Basic Firearms Instructor Course

Shotgun Instructor Student Manual

December 2010 Edition

Municipal Police Training Committee

MPTC Firearms Instructor Program
Shotgun Instructor

Course: Basic Firearms Instructor Lesson: Shotgun Instructor

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Date Written: January 2009 Date Revised: November 2010

Time Allocation: 8 hours

Target Population: Law Enforcement Officers

Recommended Class Size: Up to 20 students

Course Goal
To teach shotgun instructional skills, nomenclature and operation to prospective police firearms instructors.

Instructor Provided Training Aids & Supplies
Classroom & Range with adequate backstop and room to conduct planned activities
Q targets with optional Good/Bad Guy targets
First Aid Kit
Water
Sanitary Facilities
Communications (radio or cell phone)

Student Equipment Requirements
Operable shotgun with a sling (pump or semi automatic)
250 rounds shotgun ammo (50 slugs, 50 buck shot, 150 birdshot (#8 or #9)
50 rounds pistol ammunition (FMJ OK)
Service Pistol w/minimum of two (2) pistol magazines
Complete Duty Belt
Body Armor
Personal Protective Equipment (eye & hearing)

Student Performance Objectives
- Demonstrate the safe and proper operation of the shotgun
- Identify the basic components of the shotgun and their function
- Demonstrate the basic shooting positions used with the shotgun
- Demonstrate the procedure for administratively down loading the shotgun
- Demonstrate immediate action clearance procedures
- Demonstrate a basic proficiency to qualify to MPTC instructor minimum standards

Testing Procedures
- Minimum score of 90% for all live fire scored drills & qualification
- Minimum score of 80% on all written exams and quizzes
- Demonstrate the ability to teach in front of a class

References

MLEFIAA Firearms Instructor Development Program – Shotgun Instructor. 2007.
MPTC 8 Day Firearms Instructor Program, 2008
MCJTC Firearms Instructor Manual, 2005
Mass. Sheriff's Assn. Education & Training Committee – Firearms Instructor Course
Remington Arms Armorer School Manual
Benelli Armorer Manual
Mossberg 500 / 590 Owner's Manual
Winchester 1200 Defender Owner's Manual
PoliceOne.com
Force Science Research Center
NRA Tactical Shotgun Course
Action Target 3 Gun Course (Shotgun Section)
Shotgunworld.com

INTRODUCTION

The shotgun in the hands of the law enforcement officer is not a new tool however it has been eclipsed by the patrol rifle in recent years. As the police officer recruit demographics have changed from rural applicants with hunting experience to a more urban officer, trainers have seen a decline in familiarity with this tool. This has led to complaints about the recoil, accuracy and ease of operation. Some critics have called for its retirement stating it has become obsolete.

In fact, the shotgun is the most versatile weapon in our inventory. No other weapon is capable of delivering such a wide variety of munitions in so many different situations. The shotgun can be employed to deal with unruly crowds, prison riots and deadly force situations just to name a few. What other weapon is able to deliver distraction devices, OC, tear gas, impact munitions (both single and multiple projectiles), bird shot, buck shot and slug rounds?

Problems associated with the shotgun can generally be traced back to poor or no training. Almost all the shotgun problems you will see will be related to the manipulation of the slide action and/or compensating for the recoil of full power loads. Both can be solved with good training. This is where your abilities as a firearms instructor will help your officers make the best use of this tool. Whether you choose to retain the shotgun with its full capabilities or just limit it to a less than lethal capacity, it belongs in your armory and deserves its fair share of training time.

SAFETY CONSIDERATIONS

Firearms safety is the responsibility of everyone on the range – not just the instructor. Not only is it permissible for anyone to call a "Cease Fire" if they see a safety hazard or issue developing, it is their responsibility to do so.

Cardinal Rules of Firearms Safety

1. **All firearms are ALWAYS considered loaded until they have been physically and visually checked. Even then, they will ALWAYS be treated as if they were loaded.**
2. **Your finger will ALWAYS stay off the trigger until the weapon is on target and the decision to fire has been made. Off target – Off trigger.**
3. **ALWAYS keep the muzzle of your weapon pointed in a "safe direction". The muzzle of your weapon NEVER points at anything you are not willing to destroy. A "safe direction" is defined as a direction in which should an unintentional discharge occur, the result would NOT be death or personal injury. The *Laser Rule – treat your firearm as if it was a laser and it could destroy everything it points at*.**
4. **ALWAYS be sure of your target AND what is beyond it.**

All personnel on a MPTC range or participating in MPTC training are required to have eye and hearing protection. It is strongly recommended that when shooting weapons which produce a high decibel level report, such as patrol rifles, shooters should use foam ear plugs PLUS over the ear hearing protection. Eye protection shall have side shields.

Purpose

The purpose of the police shotgun is to provide the officer with a versatile, multi-purpose, large bore weapon capable of safely engaging targets beyond the typical range of the police service pistol. Up to the reintroduction of the patrol rifle as a common tool with patrol officers, the 12 gauge shotgun was the primary long gun for American law enforcement. While viewed by some as archaic, the shotgun was capable of delivering devastating damage during close in encounters. In recent years, the shotgun has been eclipsed by the patrol rifle mainly due to the rifle being perceived as less punishing (with recoil) by the average officer.

Many have called for the retirement of the police shotgun. Claims that it is obsolete and unnecessary are incorrect and misleading. Even with departments who have issued patrol rifles to all their officers, the shotgun still has retained its place on the front lines. The police shotgun is arguably the most versatile weapon in our inventory. We can fire single projectiles (slugs), multiple round bursts (buckshot), specialty impact munitions (bean bag rounds), beaching rounds, distraction devices and OC/chemical rounds. We do not have another weapon which can be used in so many different situations.

When equipped with rifle or ghost ring sights, the shotgun in the hands of an experienced marksman is capable of delivering accurate fire with slugs out to 80 yards. The large diameter projectile hits with authority and buck shot can deliver multiple hits with one press of the trigger. In communities where the military look of most patrol rifles is viewed as a negative trait, the shotgun portrays a more conventional and socially acceptable image for the municipal law enforcement officer.

The police shotgun is commonly found in semi automatic and pump action versions. There is a great deal of training commonality with the semi auto models. The pump action is virtually indestructible. The fact that it is not unusual to find Remington 870 shotguns in service which are older than the officer holding them speaks volumes to their longevity and reliability.

Nomenclature

Police officers should be familiar with the basic operating components of the police shotgun. You are responsible for knowing the following terms and being able to identify them on a working shotgun or diagram.

Remington 870 Pump & 11-87 Semi-Auto Shotgun

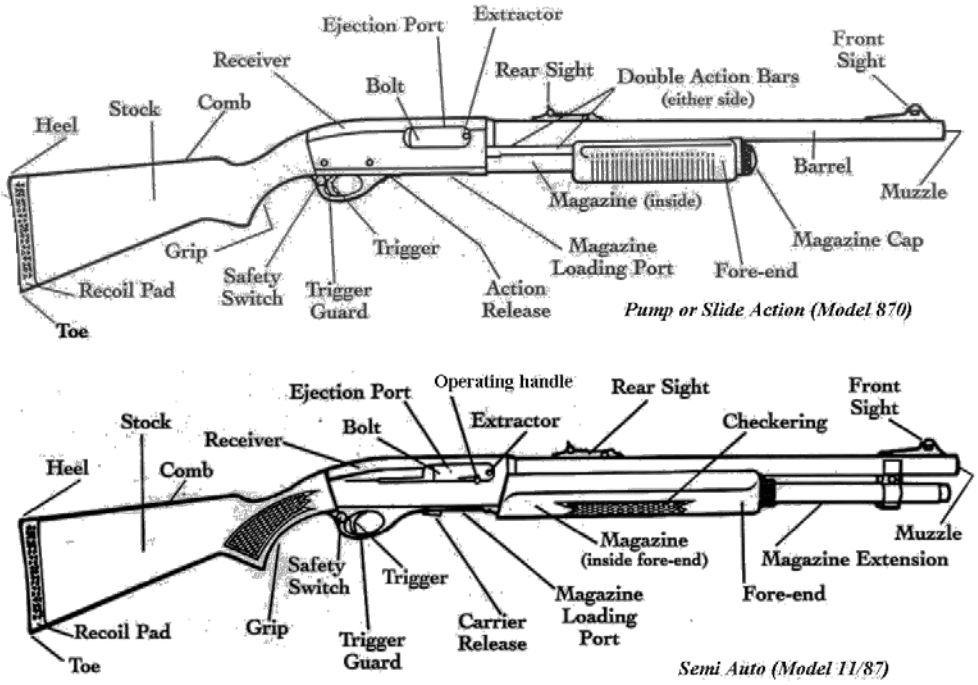


Illustration courtesy of Remington Arms, Inc.

Mossberg 500 Pump Shotgun (Model 590 is similar)

Primary differences between the Remington and Mossberg are the location of the safety and action release. Mossberg's placement of the safety on the upper receiver area makes their shotgun more user friendly for left hand shooters and locating the action release behind the trigger guard means you do not have to shift your grip to operate it. Mossberg's carrier (shell lifter) design makes a double feed less likely. Despite this, the Remington remains the most popular police pump shotgun.

Mossberg 500/590

Safety

Action Release

Remington 870

Safety

Action Release

The Remington and Mossberg pump shotguns represent the greater majority of police shotguns the instructor will encounter. Others which may be encountered infrequently are Winchester and Ithaca and are very similar in operation.

Operation

As with all other firearms, the operation of the shotgun can be generally categorized as:

Feed – Fire – Extract - Eject

Operation – Pump Action

The pump shotgun requires the operator to manually cycle the action which makes it very different from the semiautomatic pistols and rifles police officers are accustomed to using. The majority of problems you (as a shotgun instructor) will encounter on the range with the shotgun will be the result of the shooter failing to properly cycle the action.

The operation of the pump shotgun can be broken down to four steps –

PRESS – press the trigger which fires the weapon and unlocks the action.

If not firing, PRESS the action release to unlock the action without firing.

BACK – Pull the fore end all the way to the rear. You want to hear metal on metal.

RELEASE – Release the trigger

FORWARD – Push the fore end all the way forward to close the action

Operation – Semi Auto

The operation of the semi auto shotgun is similar to other semi auto weapons and can be generally categorized as –

• The firing cycle begins with the shooter removing the safety and placing their finger on the trigger.

• Press the trigger;

• The round will fire and the action will open, extracting and ejecting the spent round;

• A fresh round is released from the magazine to rest on the shell lifter (carrier);

• As the action closes under the compressed tension of the recoil spring, the shell lifter raises the new round in line with the chamber and the bolt moves forward pushing the round ahead of it into the chamber.

• The locking lug(s) engage as the bolt moves completely into battery;

• Releasing the trigger will prepare the weapon for a follow up shot.

There are some differences between the various manufacturers of semi-auto shotguns with respect to operation, terminology, loading and unloading. Semi-auto shotguns have one thing in common – it is possible to "limp wrist" the shotgun causing it to malfunction similar to a semi-auto pistol. Semi-auto shotguns must be held firmly to the shoulder to prevent malfunctions.

Remington 1100 & 11-87

The Remington 1100 and 11-87 are gas operated semi automatic shotguns which have been in production since the early 1960's. These operate similar to other gas operated weapons in that the gas pressure resulting from the burning propellant is scavenged off near the muzzle during the firing cycle. The high pressure gas is directed back via the gas cylinder and piston to the bolt assembly causing it to unlock and move to the rear. This initiates the extraction and ejection of the empty cartridge case. As the bolt returns forward under the compression tension of the action spring, a new round is fed from the magazine into the chamber. The action closes and the lug on the locking block assembly engages the corresponding notch in the receiver.

Benelli M1 (Super 90)

The Benelli is a recoil operated shotgun. When the weapon is fired, the force of the projectile(s) being propelled down the barrel causes an equal and opposite reaction against the bolt face. This causes the bolt to unlock and move to the rear extracting and ejecting the spent cartridge case. The recoil spring tension then causes the bolt to return forward which chambers a fresh round. The advantage of a recoil operated weapon over a gas operated one is they stay cleaner and there is no gas system to adjust.

Loading

Almost all police shotguns have a tubular magazine located below the barrel. To load the shotgun, the shooter will insert rounds through the magazine loading port located in the bottom of the receiver.

It is very important to push the round completely into the magazine tube so that the rim goes past the shell latch. The shell latch is the device which holds the ammunition in position and allows it to feed properly on to the carrier. If you fail to push the round past the shell latch, it may result in a double feed. This is a condition where a round is trapped between the carrier (shell lifter) and the closed bolt.

If a double feed occurs, it is easily cleared by depressing the action release while forcibly opening the action. This is usually best accomplished by slamming the butt on the ground. The instructor will demonstrate this procedure.

Certain manufacturers have slight differences. H&K and Benelli are the most commonly found shotguns with a different operating method. Loading the Benelli is simple, but it can only be loaded if the hammer is cocked so that the carrier latch can retain the shells as they're loaded into the magazine. The Benelli has a device identified as the "cartridge drop lever" that protrudes from the lower right side of the receiver just above the trigger guard - see photo below. When the lever and its red dot are exposed, the hammer is cocked. (NOTE: The lever doesn't tell you that there's a shell in the chamber, only that the hammer is cocked.)

After the magazine tube is topped off, to get a round into the chamber, press the Cartridge Drop Lever UP which will release a round from magazine on to the carrier. Pull the bolt handle to the rear and release to chamber the round. For **Transport Mode**, leave the round on the carrier with the safety ON.

Benelli Cartridge Drop Lever

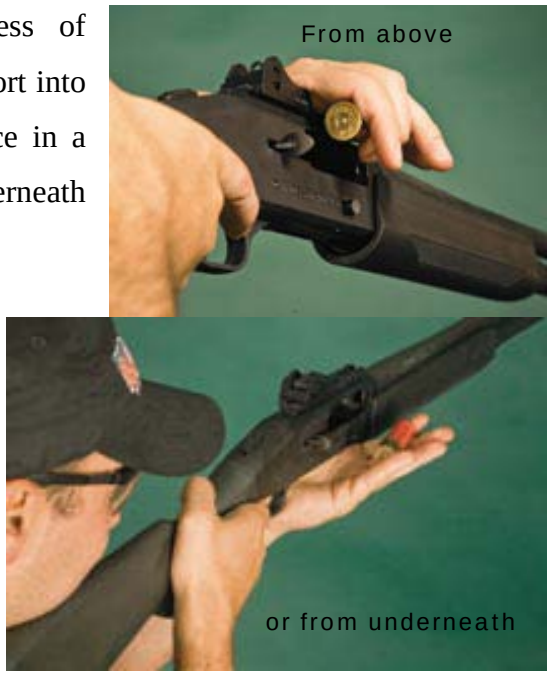
Tactical Reload

In past years the shotgun course has stressed shooting until the weapon is dry then "combat loading" individual rounds. This has now been replaced with the more practical protocol of the 'tactical reload". You will replenish the rounds that you shoot as the tactical situation permits. Think of this as "shoot 2, reload 2" and so on. This all begins when we remove the shotgun from the storage mount and rack a round into the chamber. There is now room for one round in the magazine so it should be stressed to top off.

Whenever possible, you should reload behind good cover. If no cover is available, drop to a knee to make yourself a smaller target or continue to move making yourself a more difficult target to hit. Concealment and making yourself a small target is never an acceptable alternative to cover.

Note: The tactical reload is performed the same with both the semi automatic and pump shotguns.

Combat (Emergency) Load / Reload



Combat loading refers to the process of loading single rounds in through the ejection port into an empty weapon to bring it back into service in a hurry. You can load across the top or from underneath the bottom of the receiver.

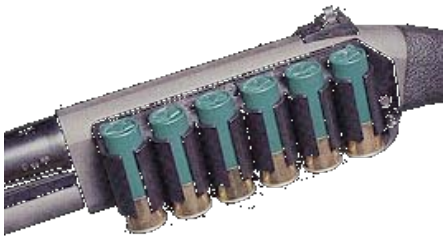
Remember - Combat loading is a technique that should only be used when the shotgun has run dry. In past years, the combat load technique was over used. It created a training scar by developing the habit of shooting the shotgun until it was empty then reloading only one round at a time to deal with an eminent theat. This set the operator up for failure since it essentially turned a repeating shotgun into a single shot weapon. The combat load technique is perfectly acceptable IF your weapon is empty and you need to get it running immediately. The preferable method is not to let the weapon run dry in the first place which is why we stress tactical reloading.

The Combat Reload is easily performed on a semi auto shotgun. On the last round, the bolt will lock to the rear. Load one round over the top or from underneath as described above. Press the bolt release for your particular model of semi auto shotgun. The bolt will close chambering a round. Either engage if necessary or top off the magazine.

Spare Ammunition

Reloading brings up the topic of extra ammunition. It is safe to presume that your agency issues or stipulates wearing a magazine pouch on your duty belt to hold extra service pistol magazines. This is because it is understood that police officers may encounter deadly force situations which do not end after the capacity of your magazine. With this theory in mind, we have to ask, “Why would any agency arm an officer with a long gun and not provide the means to carry extra ammunition?”

Shotguns have a limited ammunition capacity compared to the patrol rifle. Even with an extended magazine, the capacity will rarely exceed 9 rounds. The photos included here depict several solutions to keeping spare rounds with the shotgun. These rounds can be located on the receiver, butt stock or the sling.



If your shotgun is not equipped with a device to hold additional ammo, the officer should consider carrying extra rounds on their person. Position these rounds so they are easily accessible with your free hand. Historically, extra shotgun rounds have been carried in the trunk, duty bag or glove box. Experience has taught us that when the shotgun is needed quickly to deal with a deadly threat, none of these locations are "readily accessible" and the spare ammo is left behind.

Tactical Mode (aka Cruiser Ready (carry) Condition or Administrative Load)

Most agencies which carry the shotgun in a vehicle store it in a condition where it can be readily put into action. This is normally with a loaded magazine, action closed on an empty chamber and the safety on. Once accessed from the storage location in a tactical situation, the action is cycled to load a round into the chamber. This is called **Tactical Mode** (i.e. the shotgun is ready to be used in a tactical situation. This differs from when the shotgun is removed for an administrative purpose such as shift change or

inspection. It is suggested your department policy differentiate between the two situations.

REMEMBER - The safety remains ON until the weapon is up on target and the decision to fire has been made.

The Benelli can be carried in "cruiser ready" condition, with the magazine tube loaded, chamber empty and the hammer cocked. With your empty Benelli shotgun (safety ON), pull the bolt to the rear and release to cock the hammer. Load the magazine in the normal fashion. Press the cartridge drop lever to release a round onto the carrier. The Benelli is now in the Transport Mode. To put it in Tactical Mode – Pull the bolt to the rear to chamber a round. The Benelli will not release a round from the magazine onto the carrier unless the trigger has been pressed or the cartridge drop lever has been pressed. This is a unique feature of the Benelli.

"TRANSPORT MODE" means

Action CLOSED - Magazine LOADED – Chamber EMPTY – Safety ON"

"TACTICAL MODE" means

Round in the chamber and safety on or off as tactical situation dictates

Unloading Pump Shotguns

As with the patrol rifle, it is necessary for the police officer to know how to unload their shotgun in addition to how to load it. The procedure outlined here will allow you to remove all the ammunition from the weapon without having to cycle all the rounds up into the chamber and ejecting them on to the ground. You will be able to safely unload or download the weapon while maintaining control over your ammunition.

1. With the muzzle pointed in a safe direction, insure the safety is ON;
2. Depress the action lock;
3. Using one hand, block the ejection port
4. Slowly open the action withdrawing the round from the chamber if present. A round will be released from the magazine on to the carrier (shell lifter).

5. When the action is fully to the rear, roll the shotgun on its side so the rounds roll out the ejection port into your hand. *If there was a round in the chamber, you will end up with two rounds in your hand. If the chamber was empty, you will have only one.*

6. From the bottom, push the carrier up.

7a. On Remington shotguns, manipulate the right shell latch to allow the next round in the magazine tube to move to the rear. Repeat until magazine is empty.

7b. On Mossberg shotguns, close the action, manipulate the left shell latch to allow the next round in the magazine tube to move to the rear. Repeat until magazine is empty.

8. Visually and physically confirm the chamber and magazine tube are empty.

Unloading Semi Auto Shotguns (see Appendix 6)

Remington 1187

1. Safety ON and muzzle pointed in a safe direction.

2. Remove round from chamber by slowly pulling back on bolt handle until the round is tilted out on the extractor. If you pull back to far and a round is released from the magazine, roll the shotgun on its side and dump this round out into your hand.

3. Depress the carrier release and push the carrier down against the bolt. Press the right side shell stop to release the round(s) from the magazine into your hand. Repeat as necessary until magazine is empty.

Benelli

1. Safety On and muzzle pointed in a safe direction

2. Pull the bolt handle fully to the rear to remove a chambered round. Allow the bolt to close on an empty chamber. Press in on the right side shell stop to release the round from the magazine. Repeat as necessary until magazine is empty.

Note: Unless the trigger has been pressed or the cartridge drop lever pressed UP, a round will not be released from the magazine onto the carrier. This is a unique feature of the Benelli.

Downloading – Pump Shotguns

Not every confrontation with the shotgun requires a round to be fired. As a matter of fact, the overwhelming majority of the time, you will not fire the shotgun and will be left with a shotgun with a chambered round and wish to return it to the cruiser ready condition. There are two methods to download the pump shotgun. Both work equally well and are presented here for you to choose from.

1. With the muzzle pointed in a safe direction, insure the safety is ON;
2. Depress the action lock and open the action slightly;
3. Block the ejection port with your shooting hand and smartly open the action;
4. The chambered round will be pulled out and will come to a rest in the ejection port. The first round in the magazine will be released on to the shell lifter.
5. Roll the shotgun on its side and TWO rounds will roll out the ejection port into your hand.
6. Confirm the chamber is empty and no rounds are on the shell lifter.
7. Slowly close the action insuring no round is chambered.
8. Replace the two rounds into the magazine.
9. Return the weapon to its storage location.

The alternate method which also works well with Winchester pump shotguns –

1. With the muzzle pointed in a safe direction, insure the safety is ON;
2. Place the middle finger of the left hand behind the fore end.
3. Depress the action lock and open the action. The middle finger will limit the travel of the fore end so the chambered round is extracted but the first round in the magazine is NOT released on to the shell lifter.
4. Pick the round off the extractor.
5. Close the action slowly insuring no round is chambered.
6. Replace the round into the magazine.
7. Return the weapon to its storage location.

Downloading – Semi Automatic Shotguns

<u>Remington 1187</u>

1. Safety ON and muzzle pointed in a safe direction.

2. Remove round from chamber by slowly pulling back on bolt handle until the round is tilted out on the extractor. If you pull back to far and a round is released from the magazine, roll the shotgun on its side and dump this round out into your hand. Allow the bolt to close on an empty chamber.

3. Replace the round in the magazine.

Benelli

1. Safety On and muzzle pointed in a safe direction

2. Pull the bolt handle fully to the rear to remove a chambered round. Allow the bolt to close on an empty chamber.

3. Replace the round in the magazine.

Note: Unless the trigger has been pressed or the cartridge drop lever pressed UP, a round will not be released from the magazine onto the carrier. This is a unique feature of the Benelli.

