The Los Angeles Silhouette Club

22 Hornet
Our Littlest Centerfire

BY: PACO

Some of the rifles of the past that were chambered in 22 Hornet were Winchester model 43, 54, and 70. Savage offered models 19, 23, 219, 24, and the 340. Stevens offered the 417, Sako had the neat and small action L46... Krico the 300 and Brno the ZKB... Herter's offered their 'Plinker', but I'm not sure who built it for them... I never handled one. Not too long ago Kimber offered their mod. 82 in the Hornet... as did Charles Daly with the model 10... and there have been others that have past into history...

Today the outstanding rifle still being chambered for the little centerfire is the CZ-527... it is the mini-Mauser bolt action with a hammer forged barrel. And the American Classic Stock... a real beauty as well as a fine shooter... Ruger has two bolt actions on the market, one is their 77/22H standard with the slim iron sighted 20 inch barrel... mine is excessively accurate... When I miss with that one, I know who's fault it is... The other Ruger is the bolt action Varmint class heavy barrel... I'm not sure if the Ruger #1 single shot is still being chambered in the Hornet... but up to a year or so ago it was, so they are out there to be had. And of course for years, with T/C Contender, almost from the time they started with their handgun single shot actions made into rifles, the 22 Hornet has been a favorite chambering and still is. I shot Ed Wosika's years ago and it was a peach...

I believe Cooper will make up a Hornet on request in their model 21 action as will Ballard in their single shot rifle. Browning still catalogs the bolt action Micro Hunter and the Browning low wall 1885 single shot rifle. If you search hard enough you can find a dealer offering Savage's mod 24 with the Hornet and 12 gage shotgun barrels. Which is the berries for squirrel hunters that can't hunt with a handgun for the little rodents... And there are more manufactures out there offering the superb little chambering. Almost all of the custom rifle builders will chamber for the round for the right amount of folding money...

There is all kinds of history about how and who started the Hornet on it's way in the 1920s... but surely no responsible gun writer would doubt that the old Winchester 22 WCF was the parent case that eventually became the Hornet... Names like Wotkins, Townsend Whelen, Woody, and Woodsworth were all involved in some way as was the Springfield Armory where some of them were stationed under Whelen's command. Several Springfield model 1922 training rifles (all ready in 22 rimfire) were converted to the Hornet round. Because of this, the little round suffered an usual fate for awhile... the barrels on the 1922 Springfield's were .222 bores, a designation still used in some European 22

rimfire rifles... so the Hornet had to start out with .223 sized bullets, usually made from spent 22 rimfire brass...

History seems to suggest that 2400 powder from Hercules Powder Company came about because of the 22 Hornet... at the time the powder being used was 1201 (early boxes so marked, later boxes 1204). This powder was also being used as a handgun powder... Keith speaks of it in passing, saying only 2400 far out shines it.

A report in the 1930s RIFLEMAN states that Whelen pushed Hercules to have a new powder manufactured. And it was named 2400 because it would generate 2400 plus fps from the Hornet rifles with 45 grain bullets. Ed Pugsley was the head of Winchester at that time. He was the one that had Keith and several of his friends design what is now known as the original Model 70 rifle. He had rifles made up for the Hornet in the model 54 action first... I had one back in 1961 and didn't realize what a collector's dream I really had. All I knew at the time was it would cut Texas rabbits in half... and was superbly accurate. Winchester offered the Hornet for sale in the 54 in the early part of 1930s, around '33 or '34... When the Model 70 was finalized and being offered, it to was chambered in the Hornet. Winchester offered ammo for the Hornet loaded to 2500 fps.

I still use 2400 powder today, mostly with cast bullets...

Quietly a number of years ago Ruger put into production not one but two 22 Hornet rifles. Both on the Ruger 77/22 action, they have a heavy barrel varmint grade and a short and handy standard grade. The standard grade with it's 20 inch barrel, good classic lines and sturdy construction promised to be a winner of an easy to carry fast into action shooter.

In HANDLOADER 104 Layne Simpson does an outstanding job reviewing a number of 22 Hornet rifles and loads. Of course Ken Waters' Pet Loads on the Hornet is a classic in 1975 and the update in 1993. Loading data is plentiful, and most know the round produces velocities up to around 2800 to 3000 fps with 40 and 45 grain jacketed bullets. But cast bullet loads in the Hornet always seem to take second place. It's a shame when you consider the round was developed with lead bullets back in the 1890s.

Right from the box my Standard grade Ruger Hornet wanted to shoot. I started the field tests with the very fine Hornady V-Max 40 grain bullet just to see what it's accuracy potential would be. I like this bullet because of it's boat tailed shape. It's easy to load and for a round that has limited range, this bullet's drop out to 250 yards is minimal. I used Lyman molds for the cast tests, 225450R a 49 grain pointed bullet and their 22596 a 46 grain flat nose, for hunting cast bullets Lyman's 225462 is a 56 grain bullet and 225438 is a 49 grain bullet. The ability to load cast bullets from nearly silent, to 22 long rifle velocities,

to 22 magnum rim fire, then on to varmint center fire velocities, up to 3000 fps, gives real versatility to the Hornet.

