



◁ “Shooting houses” have always had a critical part to play in preparation for counter-terrorism operations and direct action operations.
(All photos via author)

Zach R. Black

Training Ammunition

Technology developments in the realm of training ammunition are revamping training methods used by military units worldwide, even though reductions in defence budgets in the US and Europe have seen a decline in demand for such capabilities. In the past, tactical firearms training has been restricted to the use of blank rounds and live ammunition, the latter of which has to be conducted in extensive safety environments. However, the introduction of non-lethal rounds and projectiles is changing the training model for military formations, allowing for greater flexibility and at the same time, reduced costs and manpower.

Speaking to MT, a spokesperson for Nammo, which manufactures training ammunition from 4.6mm up to 30mm, warned: “After the withdrawal of the international Armed Forces from the engagements in Afghanistan and other NATO allied engagements, we have seen a decline in demand for training ammunition, in particular for small calibre ammunition. It seems that several nations are training less and also taking advantage of their existing stocks of both live and training ammunition. We think this trend is likely to change and we foresee an increase in demand already next year.”

Nammo’s product ranges includes a variety of Plastic Blank and Plastic Short Range Ammunition, although the company concedes that training ammunition will never replace live rounds.

“Soldiers do always have to train with the live rounds,” the spokesperson continued. “But with training ammunition you can carry out cost effective training. What is important when it comes to training ammunition, is that the training has to be as realistic as possible. When firing with training rounds, all the procedures have to be the same as when firing with live rounds. For the soldiers it is extremely important that they ‘Train as they Fight’, even when they use blanks.”

According to Steve Didier, International Business Development Manager at UTM, the introduction of “man-marking rounds” (MMR) and “non-lethal”

rounds (NLR) have been responsible for a dramatic uplift in “force-on-force” training, allowing fighting units to develop their skills while fighting against a live enemy with more realistic firepower, as opposed to engaging aluminium targets with ball ammunition or enemy personnel with blank rounds. “MMR allows you to test your protocol and it’s this new technology in ammunition which gives us the benefit to conduct a wide variety of training from large infantry units through to small teams conducting close-quarter battle (CQB),” Didier explained.

Concentrating on Core Skills

Many units around the world continue to conduct training with blank ammunition which, although designed to replicate the same gun mechanisms as live ammunition, has many associated problems due to high levels of carbon build up around weapons working parts. This generally means increased amounts of stoppages and less weapon recoil compared to live ammunition. It can also mean a trainee pays less respect to a weapon system in regards to safe weapon handling and marksmanship. Aiming without looking through an optic or down a battle sight is a frequent issue for untrained and inexperienced troops.

Training with MMR and NLR provide trainees with an instant respect for the weapon system, knowing that the pistol, rifle or machine gun will behaving a lot more accurately as well as knowing that should they get hit, it will hurt to a lesser degree than live ammunition of course.

This threat immediately forces a trainee to concentrate on core skills such as using cover, adopting the marksmanship principles and moving only with covering fire—something that can often be overlooked when training with blank ammunition.

UTM’s solutions include the “Silent Blank;” “Battlefield Blank;” “MMR;” and non-lethal “Target Bullet Round,” which are available in calibres ranging from 9mm for pistols and sub-machine guns; through 5.56mm and 7.62mm for assault rifles; up to linked 5.56mm and 7.62mm rounds for light and medium machine guns. It also comes in 4.6mm and 5.7mm calibres.

The MMR is effectively a paint round, available in a variety of colours and which, when hit successfully, provide a significant sting and bruising to the skin as well as target indication that personnel or critical equipment has been hit. Similarly, the TBR fires a projectile but the bullet is not capable of penetrating 3/4 inch plywood so will not inflict any serious injury on trainees, trainers and role players, as long as are wearing sufficient safety equipment.

The only ancillary equipment required for all of UTM’s rounds is a bolt conversion kit which is easily swapped with the bolt system in a live weapon system. Normally coloured blue, the substitute bolt comprises an

offset firing pin meaning it is impossible for this to initiate the percussion caps of live ammunition. Additionally, specialist magazines can be used to better house the training rounds, and again, these are generally coloured blue.

Currently, UTM supplies a variety of military and law enforcement customers in the US, including the US Special Operations Command, Middle East including the UAE, Europe and elsewhere with customers using their ammunition for recruit training through to tactical exercises for Special Operations Forces (SOF).

Saving a Buck

Beyond the obvious benefits of safety, Didier also described how savings could be made with regards to man hours wasted cleaning weapons (training rounds with the exception of blank rounds, usually do require much more cleaning) and cost of BFAs: *“These training rounds allows a trainer to test the strengths and limitations of trainees through stress inoculation, which in turn, gives a soldier experience prior to setting foot on the battlefield in actual combat.”*

In the realm of SOF, the killing or shooting house has always had a critical part to play in preparation for counter-terrorism operations and direct action operations witnessed over the past decade in Afghanistan, Iraq and elsewhere.

Again, the use of MMR and TBR types of ammunition is expected to have a significant effect on SOF units training in this environment, although there remain to be critics of this technology.

Traditional killing houses comprise permanent structures with operators training endlessly in them and therefore already having substantial knowledge of what they are coming up against. The only variety will be the random placement of targets within the various rooms and stairwells of those buildings, meaning training capacity can sometimes be rather limited.