Fitting the Shotgun to the Shooter

Historically, one of the most influential factors in an officer's poor performance with the police shotgun is due to an improper fit. This is especially true with smaller statured officers regardless of gender. The traditional police shotgun had a standard wood stock fitted with a recoil pad to compensate for the heavy recoil of magnum loads. Officers wearing body armor or a heavy jacket found the length of pull (the distance between the trigger face and the rear of the butt) to be too long to shoot comfortably or well. In the picture below, note how the longer stock dimension puts the shotgun further forward which in turn pushes the shooter's torso back resulting in a poor cheek weld to the stock and causing the shooter to be off balance. With the arm in this position, it is difficult for it to support the weight of the shotgun causing discomfort to the shooter even before the first round is fired.

There are several remedies for this situation which will make shooting the shotgun a more pleasant experience for the officer – especially if they are a novice shooter or have had poor experiences with the shotgun in the past. Shortening the standard stock by one inch or changing it out with a "Youth" stock is the easiest for an agency wishing to retain the standard stock configuration. Youth stocks are shorter in length which compensates for the padding of a heavy jacket or body armor. Officers of larger stature can shoot a shotgun fitted with a youth stock much easier and better than the smaller officer trying to work around a standard stock. The photo to the right compares a Remington synthetic stock with the typical 14 inch length of pull and the Hogue

overmolded “tactical” stock with the same 12 inch length of pull found on youth stocks. Experience has shown that average to large statured shooters are not adversely affected when using a shotgun with a short stock. On the other hand, a smaller statured shooter will always shoot better with the shorter length of pull. If you think you may encounter resistance to equipping department shotguns with “youth” stocks, label them it a “tactical” stock for law enforcement use only.

Several companies now market adjustable stocks for shotguns. These are a little more expensive however they offer greater flexability between different users. They also permit the overall length of the shotgun to be reduced making stowage easier in the cramped quarters of today’s police cruiser. One of the most popular is based on the M4 collapsable stock. It can be had with 4 or 6 adjustment positions and is easily bolted on to your shotgun.

Another design is similar in appearance but offers a degree of recoil dampening by means of springs and a design which allows the stock to compress under the recoil. This can be a very effective design for a shotgun assigned to a shooter who historically has had recoil related issues. It should be noted that this style will not work well with semi-automatic shotguns as it tends to induce failures to feed similar to ‘limp wristing’.

In the end, any of these solutions will improve the fit of the shotgun to the majority of your officers making shotgun training less painful and more productive.

Fundamentals of Shooting the Shotgun

The shotgun has more recoil than the patrol rifle, especially rifles in 5.56mm. While not abusive or uncontrollable, shooters using a proper technique will experience less felt recoil and faster follow up shots than those who do not. In most cases, the reputation of the shotgun being punishing to shoot is a byproduct of poor technique. By applying sound fundamentals, the shooter will manage the recoil more effectively and achieve better accuracy. There are four basic fundamentals you need to master to shoot the shotgun well – Stance, Grip, Sight Picture and Trigger control.

STANCE – Unless a shooter is extremely muscular and can literally manhandle the shotgun, there is a critical need for a well balanced and supported stance. With the conventional stance, the feet are spread at shoulder width with your forward knee slight flexed and your weight slightly forward which will compensate for the recoil. Right handed shooters will lead with their left foot. Keep the dominant side elbow up pulling the shotgun back into the shoulder. Bring the shotgun sights up to your line of sight. Do not drop your head to the sights.

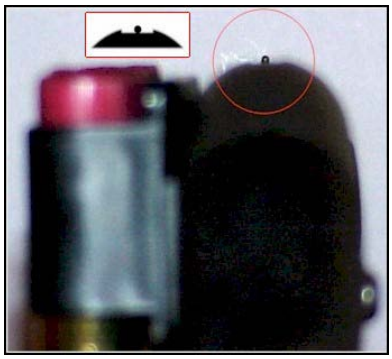
The "H&K" stance keeps the torso square to the threat so your soft body armor provides maximum protection. Tuck your elbows in to lock the weapon in place. This technique will allow you to move smoothly and be able to engage threats while moving. Use of a shorter stock can allow the shooter to assume a more squared up stance to the target. The M4 style collapsible stock allows the length of pull to be changed which will make handling the shotgun easier for smaller officers.

Over compensating the stance will limit your mobility. The photo at the right shows shooters taking an overly wide stance which is strongly discouraged. While this may provide acceptable recoil control, it is a disadvantage for a combat shooting stance as it severely limits the shooter's ability to move quickly or to

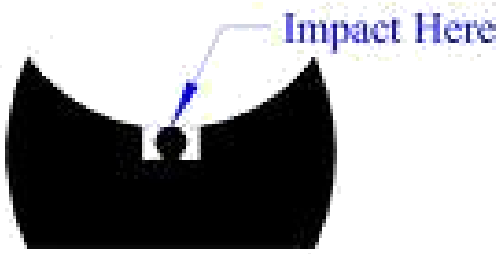
respond to a threat behind and to the left (for right hand shooters).

GRIP – The forward hand supports the front of the weapon and cycles the action on pump shotguns. The rear hand pulls the stock firmly into the shoulder and operates the trigger and safety. The toe of the stock is placed in to the pocket of the shoulder with no gap between the recoil pad and the body. Bring the shotgun up to eye level. This keeps the head erect.

SIGHT PICTURE – Three types of sights are commonly found on shotguns.



Bead sights feature a single ball centered on the top of the barrel. When sighting, you should see only the bead with none of the supporting base visible. There is no rear sight reference which makes this system fast but less accurate at longer distances.



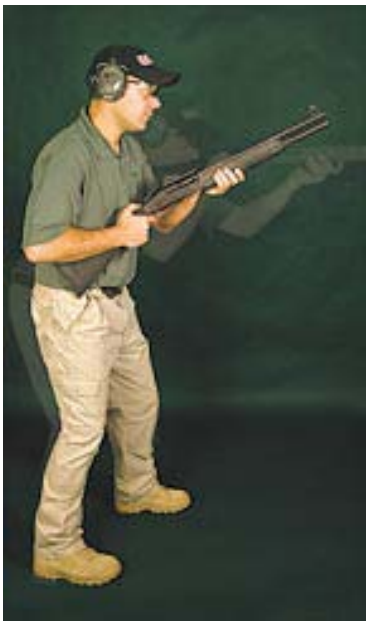
Conventional Rifle sights use the familiar post and notch system which you are familiar with from your handgun.

Ghost ring sights are similar to the peep or aperture sights you use on the patrol rifle. The difference is the aperture on ghost ring sights is much larger allowing more light to pass through which allows them to be used more effectively in dim light. The larger aperture also allows for a faster sight picture. High visibility front sights or tritium inserts make the front sight post easier to see. Center the post in the aperture as shown in the photo. As you focus on the front post, the rear aperture will disappear. With a little practice, this will become the fastest and easiest sight system to use.

TRIGGER CONTROL – The recoil on the shotgun may tend to cause the shooter to jerk the trigger or to flinch. Proper training will demonstrate to the shooter that the recoil is more than manageable and they can concentrate on smoothly pressing the trigger when the sights are properly aligned and the decision to fire has been made.

Shooting the Shotgun

High Ready – In the high ready position, the shooter is holding the shotgun at chest height with the muzzle up and the trigger finger is straight alongside the receiver with the safety on. The recoil pad / butt should be adjacent to your elbow. The eyes are concentrating on the threat or in the direction of a possible threat and not on the weapon. The High Ready position works best outdoors where you have plenty of room to maneuver. To engage, the shooter pushes the shotgun forward slightly so the recoil pad clears any clothing before bringing it back into the pocket of the shoulder as the muzzle comes down on target. It is common to see shooters catch the rubber recoil pad on their tactical vest or jacket if this is not made part of the movement. The feet, legs and hips should not have to move. The shotgun should come up to eye level. Do not bring the head down to the shotgun. The trigger finger remains indexed on the flat of the receiver until the weapon is on target. If appropriate, the safety may be removed however the trigger finger remains OFF the trigger until the decision to fire has been made.



A disadvantage to this carry technique is if an assailant grabs the muzzle, it is difficult to prevent them from controlling the weapon. This can be countered by the "J" maneuver however this becomes problematic if you are in a confined area such as a narrow hallway. <u>For this reason alone, the high ready position is not recommended for most law enforcement situations.</u>

Low Ready – The low ready position is the preferred ready position because it keeps the muzzle pointed in a safe direction. The butt of the shotgun remains in the shoulder pocket (photo below) and the muzzle is depressed so that it is pointing straight down to approximately 3 feet in front of the shooter's feet. The trigger finger is straight along the receiver of the shotgun and the safety is on. This position presents an unobstructed view of the threat axis. It also allows the shooter to safely move amongst a group of people without the muzzle "lasering" innocent bystanders. To engage, the shooter merely elevates the muzzle to the threat. If the toe of the stock is in the correct position, the weapon should naturally come up to the eye. If you find the shooter needs to bring their eyes down to the shotgun sights, the toe of the stock is not properly positioned in the pocket of the shoulder.

In the event of a gun grab, the officer can lower the butt or drop to the ground which will bring the muzzle up in line with the threat. At that point, it can be fired if necessary.

PROPER USE OF COVER

Proper use of cover is critical to proper deployment of any long gun. These photos show how properly using cover will reduce the amount of your body which can be seen thus making you less of a target. First we want to be sure that the cover we have selected is sufficient to stop incoming rounds. If it will not, it is merely concealment. The shooter should move back from cover to cut down on the angle needed to see around the cover. This can be demonstrated by the "slicing the pie" demo you may have had in the academy. Keeping back from cover not only reduces the amount of our body that can be seen by the threat and it makes us less susceptible to spall and debris that may be projected back from rounds hitting our cover. Examine these pictures and determine how you could make yourself even less of a target. Hint: look at the shooter's arm.

Malfunctions

As with other firearms, malfunctions with the shotgun can be classified in one of four categories - Failure to: feed, fire, extract or eject. Being familiar with the weapon's controls will expedite getting the shotgun up and running again after a malfunction.

Failure to Feed – The shotgun shell cartridges sit in the tubular magazine under spring tension. When the operator cycles the action, the two shell latches operate in succession to release only round on to the shell lifter (carrier). The shell lifter then raises the cartridge in line with the chamber and the bolt pushes it forward. The most common malfunction in the feeding cycle is a double feed. This occurs when one or more rounds are released on to the carrier with the bolt closed. The tension from the magazine spring jams the rounds against the bottom of the bolt can jam the action. This will not be seen on Mossberg shotguns due to the shell lifter design. Remington has modified the carrier (shell lifter) with the Flexi-tab carrier so that this malfunction can be cleared easily. After putting the safety ON, the operator presses in on the action release button and racks

the action open in a normal fashion. If you have a Model 870 that has the old solid carrier, you will need to depress the action release, apply rearward pressure on the fore end while slamming the butt briskly on the ground. The inertia will open the action and allow you to clear any cartridges out of the loading area. Be sure to keep the muzzle pointed in a safe direction as you do this and not to let it point at your body. Do not succumb to the temptation to stick a knife blade or screwdriver up beside the carrier and try to lever the cartridge back into the magazine. You will be prying against the primer and if the round were to go off, it will set off the other rounds in the magazine with horrific results to the shotgun and your hand on the fore end.

Failure to Fire – This can be traced to faulty ammunition or a mechanical failure such as a broken firing pin. Should the operator have a failure to fire they will cycle the action to eject a possibly faulty round and bring a fresh one up into the chamber. A second failure to fire will probably be indicative of a mechanical problem which will not be easily remedied. The operator will immediately sling the shotgun (or discard it as necessary) and transition to their service pistol.

Failure to Extract – When the operator experiences difficulties in extracting a fired cartridge case from the chamber, it is normally associated with ammunition or a broken extractor. The symptom will be a cartridge case lodged in the chamber and difficult to remove. The operator should immediately transition to their service pistol. When the situation has been resolved and time permits, the extractor can be examined to see if the hook is in good condition. The stuck case can be tapped out with a cleaning rod from the muzzle end.

Failure to Eject – The ejector is normally a fixed stop which causes the cartridge case to pivot out on the extractor as the bolt is drawn to the rear. A damaged ejector will result in the case being withdrawn by the extractor but not being kicked clear of the ejection port. This is not a problem which will get better so the standard practice is to

transition to the service pistol and carry on the fight. The operator may be able to reach a finger into the ejection port and flip out the spent case. This should not be attempted in a tactical situation unless there is no other weapon available.

Ammunition

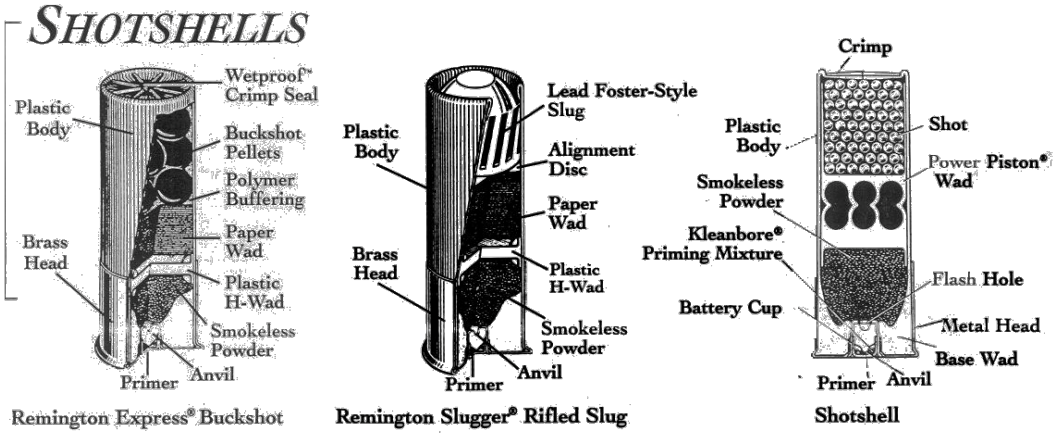


Image courtesy of Remington Arms, Inc.

The usefulness and versatility of the shotgun stems from the wide variety of ammunition which is available. Slugs are a single projectile with a maximum effective range of about 80 yards. The purpose of the slug is to extend the range of the shotgun beyond the effective range of buckshot. Range with slugs is limited by the shooters ability to accurately sight the shotgun and the trajectory of the slug which tends drop off rapidly beyond 75 yards.

Buckshot is a multi projectile load containing eight or nine .33 caliber balls. Extremely effective for close combat to about 10 yards and a maximum effective range is 18 yards. Beyond this distance, the buckshot spreads out wider than the average human torso. The rule of thumb for buckshot fired from an 18 inch cylinder choked barrel is the shot will spread one inch for each yard of distance down range. Officers equipped with shotguns loaded with buckshot need to keep this in mind at all times. Both buckshot and slugs are available in low recoil loads. If you have buckshot available and are up against a threat hiding behind an automobile, it is possible to “skip” the buckshot under the vehicle with the intent of striking the threat’s feet and ankles. Aiming for a point on the ground just in front of the gap between the vehicle and pavement, the shot will ricochet along the pavement at about ankle height.

Bird shot is much smaller in size than buck shot. While it is particularly effective for training due to lower recoil and lower cost, it has little tactical value and is generally not used as a duty round.

Short Barreled and Specialty Shotguns

A law enforcement agency may legally purchase a short barreled shotgun from a manufacturer for official use. As with any other NFA weapon, the proper paperwork should be completed and submitted to the BATFE to keep everything legal.

Legal Note: Federal law regulates the minimum legal length of a shotgun barrel to 18 inches and an overall length of 26 inches or greater. Anything shorter is considered a "short barreled shotgun" (SBS) and must be registered on the National Firearm Registration and Transfer Record (NFRTR) which was established by the National Firearms Act.

Massachusetts law prohibits anyone from manufacturing or possessing a "sawed off shotgun". This means no one can legally take a current shotgun and cut the barrel down shorter than 18 inches or otherwise shorten the shotgun to less than 26 inches in overall length. There is no exception for law enforcement agencies even if you register it with the BATFE on a Form 10. The subtlety of the law here is while it is legal to manufacture a short barreled shotgun on a new receiver, you cannot alter or modify a current shotgun to short barreled configuration – at least here in Massachusetts. It is suggested that you keep this in mind when someone comes up with the bright idea of taking an abandoned shotgun from the property room and turning it into a 12 inch barreled breaching shotgun.

M.G.L. References:

Chap 140, §121 - "Sawed-off shotgun", any weapon made from a shotgun, whether by alteration, modification or otherwise, if such weapon as modified has one or more barrels less than 18 inches in length or as modified has an overall length of less than 26 inches.

Chap 269§10(c) Whoever, except as provided by law, …or whoever owns, possesses or carries on his person, or carries on his person or under his control in a vehicle, a sawed-off shotgun, as defined in said section one hundred and twenty-one of said chapter one hundred and forty, shall be punished by imprisonment in the state prison for life, or for any term of years provided that any sentence imposed under the provisions of this paragraph shall be subject to the minimum requirements of paragraph (a).

In the past decade, the patrol rifle has eclipsed the shotgun as the long gun of choice for most police agencies. The superior range, magazine capacity and potential accuracy of the patrol rifle are good reasons why this has happened. For departments which have not embraced the patrol rifle concept, the shotgun remains the key long gun and the short barreled shotgun gives them the flexibility to operate in tight quarters. The shotgun is certainly not obsolete. No other weapon is capable of delivering such a wide variety of munitions in such a small package. One way

Remington 870 U.S. Secret Service model (above) and Mossberg 590 (left) fitted with a 14 inch barrel, Speed feed stock and Ghost Ring sights.

of decreasing the package size is to shorten the shotgun barrel. A strong argument can be made that a short barreled shotgun can be an extremely effective weapon for close in situations such as warrant services, maritime boarding operations and any other operation in confined quarters where the service pistol is considered inadequate.

Not all short barreled shotguns are suitable for law enforcement use. Back in the 1930's it was popular and easy to shorten hinge action double barreled shotguns to make them more concealable and easier to use in certain circumstances. Several companies

manufactured these weapons such as Ithaca which made the "Auto Burglar". These actually remained very popular with some agencies well into the 1970's. Due to the limited capacity (2 rounds), there are better shotguns available for this task. There are

several manufacturers in existence today who will build you a similar sized pump shotgun with a larger magazine capacity.

The pump shotgun's ability to fire specialty rounds such as bean bag, stingball, flashbang, OC and CN/CS makes it a truly versatile weapon. The MPTC offers an excellent Less Lethal Impact Munitions program. That specific material will not be covered in depth in this module. The majority of these specialty rounds do not produce the recoil or gas pressure to operate a semi-automatic shotgun so their use is restricted to pump shotguns. There is an inherent safety concern when issuing any rounds such as bean bag or other impact munitions with the combat shotgun and conventional ammo. The MPTC highly recommends that if your agency has adopted the use of less than lethal munitions such as bean bag rounds, a dedicated "Less Lethal" shotgun which has been distinctively marked be assigned specifically with these munitions.

Accessing the Shotgun

There are a number of different ways to secure the shotgun in a vehicle. Whether a gun vault or gun lock, how to access the weapon is an often overlooked aspect of training. Manipulation of the unlocking system as well as removing the weapon from the storage location should be part of every long gun training session. This used to be fairly straight forward in the days predating airbags and MDT's. Back then, it was common to mount the shotgun rack on the dash which made it quite easy to access. Federal regulations now prohibit mounting anything which will interfere with the airbag deployment and the MDT mount generally occupies the old mounting location. Shotguns and patrol rifles are

now most commonly mounted between the front seats, horizontally on the cage or in the trunk. You may find the shotgun shoehorned into a space barely large enough to hold the weapon. This has been found to cause the user to tilt or maneuver the weapon in a certain fashion to get it in and out of the rack easily. Knowing these idiosyncrasies in addition to the location of the unlock button or combination to the weapons drawer

BEFORE you actually need the weapon in a deadly force situation will greatly increase your chances of getting it out smoothly. In the end, you will need to work around what location and storage method your agency has selected and make the best of it. Every officer should know the location of the electronic lock activation button or how to open the storage location. Remember - repetition builds familiarity and familiarity builds speed.

MPTC Firearms Instructor Program
Shotgun Instructor

SHOTGUN RANGE DRILLS

I. Fundamentals drills
- A. Stance coaching
  1. balls of feet
  2. movement
- B. Mount coaching
  1. Low Ready
  2. Pocket of the Shoulder
  3. Up-Down drill
- C. Dry fire by the numbers (slide action)
  1. Press (trigger)
  2. Back (slide back)
  3. Release (trigger)
  4. Rack (slide forward to chamber a round)
- D. Dry fire
  1. Singles
  2. Multiples
  3. Topping off

II. Loading (with dummy rounds if available)
- A. Loading
- B. Downloading (return to ADMIN LOAD condition)
- C. Unloading (by manipulating shell stops)

III. Live Fire Exercises – Center Mass (50 rounds)
- A. 5 yds., 1 round 10x
- B. 7 yds., 1 round 10x
- C. 10 yds., 1 round 10x
- D. 15 yds., 1 round 10x
- E. 25 yds., 1 round 10x (slug only)

IV. Shotgun Stoppages
- A. Double Feed
  1. Instruction on how to set up double feed for training
  2. Corrective Techniques

B. Transition to handgun is the recommended option

V. Transition From Shotgun to Handgun (12 rounds)
A. Philosophy

B. Technique for Securing the Shotgun

C. Technique for Engagement with Handgun
1. One Hand Method
a. Weapon (shotgun) Perpendicular to Ground
b. Weapon (shotgun) Canted to Inside 30 Degrees
2. Arm/Body Position
3. Shotgun Muzzle Awareness

D. Dry Drills

E. Live Fire Exercises
1. 2 rds. from shotgun followed by 2 rds. from handgun 6x

VI. Multiple Shots (20 rounds)
A. Rationale

B. Technique

C. Live Fire Exercises – Tactical Reload ("Top Off") after each
1. 7 yds., 2 rds., 4x
2. 7 yds., 3 rds., 4x
D. Live Fire Exercises – Combat Reload (emergency reload of empty weapon)
1. 7 yds., Load with 2 rds., Shoot 2 rds and combat reload 1. Repeat 3x

VII. Pivots & Turns (30 rounds)
A. Rationale

B. Technique
1. Demo Left / Right pivot
2. Demo 180 degree turn (left / right)
3. Insure adequate distance between shooters
a. Muzzle discipline

C. Dry Drills

D. Live Fire Exercises @ 7 Yard Line
1. Pivot Right, fire 2 rounds – repeat 5x
2. Pivot Left, fire 2 rounds – repeat 5x
3. Turn 180 (right), fire 2 rounds – repeat 2x

4. Turn 180 (left), fire 2 rounds – repeat 3x

VIII. Shooting While Moving (30 rounds)

A. Rationale

B. Technique

1. Demo Forward / Back
2. Demo Lateral

C. Dry Drills

D. Live Fire Exercises

1. Command to move forward is "ADVANCE"
2. Command to move to the rear is "WITHDRAW"
3. Engage while moving forward from 12 to 3 yard line – 5 rounds
4. Engage while withdrawing from 3 to 12 yard line – 5 rounds
5. Repeat one more time
6. Engage while moving laterally on 7 yard line
    a. One shooter at a time – 5 rounds
    b. Repeat in opposite direction – 5 rounds

IX. Use of Cover (12 rounds)

A. Rationale

B. Technique

1. Demo right side of cover
2. Demo left side of cover

C. Dry Drills

D. Live Fire Exercises – 10 Yard Line

1. Right side of cover – 1 round
    a. Repeat 6x
2. Left side of cover – 1 round
    a. Repeat 6x

E. Demo skipping 00 Buckshot on pavement (optional if range permits)

X. QUALIFICATION (25 rounds)

A. MPTC Shotgun Qualification Course of Fire

1. 94% minimum passing score

MPTC Firearms Instructor Program
Shotgun Instructor

QUALIFICATION COURSE

Course Type: Qualification

Date Written: March 2, 2009 Revised: March 31, 2011

Rounds: 28 (only 25 will be fired) Distance: 25, 15, 10, 7 and 5 Yards

Passing Score: 94% for firearms instructors, 80% for all others

Scoring: Slug – 4 points for each valid hit
00 Buck (8 or 9 pellet)* – ½ point per valid hit
*If the agency only authorizes buckshot, the 18 rounds fired at the 10, 7 and 5 yard line stages will be buckshot. **Slugs will always be fired from the 25 and 15 yard lines.**

Fundamentals: This course of fire incorporates the fundamentals of shotgun operation and marksmanship including loading, putting the shotgun into operation, firing from different positions, tactical reloading (topping off/put back what you shoot), downloading and unloading. Additionally, officers will use good tactical fundamentals such as verbal commands, scanning, use of cover and movement.

