

# Airport noise mitigation in the United States

**Kurt Edwards,**  
Représentant de la Federal Aviation Administration,  
Ambassade des États-Unis,  
2, rue Gabriel,  
75382 Paris CEDEX 08  
Tél. : 01 43 12 22 25,  
Fax : 01 43 12 25 05,  
E-mail : kurt.edwards@faa.gov

*In order to examine the airport environmental reality from the perspective of the Federal Aviation Administration (FAA), I will first offer some facts concerning the current state of the aviation industry in the United States because there is obviously a direct relationship between aviation activity and the airport environment. I next want to discuss the predominant U.S. environmental concern for airports, which is — not surprisingly — noise. I will follow that discussion by reviewing tools that we use to address airport noise. Finally, under a category that I call “The Way Forward” I will describe FAA initiatives to improve our capability to reduce aviation’s environmental footprint — again with emphasis on noise — so that we may fulfill our responsibility for environmental quality and for the future of aviation.*

*Afin d'examiner la réalité environnementale d'un aéroport du point de vue de la Federal Aviation Administration (FAA), j'établirai d'abord quelques faits concernant l'état actuel de l'industrie aéronautique aux USA parce qu'il existe manifestement une relation directe entre l'activité aéronautique et l'environnement d'un aéroport. Ensuite, je poursuivrai ma discussion en présentant les outils que nous utilisons pour aborder le bruit d'un aéroport. Enfin, sous la catégorie que j'appellerai “the way forward”, je décrirai les initiatives de la FAA pour tester notre capacité à réduire l'empreinte de l'aviation sur l'environnement (en insistant encore sur le bruit) ce que nous devons accomplir pour un environnement de qualité et pour le futur de l'aviation.*

## The State of the Aviation Industry

Data compiled for the FAA’s annual Aviation Forecast Conference in March of this year attach some statistics to what we all know has been happening to the airline industry since 2001. For large air carriers in the U.S. domestic market and the international market, passenger enplanements were down in March to about the levels experienced in 1995, and seat miles flown were down to 1997-98 levels. There are some 800 commercial aircraft parked in the desert. The FAA forecast in March was for domestic passenger enplanements to return to pre-9/11 levels in 2006, and for international passenger demand to and from the U.S. to return to pre-9/11 levels in 2005 — although the Atlantic market was expected to lag until 2006. These March statistics do not take account of further declines in air travel since then due to the war in Iraq and SARS.

To sum up the state of the aviation industry : security concerns are the dominant near-term issue ; airline passengers and operations are down significantly and still falling ; and

the industry is experiencing both financial weakness and uncertainty about its future structure. What does this mean for the environment ? It means that aviation environmental impacts have been reduced near-term. However, on a long-term basis environmental impacts are expected to grow as air traffic once again achieves a robust growth pattern, unless we take actions to reduce and mitigate environmental impacts.

## Predominate U.S. Environmental Concern for Airports : Noise

We address the full range of U.S. airport environmental impacts — including water quality and wetlands, impacts on animals and plants (particularly protected species), historic and archeological resources, parks and recreation areas, socio-economic impacts, coastal zones, farmland, and more. There are approximately 40 separate U.S. laws that protect some aspect of the environment and apply to airports. Without diminishing these other areas of environmental protection, the area of impacts that causes the most public concern



and poses the greatest constraint on airports is noise. The problems posed by aircraft emissions are of growing concern as well, but I will limit my remarks to noise matters today.

There are a little under 400,000 people in the U.S. that live in areas of significant noise exposure around airports. Aircraft noise is a heated issue at major airports — at significant levels and below — and can constrain aircraft operations and the construction of needed airport improvements. Turning to the subject of emissions, some 25 percent of U.S. commercial service airports are in areas that are in nonattainment or maintenance for national ambient air quality standards. While emissions have not yet had the far-reaching effect on aviation in the U.S. that aircraft noise has had, increasing concern about local air quality in view of the forecast growth in emissions and upcoming stricter air quality standards — as well as concerns about climate change, toxics, and health effects — may constrain future airport growth if they are left unaddressed.

In facing these issues, we do not want to paint too bleak a picture. In the U.S., we have reduced the number of people living in areas of significant noise exposure around airports from 7 million in 1975, to 2.7 million in 1990, to less than 400,000 in 2003 — even as the number of airline passengers and aircraft operations has grown. This has been accomplished primarily with conversions of the fleet to quieter aircraft over these years. The current state of the aviation industry has unintentionally reduced noise further, as the 800 or so aircraft parked in the desert are the older and noisier aircraft meeting Chapter 3 standards.

