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# **GUNS & AMMO**

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MAY 1984



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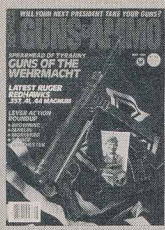
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ON THE COVER: During World War II the German Army employed a wide variety of novel, efficient firearms. For a rundown of this fascinating weaponry turn to page 50. Cover photography by Pat Brollier.



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# GUNS & AMMO

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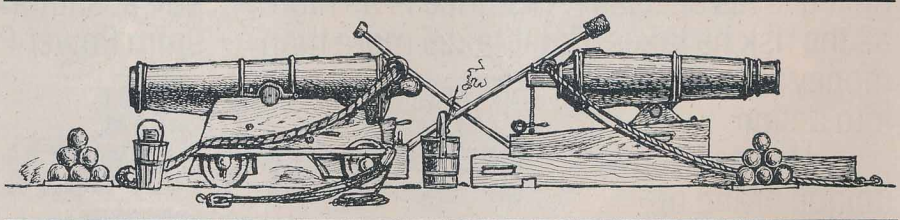
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*These two popular rifle rounds work equally well in handguns when reloaded. For the varmint shooter they can't be beat.*

*By Bob Milek*

# ULTIMATE LOADS FOR LONG-RANGE HANDGUNNING!

**.222 REM.** **.223 REM.**

■ With the advent of the specialty pistols some years back, we saw a break with tradition where pistol cartridges were concerned. Given handguns that would handle the pressure, we crammed the new pistol actions with rifle cartridges. Today we know that most factory-loaded rifle cartridges, when employed in the short barrels of pistols—short as compared to those on rifles—just don't mix. The powder charges used in rifle cartridges are formulated to burn efficiently in long rifle barrels. In a pistol barrel a sizable percentage of that slow-burning powder burns outside the barrel after it leaves the muzzle, or it doesn't burn at all. Naturally, the longer the pistol barrel, the more efficient the rifle cartridge becomes in it. Nevertheless, barrels of 14 or 15 inches just don't cut it with such cartridges as the .22-250, 6 mm Remington, 7x57 Mauser and .308 WCF.

However, some rifle cartridges make excellent pistol cartridges. Two of these just happen to be two of our most popular rifle cartridges—the .222 Remington and the .223 Remington. The reason they work in both rifles and pistols should be obvious. They're small capacity cartridges. There's not a lot of powder to burn and handloaders can use powders with a burning rate that's compatible with short barrels without sacrificing much in the way of loading

*All tested loads were fired over a chronograph to determine velocity and standard deviation, thus giving efficient reloads for each caliber.*



density. But, just how good are the .222 and .223 in pistols? Do they retain those characteristics of accuracy and low recoil that have endeared them to riflemen over the years? In order to answer these questions it's necessary to examine each cartridge separately.

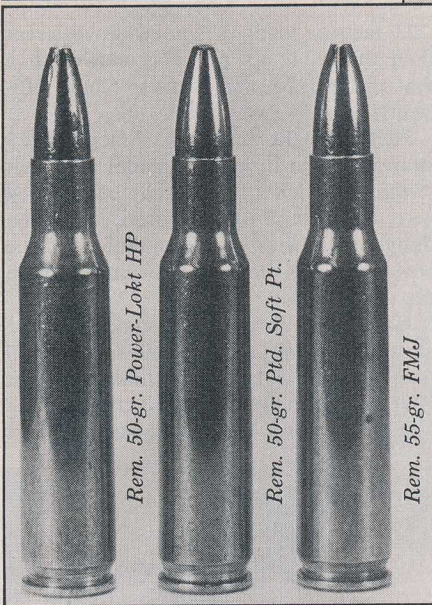
The .222 Remington is 33 years old and few cartridges in the last 100 years have captured the hearts of American shooters—match enthusiasts as well as varmint and

small game hunters—as thoroughly as has the .222. Unlike many cartridges, the .222 is not derived from another factory case. It's a Remington original, sometimes referred to as the "little .30-06" because it's a somewhat scaled-down version of this popular old .30 caliber.