Objectives: This course of fire was designed to better evaluate an officer's ability to –
- Load the shotgun in a safe manner;
- Access the weapon from the vehicle storage rack (if applicable);
- Place the shotgun into operation;
- Effectively put rounds on target;
- Fire the shotgun from realistic shooting positions including on the move;
- Keep the shotgun in a "ready to fight" condition by continuously topping off the magazine;
- Engage threats from various angles while pivoting and on the move;
- Scan effectively for additional threats;
- Download and unload the shotgun in a safe manner.

Notes: For ease in scoring, it is recommended the course be fired with slug ammunition. In this course of fire, the term "up" is used as the cue to fire. It should be noted that any cue such as "six" or "deadly threat" can be used as well. The command to fire should be decided by the instructor based on their agency's policy.

STAGE ONE – KNEELING FROM COVER 25 Yards 3 Rounds (slug only)
Preparation: Begin with the shotgun in the condition it is normally transported in on the 30 yard line. This can be either unloaded or "transport condition" as the department's policy dictates. If spare ammo is not positioned on the weapon, it will be positioned on the body where it can be easily accessed. Instructors are encouraged to have their officers demonstrate their ability to remove the weapon from the storage location in the vehicle if applicable. On the command "gun" or "threat", the shooters will access their

weapon, chamber a round and advance to the 25 yard line where they will cover the threat from the kneeling position using good cover and verbal commands.

On the command "UP", the shooters will engage the target with 3 rounds, scan while covering the target then top off their magazines. On the command to "advance", shooters will move to the 15 yard line covering their target. **Finger off the trigger – Safety ON**

STAGE TWO – OFF HAND 15 Yards 4 Rounds (slug only)
At the 15 yard line, shooters will engage their targets with 4 rounds from the standing position on the command "UP". Shooters will scan for additional threats, cover the target, top off magazine and move to the 10 yard line when the command "advance" is given. **Finger off the trigger – Safety ON.**

STAGE THREE – PIVOT & SHOOT 10 Yards 6 Rounds
At the 10 yard line, shooters will demonstrate their ability to engage a target to the side or rear. Instructor will demonstrate the SAFETY CIRCLE and how to keep the muzzle depressed inside it when pivoting. Have shooters face in the desired direction with muzzles fully depressed. On the command "UP", shooters will (in order of sequence) –
LOOK to identify the threat,
PIVOT to face the threat,
Bring the **MUZZLE UP** to the threat and
ENGAGE with ONE round.
Cover – Scan – Top Off
Pivot to the LEFT – fire one round. Repeat 1X (2 rounds).
Pivot to the RIGHT – fire one round. Repeat 1X (2 rounds).
Pivot 180 degrees – fire one round. Repeat 1X (2 rounds).
Instructors should have shooters look and pivot BEFORE bringing the muzzle up on target. If you are running a crowded line or working with novice shooters, you can reduce the angle to 45 degrees so all muzzles remain in a safe direction.

STAGE FOUR – SHOOTING ON THE MOVE 10 to 7 Yds. 4 Rounds
Shooters should still be scanning from "low ready" on the 10 yard line. On the command "Advance and Engage" or "UP", shooters will advance to the 7 yard line while firing two rounds. Once at the 7 yard line, shooters halt, scan and top off magazines. Repeat again for a total of 4 rounds. Instructors should encourage shooters NOT to stop when they shoot - keep the line moving.
Safety ON – Scan – Top off magazine if necessary

STAGE FIVE – CONTROLLED PAIRS w/ Movement 7 Yards 6 Rounds
Shooters face threat with shotgun at the low ready position. On the command "UP", shooters will engage with two rounds then move one step laterally (left or right) as directed. Scan – cover threat.

Repeat twice more for total of six rounds.
Top Off if necessary
Safety ON – Low Ready
On the command "*Advance to the Five*", shooters move forward to the 5 yard line.

STAGE SIX – HAMMER DRILL 5 Yards 2 Rounds
Position shooters facing the threat with weapon at "low ready". On the command "UP", shooters will fire two rounds in rapid succession to center mass.

DEMONSTRATE ABILITY TO UNLOAD & DOWNLOAD THE SHOTGUN
The shotgun will have 3 rounds remaining (including one in the chamber). Shooter(s) will demonstrate ability to download to Transport Mode and then unload their shotgun. If necessary, this evaluation may be conducted off the range with dummy rounds. In that case, only 25 rounds are required for the qualification course.
This skill set is part of the shotgun qualification and must be demonstrated.
Title: **25 Round Shotgun Qualification Course**

APPENDIX 1

00 Buckshot Pattern Tests

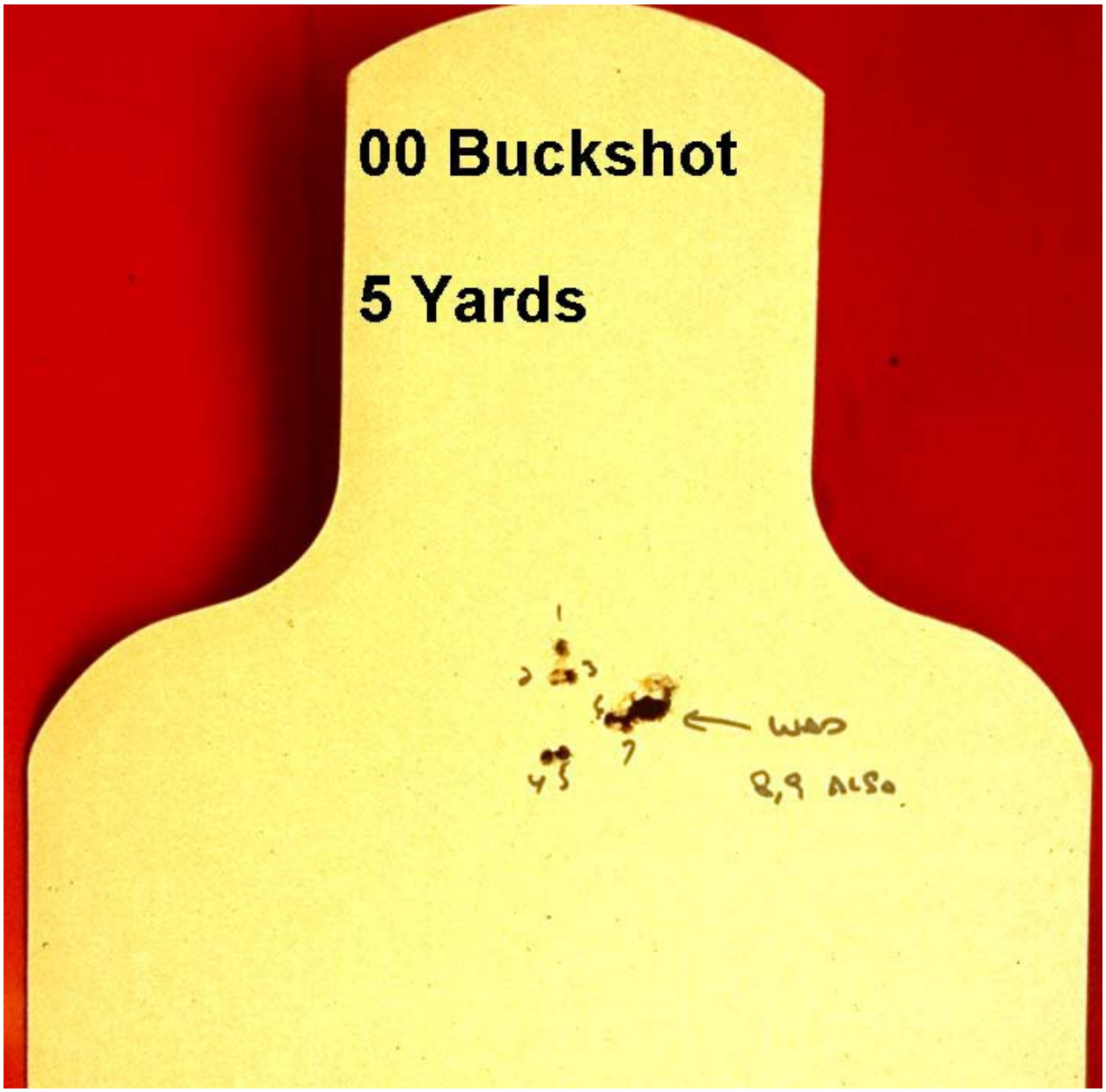
12 Gauge 00 Buckshot 9 pellet loads

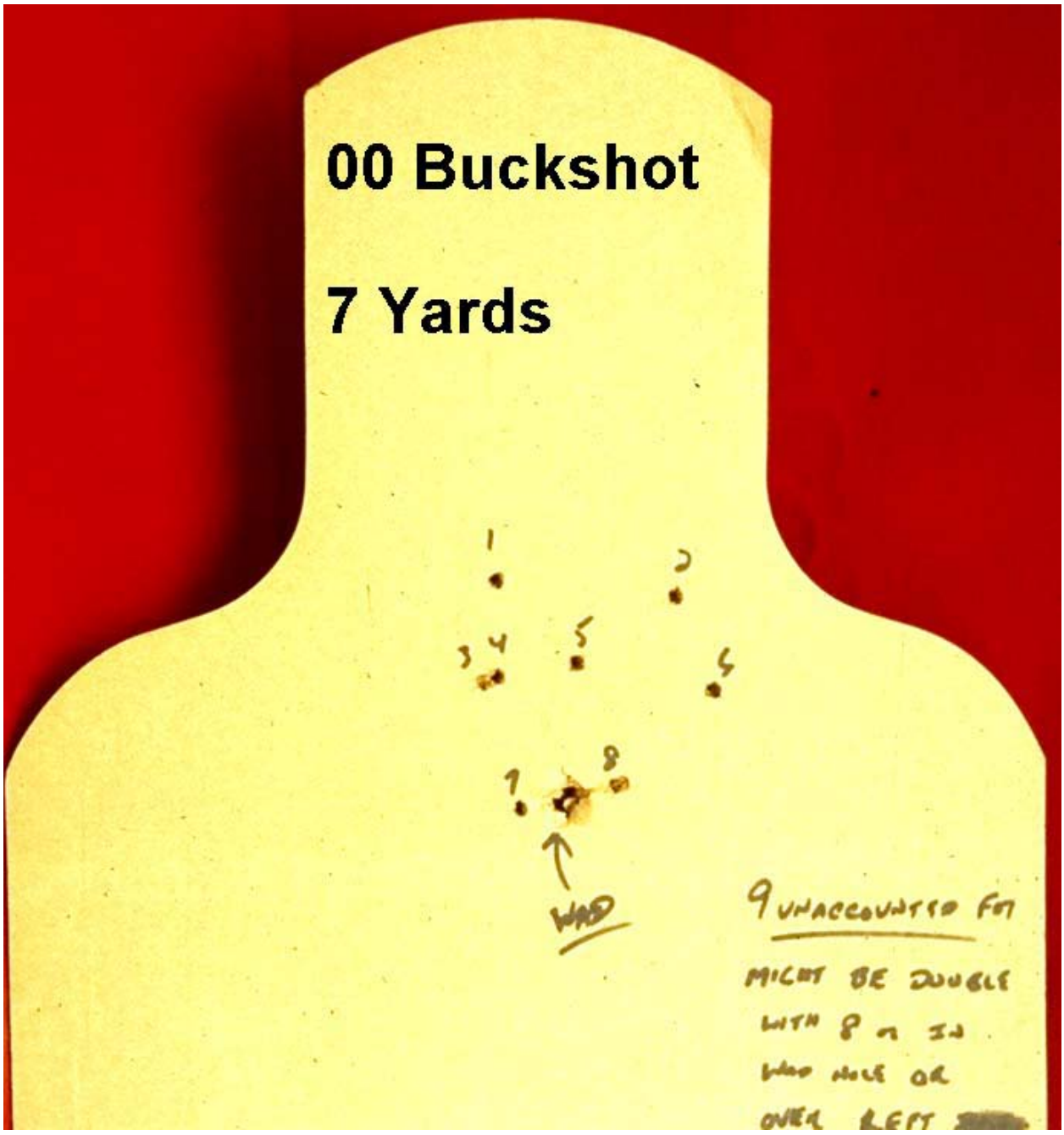
Smith & Wesson 3000 12 Gauge

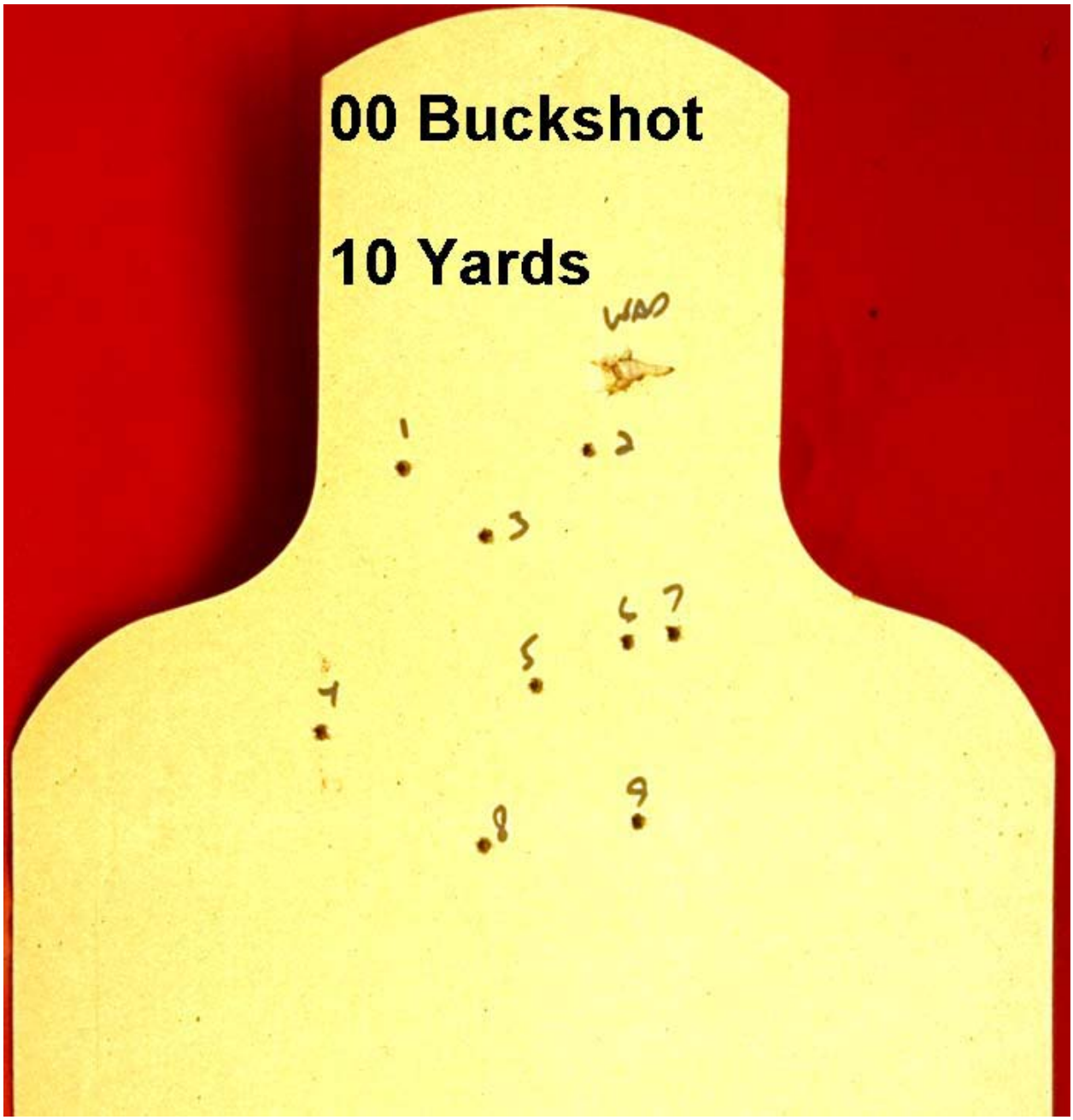
18 inch Cylinder Choke Barrel

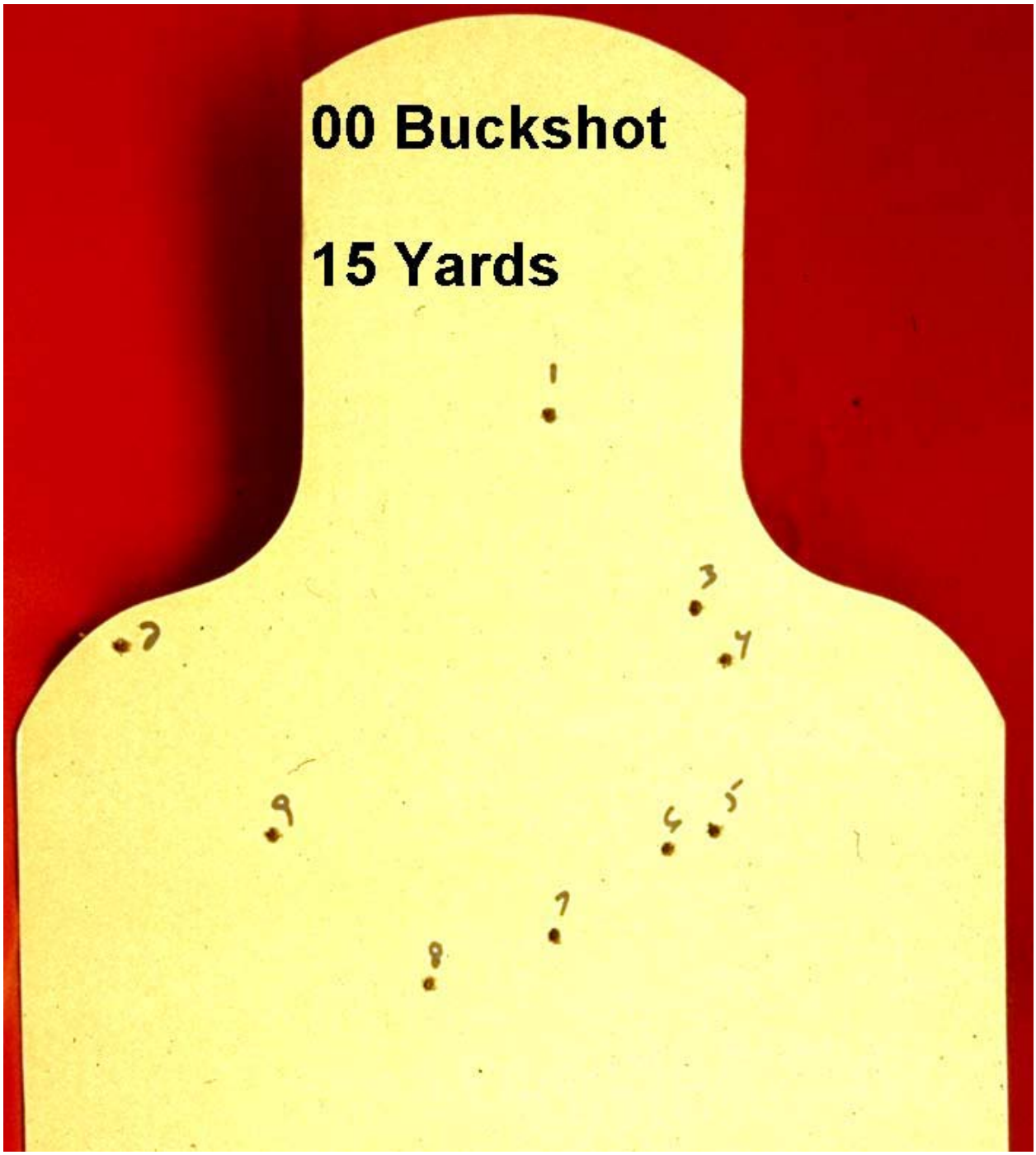
This demonstrates why 18 yards is considered the maximum engagement distance for cylinder choked shotguns loaded with 9 pellet 00 Buck Shot ammunition.