In addition to reducing noise at the aircraft source through certification standards, the FAA has programs specifically targeted towards airports. I will briefly describe the FAA's airport noise compatibility planning tools and airport emissions tools.

### Airport Noise Compatibility Planning Tools

Airport noise compatibility planning is a comprehensive, balanced approach to reduce noise and to reduce land uses around airports that are incompatible with noise levels. It's a voluntary program, with over 250 U.S. airports currently participating. It relies on airport proprietor leadership, stake holders' involvement, and FAA technical assistance, funding, and approval of completed plans. The basic premise is not that one size (i.e., a single solution) fits all airports, but that one set of tools can be used by all airports.

The set of tools includes the use of a standard noise methodology determined under law by the FAA, national compatible land use guidelines (local governments may adjust the guidelines), the preparation and issuance of current and future noise exposure maps, the development of measures to reduce noise and incompatible land uses, consultation with all stakeholders, FAA approval under statutory criteria, and funding. The types of measures that are evaluated in this process by airport proprietors for potential noise benefits include changes to airport configuration and operation, airport ground measures such as engine run-up areas and noise shielding, aircraft flight procedures, navigational aids, off-airport land use measures such as acquisition and sound insulation and zoning, airport use restrictions (voluntary or mandatory), and program support measures such as noise monitoring and noise advisory committees.

Airport proprietors have the flexibility to select the best combination of measures to address their individual airport situations. Completed plans (also called "programs") are submitted to FAA for approval. The FAA reviews each proposed measure against statutory criteria. Measures must contribute to reducing noise and incompatible land uses, must not adversely affect aviation safety or efficiency, must not impose an undue burden on interstate or foreign commerce,

must not unjustly discriminate among airport users, must meet both local needs and needs of the national air transportation system, and must be consistent with all duties of the FAA Administrator. If the FAA fails to approve or disapprove measures within 180 days after they are submitted, the measures are automatically approved by law — except for aircraft flight procedures. We have not surpassed the 180-day deadline on any of the 250 or more airport approvals.

The provision of funding is a vital incentive for airport noise compatibility planning and a necessary component for implementing approved measures that require capital, such as airfield configuration changes, noise shielding, land acquisition, and sound insulation. The FAA has been

authorized to provide grants for airport noise compatibility planning, under a noise set-aside, since 1980. Under a 1990 law authorizing passenger facility charges (PFC), the FAA may also authorize the use of PFCs for airport noise compatibility planning. Cumulatively, FAA has approved \$5.6 billion for airport noise compatibility planning. This is in addition to local money spent by airports.

## The Way Forward

Americans want safe, convenient, and inexpensive air travel. Americans also want the environment to be protected. The FAA sees “the way forward” as needing to accommodate both future visions — not one at the expense of the other. We also believe that environmental issues, particularly noise and emissions, will be a long-term constraint on aviation unless they are successfully addressed. Research is a vital component for future environmental gains, but is not the only tool we plan to use and strengthen. Success requires multi-faceted, flexible approaches with a shared commitment by the public and private sectors of aviation.

On the subject of research, tremendous progress has been made over the last several decades to reduce aircraft source noise. The FAA and U.S. aviation industry rely on the National Aeronautics and Space Administration (NASA) for research for long-term noise solutions. NASA's research goal is not just to continue the past historical trend of noise reduction, but to improve upon it. NASA's technology goal is to contain objectionable aircraft noise within the airport boundary, with a 10-year goal to contain DNL 65 dB noise levels within the airport boundary and a 25-year goal to contain DNL 55 dB noise levels.

The major legislation governing FAA programs is currently before the U.S. Congress for reauthorization. Our legislative proposals include additional noise provisions, a more robust research effort, and environmental streamlining. For airport noise, we propose to increase the noise set-aside funding and to increase the ways in which funding may be used to reduce noise and incompatible land uses, as well as to create for the first time a national noise disclosure program. We want to increase funding for research to accelerate advances in aircraft source noise. We need more funding to drive the technological break-throughs to reduce aircraft noise by substantial amounts, rather than marginally. Finally, we propose measures to reduce environmental review times for aviation safety and congestion projects while maintaining the integrity of environmental protection.

## Conclusion

Our national and international future is linked with air transportation. The continuing ability of the national airports system to grow to meet the future demand for air transportation is directly related to our success in reducing and mitigating the environmental effects of that growth. This is particularly true for noise. The FAA will continue to enhance efforts to foster and support improvements in aviation's environmental footprint for the public benefit and to ease the environmental constraints on the aviation system that we will need for the future. ■

