

HOW TO DEPLOY IMPACT MUNITIONS

THERE'S MORE TO SHOOTING
NON-LETHAL PROJECTILES
THAN LOOKING DOWN THE
BARREL AND SQUEEZING
THE TRIGGER. **H**DAVE YOUNG



ABOUT 45 YEARS AGO, American law enforcement officers started experimenting with and using impact munitions. These early lightweight impact munitions were made of wood or rubber and varied in shape and size. They were used primarily to quell riots or break up large fights within correctional institutions.

Today, law enforcement has access to a wide range of impact munitions that can be used for numerous applications. Yes, rubber and wooden baton rounds are still used in riot control, but more sophisticated impact rounds can be used to prevent suicides, to stop dog attacks, and in other uses that might have once required lethal force.

Impact munitions—whether they be rubber, wood, or even electronic like the new TASER eXtended Range Electronic Projectile (XREP)—are specially designed projectiles that are made to strike a subject's body, causing non-lethal blunt trauma and incapacitation. Unfortunately, when used incorrectly or when fired at the wrong angle, some impact munitions can cause serious injury and even death.

Proper deployment of impact munitions is not just a matter of aiming at a non-lethal zone on the subject's body. Many impact munitions are not as aerodynamic as lethal projectiles. In the case of bean bag rounds, for example, the shape offers so much resistance that it affects flight accuracy.



The 12-gauge pump shotgun can be used to launch a variety of impact munitions.

The desired effect of impact munitions is to allow an officer to incapacitate a subject at a distance without inflicting any permanent injury on that subject. To achieve this goal, you have to know where to shoot that subject and how to deliver the impact round on target.

||| TRUE FLIGHT

When an impact round is fired from a weapon, it goes through a series of changes during flight until it makes impact on the target. This is referred to as the true flight of the round.

After the projectile(s) has traveled about 10 feet from the barrel, it starts to take the path of least resistance through the air. As it continues on its way, it also seeks equal weight distribution. This can cause the round to start tumbling or spinning. It may also flatten out or pancake.

Windage also has a lot of effect on an impact munition, much more so than a bullet. If fired into a head wind, the projectile may float upward or dive into the ground. If fired from a tail wind, it may float upward, dive into the ground, or even cork screw. If fired into a crosswind, the projectile may make "J" turns to the right or left of the target, causing it to miss completely.

When firing specialty impact munitions all of these variables affect accuracy, impact, and knockdown power. There is a simple equation that you can use to calculate this effect: Velocity + accuracy + impact = effect on the target.

What this means is: If you are firing a specialty impact munition made of foam at a target that is 15 feet away, your velocity will be greater, increasing your point of aim point of impact, improving your accuracy, and delivering maximum impact to the targeted area. If you are firing a specialty impact munition made of foam at a target that is 35 feet away, your velocity will be less, affecting your point of aim point of impact, lowering your accuracy, and delivering less impact to the targeted area.

||| ANGLES OF FIRE

The effect of an impact munition on a target is also determined partially by the angle of the barrel at the time of the firing; this is called the angle of fire. The angle of fire can affect velocity, accuracy, and impact energy of the munitions used and each has advantages and disadvantages.

H Direct Fire: You aim directly into the target area, expecting the point of impact to be your point of aim.

H Indirect Fire: You aim down, skipping the impact munition to the target area.

H Low Angle: You aim slightly higher than point of aim point of impact to the target area almost like lobbing the impact munition to the target.

H High Angle: You aim significantly higher than point of aim point of impact, almost raining down the munition to the target.

Angle of fire has great effect on the accuracy and impact of a specialty impact munition. But you also have to consider weather, terrain, surface area, backstop target, and other factors when deciding what munition to use.



The shell carrier on this 12-gauge is filled with several different types of non-lethal ammo.

ations and areas to hit when using specialty impact munitions.

Distance to the target plays an important role in not only the selection of the right round but also the aiming point of that round. Some munitions only hit

with certain power from specific distances. And if you select the wrong munitions and hit the target, you can produce negative effects or inflict the “Superman Syndrome” on the subject.

The clothing the target is wearing is another factor. If it's hot and humid outside the subject's clothing will be light such as shorts and tank tops that expose a lot of skin. The round used in this situation may differ from the round that you would use on a cold and rainy day when the subject is wearing heavy clothing that covers most of his or her skin.

There are no hard and fast rules as to where to shoot a subject with impact munitions. Target areas can vary based on many factors like the size of the threat, weight of the threat, the threat's muscle mass, limbs that are exposed, movement, target availability, and target opportunity.

||| SELECTING THE POINT OF IMPACT

When using specialty impact munitions you are delivering a greater amount of force in relation to the target area than when you use your baton or hands. Let's talk about target consider-

||| TARGET AREAS

Meat and muscle areas are places on the human body that when hit may cause pain but not result in serious bodily injury. These areas support no bones or vital organs and can absorb the most

amount of kinetic energy from these munitions.

Ideal target zones for impact munitions include: biceps and triceps, forearms, the lower abdomen, thighs, and calves.

Less suitable target zones include muscle and bony areas. These are places on the human body that when hit may cause pain and could result in bone breakage but not serious injury. These areas support bones but no vital organs and can absorb large amounts of kinetic energy from impact munitions without causing death. They include



shoulders, elbows, wrists and backs of hands, hips, knees, ankles, and the bridges of the feet.

Bony and sensitive areas are places on the human body that when hit may cause serious bodily injury, which may result in death. These areas support vital organs, vision, breathing, nervous systems, blood flow, and cannot absorb the kinetic energy transferred from impact munitions without the risk of serious bodily injury that may result in death. These include the head, neck and throat, spine, groin, solar plexus, ribs, and kidneys.