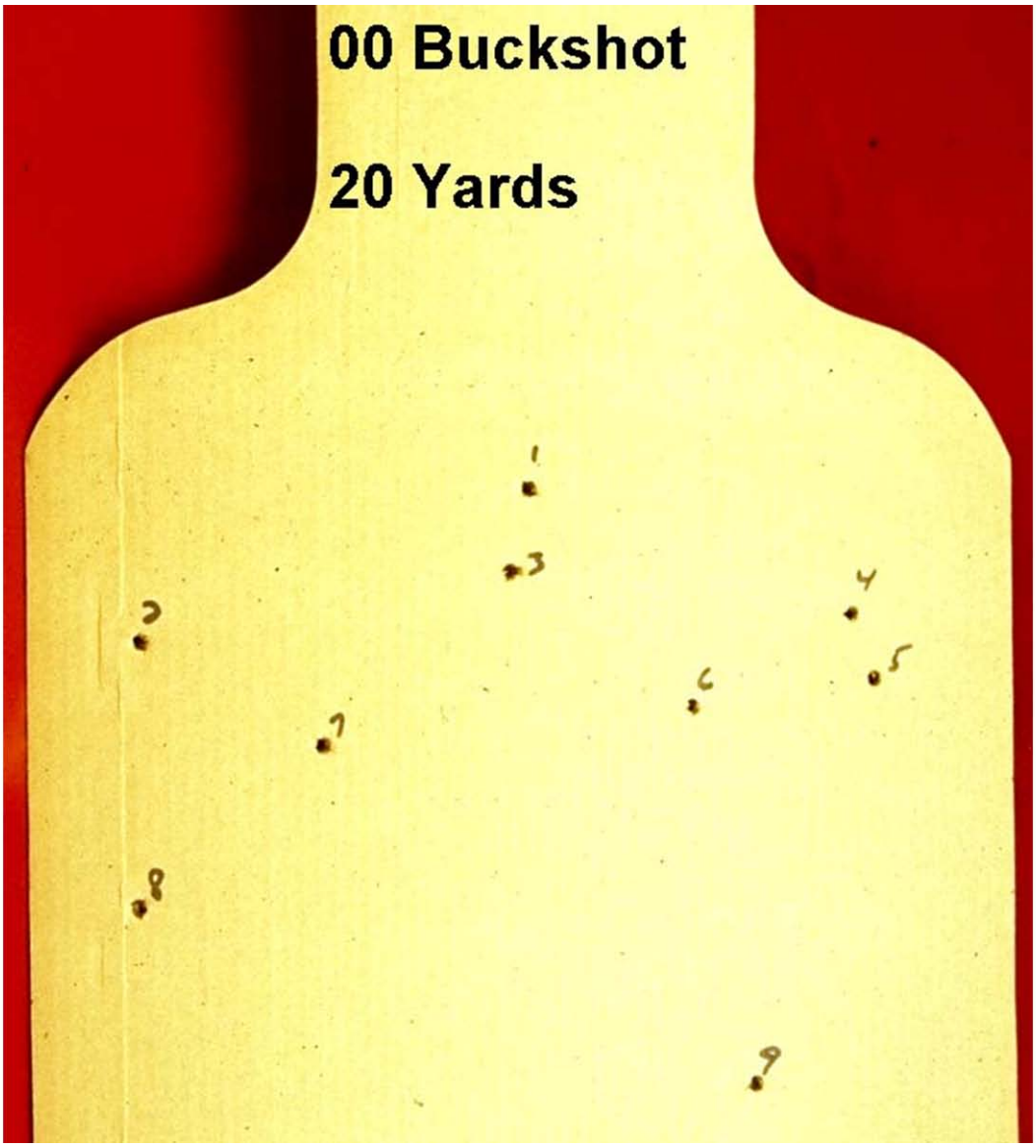

00 Buckshot
3 Yards
WAD

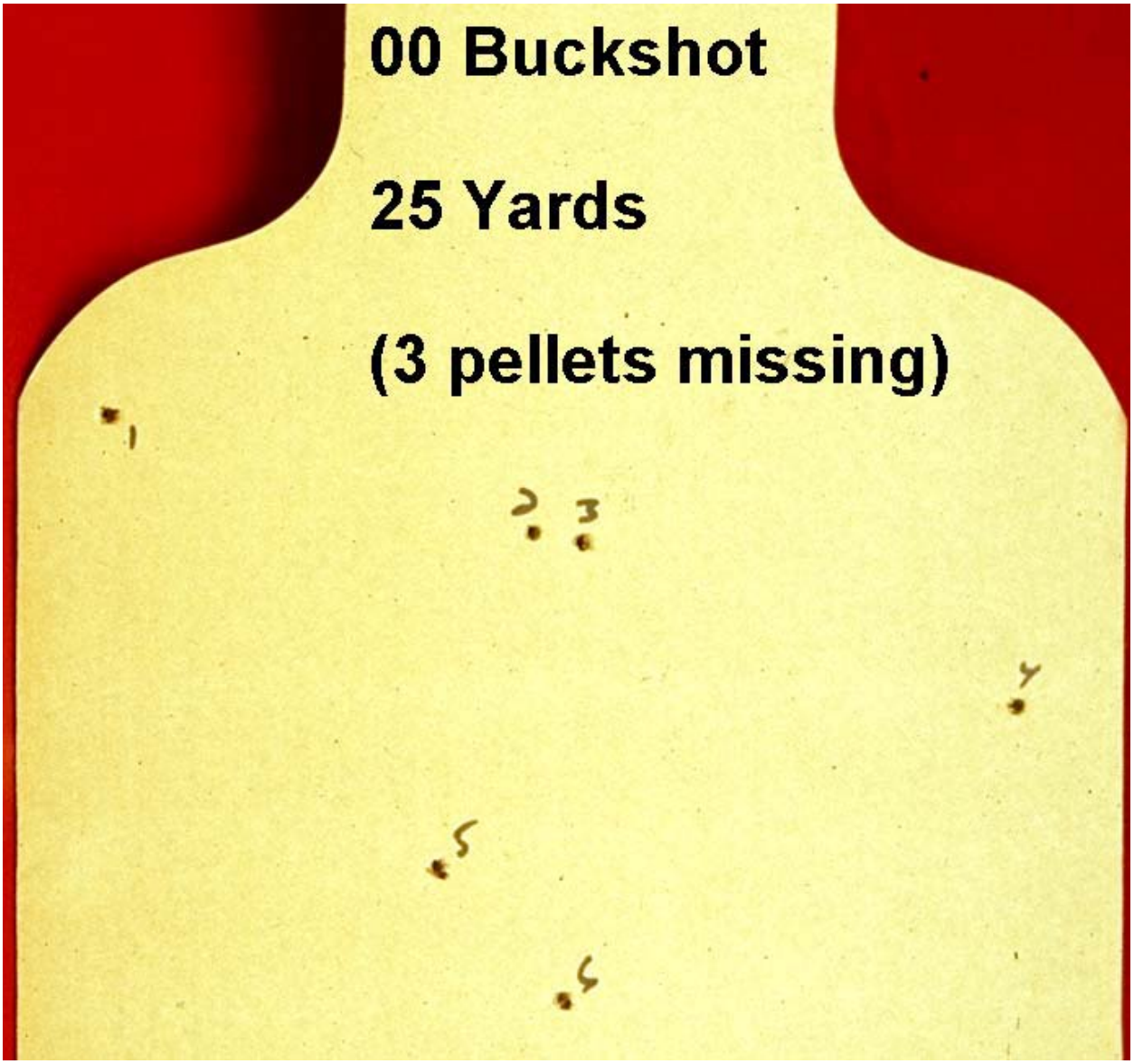

00 Buckshot
5 Yards
WAS
8,9 ALSO


00 Buckshot
7 Yards
1
2
3
4
5
6
7
8
WAD
9 UNACCOUNTED FOR
MIGHT BE DOUBLE
WITH 8 IN
WAD HOLE OR
OVER


00 Buckshot
10 Yards


00 Buckshot
15 Yards


00 Buckshot
20 Yards
1
2
3
4
5
6
7
8
9


00 Buckshot
25 Yards
(3 pellets missing)

APPENDIX 2

00 Buckshot Pattern Tests

Winchester "Ranger" Law Enforcement

12 Gauge 00 Buckshot 9 pellet loads

Fired from a

Remington 870 12 Gauge 18 inch barrel

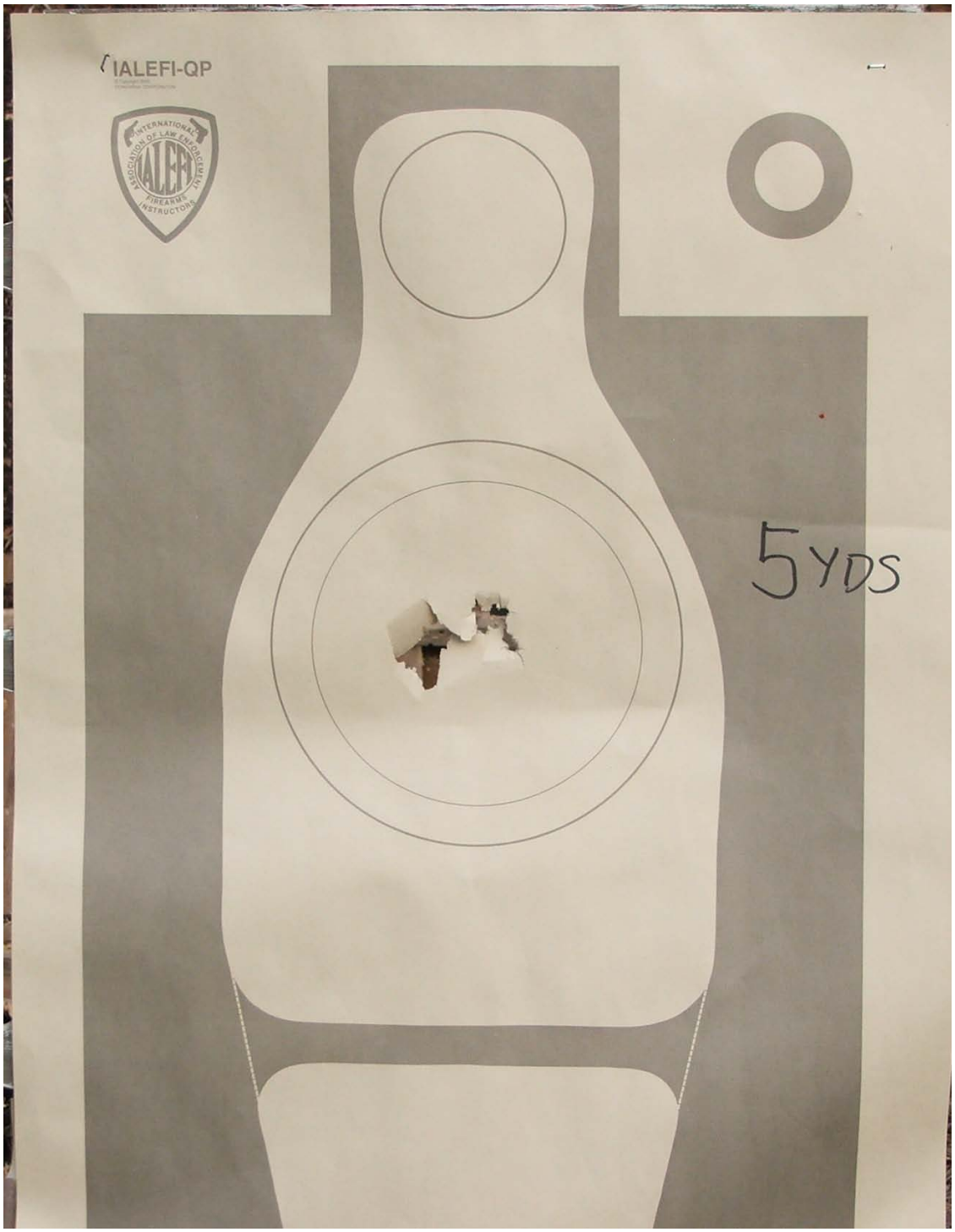
with Vang Comp System*

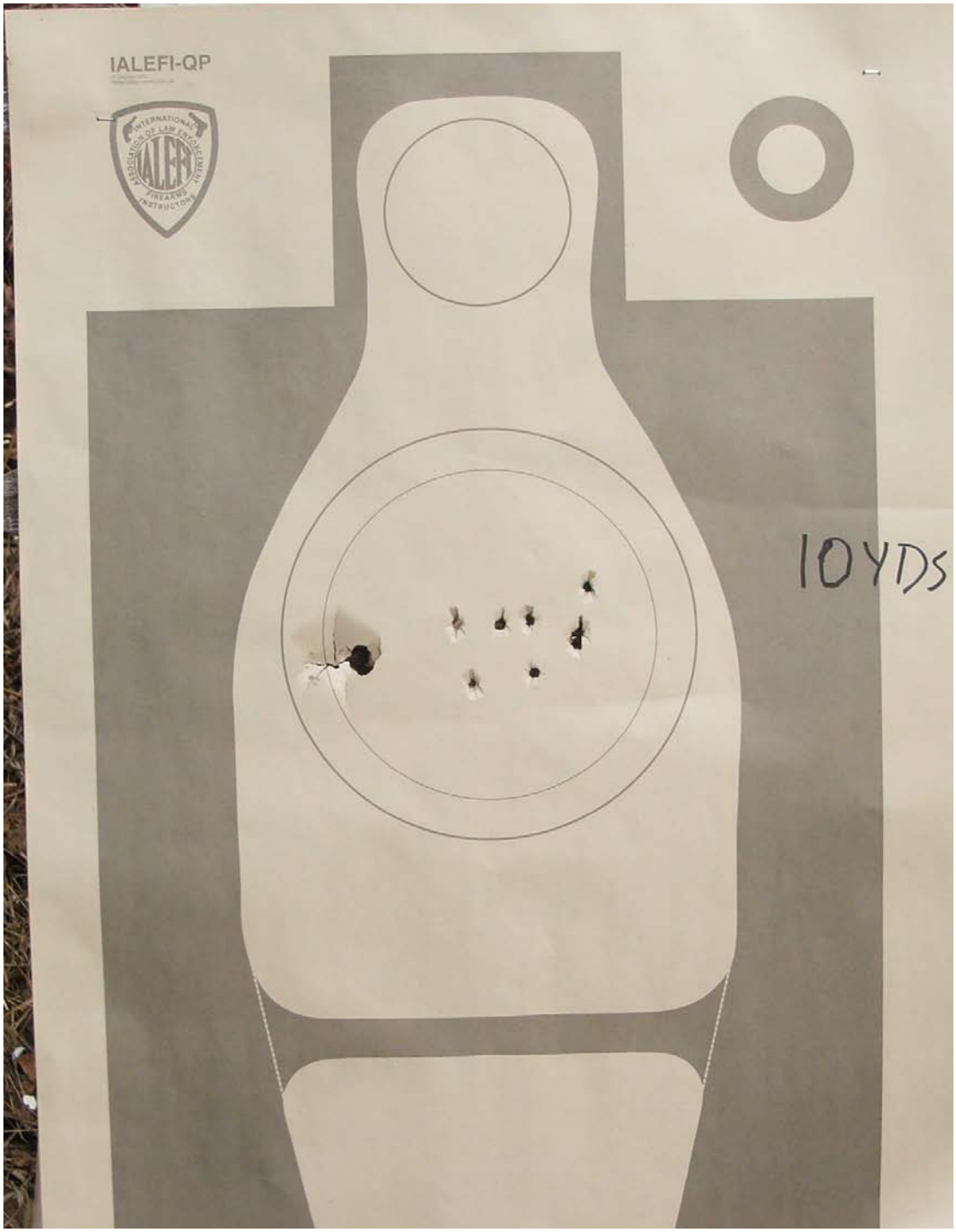
This demonstrates how you can achieve better performance with the 12 gauge shotgun with the addition of the Vang Comp system. The maximum effective range of the 12 gauge 00 buckshot load is extended out to more than 30 yards when using 9 pellet 00 Buck Shot ammunition. The Vang Comp System (VCS) is designed to reduce muzzle rise and recoil via a series of ports at the muzzle and back boring the barrel. Back boring is a process which essentially reduces the angle of the choke so the shot and wad ease through it rather than hitting it significantly reducing the felt recoil.

This information is not an endorsement of the Vang Comp system. It is included to provide an agency which does not have patrol rifles and restricts their shotgun ammo to buckshot, with a proven means to extend the useful range of their shotguns.

* www.vangcomp.com


IALEFI-QP
3 YDS


IALEFI-QP
5YDS


IALEFI-QP
10YDS

Note: Shooter error on this target put the center of the pattern to the right and the wad outside of the Q scoring area.


IALEFI-QP
25 yds

Note: Due to shooter error, the pattern on this target was slightly to the right. Adjusting the center of the pattern to the left, we see that all nine pellets would have landed within the Q scoring area at 35 yards.

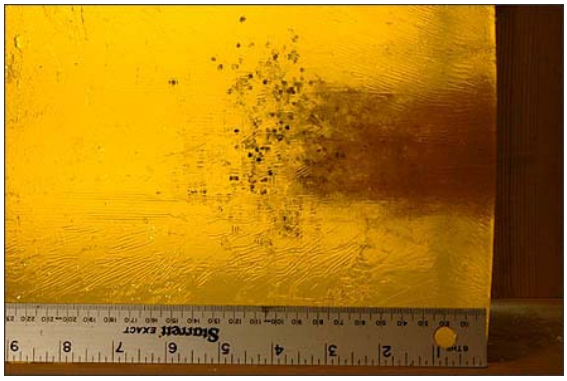
APPENDIX 3

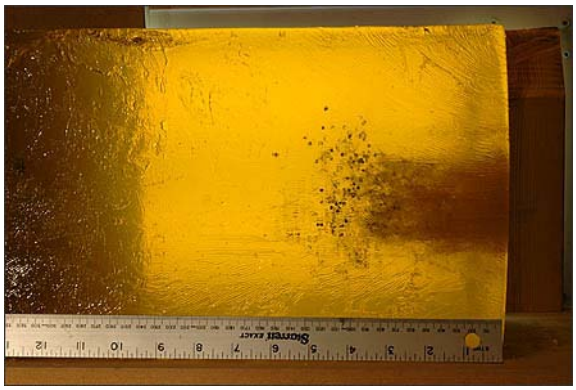
SHOTGUN AMMUNITION PERFORMANCE

There is a general misconception regarding the terminal ballistic performance of shotgun ammo. Many uninformed sources promote the shotgun as the 'ultimate stopper' for a gunfight. While this may have a degree of truth given the right ammo and distance to the target, it is not a "magic bullet" or a guaranteed man stopper. There is also a danger of over penetration with some shotgun rounds. The following information was taken from the Shotgunworld.com Tactical Shotgun forum. It documents some informal ballistic gelatin testing with various loads from bird shot (#8) to slug loads.

The opinions expressed in this section are those of Shotgunworld.com and not that of the MPTC or the authors.

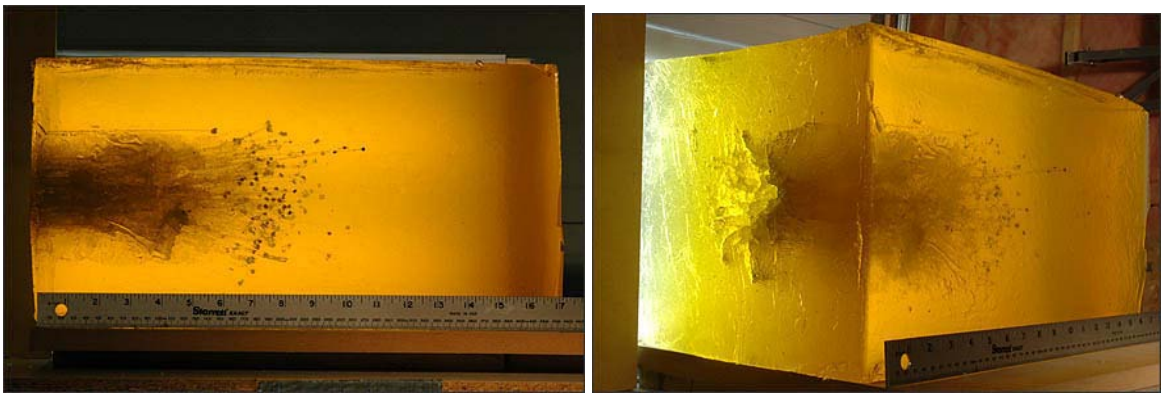
#8 Birdshot (Remington Heavy Dove Load, Remington Model 870 w/ 18" barrel)





First three inches of permanent wound cavity is completely destroyed. Little to no temporary stretch cavity effects is observed. Birdshot such as this #8 heavy dove load is a poor choice for deployment with a tactical shotgun. Wounds inflicted from birdshot tend to be gruesome yet shallow as they lack the penetration required to reach vital cardiovascular or central nervous system structures.

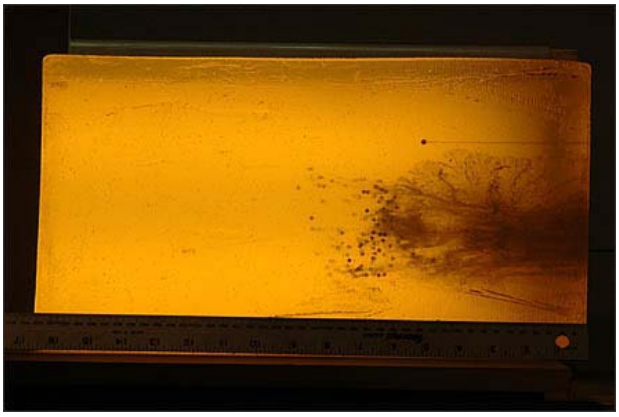
#5 Birdshot - 2¾" Kent Tungsten Matrix #5 (for comparison purposes only)

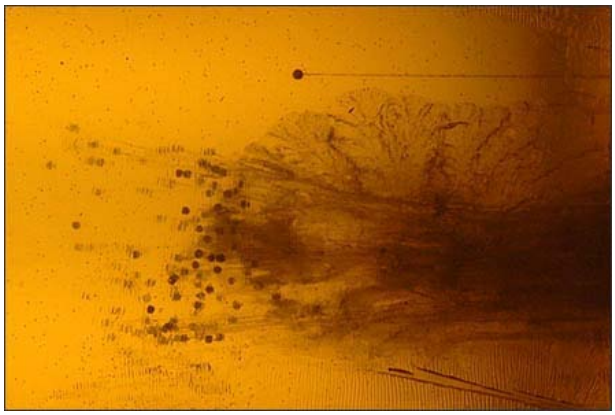


Designed as a better performing alternative to steel wetland bird loads, Tungsten Matrix is an exotic shotgun projectile material that has an even higher density than lead. The high density of tungsten is what interested us in it's possible application as a tactical shotgun load. Small sized birdshot such as this #5 Tungsten Matrix load is a poor choice for deployment with a tactical shotgun. Wounds inflicted from birdshot tend to be gruesome yet shallow as they lack the penetration required to reach vital cardiovascular or central nervous system structures.

Editor's Note: While this load's penetration looks impressive as compared with the much larger #1 shot tungsten matrix load, it needs to be interpreted in the context of the calibration bb's greater penetration. Temperature outside was a little warmer than it should have been when we shot this block and it was the last block of a relatively long string. As a result, this gelatin block exhibits slightly more elasticity than our standard blocks and consequently deeper penetration.

