Noise Reduction Claims

We have been asked on several occasions why we do not list noise reduction levels for our products.

140 dB is the “Thresh-hold of Pain” for the human ear. The human ear cannot be subjected to this Sound Pressure Level (SPL) for any period of time without incurring irreparable damage.

A .22 calibre long rifle produces a SPL of approx. 144dB and a 308 Win rifle produces in excess of 155dB. Whether the SPL of an un-suppressed firearm is only in the mid 140dB’s or the high 160dB’s, it is important to understand that the result for the firearm operator and/or by-stander exposed to these elevated levels will be permanent hearing loss.

MAE Ltd are furthering our R&D to aid in the prevention of hearing loss for all operators of firearms and for those within the noise footprint area. It is our opinion the maximum SPL that an effective sound moderator should produce, should be below 140 dB

Some moderator manufacturers advertise a reduction in the noise level that a product will achieve. It is our opinion that this can be misleading. There are many factors that play an important role in the efficient performance of a good sound moderator. Atmospheric and environmental conditions, the user’s geographical location, barrel lengths, types of ammo and bullet weights, type of rifle i.e. bolt-action, semi-auto, whether direct gas or piston- operated and whether open or closed bolt design.

If a product is said to have a 22dB – 30dB reduction, these figures are the result of a sound measurement from an unsuppressed firearm and another measurement taken using the same firearm with the suppressor fitted. The second measurement is subtracted from the first to provide the level of sound reduction expected with use of a firearm fitted with the manufacturer’s product.

Questions to ask when purchasing a sound moderator.

1. What is the SPL level of the un-suppressed test firearm?
2. What is the make & model of the test firearm? Is this similar to my firearm?
3. What is the highest SPL of the product (Not the lowest)?

Note: *140 dB is the thresh-hold for pain for the human ear. For every 6dB increase there is a doubling of the sound energy.*

It is our experience through years of extensive testing with our moderator design on multiple calibres of firearms that there is a close relationship between recoil and SPL. We have found that when a recorded SPL was well below 140 dBC PK the felt recoil was dramatically reduced. However, if the SPL was over 140 dBC PK the felt recoil was quite apparent. If you are recoil-sensitive then we would recommend a sound moderator with the lowest SPL.

It is also important to understand that an effective sound moderator will not eliminate recoil altogether. You will experience recoil because the sound moderator will only take effect once the projectile exits the barrel.

It is also important to realise that if two sound moderators are identical in design and with identical dimensions, but one is manufactured from denser material than the other and its SPL result was 137 dBC while the other moderator was 50% the density of the first, then the resulting SPL of the latter would exceed 140dBC.