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### Comparison of impulse noise damage risk criteria using the Albuquerque blast overpressure walkup study data

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The 1968 CHABA recommendations to limit impulsive noise exposure to levels below 140 dB SPL form the basis of current United States occupational and military standards. The U.S. military standard, MIL-STD-1474D, estimates the number of allowable shots to which a person may be exposed using peak level, B-duration, for varying levels of hearing protection usage. The European Union upper limit peak exposure action level is 137 dB C-weighted for the unprotected ear and 140 dB C-weighted for the protected ear. The U.S. Army blast overpressure studies in the early 1990's investigated the effects on the hearing of soldier subjects of simulated weapon blasts with varied levels and A-durations. The hearing thresholds of the subjects were tested before and after exposure to blasts. Exposures ranged from 6 shots to 100 shots per day and levels from 173 to 195 dB peak SPL. As judged by information criteria (AIC, BIC), the  $L_{Aeq8}$  index with unprotected data yielded the best fit to logistic models; all the indices produced a better fit with unprotected data than with protected data. Other metrics including the MIL-STD-1474D and the Auditory Hazard Assessment Algorithm for Human were evaluated and will be presented in this paper.