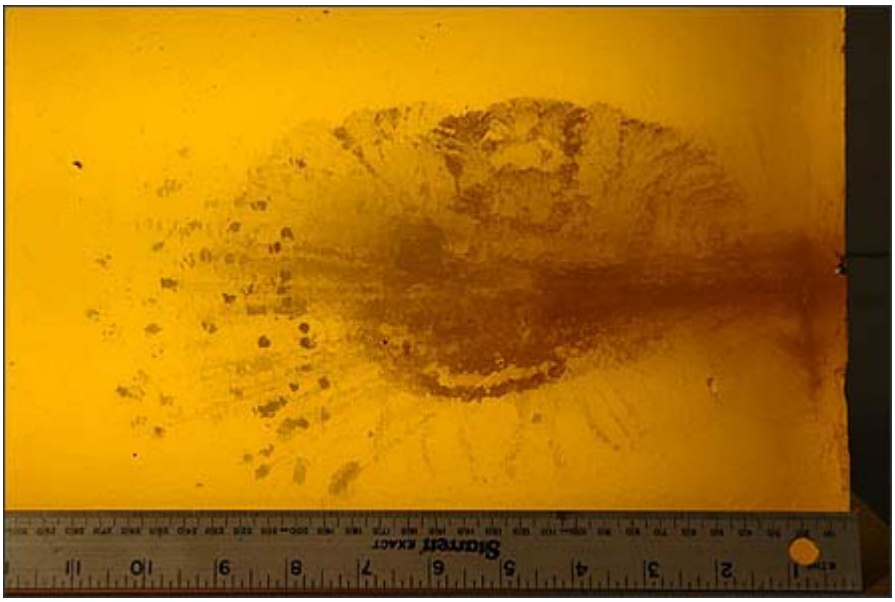
#4 Birdshot from a Remington 870 w/ 18 inch barrel





Significant crushing of tissue evident as with all birdshot, however minimal penetration limits the effectiveness of small shot as a tactical round except at ultra short range. Small sized birdshot such as this #4 heavy dove load is a poor choice for deployment with a tactical shotgun. Wounds inflicted from birdshot tend to be gruesome yet shallow as they lack the penetration required to reach vital cardiovascular or central nervous system structures.

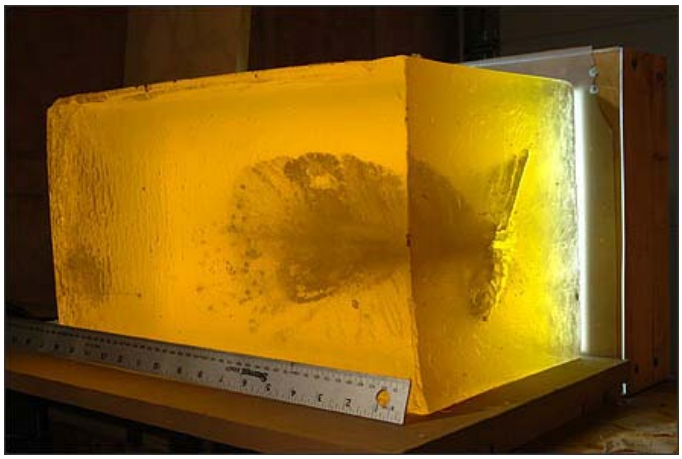
Remington Express #2 Birdshot 2-3/4" from a Remington 870 w/ 18 inch barrel



Average penetration of 9.5 inches was observed.

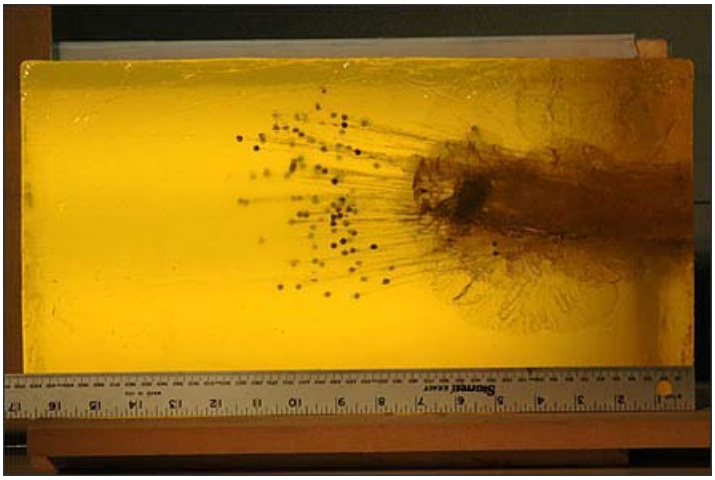
Perspective on the entrance holes and wound tract.

Small sized birdshot such as this #2 express load is a poor choice for deployment with a tactical shotgun. Wounds inflicted from birdshot tend to be gruesome yet shallow as they lack the penetration required to reach vital cardiovascular or central nervous system structures. For ultra close range applications (ie: inside your home) this load would likely be effective, however an operator should be prepared to follow up with larger shot in the event that additional force is required to stop a threat.

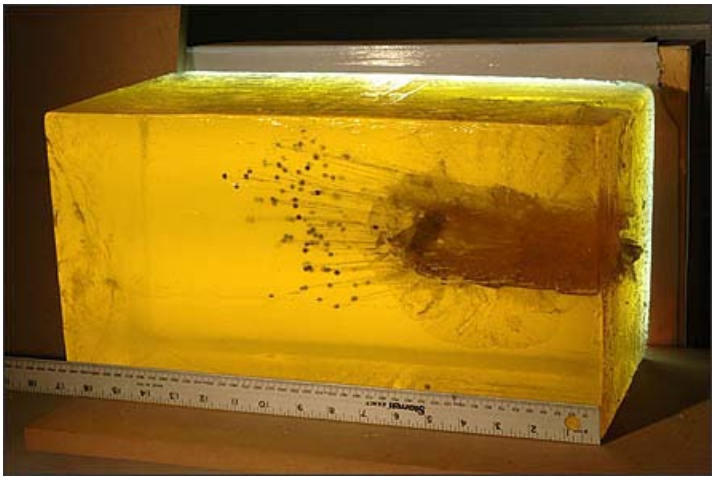


Kent Tungsten Matrix #1 Birdshot 2-3/4 inch from Remington 870 w/18 inch barrel

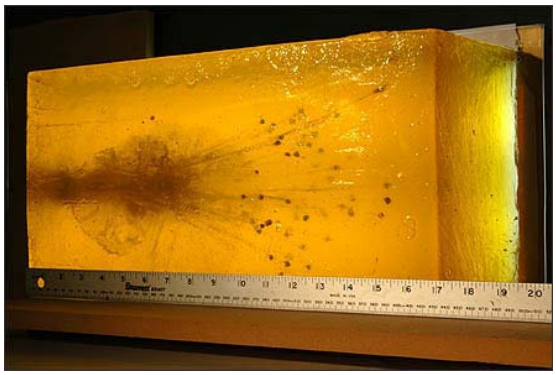
Slightly more perspective on the shallow yet massively shredded entrance tract.



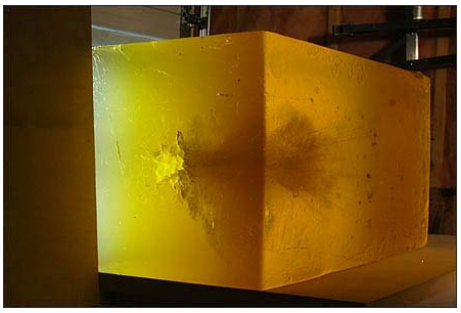
The three primary temporary stretch cavities were large; one tearing beyond the boundaries of our 9x9 test block. This load approaches the minimum recommended penetration standard for an all around tactical shotgun load. Consideration of this load should be limited to an application such as warrant services in confined buildings with small rooms and narrow hallways where an engagement is guaranteed to be very close range and over penetration is a significant and unacceptable risk. In mitigating these risks it is important to recognize that birdshot loads are significantly handicapped as compared to buckshot loads in their capacity to create the deep permanent cavities required to damage either cardiovascular or CNS structures.



Remington 2-3/4 inch BB (lead) from Remington 870 w/18 inch barrel



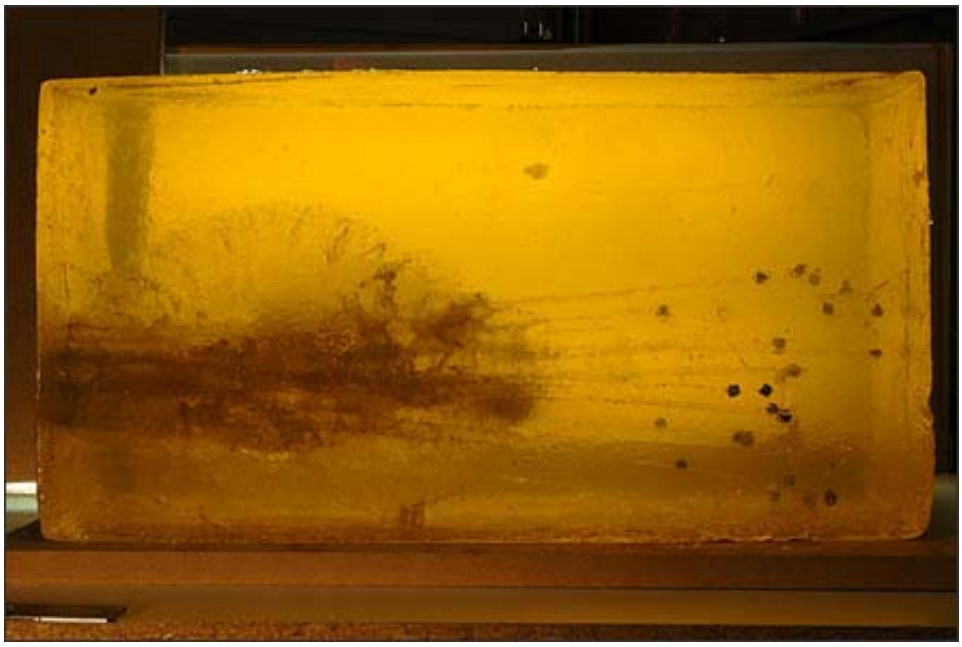
Note the permanent wound cavity depth of approximately 8 inches. Projectile penetration reaches about 15 inches which is satisfactory for a tactical law enforcement shotgun load. This could be an ideal home defense load given the balance between recoil and penetration.



Large amounts of crushed tissue visible at the entrance wound extend approximately 6.5 inches into the block. The entrance hole from the calibration BB is also visible.

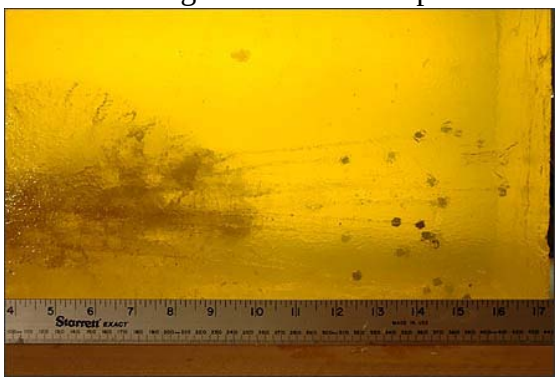
Cross section illustrating the spread of the shot as it travels through target media. Visible are the individual wound channels created by the BB's. This load is likely a very effective close range defensive or tactical load. Before lead shot was banned throughout most of North America for use on waterfowl, Lead BB was the load of choice for long range goose hunting. The same performance characteristics that made it so well suited for that application merit consideration when evaluating short range loads for your tactical shotgun. While the lead BB has its place as a short range tactical load, it is not recommended for medium or longer range work. Number 4 buckshot is the minimum pellet size recommended for general tactical applications. See next test.

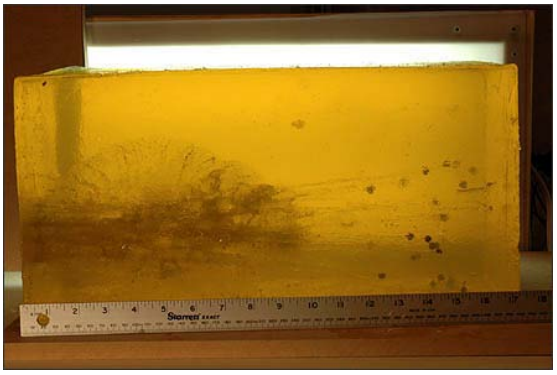
Federal "Classic" #4 Buckshot from a Remington 870 w/ 18 inch barrel



Note that the shot column struck a little low. This photograph was taken without the ruler to show the entire shot load.

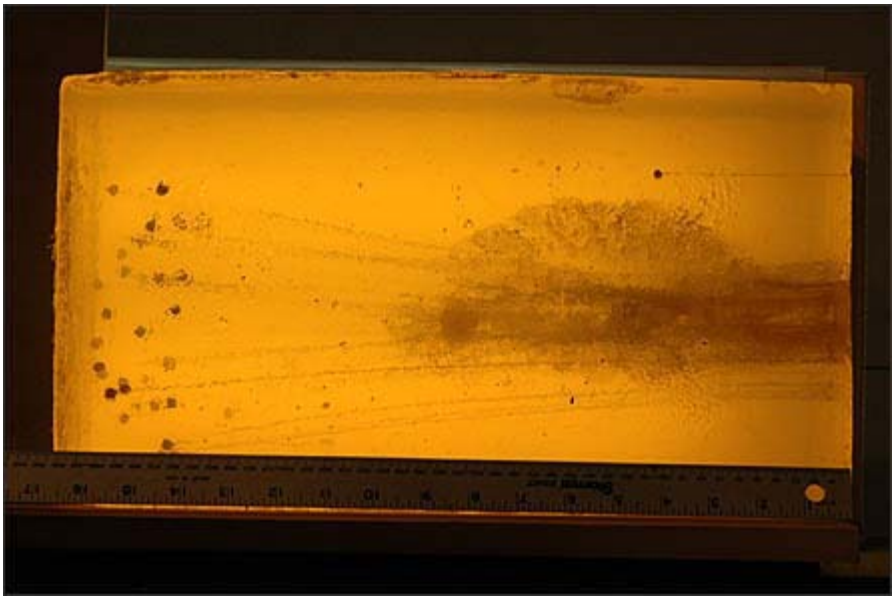
Temporary stretch cavity was approximately 10 inches long. Permanent crush cavities were on average 14.5 inches deep.



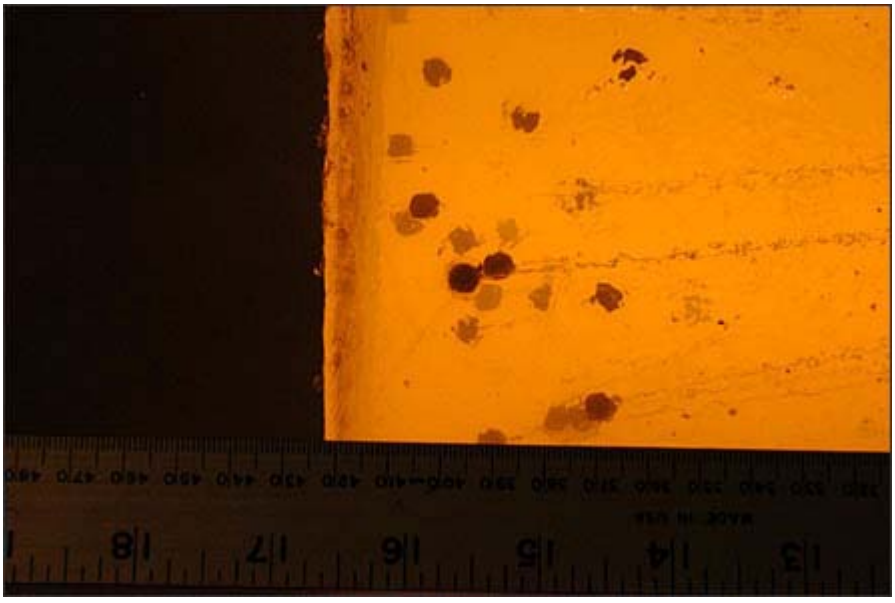


Generally number 4 buckshot is the minimum shot size recommended for all purpose tactical applications. The load balances decent penetration with a higher projectile count; increasing your first round hit probability over both #1 buck and 00 buck at medium shotgun range. If all pellets strike the intended target (likely when utilized at closer range) #4 buckshot offers several times the effective wound channel creation capabilities over both #1 and 00 buck.

#4 Buckshot Magnum

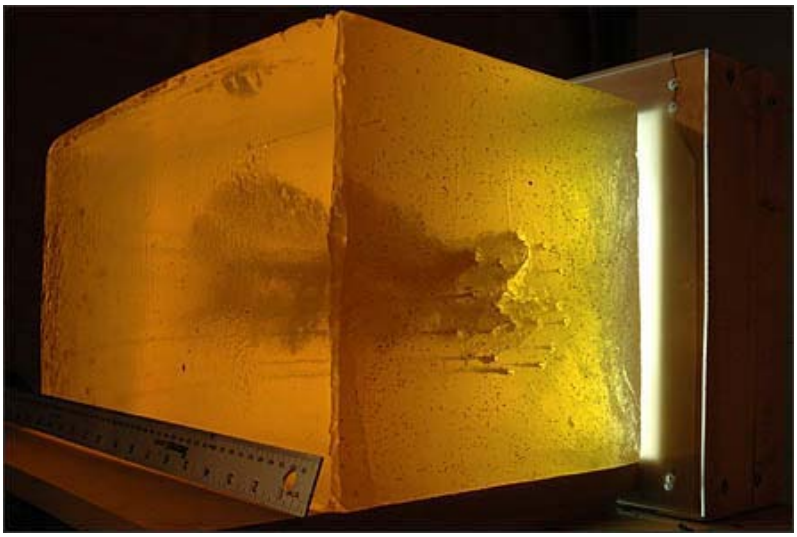


Federal Classic #4 plated magnum buck shot out of an 18 inch barreled Remington 870 Marine Magnum.

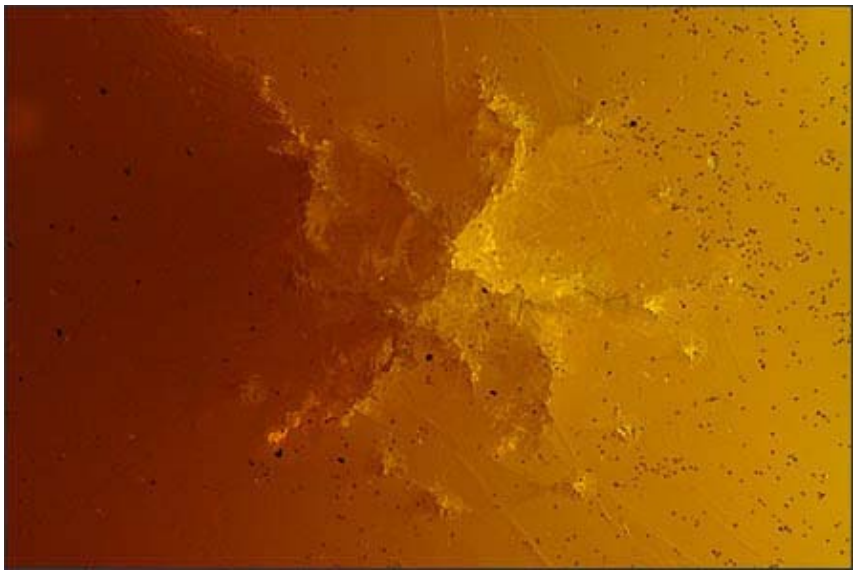


Impressive and consistent penetration of 15.5 inches was observed.

Perspective on the entrance holes and wound tract.



Given the 3 yard range, we were surprised the pattern had opened up as much as is evident in this photograph.

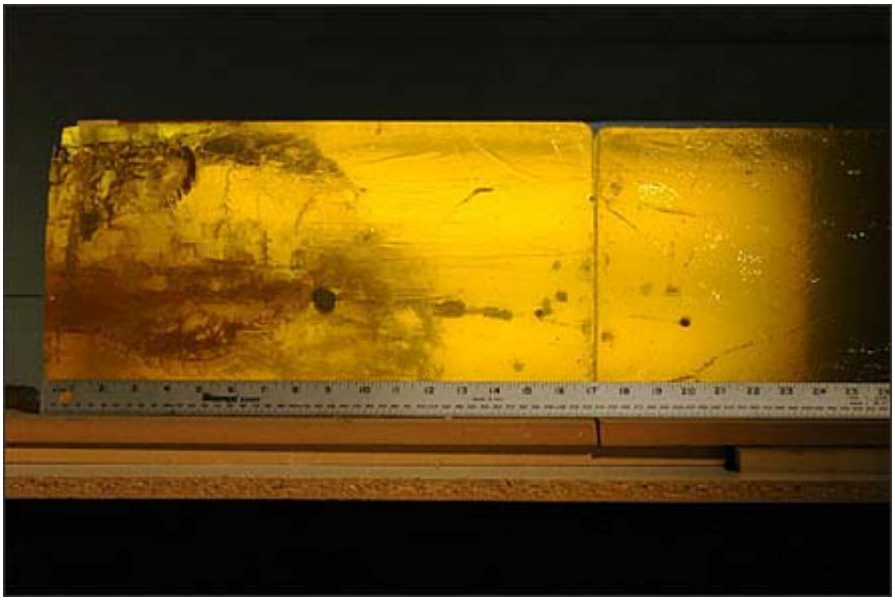


Closeup of the entrance holes.

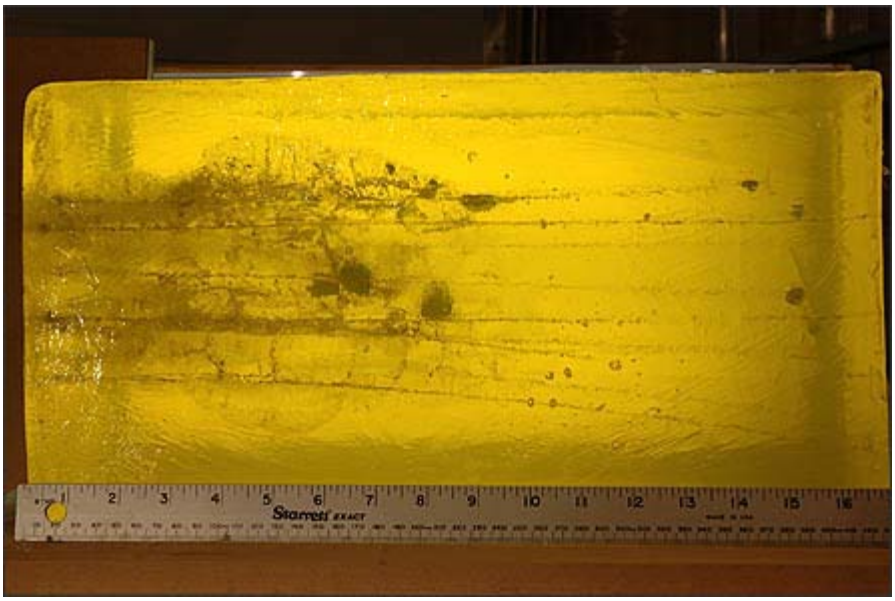
Tested was a 2¾ inch load of Federal Premium #4 plated Magnum buckshot fired from an 18 inch barreled Remington 870 Marine Magnum.

#4 buckshot is what we consider the minimum all purpose buckshot load for tactical applications. While a standard #4 buck load typically has a payload of 27 pellets, this magnum load from federal has 34. Not a load for the recoil sensitive.