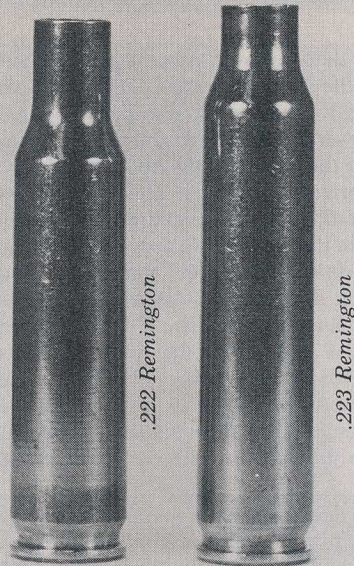
With a maximum case length of 1.700 inches, the .222 Remington case has a 23-degree shoulder angle, a neck .3127-inch long and accepts small rifle primers. Its ca-



## .222 REMINGTON

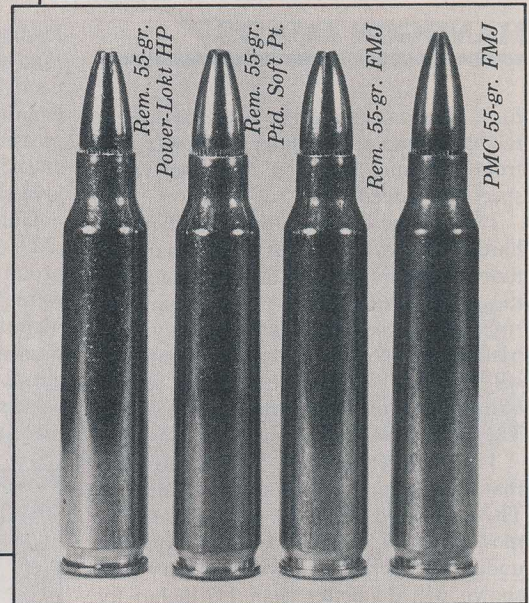


These three different factory loads were tested in the T/C Contender chambered for the .222 Remington.

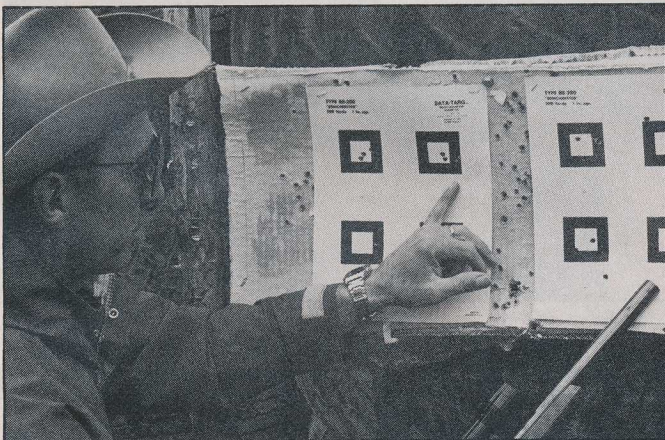


While the .223 case is only .060 inch longer than the .222, it has 7 percent more capacity due to its longer body and shorter neck.

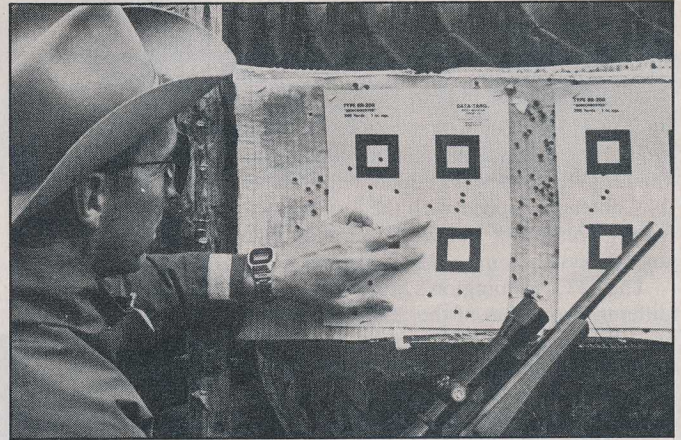
## .223 REMINGTON



Milek tested four different factory loads in his .223-chambered Contender. They didn't fare as well as those in the .222.



The Contender in .222 handled factory ammo very well, particularly Remington 50-gr. Power-Lokt HPs.

