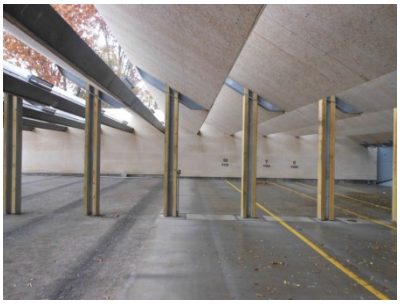
PRESCRIPTION FOR A QUIETER RANGE

If you break a bone or your knees hurt you can run to a doctor, but, who do you call if you have a headache producing noisy range? You call a member of the Troy Acoustics team at 800-987-3306.

DOES YOUR RANGE MEET THE OSHA STANDARD



This Nassau County baffled outdoor range was designed to meets OSHA CFR29

Troy Acoustics Corporation has been working with law enforcement training facilities worldwide on preexisting indoor and outdoor ranges to meet OSHA noise exposure limits or to meet local noise ordinances. Even if your range was built within the past five years there are no guarantees that your range meets the OSHA noise exposure limit or the recognized industry-standard of RT60 of 1.5 seconds reverb time across all octaves from 125Hz to 8000Hz, unless you went through the formal testing procedure, which up until now, most range designers did not require.

DON'T BE TOLD YOU CAN ONLY FIRE 9 ROUNDS

Unfortunately it takes a lot of complaints from your trainees before anyone takes an action to correct an existing noise problem. Worse yet is a condition where you are cited by your own environmental health and safety personnel and told that you have to limit your hours. That happened at a multi-million dollar range in the Northwest where they were told by their own environmental health and safety personnel that they were limited to shooting nine (9) rounds a day at their brand new range. Not until almost one year later were they able to open. Most of that time was spent getting funding to correct the OSHA noise exposure limits criteria.

LOOK AT ACOUSTIC OPTIONS IN THE DESIGN STAGE

In addition to correcting noise in the range, considerations must be made in the design phase or upgrade phase to also consider your local noise ordinances. One of the most common upgrades is to

turn a static range into a dynamic range to increase the training capacity in your range. More baffles mean more noise. In order to assure OSHA noise exposure limits all the baffles will need to be covered with a high performance acoustic system. It is also helpful if it has been independently tested for anti-ricochet or anti-splatter. Otherwise, you will need two layers of plywood for splash back from rifle rounds. Some existing structural support systems may be inadequate. You will need to work out those details with your range designer or architect.

DID YOU CONSIDER NOISE LEVELS IN ADJOINING CLASSROOMS OR OFFICES

You also need to think about OSHA compliance in adjoining classrooms and offices. Most planners do not think in terms of acoustic solutions indoors as critical; however, if your range must comply with OSHA noise exposure limits or local noise ordinances you need to look at the details. Since all law enforcement agencies haveemployee that work or train on the range OSHA CFR29 is of importance. Or, if you have adjoining offices or classrooms you need to look at what impact the noise will have on those areas.

INDOOR AND OUTDOOR RANGES MUST COMPLY WITH MOST LOCAL NOISE ORDINANCES

The other most critical item you need to look at is your local noise ordinance and see what impact it will have on you. It is much more cost-effective to speak to a shooting range acoustic specialist such as any member of the Troy Acoustics Corporation Team in the planning stages. Waiting until you receive a citation can cost you lost revenue due to limited hours or even shutdown.

POOR CHOICES RESULT IN MORE HEADACHES

You have what appear to be many options to cover your baffles however many are not designed to reduce loud noise to safe levels. Poor choices could result in ***more headaches*** and worse yet, potential hearing loss.

STANDARD ACOUSTIC TILES ARE NOT AN OPTION

Covering your baffles with a household acoustic tile has been shown to be ineffective in a range. Although many ranges feel as though this type of tile will meet their requirements, actual onsite sound testing results would most likely result in a range shutdown or restricted hours. That is what happened on an USAF (US Air Force) shooting range when they started enforcing the OSHA CFR29 noise exposure limits and the USAF ETL-11-18 (Engineering Technical Letter) for Small Arms Range Design and Development requirement of 1.5 seconds reverb time.

ETL 11-18 IS A TERRIFIC RESOURCE

On a separate note, if you aren't familiar with the comprehensive ETL 11-18 it is a most useful document jam packed with quite a bit of useful shooting range design information and is readily available online at www.wbdg.org

PLASTIC LIKE PRODUCTS SHOW LOW PERFORMANCE

Then there are plastic like products which may look nice but just aren't allowed in some jurisdictions because they don't meet the 2012 NFPA 286 corner fire test requirements. They typically do not offer you the added benefit of anti-ricochet. If you had someone put your design elements together even as little as a year ago that may not have been a requirement in your jurisdiction at the time. So recheck your documentation before it goes out to bid. Actual sound tests with complete coverage with these systems are shown not to meet basic OSHA CFR29 noise exposure limits.

