

Noise

Noise has historically been the main environmental issue for people living close to airports. It remains high on the agenda of public concern, with the focus mainly on aircraft operations, though there is also potential for noise disturbance from ground operations and maintenance.

A Balanced Approach to noise management

Both the EU and the UK have adopted the International Civil Aviation Organisation's (ICAO) recommended "Balanced Approach to Airport Noise Management".

Where a noise problem has been identified at an airport, the Balanced Approach process requires the agreement of a noise objective. Following this, all potential measures to manage noise at the airport must be identified, and a cost benefit analysis to determine the most cost-effective package of measures, carried out.

The Balanced Approach consists of four main elements:

- Noise at source
- Operating procedures
- Land use planning
- Operational restrictions

Noise at source

Aircraft noise is generated by a number of different 'sources', though the dominant one is still the main engines, on approach airframe noise is now becoming important.



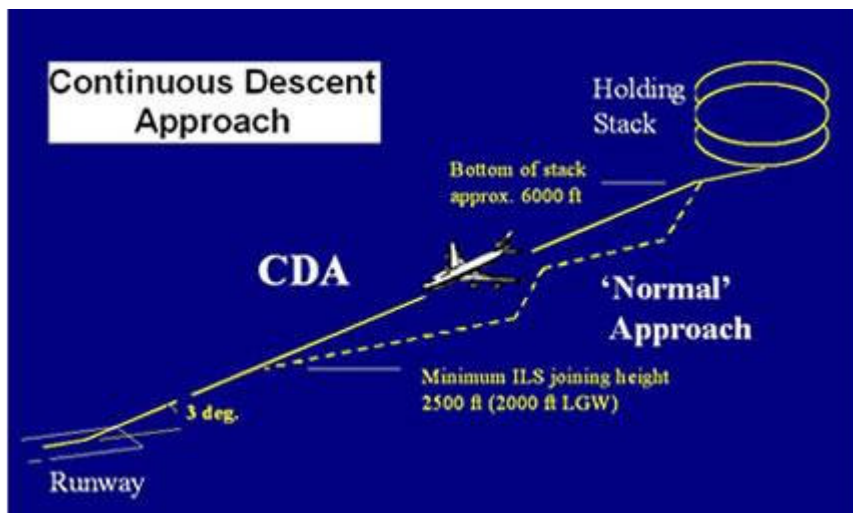
Noise standards for new aircraft types, are established by ICAO, and published in Annex 16 volume 1, one of the technical annexes to the Convention on International Civil Aviation (Chicago, 1944). Noise limits are set at three points; two for take-off (one underneath the flight-path, and one to the side,) and one for approach (underneath), and new aircraft types have to demonstrate that they meet these limits to be allowed to operate. The Annex is split into a number of "Chapters", which contain appropriate standards for different aircraft types, Chapter 4, is the latest standard for subsonic jets, and came into force for newly certificated types at the beginning of 2006.

Since 1978, total noise from the British Airways fleet has decreased by over 80% despite the significant increase in passengers carried, however, despite enormous investment in reducing the impact of noise, the issue remains active.

Operating procedures

Using defined, or 'noise preferential' routes (NPR's) are one way of minimising exposure to noise for people living near airports. Such routes are chosen because they direct aircraft, where possible, over less densely populated areas, such as heath and farmland.

Although originally developed as a procedure for reducing fuel use, Continuous Descent Approach (CDA) is another important tool for reducing the noise of approaching aircraft close to airports. It involves starting a continuous steady descent from 6,000ft, or higher, rather than following a number of short descents to set 'cleared' altitudes and joining the 3° approach glide-slope from below, as is normally required by Air Traffic Control.



The CDA technique results in lower noise levels on the ground through two effects:

1. the CDA flight-path is always higher - being further from the ground also results in lower noise levels;
2. by keeping the aircraft on a continuous descent, the overall engine power levels are kept lower, generating less noise than if the aircraft were required to fly level.

Additional noise reductions may be achieved by using a Low Power/Low Drag (LPLD) procedure. In this, the aircraft is flown in a 'clean' condition (i.e. with no flap or wheels deployed) as long as possible, consistent with safety. For some aircraft (Boeing 737's and 747's for example), using less than full flap for landing is also sometimes an option, and this can result in lower noise levels when the aircraft are close to the ground.

Most of the historical work on CDA has been carried out in the UK, and British Airways have taken an active part in the process, working with the Department for Transport (DfT), the Civil Aviation Authority (CAA), the Heathrow Airport Consultative Committee (HACC) and airports to promote its use. We have also been encouraging its use both at other airports in the UK, and internationally through ICAO and the International Air Transport Association (IATA).

Land use planning

Land use planning covers a wide range of measures aimed at improving the noise climate around airports. The most effective long-term options include the definition of noise zones in which there are restrictions on residential property development, and these are used widely in Europe. In the UK, "Planning and Policy Guidance Note 24" (PPG 24 - being revised as PPS 24) gives planning guidance where there is likely to be a noise issue, but the Office of the Deputy Prime Minister have noted that there is a balance to be made between noise and the pressure for housing development, which severely compromises the effectiveness of this document.

Operating restrictions

Operating restrictions may be necessary for some airports where noise mitigation is required, and other methods prove to be ineffective. In this respect, as part of the "Balanced Approach", operating restrictions may be applied to aircraft which have a cumulative noise certification level with less than a cumulative 5 EPNdB margin to the Chapter 3 limits.

At a number of airports, there are restrictions over and above the noise certification standard, the most common of which are applied at night. One example of this is the Night Restrictions Scheme used at the "designated" London airports.