S. Certificated Helicopters (Advisory Circular 36-1H, Appendix 11), indicates that the R44 in level flyover at about 500 feet AGL produces noise on the ground at 81.9 dB SEL (Sound Exposure Level). As a general rule, when the altitude is doubled, noise on the ground is reduced by 6-7 dB. So, it is questionable that doubling the altitude of an R44 (from 500 to 1000 feet) would be enough to reduce noise on the ground from 81.9 SEL to HAI’s “acceptable” 65 dB max. Moreover, random testing done by the community in Los Angeles indicates that, contrary to HAI’s guideline, an R44 at 1000 feet AGL produces more than 65 dB noise on the ground.

Another widely used helicopter is the Eurocopter AS 350 B2. At 4960 lbs., it is larger than the Robinson R44. However, the industry does not define “small” helicopters and many would consider the AS 350 to still be a small helicopter. AC 36-1H, Appendix 10 shows that it registers a flyover noise level of 87.1 dB EPN (Effective Perceived Noise). Again, it is difficult to see how doubling the altitude (from 500 to 1000 feet AGL) would be enough to reduce noise on the ground from 87.1 dB EPN to HAI’s “acceptable” 65 dB max. (The Los Angeles Police Department operates two of these helicopters at about 500 feet AGL for patrol at all times, day and night.)

It should also be noted that these helicopters only meet outdated Stage 2 noise requirements adopted over thirty years ago, in 1988. More stringent Stage 3 requirements were put into place in 2014. However, very few helicopters operating today are Stage 3. It will likely be decades before current fleets are replaced with newer helicopters meeting Stage 3 requirements.

Inconsistent Noise Metrics for Helicopters

Adding to the confusion is the fact that different metrics are used. HAI’s guideline is 65 dB Lmax (maximum noise), but the FAA certified noise tests use sound exposure level (SEL) for the Robinson R44, and effective perceived noise (EPN) for the AS 350. There is no common metric to allow for easy comparisons.

CONCLUSIONS

The NES clearly proves that the FAA’s standard of DNL 65 dB is not appropriate and it needs to be lowered.

The industry’s guidelines on “acceptable” helicopter noise levels (65 dB max) and recommended flight altitudes are inconsistent, confusing, changeable, and misleading. The accuracy of these guidelines is also questionable. Moreover, to our knowledge, the community was never consulted, given an opportunity to make input, or even observe in the development of these guidelines.

Voluntary measures have failed to reduce helicopter noise to an acceptable level. After decades of effort, helicopters continue to fly too low causing excessive noise in noise-sensitive areas. It is naïve to continue to expect the helicopter industry to effectively control itself using only voluntary measures.

LAAHNC Input on Neighborhood Environmental Survey

RECOMMENDATIONS

In general, the FAA needs to incorporate the findings of the NES into its decision making. The FAA should continue to use DNL to measure noise near airports, but it should revise its threshold for significance to at least DNL 55 dB or lower. The FAA should also incorporate the use of single event metrics, especially when considering noise that is sporadic throughout the day and in areas not near airports.

The FAA should take responsibility for research in collaboration with the community that would lead to independent and unbiased guidelines for helicopter noise that are truly acceptable to the public. Specifically, the FAA should develop:

1. Consistent single-event metrics to assess noise on the ground from helicopter flyovers;
2. A well justified and documented noise threshold above which helicopter noise would be considered unacceptable to the public for flyover of noise sensitive areas not near airports; and
3. Accurate altitudes helicopters would need to fly to remain below the unacceptable noise threshold.

Moreover, because voluntary guidelines are largely ignored, significant noise reduction will not be possible unless the FAA establishes mandatory regulations governing helicopter operations, including the following:

1. A minimum altitude for helicopter flyovers of noise sensitive areas (with appropriate exceptions for law enforcement and other essential flights); and
2. Require that all aircraft be equipped with ADSB-In or other collision avoidance systems to ensure against mid-air collisions and reduce the resistance of helicopter pilots to flying in the same airspace as fixed wing.

Thank you again for this opportunity to comment.

Respectfully,



Richard Root, Chair
Los Angeles Area Helicopter Noise Coalition

Attachments:

- 1) Excerpt from HAI 2005 Noise Abatement Training Program
- 2) Excerpt from Current HAI Noise Abatement Training Program
- 3) FAA Advisory Circular 91-36D

EXCERPT FROM HAI 2005 NOISE ABATEMENT TRAINING PROGRAM

Helicopter Association International

Noise Abatement

Chapter 5: The Pilot's Role in Noise Abatement

TOPIC MENU GLOSSARY HELP EXIT

Variation of Noise Levels with Flyover Height

Height in feet (AGL)

8000
4000
2000
1000
500
250

Large Helicopter Recommended Height
Medium Helicopter Recommended Height
Small Helicopter Recommended Height

Small Helicopter
Large Helicopter

Low Ambient Noise Areas
High Ambient Noise Areas

Noise Level - dB(A)

40 50 60 65 70 80

The Fly Higher chart illustrates the relationship between distance and noise.

- The "acceptable" noise level differs between low and high ambient noise environments.

Topic 5 of 6: General Operating Tips to Reduce Noise

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EXCERPT FROM CURRENT HAI NOISE ABATEMENT TRAINING PROGRAM

Notes Menu

Noise Abatement Techniques:
En-Route

During the en-route phase, two important considerations to reduce the noise footprint is selecting a suitable higher altitude and a reduced forward airspeed. This forces the sound to propagate a longer distance before it reaches the community, allowing the atmosphere to reduce the effect of the noise.