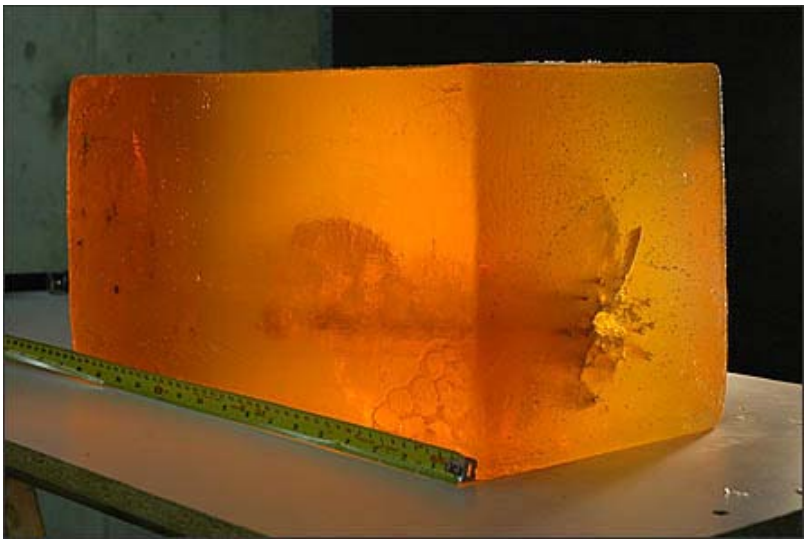
#1 Buckshot



2¾ Remington #1 Buckshot (16 pellet) shot out of an 18 inch barreled Remington 870 Marine Magnum



In this shot, the temporary stretch cavity exceeded the elastic limits of our gelatin block and ruptured out the top and side. An additional shot was conducted into a second gelatin block below at a slightly increased range to measure the temporary stretch cavity. Overall penetration was approximately the same as the first shot, however the shot pattern was slightly larger at the 5 yard range as compared to the 3 yard range of the original shot.



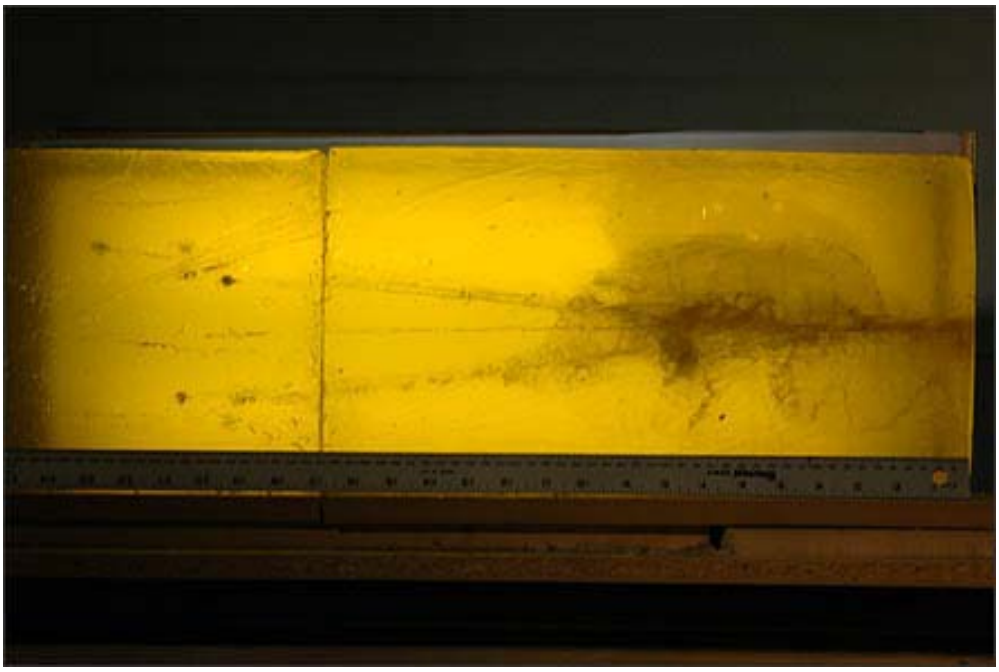
Perspective on the entrance wound of the 16 pellet load fired from 5 yards.

A 2¾ inch load firing 16 .30 cal pellets, this offering from Remington fired from an 18 inch barreled Remington 870 Marine Magnum exhibited excellent average penetration of approximately 16.5 inches.

Temporary stretch cavity measured approximately 8.5 inches. Shot recovered exhibited minimal deformation. In our opinion, this load is superior to 00 buck for selection as a tactical shotgun load. While exhibiting slightly less penetration, overall penetration is still acceptable and if all pellets strike their intended target there is potential to create approximately 77% more wound tract with the additional 7 pellets.

#00 Tactical Buckshot

2¾ Remington Tactical Managed Recoil Buckshot (8 pellet) shot out of an 18 inch barreled Remington 870 Marine Magnum.

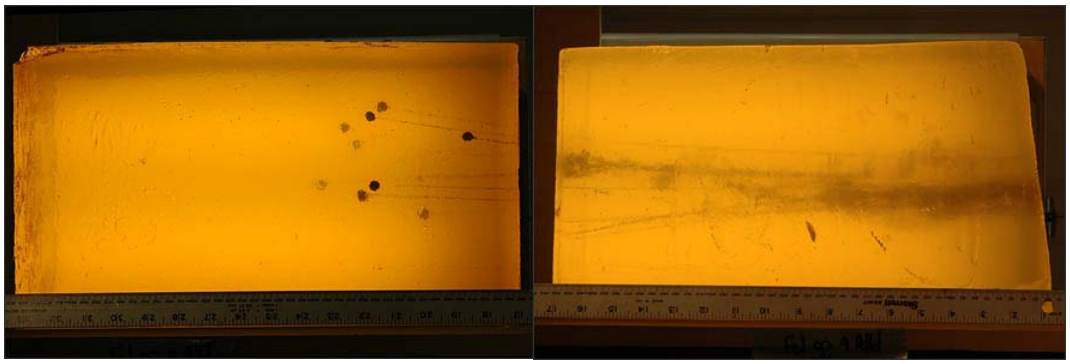


While this particular load patterned well in the test shotgun, surprising dispersion was noted in the gelatin media (one pellet was not even recovered). We speculate that is related to the moderate shot deformation observed in the pellets recovered.

This 2¾ inch load of Remington Tactical Managed Recoil 00 buckshot fired from an 18 inch barreled Remington 870 Marine Magnum surprised us with its considerable penetration of 20.5 inches. Temporary stretch cavity measured approximately 8.5 inches in length. Shot recovered exhibited some moderate deformation. The first 5 inches of the permanent crush cavities were all interconnected by tearing affected by temporary stretch.

Reduced recoil buckshot loads are becoming more and more popular as they tend to pattern significantly tighter than the higher power loads in addition to being easier to shoot. Not as much a trade off in the penetration department as one might imagine, we would have no hesitations recommending this load for use in a defensive or tactical situation requiring buckshot.

#00 Buckshot (Federal Classic)
Tested was a 2¾ inch Federal Classic load of 00 buckshot (9 pellets) fired from an 18 inch barreled Remington 870 Marine Magnum.

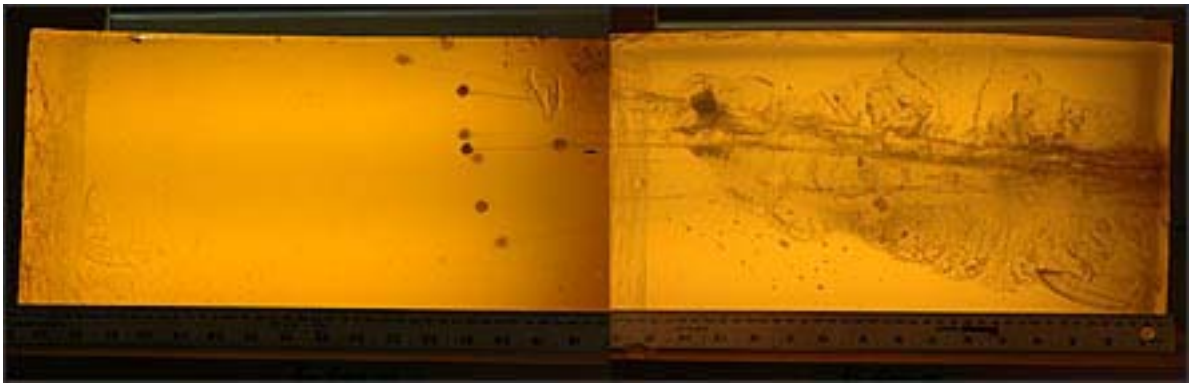


Complete penetration and generally tighter wound tract pattern.

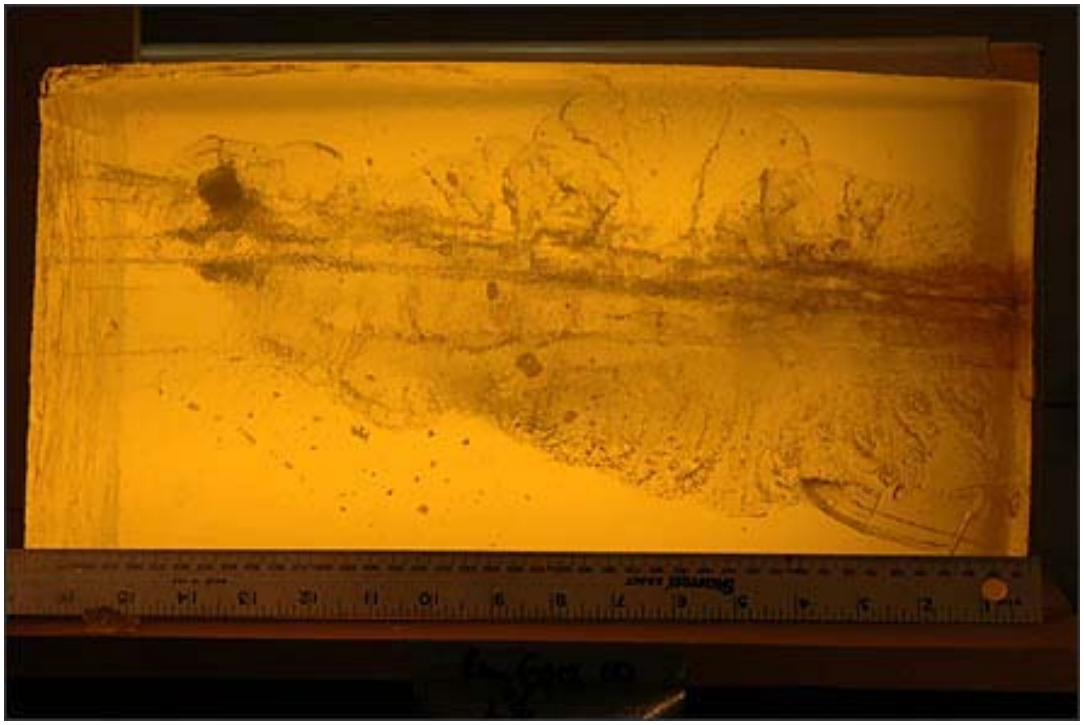
Block #2 illustrating the resting place of all 9 pellets. As compared to the Remington express load the pellets exhibited approximately 50% less dispersion within the target media.

As with most unplated buckshot, some mild deformation of the shot was observed. We believe most of this deformation occurs during firing, and plays a large role in how the shot will pattern. We do not believe general deformation of the hardened lead pellets is significant with respect their performance in target media. We do believe Federal's wad configuration is superior to most others, and as a result most of their buckshot loads tend to pattern tighter than those of their competition. Patterning can vary greatly from shotgun to shotgun....the only way to know how your shotgun will perform with any given load combination is to get out and pattern it yourself. With our caveat out of the way, we will state that it has been our observation that Federal buckshot loads typically pattern tightly across a large variety of different shotguns.

#00 Buckshot (Remington Express)
Tested was a 2¾ inch Remington Express load of 00 buckshot (9 pellets) fired from an 18 inch barreled Remington 870 Marine Magnum.

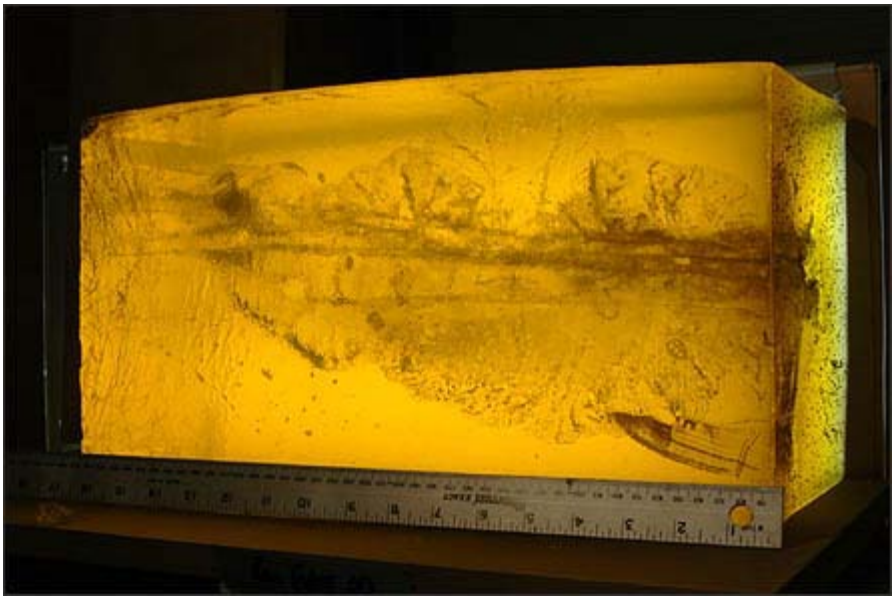


Composite photograph illustrating total penetration of one round of Remington Express 00 unplated buckshot.



The first block illustrating the temporary stretch cavity and the dispersion of the shot within the target media.

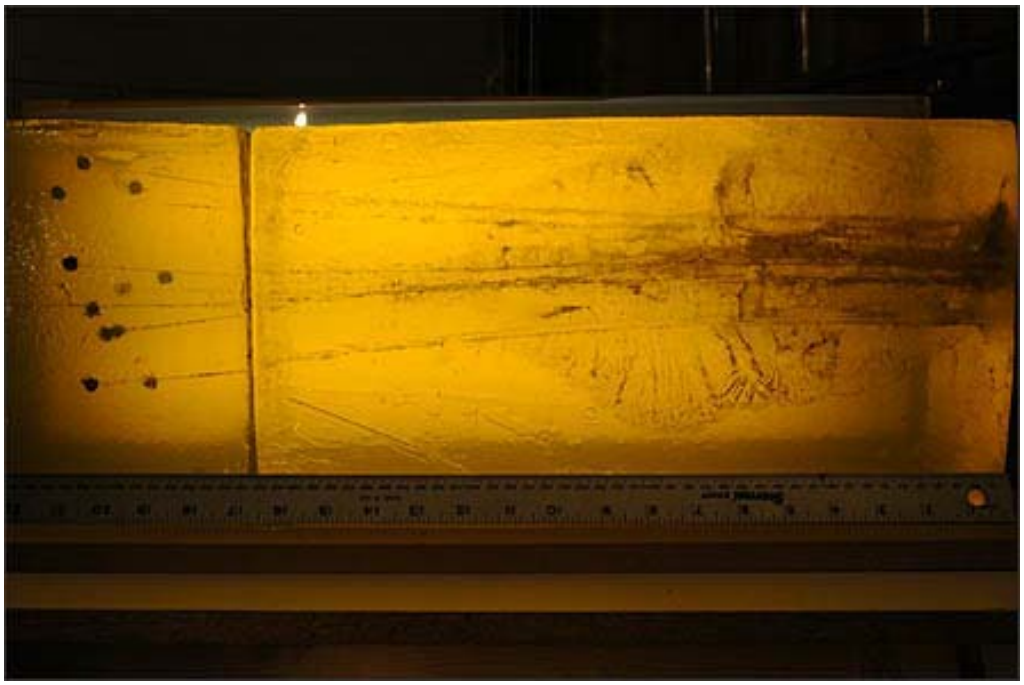
Relatively uniform penetration of all 9 pellets was observed.



Perspective on the entrance hole and wound tract. As with most unplated buckshot, some mild deformation of the shot was observed. We believe most of this deformation occurs during firing, and plays a large role in how the shot will pattern. We do not believe general deformation of the hardened lead pellets is significant with respect their performance in target media.

#00 Buckshot (Federal Classic Magnum)

2¾ Federal 00 Buck Magnum (12 pellet) shot out of an 18 inch barreled Remington 870 Marine Magnum



Details of the large temporary stretch cavity and the entrance aspect. The temporary stretch cavity measured approximately 11 inches in length.

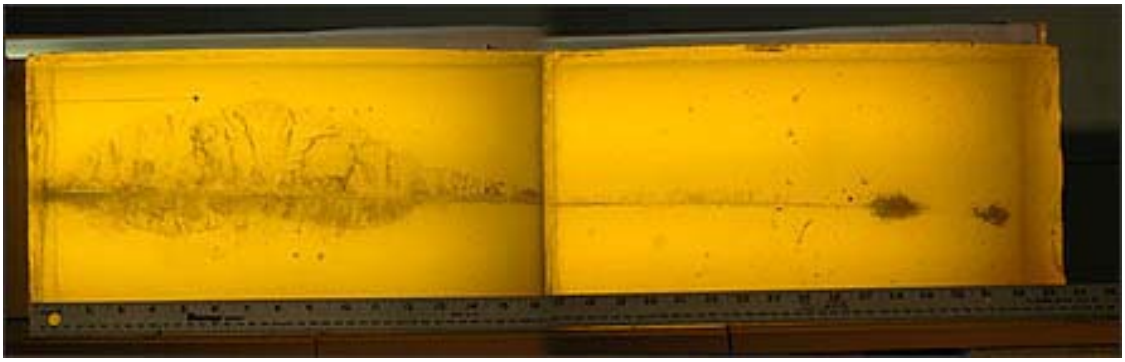
Wider perspective of testing rig. 2 blocks of gelatin, each 17 inches long, were used for this test.

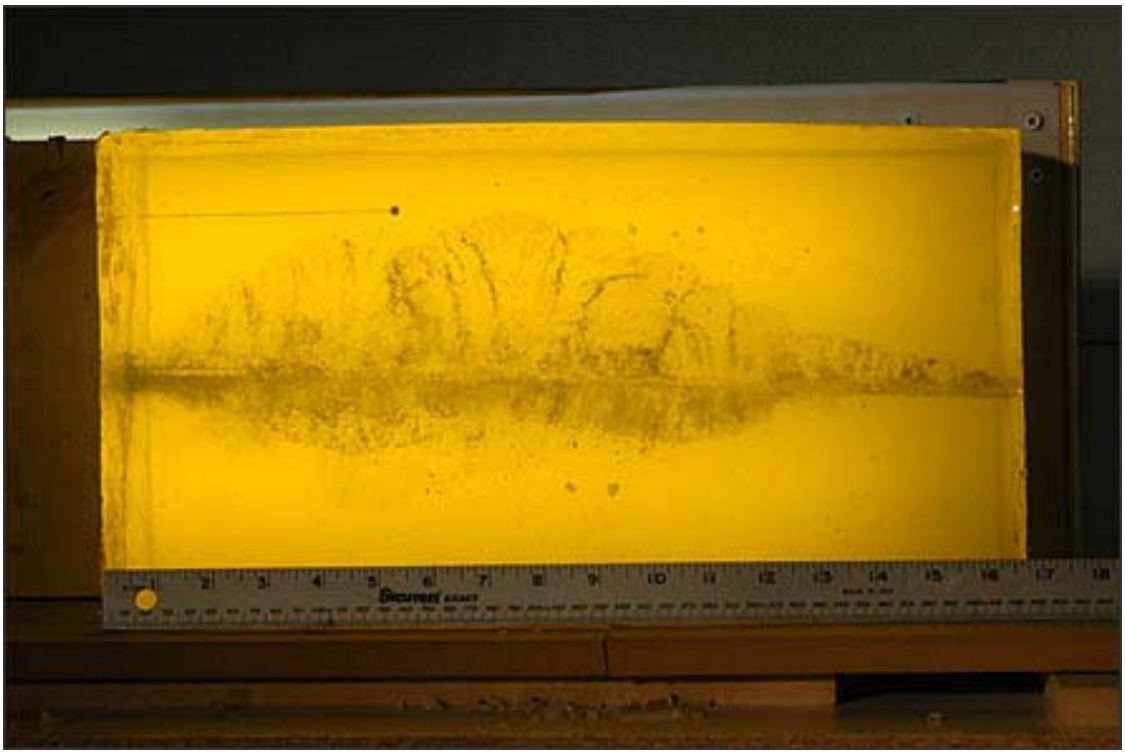
Up for observation was a 2¾ inch magnum load of Federal 00 buckshot fired from an 18 inch barreled Remington 870 Marine Magnum. Considerable penetration on average of 20 inches was noted, with the temporary stretch cavity measuring approximately 11 inches. Shot recovered exhibited minimal deformation and we speculate this is due to both buffering and the unique wad configuration of this particular load. The first 6 inches of the permanent crush cavities were all interconnected by tearing effected by temporary stretch.

If excessive penetration is not an issue, performance as observed in this test would likely be strong in a tactical application.

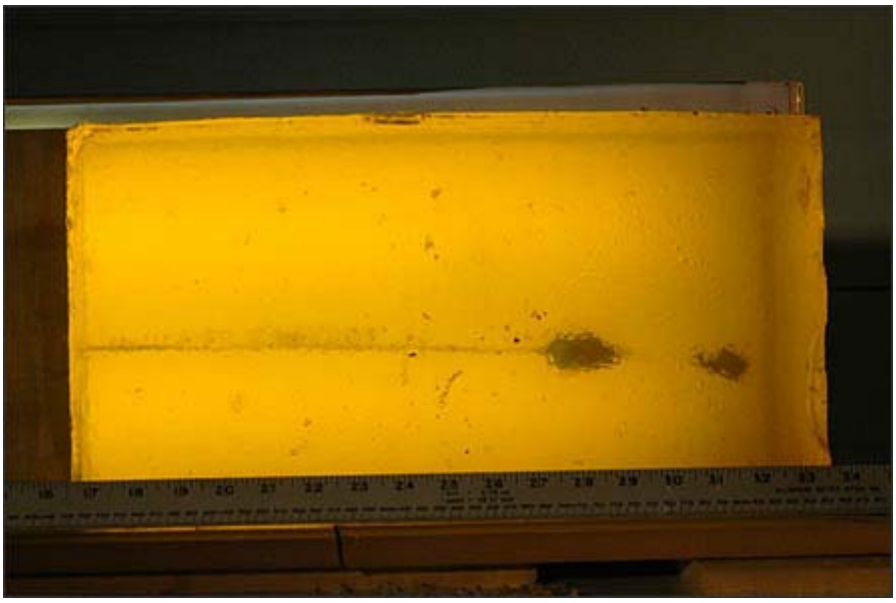
Reduced Recoil Slug

2¾ Remington Reduced Recoil 1oz Slug shot out of an 18 inch barreled Remington 870 marine magnum





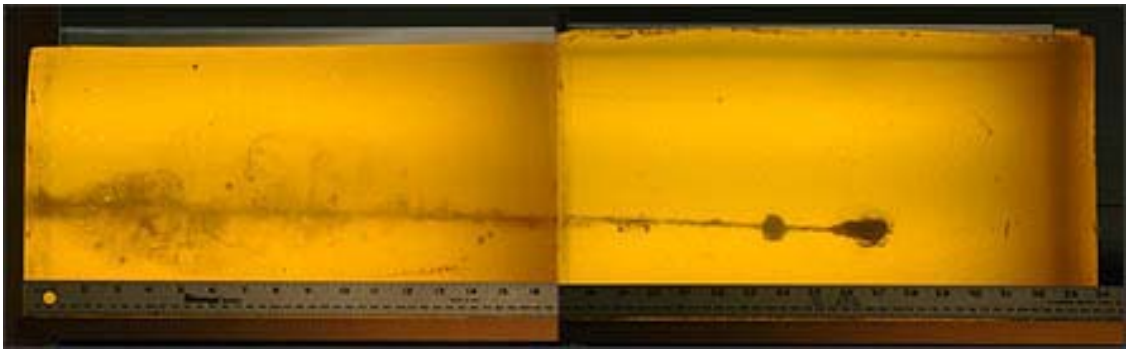
Total penetration of the load was longer than our gelatin photographing light fixture. As a result we photographed each block separately and spliced the two together for the first photograph. Here is a photo of the first block.