Things to Consider When Deploying Impact Munitions

H Distance: This determines what round you use. Bean bags and rubber balls are the most common rounds to choose from.

H You May Need Another Shooter: You may be operating in an area that requires a second non-lethal shooter. Also, follow-up shots may be required on target.

H Backstop: What is behind your intended target? Glass window panes, people, or a solid concrete wall? Selecting a round that will not penetrate the backstop or injure other people is important.

H Size of the Subject: The effect of an impact munition can be affected by the weight of the subject, the height of the subject, and the body type (thin or heavy, muscular or obese) of the subject.

H Some Clothing Can Minimize Impact: Heavy clothing, leather clothing, and padded clothing can absorb some of the kinetic energy of an impact round.

H Escape Routes: Does the subject have a place to retreat to when hit, or will it be easy for you to make the arrest?

H Takedown Teams: Takedown teams need to be ready with a good ground stabilization plan and other force options before you can begin deploying impact munitions.

H Tactical Control Plan: Have a pre-rehearsed strategy for what to do if the deployment of impact munitions fails. You may miss. You may hit the target and get no effective response. The subject could become assaultive, and you may need to disengage or escalate to deadly force or other available force options.

H Communications: If using a cover person, make sure you can communicate if needed and make sure that you are clear about who is taking the deadly force shot if needed.

H Transition to Lethal Force: If you are alone and deploying the non-lethal rounds, think about how far you need to be from the threat to safely transition to other force options if needed. Practice this transition before you have to do it in a real incident.

H Medical Care: It is recommended once the subject is secured and the area is safe that the subject receive the proper medical attention. At a bare minimum the subject should be cleared by medical staff personnel. Blunt force injuries, even serious blunt force injuries, are hard to find and can be easily overlooked without proper medical training.

H Training After the Incident: After the incident is over, treat non-lethal projectile deployment as you would any other officer-involved shooting. Debrief all personnel directly involved to improve future performance.

H Age of Your Munitions: Make sure your non-lethal munitions have not expired and are still covered by the manufacturer's warranty.

||| BLUNT TRAUMA

Whenever you have a transfer of force or kinetic energy into the body, there will be some sort of physical injury to that body. This is referred to as blunt trauma. Blunt trauma is the desired effect of using specialty impact munitions on a subject.

In addition to blunt trauma, people hit with impact munitions generally experience three types of injuries: primary, secondary, and/or environmental injuries.

A primary injury is the direct result of the tool used. For example, being hit with a bean bag round in the thigh area will cause a bruise to the skin's surface, the thigh area will be swollen, and a hematoma will likely occur. The subject may also have minor abrasions to the skin.

Secondary injuries are usually a result of how the body reacts after being hit. For example, if the subject is hit in the thigh with a bean bag round and then loses balance and falls forward putting his or her hand out to brace the fall, the result may be a sprained wrist.

Environmental injuries are injuries that occur because of objects in the environment. For example, if you hit a subject in the thigh with a bean bag round and he or she loses balance and falls on broken glass, then the cuts are considered environmental injuries.

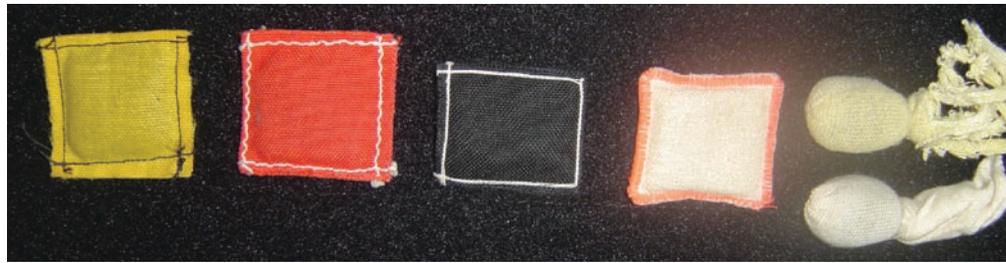
The worst type of injury that a subject can experience from an impact munition is a penetration wound. This can happen if the munitions are used at too close of a distance to the target or if a square bean bag round spins, causing a buzz saw effect.

||| MENTAL IMPACT

When you point a weapon at someone, he or she is likely to do one of two things: freeze like a deer in the headlights or run in



Paintball-like PepperBall ammo packs less kinetic energy than bean bags (right), but it is filled with chemical irritant to magnify its effect.



panic. The same is true when you fire specialty impact munitions at someone.

The mental effects of impact munitions may far outweigh the physical effects and be the determining factor in the subject's response or time of incapacitation or distraction. Everyone has a fear of being shot, and being shot even by a non-lethal impact round is a shock.

Most departments mark their shotguns that are used to launch non-lethal projectiles with brightly colored paint or tape on the barrels and stocks. This is a good idea because it prevents officers from loading these 12-gauges with lethal ammo. Unfortunately, some anarchists and other miscreants know this code, which robs impact munitions of part of their impact, the shock of being shot.

If a person is unable to control his or her levels of anxiety, it most

often turns into fear. We become scared, and enter into a fight-or-flight decision. Mentally, the subject must also cope with the physiological pain that the body feels.

Be aware, however, that while anxiety and fear can heighten the effect of impact munitions on a subject, they can also lead to panic. That's not desirable because a panicked person does not make rational decisions and at times fails to comply with the easiest and simplest commands. In riot control situations, you also have to be wary of panicking the crowd. ☯

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