- Suggested en-route altitudes:
 - Small helicopters: 1,000 feet AGL
 - Medium helicopters: 2,000 feet AGL
 - Large helicopters: 4,000 feet AGL

This list of altitudes is consistent with FAA Guidance in Advisory Circular AC 91.36D.

Fly Neighborly

Noise Abatement Techniques: En-Route

Higher altitude and reduced airspeed

Suggested en-route altitudes:

1,000' AGL	Small helicopters
2,000' AGL	Medium helicopters
4,000' AGL	Large helicopters



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9) (Q.) (see)



U.S. Department
of Transportation

Federal Aviation
Administration

ADVISORY CIRCULAR

Subject: VISUAL FLIGHT RULES (VFR) FLIGHT NEAR NOISE-SENSITIVE AREAS **Date: September 17, 2004** **AC No: 91-36D**

Initiated by: ATO-R

- 1. PURPOSE.** This Advisory Circular (AC) encourages pilots making VFR flights near noise-sensitive areas to fly at altitudes higher than the minimum permitted by regulation and on flight paths that will reduce aircraft noise in such areas.
- 2. EFFECTIVE DATE.** This advisory circular is effective on September 17, 2004.
- 3. CANCELLATION.** Advisory Circular 91-36C, Visual Flight Rules (VFR) Flight Near Noise Sensitive Areas, dated October 19, 1984, is cancelled.
- 4. AUTHORITY.** The FAA has authority to formulate policy regarding use of the navigable airspace (Title 49 United States Code, Section 40103).
- 5. EXPLANATION OF CHANGES.** This AC has been updated to include a definition of "noise-sensitive" area and add references to Public Law 100-91; the FAA Noise Policy for Management of Airspace Over Federally Managed Lands, dated November 1996; and the National Parks Air Tour Management Act of 2000, with other minor wording changes.
- 6. BACKGROUND.**
 - a. Excessive aircraft noise can result in annoyance, inconvenience, or interference with the uses and enjoyment of property, and can adversely affect wildlife. It is particularly undesirable in areas where it interferes with normal activities associated with the area's use, including residential, educational, health, and religious structures and sites, and parks, recreational areas (including areas with wilderness characteristics), wildlife refuges, and cultural and historical sites where a quiet setting is a generally recognized feature or attribute. Moreover, the FAA recognizes that there are locations in National Parks and other federally managed areas that have unique noise-sensitive values. The Noise Policy for Management of Airspace Over Federally Managed Areas, issued November 8, 1996, states that it is the policy of the FAA in its management of the navigable airspace over these locations to exercise leadership in achieving an appropriate balance between efficiency, technological practicability, and environmental concerns, while maintaining the highest level of safety.
 - b. The Federal Aviation Administration (FAA) receives complaints concerning low flying aircraft over noise sensitive areas such as National Parks, National Wildlife Refuges, Waterfowl Production Areas and Wilderness Areas. Congress addressed aircraft flights over Grand Canyon National Park in Public Law 100-91 and commercial air tour operations over other units of the National Park System (and tribal lands within or abutting such units) in the National Parks Air Tour Management Act of 2000.
 - c. Increased emphasis on improving the quality of the environment requires a continuing effort to provide relief and protection from low flying aircraft noise.
 - d. Potential noise impacts to noise-sensitive areas from low altitude aircraft flights can also be addressed

through application of the voluntary practices set forth in this AC. Adherence to these practices is a practical indication of pilot concern for the environment, which will build support for aviation and alleviate the need for any additional statutory or regulatory actions.

7. DEFINITION. For the purposes of this AC, an area is "noise-sensitive" if noise interferes with normal activities associated with the area's use. Examples of noise-sensitive areas include residential, educational, health, and religious structures and sites, and parks, recreational areas (including areas with wilderness characteristics), wildlife refuges, and cultural and historical sites where a quiet setting is a generally recognized feature or attribute.

8. VOLUNTARY PRACTICES.

a. Avoidance of noise-sensitive areas, if practical, is preferable to overflight at relatively low altitudes.

b. Pilots operating noise producing aircraft (fixed-wing, rotary-wing and hot air balloons) over noise-sensitive areas should make every effort to fly not less than 2,000 feet above ground level (AGL), weather permitting. For the purpose of this AC, the ground level of noise-sensitive areas is defined to include the highest terrain within 2,000 feet AGL laterally of the route of flight, or the uppermost rim of a canyon or valley. The intent of the 2,000 feet AGL recommendation is to reduce potential interference with wildlife and complaints of noise disturbances caused by low flying aircraft over noise-sensitive areas.

c. Departure from or arrival to an airport, climb after take-off, and descent for landing should be made so as to avoid prolonged flight at low altitudes near noise-sensitive areas.

d. This advisory does not apply where it would conflict with Federal Aviation Regulations, air traffic control clearances or instructions, or where an altitude of less than 2,000 feet AGL is considered necessary by a pilot to operate safely.

9. COOPERATIVE ACTIONS. Aircraft operators, aviation associations, airport managers, and others are asked to assist in voluntary compliance with this AC by publicizing it and distributing information regarding known noise-sensitive areas.

Signed

Sabra W. Kaulia
Director of System Operations & Safety