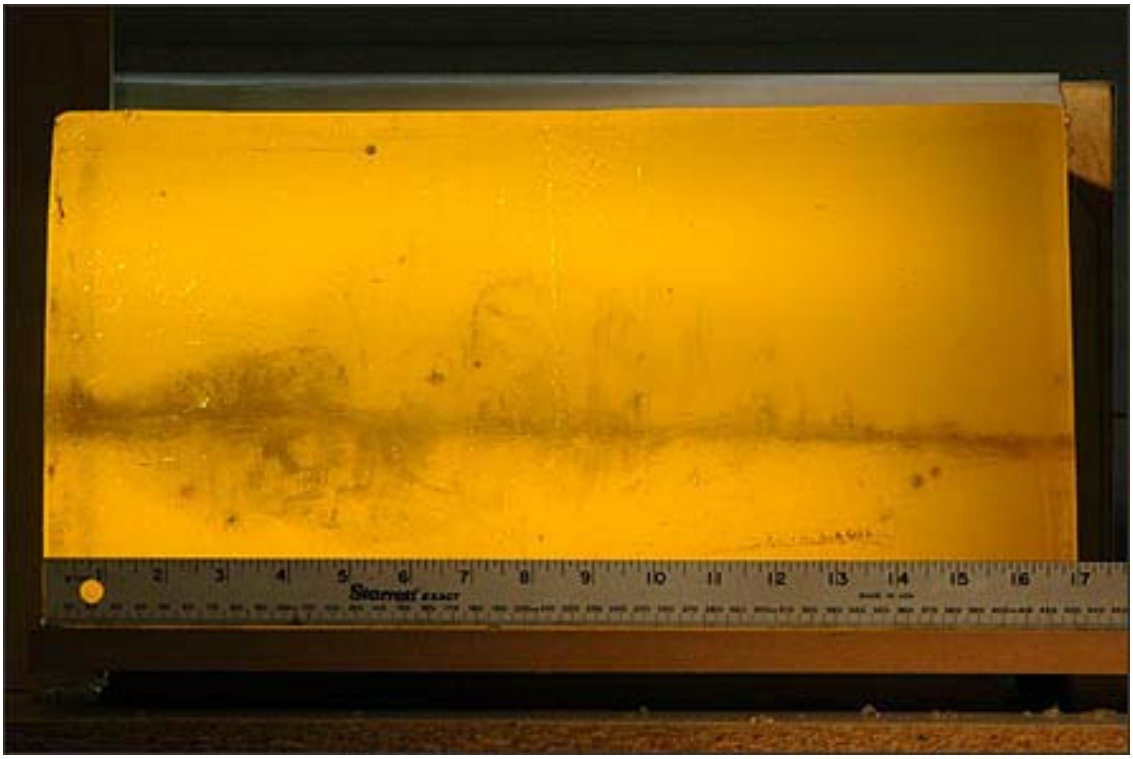
The second gelatin block showing the slug and wad material.

Closeup of the slug. You can how it has yawed slightly, however the proximity and similar orientation of the wad suggesting that tumbling of the slug is unlikely as it travels through the target media. Because the slug is as wide as it is tall, it is difficult to determine tumbling via examination of the permanent wound channel. If you can live with the approximate 15 to 20 yard decrease in maximum range (85 yards as compared to approximately 100 with a full power slug), this load exhibits phenomenal penetrating capability...especially when you consider the projectile's poor sectional density.

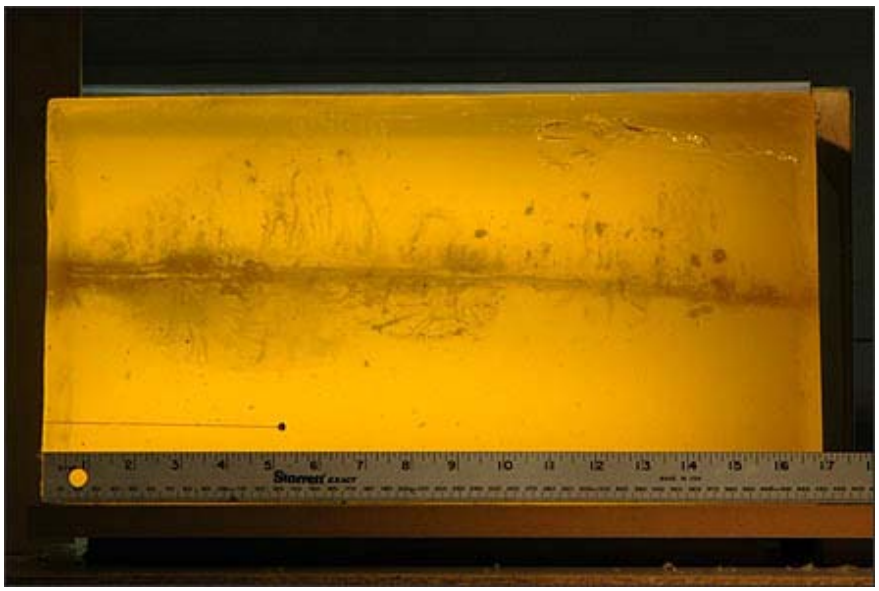
Reduced Recoil Slug (14" Barrel)



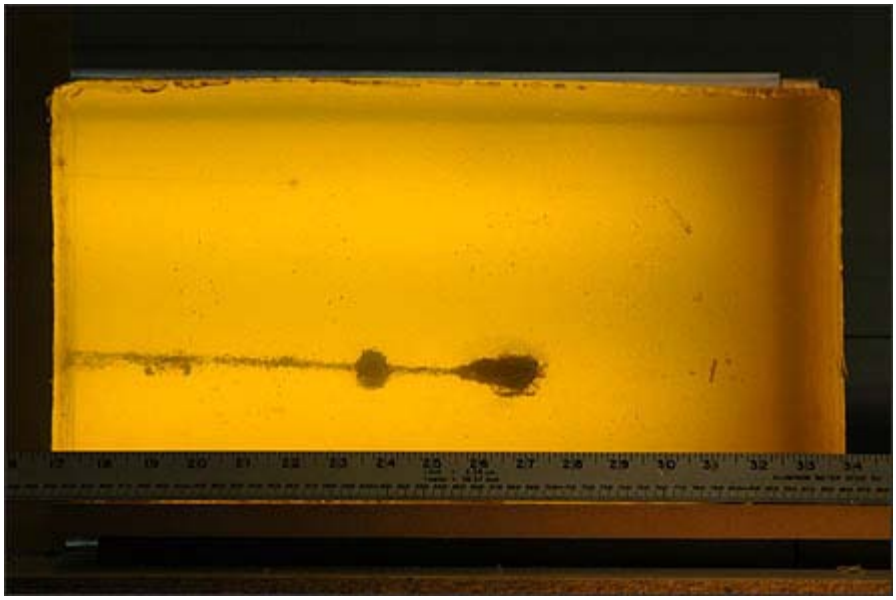
2¾ Remington Reduced Recoil 1oz Slug shot out of a 14 inch barreled Remington 870 hybrid. Our light table is not long enough to capture the full tract, thus the composite photograph.



As with most slug testing, total penetration of the load was longer than our gelatin photographing light fixture. As a result we photographed each block separately and spliced the two together for the first photograph. Here is a photo of the first block.



The first block rotated 90 degrees, illustrating with slightly more clarity the temporary stretch cavity.



The second gelatin block showing the slug and wad material. In comparison to the same load fired out of an 18 inch barreled Remington 870, the 4 inches of barrel length missing effects an overall penetration reduction of approximately 2.5 inches.

Closeup of the recovered slug. Similarly to the same slug load fired from an 18 inch barreled 870, there was little to no slug expansion evident.

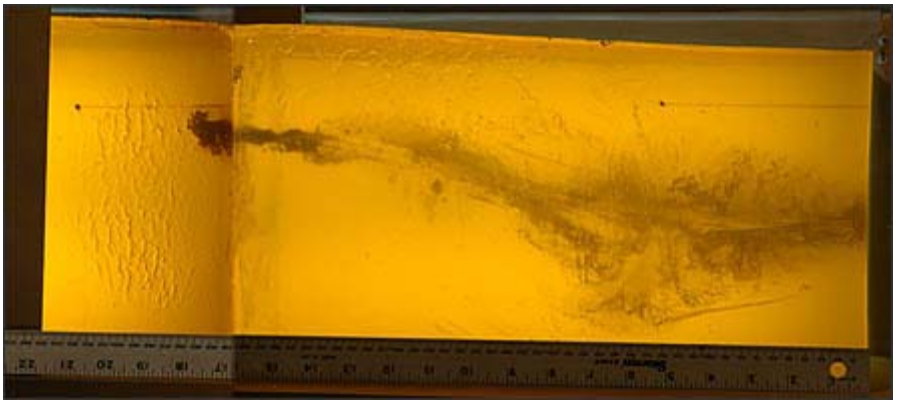
Evidence of the slightly lower muzzle velocity when fired from a barrel 4 inches shorter than our standard 18 inch test barrel is approximately 2.5 inches of total penetration reduction. Are the benefits of the reduced recoil slug and a short barreled shotgun worth this type of performance penalty? Our experience has been that on animals weighing less than 500 lbs there is nothing lacking at all in this slug/barrel length combination.

We highly recommend reduced recoil slugs, as they certainly are easier on the shoulder in practice and as such you are likely to practice more and feel more confident in your ability to hit. In our patterning exercises we also found these slugs to be very accurate across a wide variety of guns.

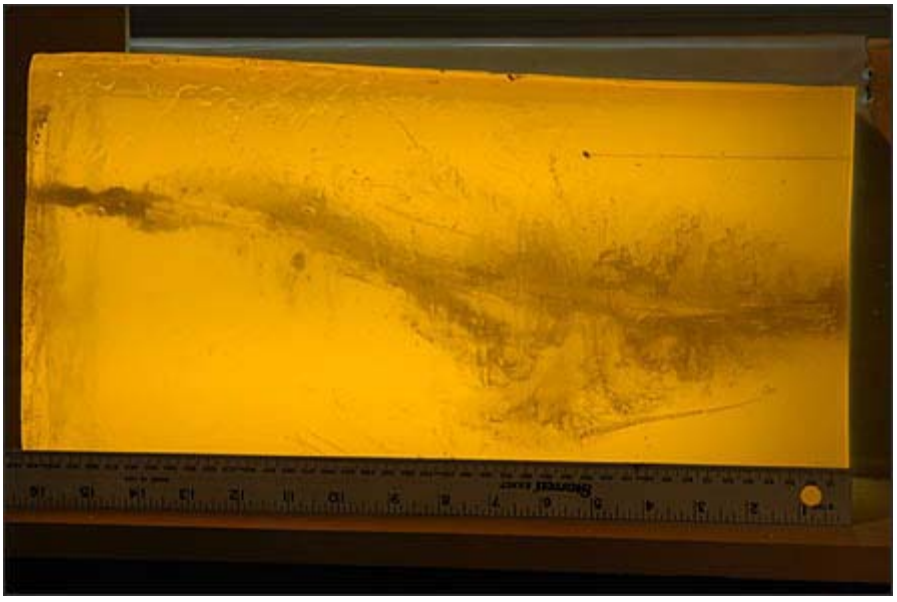
*****NOTE*****

Based on experience with a yearling cow we were requested by its owner to shoot, we DO NOT RECOMMEND REDUCED RECOIL SLUGS FOR DANGEROUS GAME OR ANIMALS THAT WEIGH MORE THAN 500lbs.

Foster Slug
Tested was a 2¾ inch Winchester regular foster styled slug fired from an 18 inch barreled Remington 870 Marine Magnum.



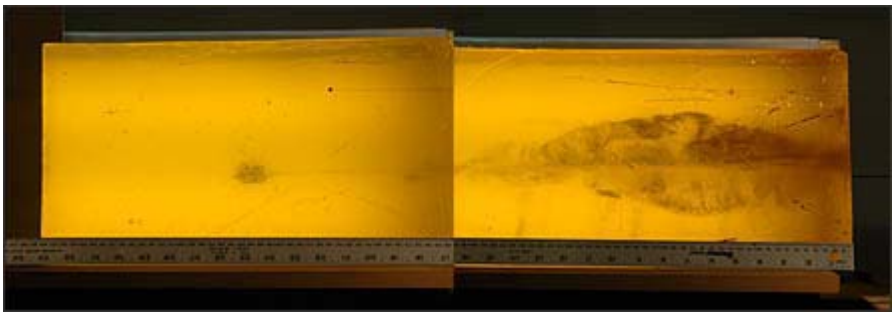
Composite photograph illustrating total penetration of a 1600fps Winchester Foster styled slug.



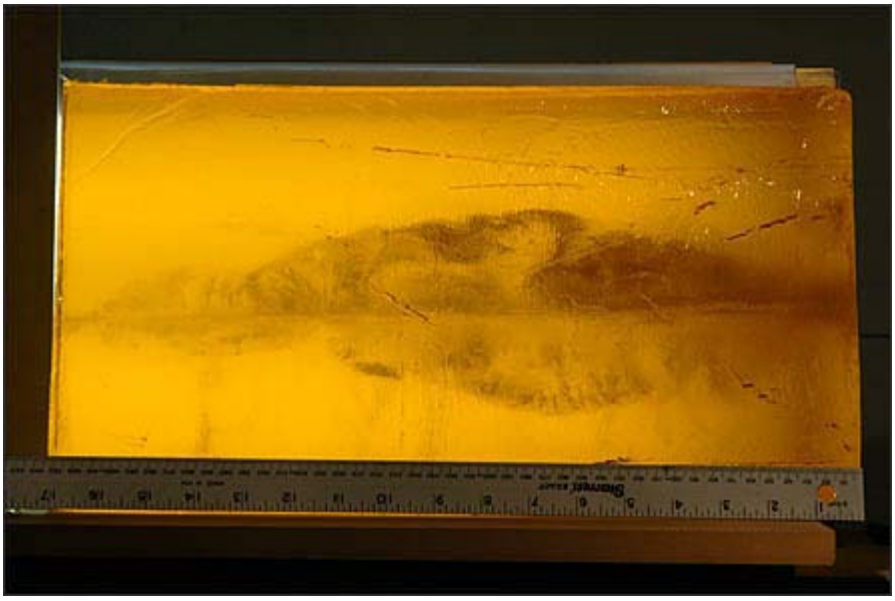
This photograph illustrates the deflection of the slug as it travelled through the target media...likely caused by the high degree of slug deformation observed. The slug only barely penetrated into the second block. A fragment of the slug was recovered at the very tail of the first block.

A 1 oz soft lead slug traveling at approximately 1600 fps yielded some surprising observations in the ordinance gelatin. When compared with the reduced recoil loads; the higher velocity of standard velocity loads with the Foster slug (such as this one by Winchester) produce less penetration as far more energy is invested in deformation and deflection of the slug.

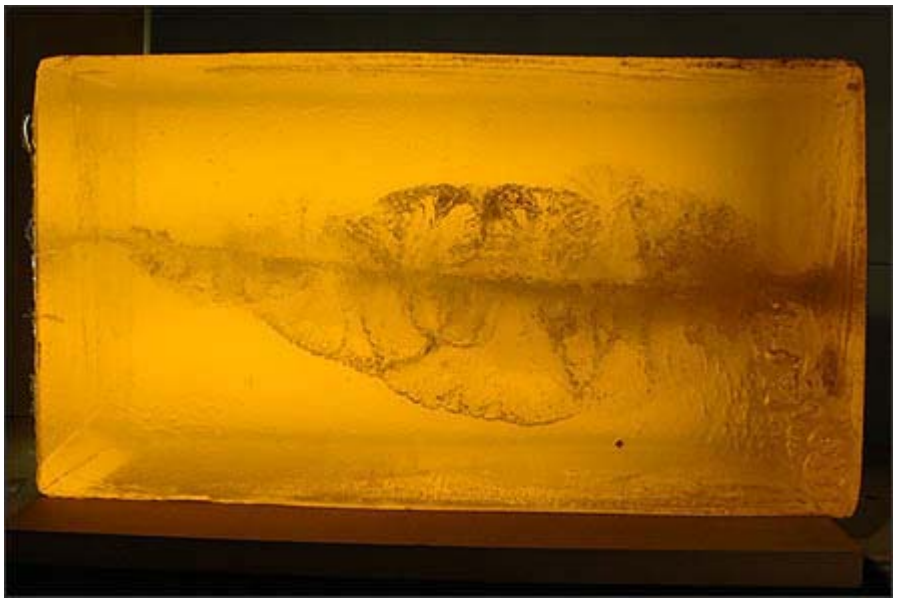
Brenneke R10 Slug



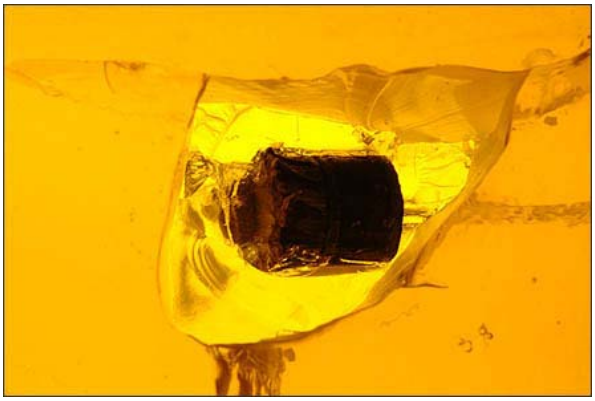
Composited combined tracts of a 2¾ Brenneke R10 slug fired from an 18 inch barreled Remington 870 Marine Magnum.



As with most of our slug testing, total penetration of the load was longer than our gelatin photographing light fixture. As a result we photographed each block separately and spliced the two together for the first photograph. Here is a photo of the first block.



Rotating the block to emphasis the temporary stretch cavity, note that it is significantly more developed and longer as compared to the regular foster style slugs we've tested.



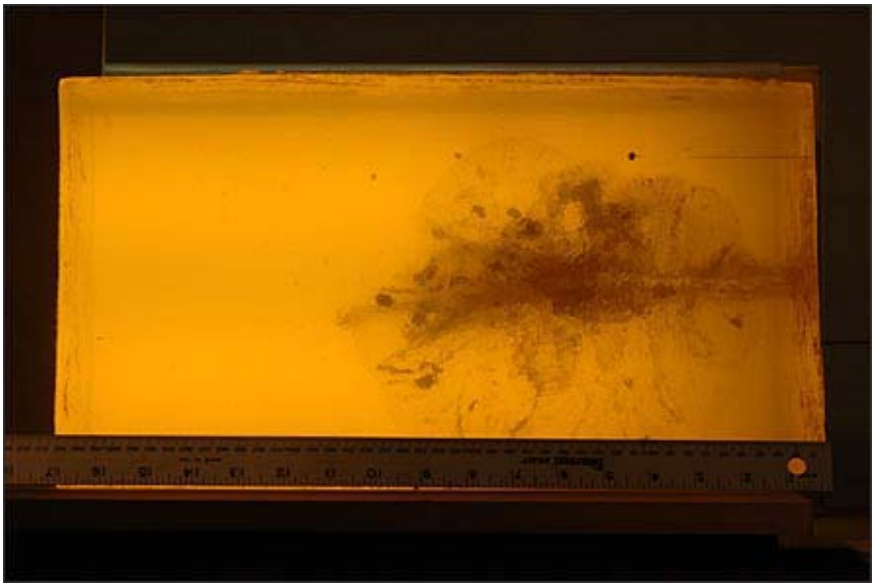
The second gelatin block showing the slug and affixed wad. Slug and wad combination as recovered from the gelatin.

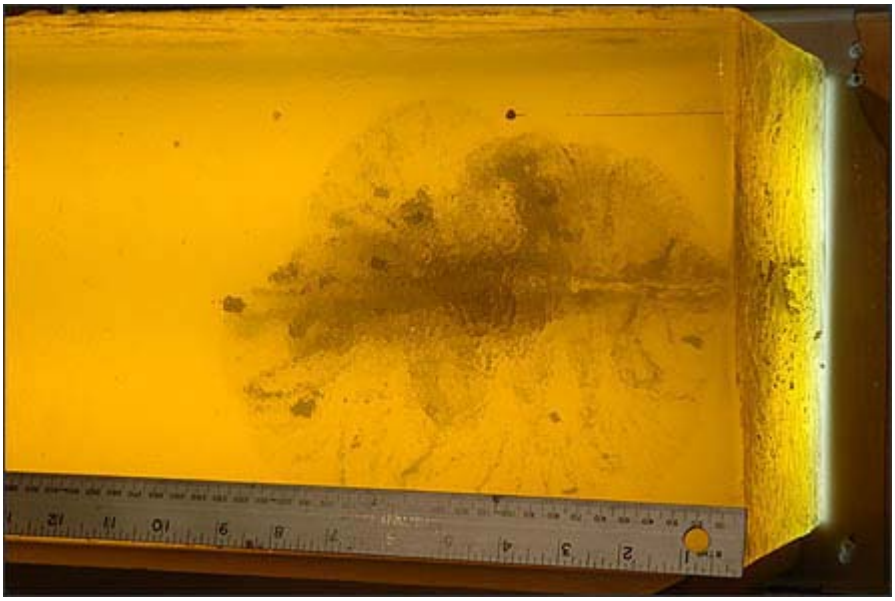
Brenneke slugs are frequently discussed as having significantly superior penetration characteristics as compared to other high velocity slugs. The gelatin testing support these claims and uncovered some other interesting performance characteristics that merit consideration when selecting a slug. The nose design of these slugs is such that very controlled expansion occurs with the slug retaining 97% of it's original mass. The slight expansion and geometry of the expanded head are such that as the slug travels through

target media it cuts a larger diameter wound tract. As compared to most regular Foster styled slugs cast/swaged from soft lead, the Brennekes are manufactured from a harder alloy that largely accounts for the slug holding together better at the higher velocities. At velocity reaching 1600 feet per second, the softer lead slugs tend to deform significantly, losing their penetrating potential as the slug either expands so much as to present huge cross sectional area or breaks up into smaller, less efficient fragments. As the Brennekes hold together better, they are a more appropriate slug when deep penetration is required.

