Airport Noise Report

A weekly update on litigation, regulations, and technological developments

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Noise Metrics

FAA NOISE RESEARCH PLAN WILL ADDRESS METRICS' RELATION TO HEALTH, WELFARE

The Federal Aviation Administration has notified the O'Hare Noise Compatibility Commission that the agency's comprehensive noise research plan will pursue research to establish new or updated relationships between aircraft noise exposure metrics and the health and welfare impact on residents living near airports.

Recent shifts in O'Hare International Airport air traffic following the opening of a new runway last November has renewed concerns about frequency of flights and annoyance to residents, according to ONCC Chairperson and Arlington Heights Mayor Arlene J. Mulder, who initiated the noise review request by the FAA.

"The FAA is keenly aware that aircraft noise continues to affect airport communities despite large reductions in noise exposure," said Acting Assistant Administrator for Aviation Policy, Planning and Environment Nancy D. LoBue in a March 11 letter to Mulder.

"While decades of research throughout the world continue to show that community annoyance from cumulative noise energy exposure correlates well with the

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Noise Metrics

FOCUS GROUPS SAY SUPPLEMENTAL METRICS ENHANCE UNDERSTANDING OF NOISE IMPACT

A small number of focus groups participating in a British study found conventional noise metrics, such as DNL, that involve the use of contour maps, "difficult or impossible to understand" but found supplemental noise metrics very useful.

For most of those in the focus groups, the lack of relevance of conventional metrics, such as DNL, to personal experience of aircraft noise makes them meaningless, the study concluded. However, it said that "most participants agreed that a suite of metrics providing information on flight paths, number of flights at peak times, and maximum sound levels would be particularly useful."

The study, "Indices to enhance understanding & management of community responses to aircraft noise exposure," was conducted by a consortium of nine universities in the UK known as Omega, which focuses on aviation environmental research. Omega is led by Manchester Metropolitan University.

The study is available on the Omega website: http://www.omega.mmu.ac.uk. It was conducted by Paul Hooper, Janet Maughan, Ian Flindell, and Ken Hume of Manchester Metropolitan University and the University of Southampton.

"Noise disturbance is often the most significant issue raised by local communities concerned about airport expansion and also accounts for the vast majority of

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day/night average sound level (DNL), we agree that it is timely to undertake a new systematic review," LoBue said.

The FAA official said that the research consortium PARTNER has initiated research to investigate noise metrics that best correlate with human response to noise exposure. "We at FAA are presently developing the comprehensive research effort needed to definitively establish new or updated relationships between noise exposure metrics and the health and welfare impacts of noise," LoBue told the ONCC.

"At the same time," she continued, "we are pursuing plans to enable earlier maturation of new aircraft noise reduction technologies through our proposed Continuous Low Emissions, Energy, and Noise (CLEEN) initiative. As you know, being able to move forward with that initiative is dependent on appropriation of funds. We also remain actively engaged in demonstrating and implementing low noise operational procedures."

The noise metrics research LoBue referred to in her letter is part of the comprehensive noise research plan under development by the FAA Office of Environment and Energy.

The ONCC said that as a member of the PARTNER Advisory Board, it plans "to reach out to other airport communities this summer to promote further research and to ask residents for their support by contacting aviation stakeholders and government agencies to ensure aircraft noise reduction is a priority for federal funding and research," Mulder explained.

Park Ridge Mayor Howard P. Frimark, whose city is feeling the impact of O'Hare's new Runway 9L-27R, explained he is willing to work with any FAA department to bring relief to Park Ridge residents. "We have been relentless in our efforts to reduce the number of flights on the new runway, said Frimark. "We want to collect more noise data along the flight tracks to show the FAA that the standards are skewed."

ONCC also formally requested a review of nighttime flights to confirm that O'Hare's new runway usage and North Air Traffic Control Tower adhere to normal hours of operation between 6 a.m. and 10 p.m. Local FAA officials have promised that any deviation in the nighttime flight schedule will be forwarded to ONCC in a monthly report.

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complaints about airport operations. As aviation growth is forecast to outstrip the rate of technical and operational improvement, the number of people exposed to noise around UK airports could potentially increase; a trend that is unsustainable," the researchers said.