One of the first things that surprised me about this rifle was it's velocity potential from a 20 inch barrel. I expected a loss of 40 fps per inch under 24 inch barrel velocities. But happily it didn't happen. And why is still a mystery I haven't solved, unless it's the small amount of powder used reaches it's peak easily in the shorter barrel. J.D. Jones once wrote of his improved Hornet attaining near 3000 fps from a 15 inch barrel T/C.

And of course all things being equal, cast bullets will give higher velocities than jacketed bullets with the same powder levels. Neck sized cases fired in the Ruger's chamber, hold 11.6 grains of 2400, and re-chamber without a hitch. With that load the V-Max gave 2789 fps and an average of five three shot, 100 yard groups, was .91 inch. The smallest group going into .62 inch, several fliers opened the average. With a little load development I'm sure close to half inch groups would be the norm.

Though I prefer a faster twist rate… the 1 in 14 twist of the Ruger rifling is fairly standard and will stabilize cast bullets all the way up to 56 grains. Even with the velocity down to 2200 fps they went into 1.6 inch groups... below 2200 fps this long bullet put holes in the paper that began to show oblong profiles. The lighter cast bullets even at velocities as low as 600 to 900 fps shot very well. As I said, a Hornet rifle can shine in an area few write about extensively... cast loads. The Hornet because of it's limited case capacity, gives balance and efficiency to cast loads. Which in turn means fine accuracy with decent power.

First a word about how to cast exceptionally good .224 caliber bullets. For 9 years I was the Technical Editor for the bi-monthly magazine of the Cast Bullet Association. When you write for those boys you have to have your facts right. So I learned a great deal about cast bullet shooting. Their bench rest groups with cast bullets, rival jacketed bullet bench rest groups. One of the first things I learned was that there was a good deal of misinformation believed by many shooters about cast bullets.

For example velocity… it is generally believed that cast bullets must be kept to around 2200 to 2400 fps for the highest velocities and still maintain accuracy and keep down fouling. Well using the Lyman mould 22596, the 46 grain flat-nose bullet over 11.6 grains of 2400 gave 2791 fps and went into a 0.95 inch group at 100 yards. And that was not exceptional… just average.

To get this kind of performance I use only excellent molds for small caliber bullets... no others may even apply. Then I do things a bit backwards to conventional wisdom. I recommend HANDLOADER'S Bullet Making Annual of 1990, it is a wealth of good solid information that will help you cast outstanding bullets.

First for hunting and shooting groups with cast, I use the best base lead I can. For playing and plinking, wheel weights and other sources may be fine. But when accuracy must be at it's best, then the alloy must also be excellent. I use high antimony lead shot. Magnum lead shot has 6% antimony in it, standard shot has 3% in it, I use the magnum with the higher antimony content. I buy the off size 25 lb bags that go on sale after bird season. Dropping 19 lbs in my 20 lb pot, I then add one lb of 95% plumbers tin wipe into it. I turn the pot's temperature up to it's highest and put a heavy cover of tinfoil over it to keep the temperature consistent, and the oxidation down to a minimum. I flux and stir often while casting to re-mix any oxidation of ingredients. I have never had tin burn off from a hot pot, (I don't know who started that fable, but it's nonsense)... the first bullets are as hard as the last... always.

This high heat casting does two things that are critical with small caliber bullets. It helps keep air out of the bullets and it fills the cavities out completely. It also makes the bullets frosty, which I have never found a problem, it actually helps hold the lube. One of the imperative things with small cast bullets is to eliminate air in the mold. It's a killer to bullet weight and accuracy. Small caliber molds need to have their vent lines deepened. Do it with a sharp pointed scribe, going over every other line, off set on each side...opposite to each other. The vent lines on the bullets cast will come off in the lube sizer. Vent lines on the bullet mean the air is out of the bullets.

I cast bullets and drop them into a high can of water... when they sizzle I know they are tempering... this combination gives a BHN hardness of near 22. Yet because they are 1 in 19 alloy they will expand even at lower velocities. With a good lube like Apache Blu made for high velocity cast bullet shooting, fouling is kept to a minimum. Twenty pounds of alloy will probably make more bullets than you are ready to sit thru at one casting session. Well over 3000 with around a 45 grain weight. At today's prices for magnum shot and plumbers tin/lead wipe... the cost per bullet is less than a 2 cents each.

I wait 24 hours after casting for the hardness to set and then size and lube. Care must be taken in sizing, all can be ruined with a bullet going even a slight amount sideways into the sizing die. It changes the point of balance and the bullet at best will wobble out of the group, or at worst miss the target completely. I use crimp on gas checks exclusively. It takes a little work to make good cast bullets but it is worth it.

