



## Developing trust between the local community and airports

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### ABSTRACT

While significant reductions in noise levels have been achieved around many airports, adverse community reaction towards airport operations has increased over time. Our previous work has suggested that non-acoustic factors are significant in determining the level of annoyance to aircraft noise events and must now be given a raised priority in the design of noise management strategies. The ultimate goal of managing the non-acoustic factors is to improve relationship with community.

One key non-acoustic factor is trust. This paper looks at the need to develop trust between the local community and airport (and aviation industry). This includes trust in the data, perceived honesty, procedural fairness, open transparency and delivering promises. It looks at case examples of the methods adopted to develop this trust and how well this has worked to date.

Keywords: airports, noise management, non-acoustic factors, trust.

### 1. INTRODUCTION

Our society is becoming more demanding of efforts to minimise environmental impacts but also of improving prosperity and connectivity. Airports are a powerful contributor to economic prosperity and improving connectivity and therefore play a significant role in improving quality of life and wellbeing for our society as a whole. However, whilst the benefits to both local and national economics, prosperity and therefore quality of life and wellbeing are clear, there are environmental impacts. Whilst some have global effects, impacts are mostly immediately experienced in the local community. This is particularly the case with noise, where it is only the local community that experience the negative effects.

Over the last few decades the aviation industry has moved from a position of ignoring the noise issue (“what noise?”) to defending and contesting the issue (“it’s an airport, what do you expect”) through to a period where there is genuine effort to reduce noise levels from aircraft (“how can we reduce noise within the safe operation of the airport”). Over this period noise levels from aircraft have reduced, industry stakeholders have worked together to reduce noise through operational measures and procedures, and noise insulation schemes. Vast sums of money have been spent and, overall, the noise impacts of the aviation industry are reducing whilst the industry grows.

However, the communities who experience the noise, have to a some extent been left out, their concerns not listened to or understood or have been insufficiently considered. At the same time they hear from the industry and regulators that noise is better than it was and that they are committed to making things better. The perception for the community is that things have got worse. We have become more aware as a society – we understand the issues more. Add to that growth, expansion, airspace modernisation, the concept of PBN often talked about in terms of improving efficiency. So, it should be a surprise that despite the significant industry-wide expenditure on noise reduction and mitigation, annoyance has got worse - opposition and negative feelings have increased and trust has been eroded.

Airport noise has become a social and political risk for constraining growth, requiring a renewed focus towards a ‘social licence to grow’. The social license relates to the activities of any organization and might be defined in relation to an organization’s legitimacy in the eyes of society and the trust stakeholders have in it<sup>23</sup>. It is key to highlight that this concept implies joint responsibility in the achievement of shared benefits. It is time for airports and communities to collaborate, understand each others priorities and enable management of noise to help share the benefits and a better approach in the future.

## 2. NON-ACOUSTIC FACTORS<sup>1</sup>

Research over the last decade or so is indicating that noise level (and factors that affect it) is not the only determinant of annoyance. Noise is said to account for, at best, 30% of the response, non-acoustics factors (NaF) can in fact be more important accounting for around 30-40% of the annoyance response.

Non acoustic factors include: personal characteristics such as individual sensitivity to noise; social factors such as trust and perceived fairness; and situational factors such as time of day, location and activity.