RUBBER WORKS WELL IN A SHOOT HOUSE NOT IN A RANGE

So many range developers recommend rubber. They like it for its self-healing properties; which works terrific in a shoot house. However when it comes to rubber used throughout a range, with multiple guns firing simultaneously and consistently, your noise levels will definitely not meet any OSHA noise exposure limits guidelines or the industry recognized RT60 of 1.5 seconds at all firing position.

Two major three letter agency shooting ranges were completely lined with rubber. One had to be upgraded with a high performance Portland Cement acoustic system with anti-ricochet capability to reduce the non-compliant loud noise levels. The other reduced-use baffled outdoor range was dismantled and is being rebuilt as an indoor range with ALL of the rubber removed with exception of a peripheral 6" high toe guard.

LIMIT YOUR USE OF RUBBER IF YOU MUST HAVE IT

If you must use rubber in your range because you know you are going to intentionally hit the sidewalls near the trap, you might consider putting rubber on the last 10' near the trap as well as on the last row of baffles near the trap. No acoustic material is recommended for that last ant baffle which is essentially an extension of the trap to the bottom of the last baffle row. This recommendation will vary depending on your goals.

OUTDOOR RANGES PRESENT DIFFERENT CHALLENGES

So, you thought we forgot to talk about those of you who have outdoor ranges and are getting complaints from the neighbors or just want to build an indoor range but it won't fit in your budget.

There are several choices that are currently available and tested to assure you that these similar solutions will work for you

Just five years ago innovative high-performance acoustic canopies, shooting stalls and even acoustic roofs the size of football fields were unavailable and unproven as an effective means to develop an outdoor range. Now they are… with the introduction of the patented Troy System customized acoustic roof systems manufactured by Troy Acoustics Corporation. Many customized options are available.

EXISTING METAL CANOPIES:

Metal canopy with the Troy System lowered the average sound pressure levels

When Troy Acoustics Corporation was approached by the US Marine Corps they had concerns about an existing metal canopy over the firing line which they had treated but just was still extremely noisy and not in compliance with OSHA. According to a USMC press release "In 2013, the Naval Medical Center performed an Industrial Hygiene survey at Rifle Range 100 that indicated unacceptable impulse noise exposure (greater than 165 decibels), which was a potential health hazard to both instructors and shooters alike using the range… Significant improvement was reported after removing existing outdoor canopy baffling and installing acoustic insulation materials and TROY® Board panels to address firing range noise. Post-abatement acoustic testing after installing the TROY® Board panels at Rifle Range 100 also lowered the average sound pressure levels (3-6 dB for single shot, 3-6 dB for multiple shots)."

According to Bill Bergiadis, CEO, Troy Acoustics Corporation, "if they had to reduce it 10 dB or half the noise level then we would have taken a different approach as we did at Pomona CA where we installed not only an acoustic roof for tactical training, but installed cost-effective acoustical shooting stalls for their rifle range."

CUSTOM CANOPIES:

Customized acoustic canopies can mean anything from a traditional canopy lined with a high performance acoustic system or an acoustic canopy with extended roof lines with added sidewalls. The determining factor is your local noise ordinance or the "be a good neighbor" concept employed by so many outdoor range owners.

SHOOTING STALLS:

Customized acoustic shooting stalls can reduce noise levels by as much as 10 dB

These stalls can be any width or height depending on your specific requirements and concerns. Primarily used on fixed firing point 50 -1000 yard outdoor ranges, this cost-effective solution can result in as much as a 10dB or HALF THE NOISE reduction only hundreds a feet from the firing line. Other advantages of these stalls includes reduction of your SDZ (Safety Danger Zone) and with the addition of an eyebrow baffle the reduction of your VDZ (Vertical Danger Zone).

OUTDOOR BAFFLED RANGES

Whether your baffled outdoor range has concrete or steel baffles, the need for acoustics is equally as critical to meet OSHA compliance for noise exposure limits. Just because your range is in the middle of nowhere does not mean it means OSHA. It is most likely the easiest way to avoid or delay neighbor complaints; for awhile anyway.

Troy Acoustics Corporation

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OUTDOOR RANGE ACOUSTIC ROOF IS THE ULTIMATE SOLUTION FOR LAW ENFORCEMENT LOCAL NOISE ORDINANCE

Customized outdoor acoustic roofs

The customized acoustic roof system allows you to be sheltered from the hot sun or pouring rain in a cost effective outdoor environment. When comparing it to building an indoor range it is a fraction of the cost with most of the same benefits. Optional features such as lighting and ballistic containment are available.

Budget-wise, an acoustic roof with sidewalls may be a little more expensive than a bermed range, however much less expensive than an indoor facility. It's a great alternative for a new or existing outdoor range.

Visit Troy Acoustics Corporation at SHOT Show Booth 7103 or attend one of the NRA Range Development and Operations Seminars https://rangeservices.nra.org/development-training/range-development-operations-conference/ to learn more about shooting range acoustic solutions.

To learn about customized acoustic solutions, whether it is indoors or outdoors shooting range solutions, contact TROY ACOUSTICS CORPORATION at 818-376-8490 or their convenient toll free number at 800-987-3306 Ext. 400 or write info@troyacoustics.com