

ACOUSTICS2008/3559
Effect of recording/playback technique and experimental method
on assessments of noise

Emine Çelik-Christensen^a, Kerstin Persson Waye^b and Henrik Møller^c

^aAalborg University / Rockwool International A/S, Rockwool International, Building Knowledge Center,
Hovedgaden 584, Entrance C, 2640 Hedehusene, Denmark

^bDept. of Environ. Medicine, The Sahlgrenska Acad. of Gothenburg Univ., Box 414, 405 30 Gothenburg,
Sweden

^cAcoustics, Aalborg University, Fredrik Bajers Vej 7 B5, 9220 Aalborg Ø, Denmark

The study investigated possible effects of recording/playback technique and experimental method on assessments of annoyance, loudness and unpleasantness. A possible effect of exposure duration was also studied. Sounds were recorded with two different techniques: monophonic and binaural (dummy-head technique). In addition, they were reproduced with three different techniques: monophonic recordings presented through a loudspeaker system, binaural recordings presented through closed (circum-aural) and completely open (free-of-the-ear headphones). The study adopted three psychometric methods for collecting responses from test-subjects. Fifty-four subjects participated, and three types of sounds were used: everyday restaurant sound, road traffic sound and ventilation sound dominated by low frequencies. Each sound was played back at three different levels. The results show that there is no significant main effect of recording and playback technique for any of the three perceptual attributes; however, significant interactions between techniques and sounds were found. Since the effect of recording and playback technique differs depending on sound, this finding is of importance for future design of experiments and interpretation of results. The results also show that long-term annoyance and unpleasantness are poorly predicted by short-duration methods.