



## Art exhibition drives debate

An exhibition combining acoustic science and landscape art highlights the negative health impacts of continuous aircraft noise



### The challenge

Previous debates about the impact of aircraft noise on human health were informed by models that failed to account for the social and cultural effects of the noise. Our research in Japan has incorporated these factors into improved models, which now include the background sounds against which aircraft noise is perceived as noise. To underscore these findings an experimental film and auditory composition was devised, recreating an entire sound environment within an art gallery installation.

### The impact

Our exhibition, based on acoustic science, brings an anthropological perspective to bear on the lived experience of locals living near – and even within – two Japanese airports. In combining anthropological research with art practice, the exhibition has supported progress in noise negotiations and improved understanding about the negative health impacts caused by constant exposure to unwanted sound.

The researchers presented their work to 40,000 visitors through an exhibition at the Whitworth Art Gallery in Manchester, and at galleries in the USA, Spain, Colombia, Switzerland and Japan. Aircraft noise recordings were distributed on an audio CD to 30,000 readers of The Wire magazine and online through the Sensory Studies website.

Public officials and civil groups paid to install the art exhibition in the Japanese cities of Okinawa and Narita, in order to stimulate public discussion about the scientific evidence used in debates on aircraft noise. In tandem, the finding that people living and working close to airports are subject to higher levels of anxiety was covered in both the UK and Japanese media. Measurable benefits include:

- A raised awareness among key stakeholders including an airport mayor, anti-airport protestors and local farmers.
- An enhanced public appreciation of the effects of aircraft noise. This was assisted by positive coverage in several newspapers, including the Mainichi Shimbun (3.45 million daily readers).
- The exhibition serving as a mechanism for addressing, and ultimately breaching, a long-standing impasse in noise negotiations.

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## Our research

The study brought together a University of Manchester anthropologist, an artist and an acoustic scientist, in order to both develop improved methods to describe day-to-day noise levels, and to assess from a social perspective the psychological effects of noise on health and wellbeing.

Traditional methods of monitoring aircraft noise are based on reading sound level data and producing abstract numerical calculations. However, quantitative formulas do not account for cultural factors which influence the meaning of noise, nor the daily anxiety experienced by people living and working near airports who are constantly stressed by the expectation of noise disruption.

The research involved:

- Playing back recorded interviews to establish links between aircraft noise and psycho-somatic conditions.
- Defining new model paradigms and measuring mechanisms to categorise noise in terms of daily 'lived experience' instead of yearly average.
- Mapping acoustic data on to film and sound recordings.

Feedback from visitors and volunteers to the installation in Japan revealed that:

- There are important differences between the sound monitoring devices used by the Japanese government, and those used by citizen groups seeking compensation.
- Airport authorities' measuring devices did not monitor the noise of aircraft on runways.
- Noise should be categorised differently for locals living outside the airport, compared to workers inside.
- Aircraft noise from US military jets on the island of Okinawa triggers traumatic wartime memories for many locals, yet triumphant associations for US service personnel.

## Future directions

The research is currently being developed for future impact through the support of awards from the Toyota Foundation, Japan Society for the Promotion of Science and the University of Manchester in a project titled: 'Listening as a civil value in Okinawa'.

This ongoing work expands upon the prior focus on human habitats affected by noise, to look at natural habitats. It addresses

the relationship of environment, sound, health and social life in Okinawa in a new way, drawing attention to the importance of listening as a way of making relationships between persons and place, and across generations.

Details of this project and its development can be found at: [airpressureblog.com](http://airpressureblog.com)

## Key people

- Dr Rupert Cox (The University of Manchester)
- Professor Kozo Hiramatsu (Professor Emeritus, Kyoto University)
- Professor Angus Carlyle (University of the Arts, London)



*We helped to breach a long-standing impasse in noise negotiations in Japan.*