"The absence of a common language of reporting, communication and negotiation in relation to aircraft noise is a key obstacle to more effective noise management. In order to help address this deficiency and thereby facilitate better communication and dialogue with local communities on the issue of aircraft noise, this study undertook a preliminary, systematic evaluation of public understanding of conventional and supplementary noise metrics. The intention here was not to undermine the existing contour based metrics but rather to establish whether these could be enhanced if other explanatory indices are added."

The findings of past research show:

• There is no consensus as to the best means of illustrating aircraft noise exposure.

• What is measured and/or modeled is the physical phenomenon of exposure to aircraft sound; however, it is the human response to this (i.e. disturbance) that explains opposition to airport development. Thus, any attempt to improve noise management should engage with the physiological, psychological and sociological determinants of disturbance.

• Conventional metrics are primarily designed to 'capture' the aggregate level of noise exposure through single event measurements or noise contour modeling and, thereby, provide a (legally) defendable basis for planning and other strategic developmental decisions.

• Aggregating the elements of aircraft sound generation can often inhibit public scrutiny and understanding of the influence of specific elements (e.g. maximum levels, duration and frequency of events) on levels of disturbance.

• Supplementary indicators of noise exposure have made a positive contribution to consultation exercises undertaken in Australia; however, no systematic assessment of public understanding of the metrics has been attempted.

Focus Group Findings

The study said the focus groups revealed the following:

• General dissatisfaction and indeed mistrust in some cases among members of the public with the aggregated indictors such as Leq (equivalent sound level) and Lden (day-evening-night level).

• A preference for metrics that disaggregate key elements of aircraft noise; namely, time, frequency of events and individual sound levels.

• A desire for a wider range of noise exposure illustrations, especially among members of the public living close to airports.

• Universal acknowledgement that bar charts, for specific locations illustrating the numbers of events within ranges of maximum sound levels for given periods of the day, were the most informative and easiest to interpret of all the metrics viewed.

• Consensus that the flight path densities maps were the most visually attractive despite the lack of specific noise data contained therein. To combat this, a number of participants suggested that this image could be overlaid on aggregated noise footprints such as N70 (numbers of events louder than 70 dBA; used in Australia) or Leq contours.

• That the public is more interested in site specific information that is easy to interpret in relation to their own personal exposure, rather than more complex images that may provide a comprehensive overview of the whole noise environment around an airport, as conventionally used by planners and decision-makers.

Small Sample Size

The study stressed that its findings are based on a very small sample size. Four focus groups were held and included a total of 51 members of the general public in high and low noise exposure areas and six airport authority officials. However, those numbers were considered adequate for the purposes of the study and for proper focus group functioning.

"Given the small sample size and the exploratory nature of this research, care must be taken when attaching significance to these findings," the study said. Nevertheless, it added, the results point to the potential value of:

• A more substantive UK study to 'test' these preliminary findings.

• Providing appropriately differentiated information to different user groups depending on their individual requirements.

• More detailed investigation of the supplementary noise indicators such as those developed in Australia and the novel location-specific histograms evaluated in the study for the first time, in terms of their contribution to improved understanding of aircraft noise exposure and their potential to aid in establishing effective dialogue with the communities most affected by aircraft noise and most cynical about the conventional metrics.

• Contributing to the development of future noise metrics in such a way as to enhance public acceptance of future aviation development

FAA

ENPLANEMENTS ARE FORECAST TO DROP BY 7.8 PERCENT IN 2009

Due to the current worldwide economic downturn, the Federal Aviation Administration's 16-year forecast for 2009-2025 predicts domestic passenger enplanements to decrease by 7.8 percent in 2009 and then grow an average of 2.7 percent per year during the remaining 15-year forecast period.

The FAA's annual aviation forecast released March 31 predicts a return to growth for air travel in the long term, underscoring the need for vital aviation infrastructure and environmental improvements contained in the FAA's comprehensive Next Generation Air Transportation System plan, the agency said.

"A vibrant, efficient and green aviation system will play a key role in our nation's economic recovery," said U.S. Secretary of Transportation Ray LaHood. "The Obama Administration is committed to essential safety and efficiency advancements that will meet our continued air travel demands."