One of the fun loads that I found was a bit surprising... using ReLoader #7 with 12 grains and the Lyman 49 grain 225438 bullet, the Ruger Hornet gave 2540 fps. But the groups were excellent at 1.1 inch... the surprising part was I fired 15 rounds into the same group without heat walking or fouling opening the group from this slim barrel. And with good muzzle energy above 750 ft. lbs. This bullet will expand in small game. In fact I even got some expansion with 2.7 grains of Bullseye under this bullet fired into wet phone books at 50 yards... and

that load groups into one ragged hole. 4 grains of Unique gave 1692 fps and 1.78 inch groups at 100 yards, which is better than some of my 22 rim fire rifles.

This little Ruger Hornet allows you to see the target being hit (or missed as the case may be), especially with cast loads. The friction is less in the barrel so the recoil is lessened, in a rifle already with low recoil. Even with the heavy weight Lyman 225462/56 grain bullet over 11 grains of ReLoader #7 at 2220 fps the recoil is negligible and allows seeing the target hit, it is a mild load. And it goes into 3/4 of an inch at 100 yards, and is better than a 17 or 22 magnum rimfire. With H4227 and 11.2 grains the same bullet gives 2500+ fps and sub MOA accuracy. And it will rip large hunks out of jack rabbits or any other pests or vermin you turn it on. I know it spoils the day for any coyotes that are foolish enough to answer my calls.

22 Hornet Load Data

Bullet	Powder	Velocity	Comments
Lyman 225450R 46 gr.	4 gr. Unique	1692 fps	1.78 inch100 yard
S/A	2.7 gr. Bullseye	1327 fps	1 ragged hole 25 yard
S/A	3.6 gr. 4756	1113 fps	0.90 inch 50 yard.
Lyman 22596 46 gr. FN	5 gr. Unique	2150 fps	.75" 100 yard 22 M RF class
S/A	9.6 gr. 2400	2401 fps	0.67 inch 100 yard
S/A	11.6 gr. 2400	2791 fps	0.95 inch 100 yard
Lyman 225462 56 gr.	11.6 gr. 2400	2728 fps	1.3 inch 100 yard
S/A	13.6 gr. WW 680	2820 fps	0.75 inch 100 yard
S/A	11 gr. RL #7	2220 fps	0.75 inch 100 yard
S/A	11.2 gr. H 4227	2502 fps	0.69 inch 100 yard
S/A	11 gr. WW680	2520 fps	0.90 inch 100 yard
Lyman 225438 49 gr.	5 gr. Unique	2112 fps	1.4 inch 100 yard
S/A	8 gr. 2400	2222 fps	1.3 inch 100 yard
S/A	12 gr. RL #7	2540 fps	1.1 inch 100 yard

My fired and neck sized cases held 13.6 grains of my old 680 (now 1680)... putting the 56 grain Lyman over that load gave 2820 fps for the fastest load with the heaviest cast bullet! It's flying gyroscopically but ready to come apart in substantial sized animals like coyotes. This load hovers at 3/4 of an inch at 100 yards... but the nice thing is it keeps it's accuracy all the way out to 250 yards... 1.5 inches at 150 yards... 2 and 1/4 inches at 200 yards and near 4 inches at 250 yards, off the bench. I like this load and bullet in this Ruger Hornet. I shot at rocks and such well past 250 yards, but like most I feel the Hornet's range on live animals should be less than 250 yards, except with SX type fragile jacketed bullets...

After 20 or so rounds of cast, I run a dry patch thru the Ruger's bore and accuracy stays consistent. Every once in a while I will fire a backwards loaded flat base jacketed bullet thru the bore at around 900 fps...that cleans everything out... especially any leading that might be forming.

Flat nosed 46 grain bullets like the 22596 at 1400 fps or so will sure surprise a squirrel that's used to defeating the 22 rim fire hunter by laying on the top of thick branches. I have fired right up through the bottom of branches and right on through the squirrel, taking him off the branch and down into my game bag. And without a lot of meat damage.

Lyman 225438 44 Gr. RNGC Sized .225"

For real fun without a lot of noise, take a handful of 24 caliber magnum shot balls, a rifle primer and a 1/4 grain of Bullseye (I put a wisp of Dacron fiber over the powder charge holding it to the primer). These shotgun balls have a hard coating over them and are rated for 1100 fps velocity from scatter guns so this load won't foul. Squeeze the ball into the mouth of the chamfered case... hand feed them into the chamber. They will go thru a 2X4... so don't use them in a barn aiming at the roof or a garage wall as a backstop. No louder than a cap gun they are one hole accurate at 25 yards. With just a small pistol magnum primer and a 22 caliber air rifle pellet squeezed into the case, you get the same accuracy, and you can eliminate pests in a barn without worry over holes in the roof. With a box stuffed with newsprint they make great indoor practice loads.

The 22 Hornet is a special and fun caliber/cartridge, and the Ruger 77/22 is a classic rifle. They are soul mates together.

- PACO

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