

AIRCRAFT NOISE AND COMMUNITY RELATIONS

www.aci.aero

Aircraft noise technology has improved dramatically in the past 40 years, however noise remains the most important local environment issue for most airports. Aircraft noise management includes using the best technology and flight procedures to reduce noise impact. Land use planning requires the cooperation of a territorial authority with foresight. Airports need to proactively foster community relations based on open and clear communications and social programme initiatives

Aircraft noise can be very disruptive to the lives of those who live close to airports. The effects are not uniform around the world and can be influenced by the type of aircraft that operate at an airport, the location and type of housing under a flight path, the hours that an airport operates and the number of flights.

A Balanced Approach to Aircraft Noise Management

The International Civil Aviation Organization's (ICAO) provides guidance on airport noise management, known as the 'Balanced Approach'. ACI supports this integrated approach for addressing aircraft noise at airports, including the reduction of noise at source, land use planning, noise abatement procedures and operating restrictions at airports.

Reduction of noise at source

The reduction of noise at source refers to ICAO's noise certification standards for new aircraft types. ACI supports the development of a new noise stringency at the next Committee on Aviation and Environmental Protection (CAEP) meeting in 2013 to ensure that future aircraft perform as well as the current state-of-the-art aircraft. The newest aircraft including the Airbus A380, the forthcoming Boeing 787 and Bombardier C-Series are all about 15 decibels (cumulative) better than ICAO most stringent noise standard – Chapter 4. Furthermore, to truly address the needs

of airports, any stringency increase should require minimum reductions at all three of the assessment points (take-off and landing centreline, and take-off sideline), rather than the current compromise of reductions of the sum of two and three points.

Land use planning

Land use planning is usually the responsibility of local government authorities and airports work with them to get in place zoning and land use rules that prevent or minimize noise-sensitive activities in the areas of high aircraft noise. In many cases, existing land use conflicts are being addressed by noise management and mitigation schemes including sound insulation and ventilation of noise sensitive buildings such as houses, schools and hospitals, and in extreme cases, by land acquisition.

ACI strongly urges all its members to work with their local communities and territorial authorities to ensure that land in noise affected areas is not used for residential activities. There many industrial and commercial activities better suited to such land. The encroachment of new residents in high aircraft noise areas is a major threat to the sustainability of airport services.

Noise abatement operational procedures

Operational measures such as limitations of power and flap management, preferential



ACI has adopted the following key environmental policies on behalf of the world's airports.

- *Minimize or mitigate the adverse effects of aircraft noise on people.*
- *Minimize or mitigate the adverse effects of aviation related air pollution.*
- *Minimize or mitigate the impact of aviation on climate change.*
- *Promote sustainability by improving the environmental performance during airport development and operation.*
- *Improve environmental awareness, training and sharing of information among world airports.*
- *Promote understanding, cooperation and collaboration with stakeholders.*

flight track or runway use, flight scheduling, restrictions on engine run-ups, rotational runway use, noise sharing or noise spreading and continuous descent operations can be used for noise abatement. ACI recommends that such measures should be backed up by monitoring and enforcement procedures, and sanctions should be considered for repeat violations.

Operational restrictions

The introduction of a total curfew at airports is not advocated by ACI. Curfews lead to under-utilization of infrastructure, as airports are congested during the day and not used properly at night and may have financial and social effects beyond national borders. Night time operational restrictions including curfew can have flow-on effects on airports in other countries.

Further ACI Positions

Noise-Based Landing Fees

A landing fee with a noise-related component can reward aircraft operators who use quieter aircraft and provide an incentive not to operate noisier models. Such a fee can be “revenue neutral” generating no net income for the airport. This can be achieved by balancing the total fee reduction for low-noise aircraft with the total fee increase for noisier aircraft. Excess funds should be used for noise mitigation projects such as sound insulation.

ACI’s Noise Rating Index

ACI has developed an aircraft noise rating index (NRI) to provide a finer system for categorizing aircraft noise performance consistent with ICAO certification. In line with ACI policy, the NRI is designed to recognize aircraft with noise reductions at all three ICAO certification locations as well as the cumulative total.

Airports can use the NRI as a basis for introducing charges to encourage the operation of less noisy aircraft. It is also useful for benchmarking the noise performance of the aircraft fleet using an airport. Narita International Airport was the first to use the ACI NRI as the basis for its landing fees.

Other noise sources and their mitigation

Major ground-based noise sources include aircraft engine run up and in-situ engine testing. Mitigation procedures range from the construction of screens and bunds, and the scheduling of activities to less noise-sensitive periods, to the construction of sound insulated and ventilated hangars for indoor run ups.

Community Relations

The perception of environmental impact by neighbouring residents can be as important as the physical noise levels. Fostering community relations can make a vital contribution to the mitigation of adverse environmental pressure due to aircraft noise.

Noise Complaints

Receiving and responding to complaints are often an airport operator’s primary interaction with noise affected community members and increasing complaints could indicate a developing problem. A response to a noise complaint needs to assure the person that the complaint has been heeded and a satisfactory explanation provided. Environment pressure could derail a planning consent process for new airport infrastructure or capacity.

Environmental Reporting

Reporting is a proactive means of addressing community concerns. Results from noise monitoring, traffic statistics and other noise and environmental developments can be included in printed annual reports or airport websites or other media. Invariably a properly informed and educated community will respond to issues in a more reasonable and measured manner. Information must be presented in a clear and transparent manner generally in both technical and layman’s forms.

Noise Metrics

Noise data for land use planning are usually presented as noise contour maps based on time- averaged logarithmic noise metrics such as the day-night noise level, Ldn. These metrics are usually very confusing for the general public who often become dubious that the information is transparent. There are many alternative metrics that are based on the numbers of aircraft events and better communicate the impact on residents. These include Lmax, N70 and respite charts. Sydney Airport and its Transparent Noise Information Package (TNIP) provides one of the best examples of keeping its neighbours informed on its noise sharing programme.

Community Liaison Initiatives

Community liaison groups provide a regular forum for airport interaction with residents and ensuring that environmental performance is reviewed and that information is properly disseminated. Airports can instigate initiatives providing a social contribution to its local communities. At Auckland, the airport supports student literacy and funds teacher microphone and loud-speaker systems for classrooms.