“Traditional live fire shoot houses have limited training environments and can be rendered ineffective after construction,” Didier explained. *“Trainees are relying on memories of the floor plan and that does not constitute a training objective. The main effort of the house is to provide protection and contain any live ammunition being fired. So once an operator has become aware of where the targets can be, they will learn to clear that particular house very well.”*

But with the use of MMR and TBR ammunition- the latter travels at a speed of 850ft per second- Didier claims you can now frequently rebuild multi-storey killing houses for the same amount of money in order to provide a more enhanced training environment. *“This ammunition has blown the top off traditional live fire training. It is now limitless what you can build for a tenth of the cost allowing trainers to focus on force on target as opposed to being too safety conscious. Over the past year and a half, TBR has really been sought after by SOF units through to regular infantry because of what you can do with it.”*

Ball Ammunition Training

However, there are elements within the international SOF community who continue to call for the use of ball ammunition training. One such

As Ye Train, So Shall Ye Fight

RUAG's Frangible-bullets have been specially designed for police, military and security training scenarios. The shooters can engage the targets closer, without the risk of being hit by a backsplash or ricochet. In many cases marksmanship-training is limited to static precision shooting. Dynamic training is missing due to time and budget constraints. There is always light in the shooting range, it is warm, the target is fixed and the hands do not shake from excitement ...

Conventional Full Metal Jacketed cartridges do not allow to engage a target closer than 15m because the risk of being hit by a backsplash or ricochet is too high. But *“As ye train, so shall ye fight”* has always proven itself. Every shooter has to go through a realistic short distance training. Weapon and ammunition has to correspond to the equipment carried on duty. Distractions like bad light conditions, noise, other persons or animals have to be included into the training scenarios.

In training with blank or marking cartridges often the *“Game effect”* is criticised. Because the trainee knows that nothing serious can happen, he tends to take too many risks and does not concentrate enough on his cover. Frangible ammunition however is lethal. This provides in training a stress level which is comparable to duty.



◁ Nammo's range of training ammunition.

operator informed MT that only having this full capability whistling past your ear, was the optimal way to train for specialist operations in particular including hostage rescue.

“You're training for the environment. Yes, it's

great to include role players and go down a two-way range,” he explained. *“However, when building up to operations you need to get used to the sound, sight and smell of live ammunition, demolitions and other things.”*

Another market leader is General Dynamics Ordnance and Tactical Systems (GD-OTS), which owns Simunition, a long time provider of MMR type rounds to the SOF community, and has also designed the Short Stop short-range training ammunition (SRTA) family of rounds designed to reduce the risk of ricochets and stray bullets.

However, such technology is limited to short ranges due to the low propellant ratio within the bullet itself. *“The design of the Short Stop bullet allows it to match the accuracy of conventional ammunition at 100m while reducing maximum range to 600m,”* a company spokesperson told MT.

The SRTA is produced from a frangible copper-filled polymer that lowers the danger of ricochet and splash back while also eliminating environment contamination with GD-OTS proclaiming it to be ideal for training in urban areas (and consequently reduced safety templates); indoor ranges; sniper-initiated assault training; and maritime counter-terrorism training.

SRTA is currently available in 5.56mm, 7.62mm with a .50 cal version in the final stages of development. No weapon modification is required, meaning that rifle-grade ammunition could be used on a short pistol range, measuring no more than 40 or 50 metres in length.

However, such rounds cannot be classified as non-lethal since these GD-OTS SRTA 5.56mm and 7.62mm rounds both have muzzle velocities of 1,970ft per second.

Additionally, companies are also looking at using such ammunition in collaboration with virtual reality training systems with UTM's Didier explaining that such technologies would provide mutually supporting capabilities in the simulation and training environment.

“We are always looking at ways to reduce cost and functionality and are considering options to assist in reality-based training to make sure everybody is getting the most out of it,” Didier said. *“We are already in partnership with a lot of interactive screen companies about using our technology to replace the old air-compressed, tethered weapon systems. This means a soldier can use the same tactical indoor simulation ranges but this time, with his personal weapon complete with his own optics, handgrips and ancillaries. This adds a different level to what's currently going on in the training environment. There are no limitations anymore. Technology has advanced to a point where the only limit is a trainer's imagination as to what they want to do with reality based training. You need to be able to have experience prior to going to war and getting into a contact situation and now training is not about surviving first contact but getting experience in a fire-fight so you can get the maximum effectiveness out of your soldiers. It's about confidence levels and making sure the soldiers are fully armed with knowledge and experience to go out and be effective.”*

As far as small arms are concerned, the utility of TBR and MMR type rounds seems to be confirmed and any added input into synthetic training could only prove positive. However, there are areas of capability gaps that remain and companies such as UTM and GD-OTS are making efforts to develop solutions for long range, sniper training for example.

The Nammo spokesperson concluded: *“In the future there will be more focus on affordability and cost effectiveness even when the budgets starts to increase again. Military forces will look at how to train with less cost. We believe that in the future there will be more focus on cost effective training and training ammunition will be an important part of this.”*



Zach R. Black, after completing multiple tours of duty with the British Army in the Balkans, Iraq and Afghanistan, provides a unique insight into the contemporary operating environment, and is a regular contributor to MT.