NORAH
Lärmwirkungsstudie

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NORAH Child Study concluded with clear results but raises new questions

Frankfurt, 4 November 2014. Children living in areas exposed to high levels of aviation noise learn to read more slowly than children living in quiet locations. This is the conclusion reached by the NORAH Child Study, whose results were presented today at a press conference at Frankfurt's Literaturhaus. The child study is the first part of the NORAH Study, which is examining the effects on health of aviation noise in the Rhine-Main Region by commission of the Ge-meinnützige Umwelthaus GmbH.
The study was reviewed by an advisory board of international scientific experts who certified its high scientific quality. 1,243 second-grade children at 29 schools in the Rhine-Main Region took part in the surveys and tests. In addition to this, 85 teachers and 1,185 parents answered the questions of the scientists from the Technical University of Kaiserslautern under the direction of Prof. Dr. Maria Klatte.
On the basis of the assessment of the Scientific Advisory Board (WBQ) the main results can be summarized as follows:

1. **With strict controls against other influencing factors not related to aviation noise, it can be established that there is a connection between aviation noise exposure and a reduced ability to read in children exposed when they are still in the reading skills acquisition phase. The study also shows that it is necessary to look at other influencing factors in order to understand the scale of the negative effect.**
2. **The research hypothesis that aviation noise has direct effects on the examined precursor skills for reading (for example on phonological awareness or listening comprehension) was not confirmed. The results of the study on the re-ported quality of life and on the disruption of classes by aviation show a connec-tion between increasing exposure and a negative influence on these items. The effects on the quality of life, however, are quite low in general; quality of life was evaluated as high at all locations.**

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The teachers unanimously described the dis-ruption of classes in the high sound level ranges as considerable.

3. **A higher number of medically diagnosed speech and linguistic disorders as well as a higher intake of prescribed medication at higher continuous sound levels were established; it was not possible, however to verify a difference in the ability to learn how to read compared with the non-exposed children.**
4. **Longer-term effects – in any direction – were not registered by the study. It is therefore not possible to make statements in one or the other direction. The percentage of children who, according to information provided by the school, go on to secondary school is just as high in the primary schools with high aviation noise exposure as in the less exposed schools.**
5. **In the opinion of the scientists, the study highlights the need for further research; the overall complexity of the issues involved makes it clear that there is no place for simplified, generalized and populist interpretations.**

Statement of the Airport and Region Forum on the NORAH Child Study

The Airport and Region Forum agrees with the assessment of the WBQ and adds:
"At the end of 2010, the contract for the noise impact study NORAH was granted to a consortium made up of 10 established research institutions. The aim was to examine at the highest scientific level the impacts of traffic noise and, in particu-lar, aviation noise on human health, wellbeing and intellectual development of primary school children. In order to achieve this objective, an independent, ex-ternal and international scientific quality assurance board was installed to ensure continuous critical assessment of the research work and review the results at the end.
For us and the committees of the AFR, management board and steering board, it was important to withdraw from the proceedings once the work began and to leave the field to the scientists. The partial result now published, the Child Study, shows that the scientists were able to achieve results in this highly emotional area which in our opinion will stand up to the most rigorous standards. We therefore regard these results as an excellent basis for further work on the part of the AFR but also of politics and administration."

The NORAH Study

The noise impact study NORAH (Noise-Related Annoyance, Cognition, and Health) is one of the most extensive studies internationally on the effects of avia-tion, rail and road traffic noise on the health and quality of life of the popula-tion. Nine research and development institutions from the fields of

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medicine, psychology, social science, acoustics and physics have joined to form the NORAH research consortium. The investigations are carried out mainly in the Rhine-Main Region, but also in the regions around the airports Berlin-Brandenburg, Cologne-Bonn and Stuttgart.
The client for the NORAH Study is the Umwelt- und Nachbarschaftshaus GmbH in Kelsterbach, a subsidiary company of the Land of Hessen. Alongside the Land of Hessen, the communities, Fraport, aviation companies and the UNH are in-volved in the financing.
If you would like to know more about the NORAH Child Study, visit the website www.laermstudie.de, call us or order by e-mail one or more of the following brochures as a PDF:

- NORAH Knowledge 1: Child Study – task and method
- NORAH Knowledge 2: Sound and noise – the basic principles of acoustics
- NORAH Knowledge 3: NORAH noise impact study – an overview
- NORAH Knowledge 4: Child Study – results

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