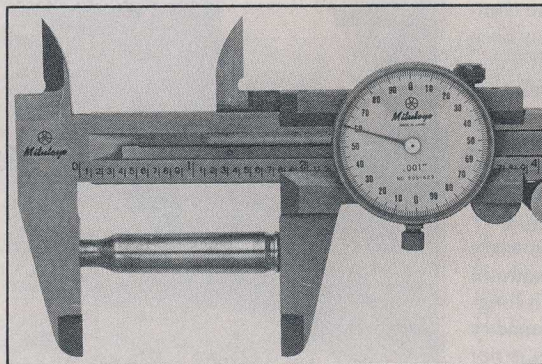


Groups with factory ammo in the .223 Contender were normally 1½ inches (or more) larger than those fired in the .222.

capacity, measured in the amount of BL-C2 powder that fills it to the top of the mouth, is 30.3 grains. (Warning! This is not a load, but merely an arbitrary unit of case capacity.) The case is rimless, so headspacing is on the datum line of the shoulder.

It was designed as a rifle cartridge, so how does it take to doubling as a pistol round? Very well indeed. In fact, those of you who want one cartridge you can use in both rifle and pistol, using just one load, can do no better than the .222 Remington. What pistols are available for it? Right now the Thompson/Center Contender is the leader with both ten- and 14-inch barrels available. Wichita will chamber their bolt-action pistol for the .222, but I'll have to say that Thompson/Center is the only company that is chambering for the .222 in a big way.

To conduct the tests for this article I used a Contender Super 14 topped with a



Thompson/Center 4X RP scope. As rigged, the pistol weighs four pounds, ten ounces. Many Contender barrels in other chamberings have a ridiculously long throat, so long that it detracts from the accuracy of the barrel. My .222 barrel isn't so throaty, thus I was able to adjust my bullet seating depth for optimum accuracy which is with the bullet set back about 1/32 inch behind the lands.

My first tests with the .222 involved fir-

ing Remington factory loads to determine velocity and accuracy at 100 yards. I was pleasantly surprised with the results, particularly with Remington 50-grain Power Lokt hollow point ammunition. It seems that the powder Remington uses in their .222 loads is fast enough to be efficient in the 14-inch barrel as well as in a rifle. My five-shot groups at 100 yards were far better than I expected and the shot-to-shot velocity spread was minimal, indicating uni-

Maximum case length for the .223 is 1.760 inches. One more firing and this case will have to be trimmed about .010 inch.



## HANDGUN LOADS

form ignition. While the velocities of the factory ammo are considerably lower than from a 24-inch barreled rifle, they're respectable indeed.

I found the factory ammo performance hard to improve on. I was unable to do any more than duplicate the factory load velocities, but certain bullet/powder combinations produced excellent accuracy. The best powders for use in the .222 Contender will come as no surprise to those who've handloaded for this cartridge in rifles. They're H4198 and BL-C2.

The enclosed load table lists the loads that my tests proved best in my Contender. Those marked with an asterisk are the most accurate with five shots grouping in under one inch at 100 yards. Every load shown will do better than 1½ inches for five shots. There are a number of very good hunting rifles in my cabinet that can't do that well. If I were to fit this pistol with a more powerful scope, I wouldn't be surprised to see those groups with my best loads shrink to ½ inch or less!

Thompson/Center also chambers barrels for the .222's more powerful cousin, the .223 Remington. As for the .222, both ten- and 14-inch Contender barrels are available. In order to get test results that would be a fair comparison, my work with the .223 Remington was done with a Super 14 Contender topped with the T/C 4X RP scope. This pistol weighs 4½ pounds, two ounces less than my .222 Contender.

The .223 Remington's history is quite different from that of the .222. Introduced in 1964, it was developed as a military round and is known to military types as the 5.56 mm Ball Cartridge M193. Being a military round, which means surplus ammo and once-fired cases are readily available, guarantees the popularity of the commercial round. However, the .223 has been making big strides in the popularity category and not just because it's a military cartridge. While benchrest shooters have not exactly taken it under their wing, hunters have found that it has some advantages over the .222, especially out beyond 200 yards.