International Frangible Slug

2¾ International Frangible slug fired from an 18 inch barreled Remington 870 Marine Magnum.

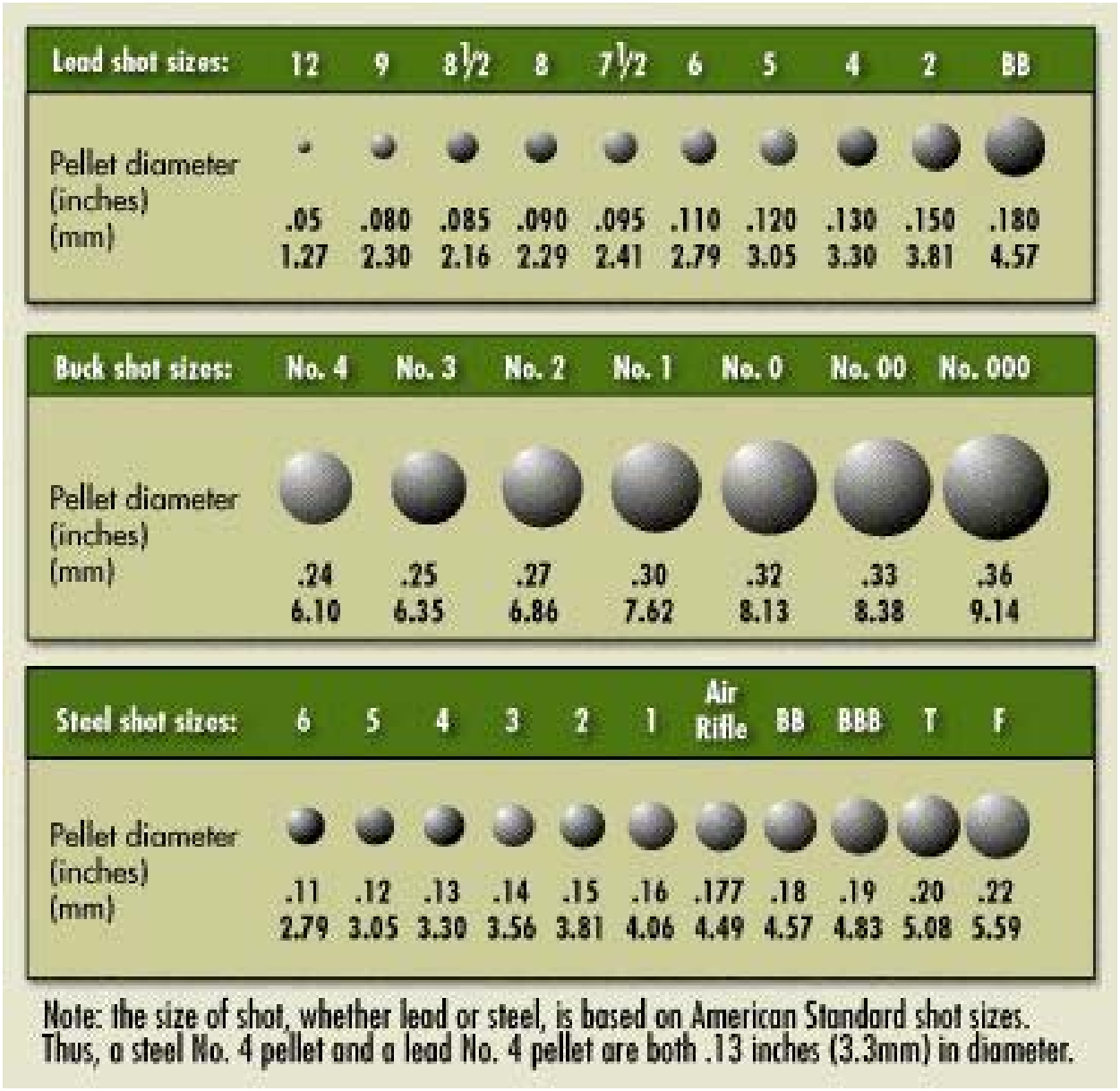




Primarily designed as a non lead training round with minimal ricochet or spatter potential, these rounds are designed to disintegrate on impact. Likely an excellent load for those concerned with over-penetration in a crowded urban environment while still needing the relative accuracy associated with a single projectile. This being said, poor penetration characteristics of the slug should be taken into serious consideration.

APPENDIX 4

Buckshot Comparison Chart



(Courtesy of Remington Arms, Inc.)

APPENDIX 5

MAINTENANCE & CARE

Modern non-corrosive propellants have reduced maintenance, however, there is no such thing as a self cleaning or maintenance free weapon. Any firearm which is relied upon for self defense must receive at least a minimum of preventative maintenance and cleaning to ensure safe and reliable functioning and a longer service life. It is highly recommended that law enforcement weapons be inspected on a preventative maintenance schedule and that they be cleaned after each use.

With use and time, combustion residues, grease and dirt particles accumulate in the action. Proper cleaning and lubrication of the shotgun after each use is the best guarantee for reliability and protection against corrosion. This is especially true with a law enforcement weapon which may see increased exposure to the elements and salt air on the sea coast.

CAUTION: Before performing any cleaning operation, unload the weapon. If you believe the weapon is unloaded, check it then check it again. The magazine must be empty. The chamber must be clear of any ammunition and you should cycle the action several times to insure the weapon is empty.

1. **Ensure the safety is in the ON position.**
2. **Open the action and lock the bolt to the rear if a semi-auto. Double check the chamber and magazine are empty. Check through the ejection port, loading port and insure there is no cartridge on the shell lifter (elevator / carrier).**
3. **It cannot be overemphasized the importance of starting all weapon disassembly procedures with an OPEN ACTION.**

When you are satisfied the shotgun is unloaded and safe, disassemble for cleaning in accordance with the manufacturer's instructions.

Assemble your cleaning supplies and equipment. At a minimum, this will consist of a cleaning rod or bore snake, bore brushes of the proper size, cleaning patches, bore solvent, cleaning brush such as an old toothbrush and firearm lubricant. Cotton swabs, pipe cleaners and toothpicks are optional but make the job easier.

BARREL

1. Whenever possible, clean the barrel from the chamber end. Avoid pulling a dirty patch or brush back through the barrel which may cause damage to the bore over time.
2. Using your cleaning rod and a wet patch in the slotted tip, run the patch through the bore then set it aside to give the solvent some time to loosen any fouling. Pull the patch off at the muzzle so as not to drag it back through the bore. (Some may

argue that since the patch does not fit as tightly as one in a rifle or pistol barrel that this is unnecessary. We feel it is a good habit to get into.)

3. While the solvent is working inside the barrel, clean the bolt face and inside the receiver. An old toothbrush or similar brush works well here.
4. If you are working on a semi-auto shotgun, clean the gas system or recoil spring area on the magazine tube. See below.
5. Clean the barrel bore by passing a wet patch through to remove any loosened fouling. If necessary, follow up with a bronze brush and/or a patch soaked in a bore cleaning solvent. Include the chamber.
6. Repeat as necessary until the patch comes out clean. Heavy fouling from plastic wads may require vigorous scrubbing.

GAS CYLINDER & PISTON (semi-auto only)

1. Check that the piston slides freely inside the gas cylinder.
2. Carefully clean the inner side of the gas cylinder with a bronze brush sprayed with gun oil.
3. When all combustion residues are removed, clean the inside of the gas cylinder with a soft cloth.
4. Carefully clean the piston and check that the piston can move freely in gas cylinder.

CAUTION: Be sure to follow the manufacturer's instructions on lubricating these parts especially if they recommend NO LUBRICATION in the gas cylinder or on the piston.

BOLT ASSEMBLY

Thoroughly clean the parts with a small brush and solvent. Carefully dry with a soft cloth and lightly oil the parts with gun oil per the manufacturer's lubrication instructions.

TRIGGER GROUP

Thoroughly clean the parts with a soft or medium bristle brush. Apply lubricant per manufacturer's instructions.

RECEIVER

Maintain as described for the bolt assembly. Lightly oil the action bars (pump shotgun) and rails of the bolt inside the receiver. Remove any excess lubricant.

MAGAZINE TUBE

Clean the outside of the magazine tube with a soft cloth sprayed with gun oil. Carefully dry with a soft cloth and lightly oil. Wipe off excess.

EXTERNAL SURFACES

Clean with care the external surfaces of the gun to remove any trace of dirt, sweat and fingerprints. Apply a thin film of gun oil with a cotton patch.

1. Wipe a thin film of lubricant / preservative on to all metal surfaces then wipe it off. Weapons stored in a vehicle should be free of excess oil which only attracts more dirt and debris.
2. Never apply lubricants or preservatives (especially WD-40) to ammunition.

WARNING: Use lubricants and solvents properly. Pressurized solvents such as brake cleaner and Gun Scrubber® are highly flammable. Do not use near open flames or high heat sources. Solvents can damage furniture finish and paint.

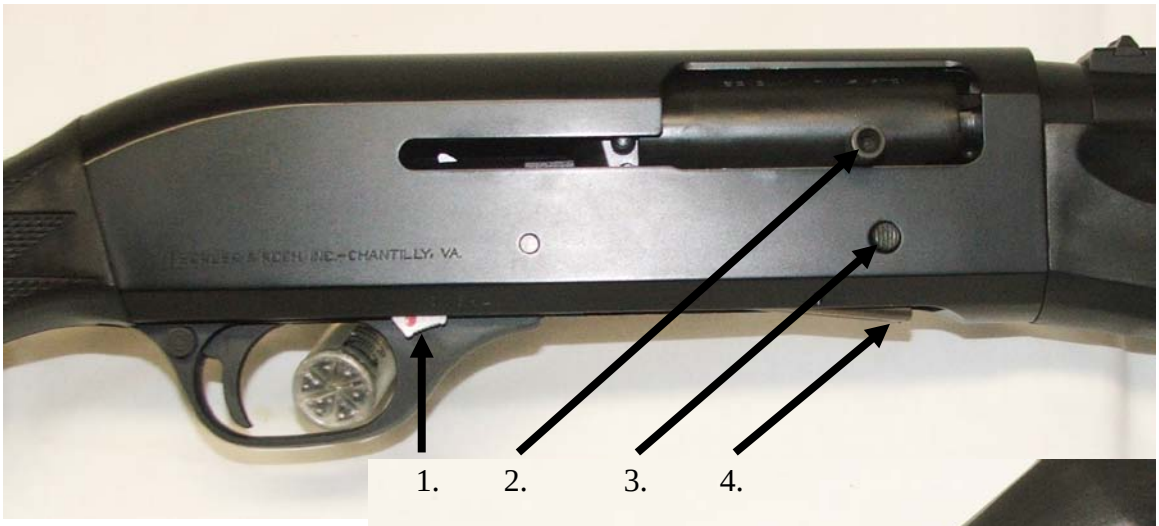
APPENDIX 6

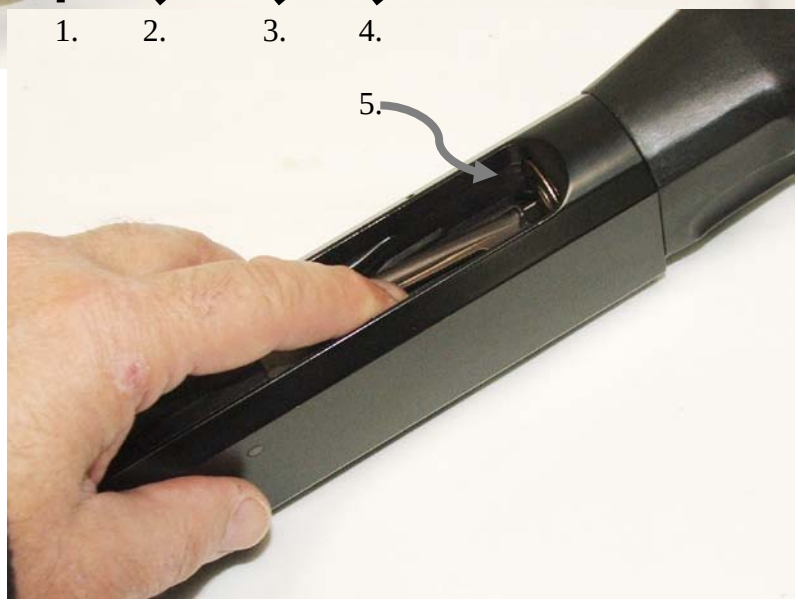
DOWNLOADING & UNLOADING SEMI-AUTOMATIC POLICE SHOTGUNS

BENELLI

Nomenclature

The instructor should be familiar with the following parts on the Benelli shotgun:





1. Cartridge Drop Lever
2. Bolt Handle
3. Bolt Release Button
4. Carrier
5. Shell Stop

LOADING

Before loading the shotgun, insure the safety is ON and the muzzle is pointed in a safe direction.

Operational Note: On the Benelli, the bolt must be closed and the hammer cocked to load the weapon. To determine if the hammer is cocked, inspect the Cartridge Drop Lever. If the red dot is visible on the Cartridge Drop Lever, the hammer is cocked. If the hammer is not cocked, the carrier will not move to allow the rounds to be loaded.

1. Cycle the bolt open and closed to cock the hammer.
2. Insert one round at time into the magazine by depressing the carrier and sliding the round into the magazine in the conventional manner.

To chamber a round –

1. Press the Cartridge Drop Lever up. This will release a round from the magazine onto the carrier.
2. Pull the bolt handle fully to the rear and release it. This will chamber a round.

DOWNLOADING

1. Pull the bolt handle slowly to the rear to extract the round from the chamber. As the round tilts out of the ejection port, pick it off the extractor.
2. Replace the round in the magazine.

Note: A round will not feed from the magazine onto the carrier unless the trigger has been pressed or the Cartridge Drop Lever is pressed. This is a unique feature of the Benelli.

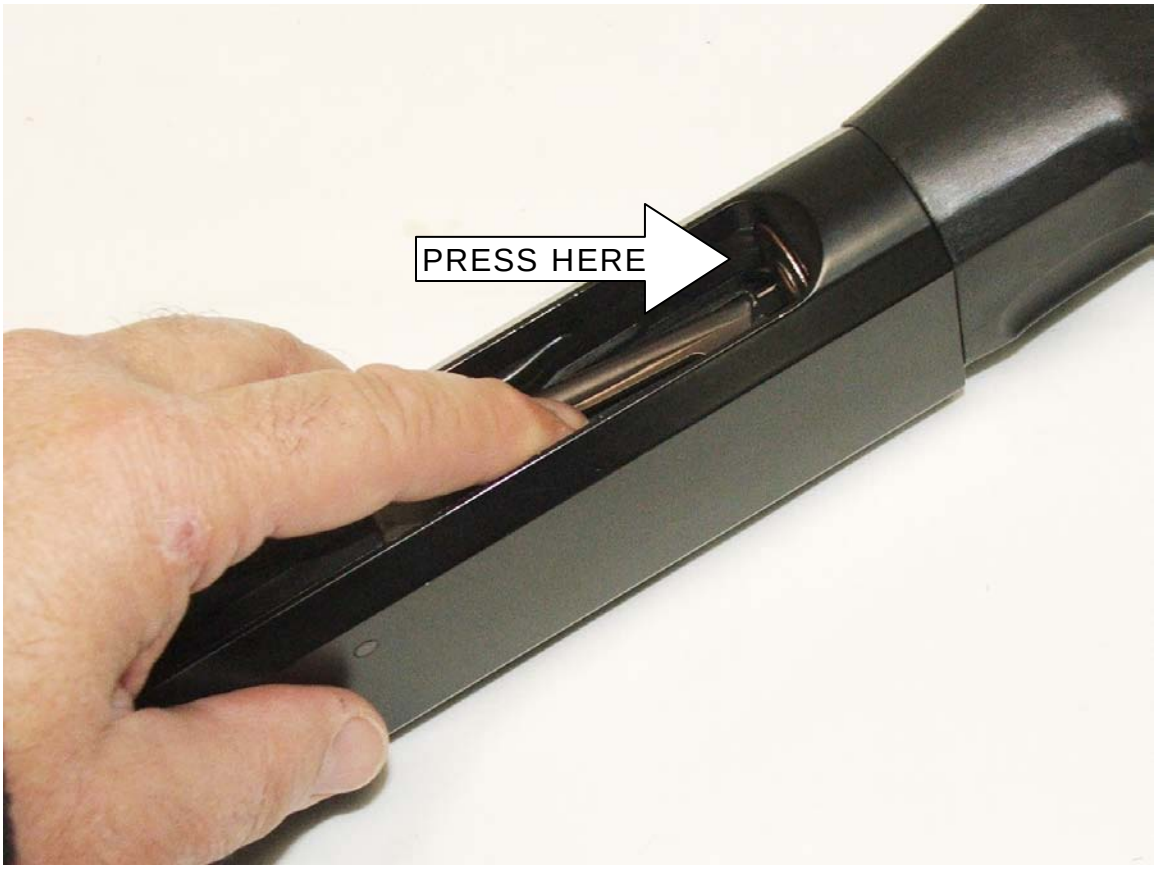
UNLOADING

1. Perform the Downloading steps as above to clear the chamber but do not replace the round in the magazine. Place the round in your pocket or another safe place.

2. Tip the shotgun upside down. Depress and hold the carrier down against the bolt.

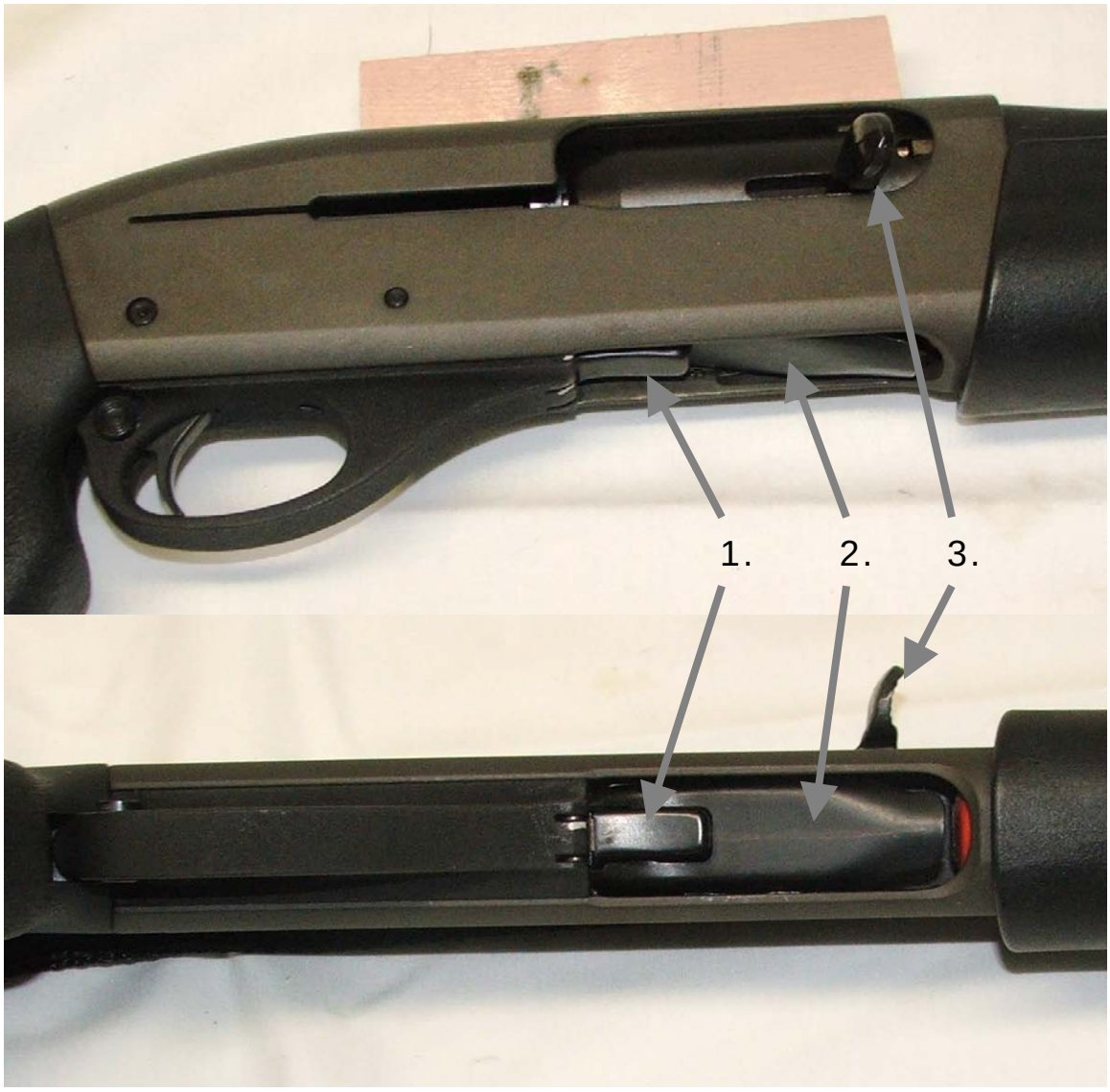
3. With your finger tip, press in on the right side Shell Stop to release the first round from the magazine. The round will slide back into your hand under the tension of the magazine spring.

4. Repeat as necessary until magazine is visually confirmed empty.



REMINGTON 11-87

Nomenclature



1. Carrier Release
2. Carrier
3. Bolt Handle

LOADING

Insure the safety is ON and the muzzle is pointed in a safe direction. Insert each round into the magazine by pressing the carrier release and then pushing the carrier down while

guiding the round into the magazine tube until the shell latch engages and retains the round. The carrier will not move unless the carrier release is pressed. Repeat until the magazine is loaded.

DOWNLOADING

Downloading the 11-87 may seem tricky at first but it is very simple.

1. Insure the safety is ON and the muzzle is pointed in a safe direction.
2. Brace the butt against your leg or another firm object and slowly pull the bolt handle to the rear until the chambered round starts to tilt out the ejection port.
3. With your other hand, pick the round off the extractor and allow the bolt to close on an empty chamber.
4. Replace the round in the magazine.

Note: If you pull the bolt back too far and a round is released from the magazine on to the carrier, simply roll the shotgun (ejection port down) on its side and let the cartridge roll out into your hand. Replace both rounds into the magazine.

UNLOADING

1. Insure the safety is ON and the muzzle is pointed in a safe direction.
2. Perform the downloading steps (above) to remove the round from the chamber (if present).
3. Tip the shotgun upside down and press down on the Carrier Release then push the Carrier down against the closed bolt.
4. Press the in on the Shell Stop (same location as on Benelli; See page 87) to release the first round in the magazine. The magazine spring tension will push it back into your hand.

5. Repeat this process until the magazine is visually confirmed empty.
6. If desired, you may pull the bolt back to lock it in the open position.