ACOUSTICS2008/1397 Impulsive occupational exposure for workers in drop-forge foundries

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Occupational noise exposure limits for impulsive sounds in the United States are established by the Occupational Safety and Health Administration and recommended by the National Institute for Occupational Safety and Health to permit no impulsive exposure in excess of 140 dB peak SPL. Peak pressure levels in excess of this limit can be found in industrial sectors such as construction, law enforcement and manufacturing. Taylor et al. [J. Acoust. Soc. Am 76:807-819, 1984] reported equivalent A-weighted levels, L_{Aeq} , of 108 dB for forge operators sampled in seven drop-forge foundries in the United Kingdom. In a recent study of noise exposure at two drop-forge manufacturing plants in the U.S., peak impulse levels were measured in a range of 117 to 154 dB peak SPL and 8-hour equivalent A-weighted levels, L_{Aeq8} , for forge operators between 95 and 116 dB and for press operators between 95 and 105 dB. Kurtosis, A, B C and D-durations were assessed for the impulsive and continuous noise samples. This paper will present the results of measurement and analysis of noise exposures typical for a drop-forge facility.