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Bean Bag 12-guage Ammunition **Roll your own**

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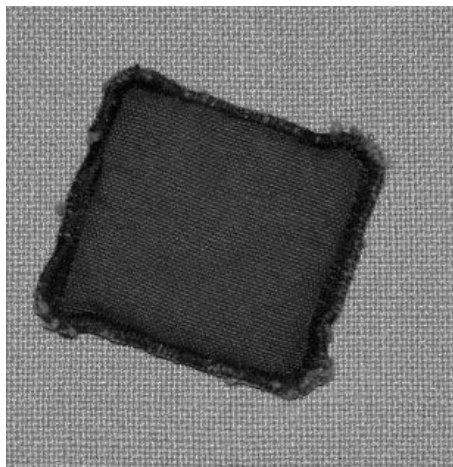
(Note well: All the information here is simply a report of my own tinkering. No warranty, result or benefit is guaranteed, implied, or intended from this or the processes, techniques or materials discussed here. If you follow my footsteps, you are on your own. All usual safety procedures and practices must be applied, and all laws followed. This is your responsibility.)

History

Beanbag 12-guage ammo has been available for several years, developed as a "less than lethal" round for law enforcement uses. Most commonly, bean bags have been used by law enforcement as a stand-off contact weapon, for example to disarm a knife-wielding subject.

My interest in beanbags is for wildlife "adversity training", specifically to keep marauding bears out of my apple tree. I have tried paintballs on bears, and they work okay, but they don't thump a bear with quite the authority necessary to render a good lesson. Twelve-gauge beanbags might work well also for other wildlife tasks, such as hazing wild bison.

The first development of commercial bean bag rounds of which I am aware was done with square bean bags. Two squares of heavy-duty fabric, about 1 1/4" per side, were sewn together, including a measure of lead shot between them, to make a small pillow of encased lead shot.



These have generally been produced in two loadings: 1) A "close range" loading with a muzzle velocity of about 200 feet per second (FPS), and 2) a "long range" loading of about 300 FPS. The close range ammo has been intended for law enforcement personnel to use on subjects who are at close range to the officer. Instructions with the long range ammo declare that use on subjects within a certain range may cause serious injury or loss of life.

There is one serious problem with these early, square beanbags. They are highly inaccurate. Because they are flat and square, when they exit the muzzle of a shotgun they tend to "sail" - sail off in some random direction other than straight towards the target. This is generally not a big problem inside about 20 yards, but don't bother trying to hit anything with a square beanbag at 50 yards.

More recently, manufacturers have been producing what they call a "drag-stabalized" beanbag round. In this configuration, fabric is gathered around the measure of shot and banded behind the shot, leaving a tail of fabric. This configuration presents a round front to the projectile, and the tail of fabric drags in the air to keep the projectile pointed down range during flight.

The drag-stabilized rounds struck me as a much more accurate way to configure the beanbag.

There is still a problem. These rounds are VERY expensive, even assuming a consumer can persuade a manufacturer to sell them to a person not using the ammo for law enforcement purposes. The going rate is about \$6 per round, too much for my lean budget.

It seemed to me that making these rounds would not be rocket science or brain surgery, so I set out to make my own. It turns out that it's not all that hard to do.

Development

My goal was a one-ounce bag with a muzzle velocity of about 400 to 450 FPS. Although I've loaded a LOT of ammo, I've never loaded shotgun ammunition. But it was pretty simple, at least for what I needed to do, thanks to friend Scott for his coaching and use of his press.

I happened to have quite a bit of BB-sized lead shot on hand, so that's what I used. Probably any weight of shot would work just fine. Some manufacturers of drag-stabilized bean bag rounds use mil-spec, rip-stop nylon to encapsulate the shot. I had an old parachute I'd formerly used for a dropcloth, so I used fabric from that chute (which explains why some photos show paint spots on the fabric).

A shotshell loader is essential for loading beanbag rounds, as well as a brief introduction to shotshell loading.

The loading manual shows quite a few powders that can be used with one-ounce 12-gauge loads, but many of them are powders specific for shotguns. The manual did, however, show loads for Bullseye, Unique and Blue Dot. Being a handgun and rifle loader, I had those powders in stock. I elected to work up my loads with Bullseye.

Materials and equipment



Here are the materials and equipment I found necessary to create the loads.

Nylon parachute fabric

Lead shot

4" plastic cable ties

A stout and sharp pair of shears (good dikes might work as well)

Winchester AA trap shotgun hulls

Bullseye smokeless powder

CCI 209 shotshell primers

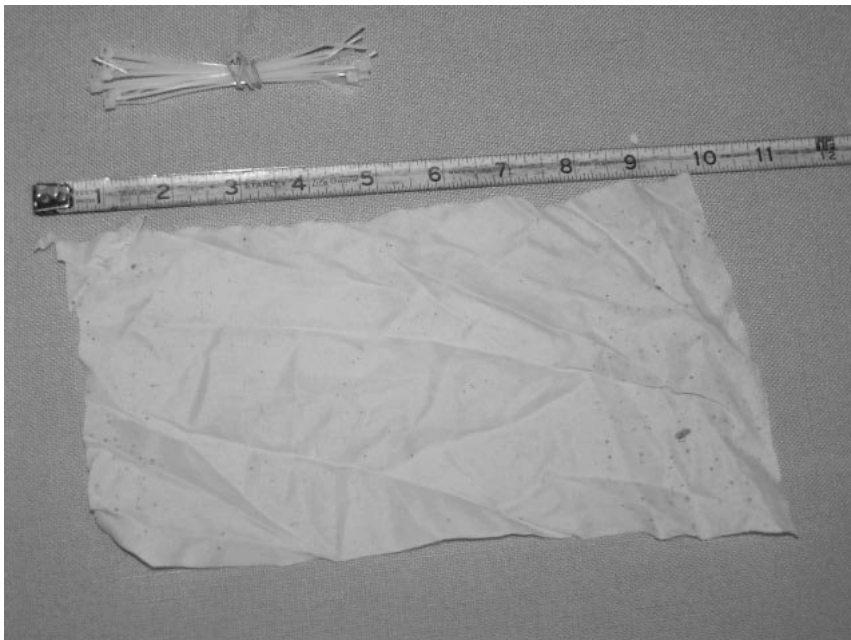
Claybuster WAA-12 wads

A basic shotshell reloading press

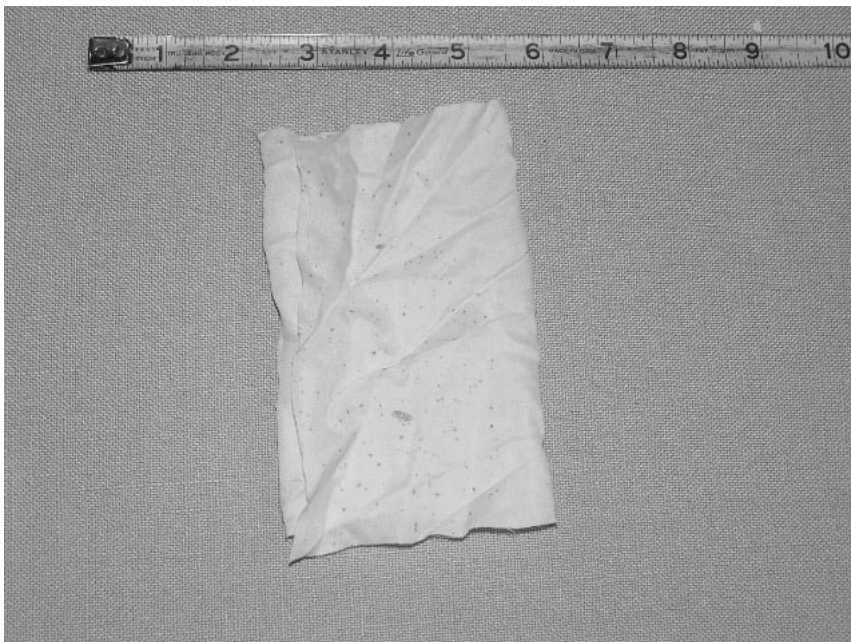
A scale for powder and shot.

The Process

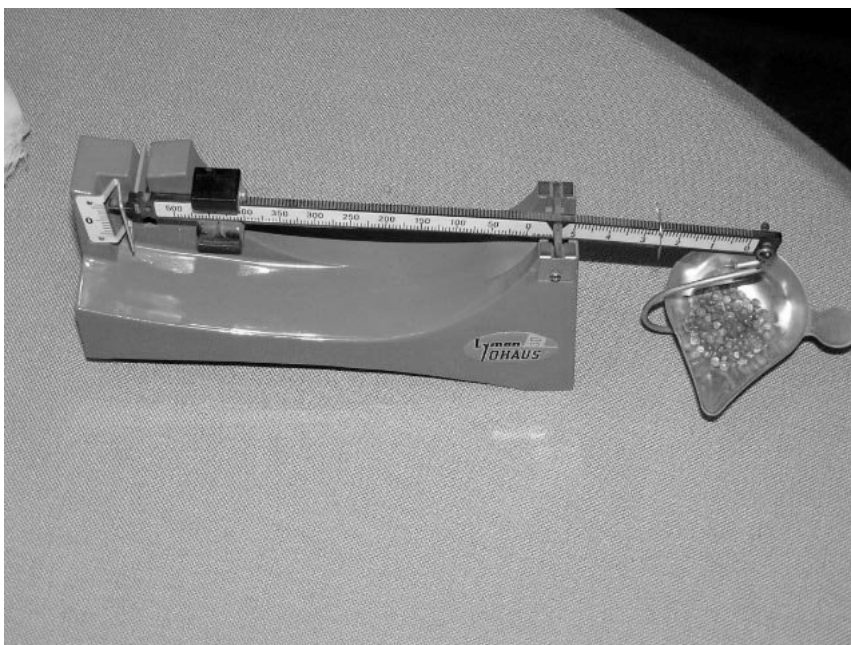
After trial and error, I found that a piece of fabric about 3" by 9" inches worked best for my purpose. I tested two layers of fabric, but found that the shot would sometimes break through two layers (my parachute is old and the fabric is weak). I found that three layers seems to reliably contain the shot upon impact with a soft target (it is unknown how this would perform with a hard target).



So, my 3 X 9 piece of fabric was intended to be folded into three layers, giving a three-layer piece of about 3" by 3".



I weighed every load of shot on a powder scale to make sure my projectiles were as uniform as I could make them.

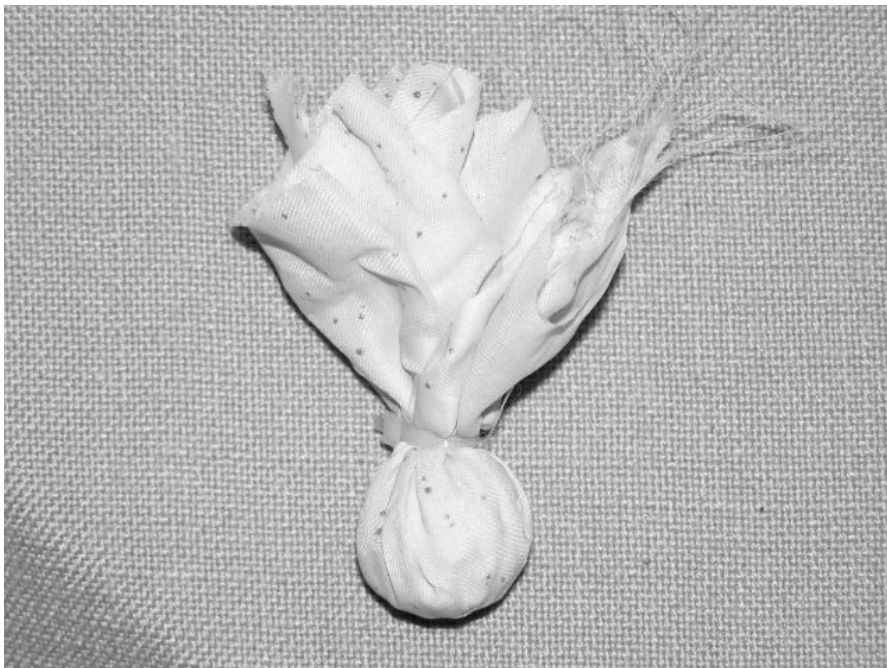


It works fine to just dump the pan of weighed shot into the center of the fabric square.



Then, it is simple to just pick the fabric up by the corners, allowing the shot to pool in the center of the square. I learned to shake the fabric and shot just a bit to get the shot settled in the pocket of the fabric. Then, I gathered the fabric at the top, and gave it a quarter twist above the shot to further gather the fabric. Then, I would wrap and lightly secure the cable tie at the location of the twist. At first I used two cable ties, but later determined that two ties were not needed for my application.

I also learned to not crowd the cable tie too close to the shot. If I left just a bit of looseness in the fabric between the shot bunch and the cable tie it was a LOT easier to get the projectile into the shotgun hull. After getting the cable tie properly positioned, I would pull it tight with a pair of pliers and clip off the excess length of the cable tie.



One further step was necessary. Because of the limited capacity of the shotgun hull, it was necessary to clip excess fabric off the projectile. A sharp and strong pair of shears was useful for this purpose, but a pair of dikes might also work fine.





For loading, I used Winchester, 2 3/4 AA trap hulls because they are a known standard. Other hulls might work just as well.



After some experimentation, I found that 6 grains of Bullseye would launch the bean bag over my chronograph at an average of 430 FPS, just where I wanted to be.

Of course, it was necessary to de-prime and re-prime the hulls, add the load of Bullseye, and insert the wad before seating the bean bag. I found the Claybuster WAA-12 wad to be about the right length to accommodate the bean bag in the 2 3/4" hull.

It took a while to figure out how to insert the bean bag into the hull. What worked best for me was to twist the tail a bit to get the tail started into the hull. Then, it was necessary to roll the shot capsule/fabric between my fingers to reduce the diameter of the capsule enough so it would fit into the hull. I would roll, push, roll more, push more, roll more and push more. I would also rotate the projectile in the hull a bit during the first part of the insertion. For the final seating of the projectile, I would use the ram of the press, that seats the wad, to press the bean bag further into the hull. Sometimes I would have to

push with the press, release, roll the hull in my fingers to squeeze the shot, and press some more with the press. Once the bean bag was firmly seated and crimped, the combo makes a tidy package. I considered using an overwad, but space was short, and an overwad didn't seem necessary with three layers of fabric.

Accuracy

I was pleasantly surprised at how accurately the bean bags shoot - much more accurately at distance than the square bean bags. I didn't actually group them, but I'd guess they'd group in about six inches at 50 yards, which is a lot better than the two or three feet I have gotten from the square bags. These drag-stabilized bags seem to drop about four to six inches from line of sight at 50 yards.

Conclusion

This is a pretty stout load for a less-than-lethal round. Running out at 430 FPS, I will be careful to not use it at close range (who wants to get close to a bear anyway). But, it does meet my goals for what I wanted to produce. And, it was not all that hard to do.