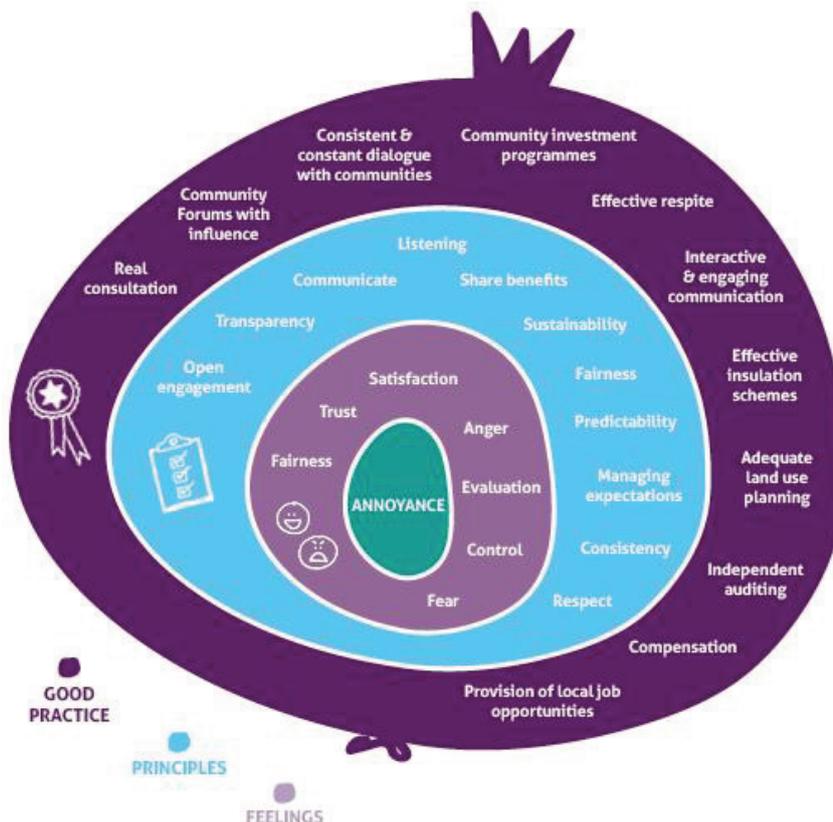
So for any noise management strategy, it is clear that not only is noise reduction needed but so is the need to address the key non-acoustic factors such as trust. However, where noise level reduction shows tangible results, attention to NaF does not show in any difference in number of people affected. It reveals in a long-term understanding of the role of airport and the balance in a sustainability context. This is non-tangible and may be a struggle to evaluate “return on investment” in standard financial models.

### 2.1 Incorporating non-acoustic factors into airport noise management strategy.

Individual sensitivity to noise is important in explaining annoyance however this is an inherent personal characteristic - airports have no influence over it. The situational factors are important but again they are difficult for an airport to influence. So, in terms of the addressing annoyance, airports need to work with social factors such as perceived fairness, trust and satisfaction.

We have developed a framework of core principles that can be applied to specific actions which is presented in Figure 1 below.

Figure 1 – A Framework for Non-Acoustic Factors



<sup>1</sup> Non-acoustic factors have been identified throughout the references but most specifically in 11, 14, 15, 20, 22, 23, 24, 25, 27, 28, 29, 30 and more recently in the reports of the NORAH study. Rather than use these references throughout we make this general reference to these specific papers.

## 2.2 Trust underpins everything.

Noise management needs to be considered holistically in the context of airport management. Job creation and local economic benefits are as key to building trust as any part of the non-acoustic framework. Trust is not something that develops overnight, and in some cases may never be present. It takes time, there is no silver bullet. As with anything it's about starting somewhere and moving forward.

The local community is part of the team. Developing trust underpins the entire framework. Therefore as with any team principles of respect, empathy, transparency, open-honest conversation, fairness, accountability and follow-through are required from all parties.

There are many ways in which these principles can be addressed. Figure 1 presents a number of options considered to be best practice. Below we consider some examples implemented at a busy airport and the progress that has been made from what some would consider to be a fairly low level of trust that was made worse by recent airspace change trials.

## 3. Building trust

There are a number of actions that together help to build trust. These are considered below.

### 3.1 Effective communication.

Within our framework we propose a number of elements related to delivering effective communication. These include: Consultation, Community Forums, consistent dialogue, being interactive and engaging. We believe that communication forums that have real influence, that consult and are engaging, are essential. These must be regular and must address difficult topics to find common ground. They require strong leadership from both the local community and the airport. Whilst difficult, these forums must demonstrate *respect* for each others views, *empathy* for each others position and *awareness* of the consequences of our actions. Above all they must be open and honest – bad news treated the same as good news and those involved must be able to hold safe conflict and be held to account.

At our study airport there are two distinct and connected forums. One of these is a broad stakeholder forum that discusses strategic and wider issues of noise and approach to reduction – it includes airlines, navigation service providers, regulator and the airport as well as membership representing the local community. The other is a very community focused forum that comprises local opposition groups and some industry stakeholders – it focuses more on particular geographic issues. Sub-groups are created to address specific topics and the outcome of these presented back to the main community forum. This community forum has been running for around a year and is going through a normal cycle for this type of group where there are still trust issues between the community groups and the airport. However, slowly but surely as the views become more understood, as the knowledge of the members of the group starts to equalize and as the priorities are being addressed the forum gets better as trust builds.

Effective communication requires a *common understood language*. The plethora of metrics available for describing noise exposure is confusing and complex and has helped to create some of the problems that exist as the local community thinks that outcomes are being hidden. The case study airport has trialed many metrics and options for communicating through the recent reporting of airspace trials and through the community forums. It is clear that more work is needed but there are some metrics that are better than others in terms of reflecting the community experience and for generating common understanding of those experiences. These are helping to enhance communication.

