ABSTRACT
Firearm noise measurements were obtained in a small hunting blind using a large-caliber game rifle (30-06) and a high-powered revolver (.44 magnum). Shots were fired with the muzzle inside and outside the blind. Recordings were obtained with KEMAR and the ISL head, with and without hearing protection (Combat Arms Earplug). Peak SPLs measured within the blind ranged between 163 and 182 dB SPL (L100db range: 83-107 dB SPL) and varied as a function of muzzle location and firearm. Mean peak reductions afforded by hearing protection ranged between 32 and 40 dB. Mean unprotected B-durations were increased for the muzzle inside the blind condition.

RESULTS: Composite Waveforms (n=5)

<table>
<thead>
<tr>
<th>FIREARMS &amp; AMMUNITION</th>
<th>Muzzle OUT</th>
<th>Muzzle IN</th>
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</thead>
<tbody>
<tr>
<td>Remington .30-06 Rifle</td>
<td></td>
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<tr>
<td>Colt .44 Magnum Pistol</td>
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</tbody>
</table>

RESULTS: Mean comparisons

Remington .30-06 Rifle and Colt .44 Magnum pistol

SUMMARY OBSERVATIONS:
- Both firearms produced unprotected mean peak levels and L10eq values high enough to be considered hazardous to hearing with just one exposure (shot).
- Auditory hazard is increased by firing a firearm within a blind. Unprotected and protected mean peak levels increased an average of 7.5-8.6 dB. L10eq values increased an average of 9.4-10.4 dB for all measurement conditions. Unprotected B-durations increased an average of 13.8 ms for the .30-06 and 3.9 ms for the .44 magnum.
- Mean peak attenuation measurements for the CAEP ranged from 32.3 to 39.3 dB for the .30-06 and 35.6 to 39.8 dB for the .44 magnum. Peak attenuation values were generally consistent for measurements made under both muzzle conditions.
- Protected peak levels exceeded 140 dB SPL for the muzzle inside the blind condition for both firearms.

REFERENCES:


