Cast in the .223

Part III

The Itsy Bitsy Bullets

In this segment of the .223 Remington, we'll look at some bullets that most casters refer to as the "Hornet" bullets. These bullets are the #225107, the #225438 and an old #225353 plain base.

L-R: 225353, 225107 and 225438

These bullets in a sense are bullets that have seen much use in the .22 Hornet as they fit the weight category in most shooter's minds that they associate with the .22 Hornet. They have worked well but, in reality, we're doing these designs an injustice.

Most of the .22 center fire calibers that we are familiar with use a fairly slow twist (1-12 through 1-16) as the velocities are really high and most are associated with the 50 and 55 grain jacketed bullets at velocities in the neighborhood of 3,000 feet per second and above. These twists work well at these velocities with jacketed bullets as the speed is there to develop the high revolution rotational twist required to stabilize these projectiles.
Not a thing wrong with this concept as long as you're shooting jacketed stuff. That's the way it was designed and it works good.

Along comes the normal caster. He wants to shoot the same weight cast bullet in his .22 center fire. He's aware that to approach 3,000 FPS with cast he'll have to go through all kinds of hoop jumps to get it to work so he'll settle for about the highest velocity he can achieve with water quenched wheel weight alloy and be done with it. This will probably be somewhere in the neighborhood of 2,000 to 2,400 FPS give or take. Then, he'll pick up a 22-55-SP RCBS mould, cast a few hundred, complain about how he can't see to seat the GCs, how hot the mould must be maintained to cast good bullets, the number of flaws he encounters and then really get disappointed when they don't shoot that well right off the bat. It's not the rifle to blame probably and it's not the mould manufacturer either. He needs to go look in the mirror. At cast velocities, the normal twists associated with the speed demon .22s just won't shoot a long cast bullet that accurately. Us casters, and I'm as bad as the next man, make all kinds of assumptions and mess our minds up and wonder where we went wrong.

Turn now to the old masters. H. Guy Louverin and many of the old shooters shot the likes of the #225438 and #225107 in the old "speedies" such as the Hornet and 2R Lovell and killed many groundhogs with them. In fact Loverin probably made a pretty good living or as least a lot of powder and primer money selling regular and hollow pointed #25438s to the shooters and hunters of his day. Now, remember, this was the war years and about the only jacketed bullet available was the Sisk and they were probably at the mercy of war material priorities. This led to a big market for tools to use copper cased .22 cases for jacketing material. If you weren't flush in those days, you used cast and it worked very well. These old timers knew the rules of what shot and didn't. They knew that a short bullet shot better in the 1-16 twist of the Hornet at cast velocities and they shot short bullets and got decent results with them.

Then along comes Ideal and markets a flat pointed spitzer design as the #22596 in various weights. The little heavier design weighing about 50 grains (at the bottom of the weight spectrum) worked well and they got away with it. About this period, all of the returning GIs from World War II hit the hunting and shooting market. All they knew from the

war was spitzer bullet designs. After that, all of the designs were mainly spitzer as far as rifle calibers went with exceptions for the levers and some round noses. If it was a bolt gun, normally, it had a spitzer design bullet in it. The #22596 was reincarnated as the #225415 which we have today and RCBS followed suit with their 22-55-SP and that's the state of the .22 bullet mould world right now.

We forgot what the old masters knew.

The #225107 went by the wayside. The #225353 went by the wayside as a plain base bullet had no use in .22s anymore at the speeds that we wanted to shoot. Only the #225438 remained as it was "the Hornet bullet".

This is my take on how things came about as we know it. I'll test these three old designs in the .223 and see if I can re-learn what the old masters already knew and pass some of it along.

Loads for the Ideal 225107

Bullet	Weight	Powder	Weight	Primer	Average Velocity	Standard Deviation	Sized Diameter	Overall Length	Comments
225107	40.0	700-X	6.0	Herter's SR	2193	20.2	.2255	1.986	1.5"@ 100 yards
225107	40.0	WC820 L50276	10.0	WSR	2175	61.6	.2255	1.986	¾" @ yards
225107	40.0	2400	9.5	WSR	2084	35.7	.2255	1.986	1" @ 100 yards
225107	40.0	Blue Dot	8.5	WSR	2241	35.6	.2255	1.986	1.5" @ 100 yards
225107	40.0	Longshot	8.0	WSR	2462	12.9	.2255	1.986	1" @ 100 yards
225107	40.0	Lil Gun	10.5	WSR	2317	74.4	.2255	1.986	2.5" @ 100 yards

Loads for the Ideal 225438

Bullet	Weight	Powder	Weight	Primer	Average Velocity	Standard Deviation	Sized Diameter	Overall Length	Comments
225438	46.7	Lil Gun	10.5	WSR	2208	31.7	.2255	2.118	1.5" @ 100 yards
225438	46.7	700-X	6.0	RSR	2057	10.1	.2255	2.015	1.5" @ 100 Yards
225438	46.7	WC820 L50276	11.0	RSR	2120	53.7	.2255	2.015	4" @ 100 Yards
225438	46.7	2400	10.0	RSR	2010	58.6	.2255	2.015	2" @ 100 Yards
225438	46.7	Blue Dot	8.5	WSR	2170	44.7	.2255	2.015	2" @ 100 Yards
225438	46.7	Long Shot	8.0	WSR	2308	26.7	.2255	2.015	1" @ 100 Yards
225438	46.7	Bullseye	6.0	RSR	2054	6.9	.2255	2.015	1" @ 100 yards
225438	46.7	WW 231	7.0	RSR	2128	15.1	.2255	2.015	1" @ 100 yards
225438	46.7	Unique	8.0	RSR	2289	43.2	.2255	2.015	1.5" @ 100 yards

225438	**46.7**	**Red Dot**	**5.0**	**RSR**	**1799**	**19.9**	**.2255**	**2.015**	**1.5" @ 100 yards**
225438	**46.7**	**Red Dot**	**6.0**	**RSR**	**2009**	**5.8**	**.2255**	**2.015**	**2" @ 100 yards**
225438	**46.7**	**Clays**	**6.0**	**RSR**	**1955**	**12.3**	**.2255**	**2.015**	**1.5" @ 100 yards**
225438	**46.7**	**Titegroup**	**6.0**	**RSR**	**2047**	**6.6**	**.2255**	**2.015**	**1.5" @ 100 yards**
225438	**46.7**	**Green Dot**	**6.0**	**RSR**	**1965**	**24.9**	**.2255**	**2.015**	**1" @ 100 yards**
225438	**46.7**	**Red Dot**	**6.5**	**RSR**	**2073**	**8.6**	**.2255**	**2.015**	**2" @ 100 yards**
225438	**46.7**	**Universal**	**6.0**	**RSR**	**1876**	**15.6**	**.2255**	**2.015**	**.75" @ 100 yards**

Loads for the Ideal 225353

Bullet	Weight	Powder	Weight	Primer	Average Velocity	Standard Deviation	Sized Diameter	Overall Length	Comments
225353	**44.5**	**Bullseye /dacron wad**	**2.0**	**WSR**	**1045**	**15.9**	**.2255**	**2.015**	**1.5"@50 yards**
225353	**44.5**	**Red Dot /dacron wad**	**2.0**	**WSR**	**1026**	**20.2**	**.2255**	**2.015**	**1"@ 50 yards**
225353	**44.5**	**Red Dot /dacron wad**	**3.0**	**WSR**	**1292**	**17.0**	**.2255**	**2.002**	**3" @ 100 yards**
225353	**44.5**	**700-X /dacron wad**	**3.0**	**WSR**	**1323**	**10.1**	**.2255**	**2.002**	**2" @ 100 yards**
225353	**44.5**	**Bullseye /dacron wad**	**3.0**	**WSR**	**1356**	**26.9**	**.2255**	**2.002**	**3" @ 100 yards**
225353	**44.5**	**700-X/dacron wad**	**4.0**	**WSR**	**1650**	**8.3**	**.2255**	**2.000**	**2" @ 100 yards**
225353	**44.5**	**Red Dot/dacron wad**	**4.0**	**WSR**	**1631**	**13.7**	**.2255**	**2.00**	**1.5" @ 100 yards**

Results

I fired a great many rounds for these tests. Results with the #225353 kind of amazed me as I didn't expect much with a plain based bullet. With dacron to protect the base, it makes a nice shooting little bullet.

The #225107 shot well for me but I rather fancied the #225438 as it has a bit heavier weight.

Of the three bullets tested, I'd probably buy the #225438 as it's still listed as available by Lyman. It's heavy enough for general plinking and light hunting duties and in the slower twists of bolt action and single shot .223s, it makes a pretty good cast shooter.

Short bullets are definitely more accurate in the .223 than are the heavier and longer bullets and shoot more

consistently as well from my experiences. So, the old masters were right…as usual.

Use the right powder

One thing that the tests for this article revealed is that the lighter .22 cast bullets perform better using powders with a faster burning rate.

The original tests run with the .223 years ago with heavier solid bullets allowed me to successfully use such powders a 4227, 4198, 2400 and 4759 with good accuracy and fairly good burning. As I progressed to the hollow point series in the .223, Part II, I gradually began to get better accuracy from the faster burning powders and the slower powders I was use to using didn't give results that were near as good. I guess that I discovered this when I was testing the whisper loads in the .223. A little fast burning powder such as 700-X with a dacron wad produced velocities that were getting up there and very small SDs and good accuracy. I once again began to test with 700-X as I had left it alone for years. It produced very good results with the light bullets as did Longshot. Now, I'm down at the very bottom of the .22 weight class and the fast burners are shooting much better than the old slow burners. Where does this phenomenon stop? Right now, I have some test loads made up with Bullseye and WW 231 with the 225438.

These test loads showed me that accuracy was much better with faster burning powders with lighter weight bullets. I ran tests with all of the fast burning pistol and shotgun powders I currently had on the bench. Results were very encouraging. From now on, I'll use a bunch of it. Hodgdon's Longshot seems to be a very consistent powder for these lightweights in the .223.

I and many of the other old time loaders have known for years that you can use about any powder for some kind of a load in a given caliber. The problem then becomes one of when to realize the limitations of a specific powder and not go any higher.

Of course, one downside to the faster burning powders is the chance of a double charge but that comes with the turf. Still, when you're launching a 40 grain bullet, you don't need much powder and not much velocity either.

Gas check fit

One of the things that I learned for all of the .22 cast shooting that I've done in the last 10 years is that one of the biggest factors in shooting consistent groups is to have gas checks that fit. One lot of old Ideal checks was really bad about coming off at the muzzle. A second batch of Sierra checks that I was trying to use up was just as bad. Tore the heck out of my armor plated (1/4" lexan) Chrony. Sierrra checks (if you happen up on them are just as bad. I found out that annealed Hornady checks gave me the best results and only then if the gas check shank was big enough to securely hold the check on. The shank, if it is too small, can be opened using the smooth shank of a 10-32 screw. This can be done in a drill press or even a hand drill. Just take it very slow and open it a bit at a time. Cast between sessions and see how you're progressing.

Nose first sizing the bullets also helps to seat the gas check squarely and crimp it firmly on the shank.

These "missing" checks often account for many of the flyers that we experience in our .22 cast groups. .22 gas checks are at the bottom of the spectrum in the world of gas checks. They have to be thin and they don't extend very far up the base of the bullet so special care must be taken if you want good, consistent accuracy.

My recommendation is that you use Hornady crimp on checks and anneal them before installation. This seems to give the best results.

In Conclusion

The short, light bullets definitely have a place in your .22 cast shooting and are more accurate than the longer, heavier bullets. Order up a #225438 and make a batch up, be merciless in culling, use Hornady gas checks and fast burning

powder, size to .226” if you can find a sizer in that size and you’ll be amazed at the groups you get with these Itsy Bitsy bullets.

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