The case study airport has also used auralisation techniques to help the local community hear what various interventions actually sound like. This has also been very successful.

### 3.2 Management control and reduction of noise levels.

Noise management must consider noise reduction at its core. However, every airport is different and what works for some will not be relevant elsewhere. The priorities for local communities will be different. A strategy for noise level reduction will need to be present that demonstrates to the local community that the airport is doing “what it can” to reduce noise levels from its operation. These strategies must not simply aim to be compliant with policy and legislation, but demonstrate benefit.

At the case study airport not only is there a Noise Action Plan as required by the Environmental Noise Directive but there is also a clearly defined strategy and blueprint for further noise reduction to address community priorities.

### 3.3 Effective and generous noise insulation schemes.

This also leads into the requirements for effective and generous noise insulation and compensations schemes that reduce noise levels inside the home. At the case study airport, a noise insulation scheme has been implemented that includes an in-person assessment of the property requirements, a range of solution options and multiple suppliers. This has been warmly received.

### 3.4 Effective noise complaint management.

There must be effective and transparent noise complaints management. It should be possible to identify the key priorities for the local community from complaints data (in the same way that passenger complaints can help identify common issues to be addressed) and therefore enable them to be used to help drive the development of noise management strategy – in that way making a complaint becomes a valuable exercise.

At the case study airport, day-to-day noise complaints have been moved to an outside agency with clear accountability for quality and performance to the airport. This enables the community to challenge, for the airport to hold to account and overall for the service to managed much more effectively and have much greater value.

### 3.5 Independent audit and verification - transparency.

Underpinning any work must be trust in the data presented. Independently verifying the sources of data, the assumptions and the approach enables the conversation to move forward from questioning whether an assessment was done correctly to being about what the results mean, what was learnt and listening to concerns. Assessment generally needs to consider measured and modelled data, but the data and the modelling need to be believed.

At the cases study airport, INM was used as the engine for modelling, but the standard city-pair approach to assigning procedures and profiles was not – a best profile fit approach based on radar sourced flight track profiles from the airports noise and track monitoring system. This resulted in a significant improvement in the reliability and accuracy of the noise modelling.

This model was independently verified with measured aircraft noise level data obtained during the same period by an independent organisation selected by the community forum. The independent verification concluded that the model was generating noise levels consistent with average measured values and therefore the conversation was able to move on. In addition the study used a suite of metrics to compare exposures which were compared with complaint data over the same period. Noise event based metrics showed a consistently close match with the community experience, where average noise level metrics were considered less consistently useful.

Progress against Noise Action Plan is reported to the local communities. At the case study airport the statements of progress are also independently audited on an annual basis. This is considered key.

In the UK there is discussion about an Independent Aviation Noise Authority to help build trust. Whilst we think there is some value in this in terms of consistent application and development of policy and to hold the airports to account, we caution against this being a universal solution to trust. Further, we consider that too much transfer of responsibility could result in reduced airport accountability.

### 3.6 Consultation.

Airspace change presents a real opportunity to rebuild trust, work with the community to understand and address their priorities. Airspace change presents opportunities to improve noise exposure patterns. But there are choices that all fit with the UK Aviation Policy Framework.

Recent consultation at the case study airport indicated respite and fairness as two key principles. However, there are compromises with the number of people that may be exposed to aircraft noise and issues of concentration that need to be discussed. Community forums can be used to start the discussions around the choices available, prior to consultation. Further, at this airport a consultation was undertaken to understand the priorities for noise insulation schemes. This fundamentally changed the approach of the airport and the offer available – demonstrating real consultation. The outcome being a “game changing” noise insulation and compensation scheme offer.

## 4. CONCLUSIONS

This paper has considered the importance of non-acoustic factors in explaining annoyance and has presented a framework for how trust between local communities and airports trust might be developed.

Effective noise management requires evaluation of complex, incomplete and, often, conflicting information. Airport noise management must evolve from consideration purely of an exercise in noise reduction and mitigation to being a true collaboration with local communities to address issues of trust with dealing with their priorities. Trust takes time and is an intangible, but building it is worth it.

Noise management must be considered in the context of sustainability. Airports bring significant benefits to our society and impacts need to be considered alongside economic, social and other environmental considerations. Integrating noise management as a core skill in the context of managing airports is becoming a fundamental need.

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