While last year the FAA predicted the U.S. airlines would reach a billion passengers a year by 2016, the new forecast projects U.S. airlines to reach one billion air travelers annually by 2021. The number of passengers on U.S. airlines domestically and internationally is forecast to increase from 757.4 million in 2008 to 1.1 billion in 2025.

U.S. aircraft operations are predicted to experience a 5.7 percent decrease in 2009 from 2008 levels. Beginning in 2010, the agency expects operations to grow at an average annual rate of 1.5 percent for the remainder of the forecast period.

FAA said that the Next Generation Air Transportation System (NextGen) "is a key to transformation of the ground-based air traffic control radar system of today to a satellite-based system of the future and necessary for FAA to meet the safety, efficiency and environmental needs of the future."

The agency estimates that the cost of delays currently averages approximately $9.4 billion each year. Environmentally-friendly NextGen technologies and procedures will increase capacity and safety and reduce fuel burn, carbon emissions, and noise, FAA said.

A fact sheet about NextGen can be found at: http://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=8768

FAA's forecast was unveiled at an annual forecast conference in Washington that gathers members of the aviation community to discuss how the forecast projections may affect policies and plans for aviation. Additional details on the forecast, including information on general aviation, cargo demand, landing and takeoff operations at airports and FAA facilities, can be found at the forecast website at: http://www.faa.gov/data_research/aviation/aerospace_forecasts/2009-2025/.

A fact sheet on the forecast is also available at: http://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=10457.

Boston Logan Int'l

TIME LIMIT ON LAND USE RESTRICTION RULED EXPIRED

A Massachusetts Land Court judge has ruled that a property owner was not bound by land use restrictions barring residential development on two parcels in East Boston near Boston Logan International Airport because the 30-year time limit on the use restrictions has expired.

The Massachusetts Port Authority (Massport) had imposed the use restrictions on the parcels to prevent future claims, including noise claims, from airport operations.

Massport argued that the restrictions were part of a "deed of the Commonwealth" and were imposed for conservation purposes and were therefore exempt from the 30-year time limit.

However, Judge Keith C. Long dismissed that argument, calling it interesting but not convincing.

Massport argued that it had acted as an "arm of the state" in imposing the land use restrictions. But the judge disagreed.

He granted summary judgment for the landowner in the case, *Massachusetts Port Authority v. Basile.*

In Brief…

Kansas City Part 150 Under Review

The Federal Aviation Administration announced April 1 that noise exposure maps submitted by the Kansas City Aviation Department for Kansas City International Airport meet federal requirement.

The agency also announced that it is reviewing a proposed Part 150 Airport Noise Compatibility Program for the airport and that its review will be done by Sept. 16.

The public comment period on the proposed Part 150 program ends on May 19.

For further information, contact Todd Madison in FAA's Kansas City, MO, office; tel: (816) 329-2640; e-mail: todd.madison@faa.gov.

FAA Seeks Member for Overflights Group

On March 30, the FAA issued a notice inviting interested persons to apply to fill the vacancy representing Native American tribal concerns on the National Parks overflights Advisory Group Aviation Rulemaking Committee.

The current member's three-year appointment ended on April 2.

For further information, contact Barry Brayer, who is on the Special Programs Staff in FAA's Western-Pacific Regional Headquarters office in Los Angeles; tel: (310) 725-3800; e-mail: Barry.Brayer@faa.gov.

Guidebook on Community Response

A Guidebook on Community Response to Aircraft Noise, which was developed under the Airport Cooperative Research Program (ACRP), is expected to be released in July.

The report was discussed at the recent UC Davis Symposium on Aviation Noise & Air Quality in early March (21 ANR 29).

Mike Salamone, ACRP program manager at the Transportation Research Board, said his best guess is that the report will be available online at TRB in July.

Correction

On p. 36 of the March 27 issue of ANR, it was stated that the FAA's Noise Integrated Routing System (NIRS) requires a 5 dB DNL increase in noise levels in order to find a significant increase in noise impact. That is incorrect. The 5 dB increase serves only as a trigger for the FAA to consider if additional environmental analysis is required.

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