The .223 has the same head and body diameters as the .222, but the maximum case length is 1.760 inches, .060 inch longer than the .222. However, its case capacity of 32.4 grains of BL-C2 (again, this is *not*

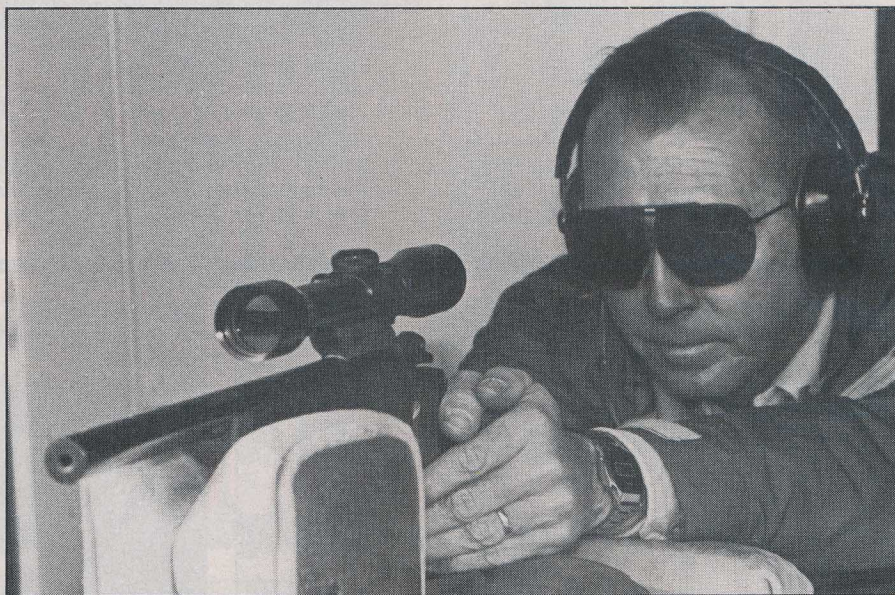
loading data) is seven percent greater than that of the .222 Remington. The added capacity of the .223, without much additional length over the .222, is accomplished by increasing the length of the body of the case and shortening the neck. The 222's 23-degree shoulder is maintained on the .223.

Unlike the .222, the factory loads for the .223 didn't give results that I was too proud of. The .223 factory load velocities weren't any higher than those recorded with the .222. Granted, the hunting bullets Remington loads in the .223 weigh five grains more than those in the .222, but the velocities should still be higher. This indicates to me that the powder used in the

.223 factory loads is somewhat different than the .222; it's probably slower than that in the .222, and it doesn't burn efficiently in a 14-inch barrel.

Neither is the accuracy of factory .223 ammo as good in my Contender as is that of the .222. Other factors may be involved here, but I think that this, too, has something to do with the formulation of the powder and its incompleting combustion in the pistol barrel.

Handloads, though, are something else altogether. They really shine in the .223 once you hit on the right combinations for your pistol. The two powders that give the best results in my Contender with all bullet



*In order to be fair during accuracy testing, both T/Cs were equipped with 14-inch barrels wearing T/C mounts carrying T/C's 4X Recoil Proof scopes.*

*Although the .222 proves to be more accurate in a pistol, the .223's higher velocity gives it the overwhelming edge when it comes to taking small varmints at ranges out to 200 to 250 yards.*

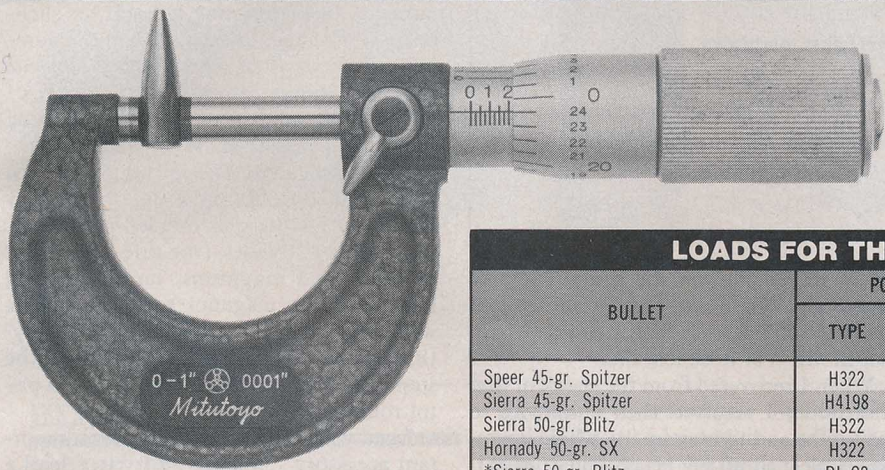
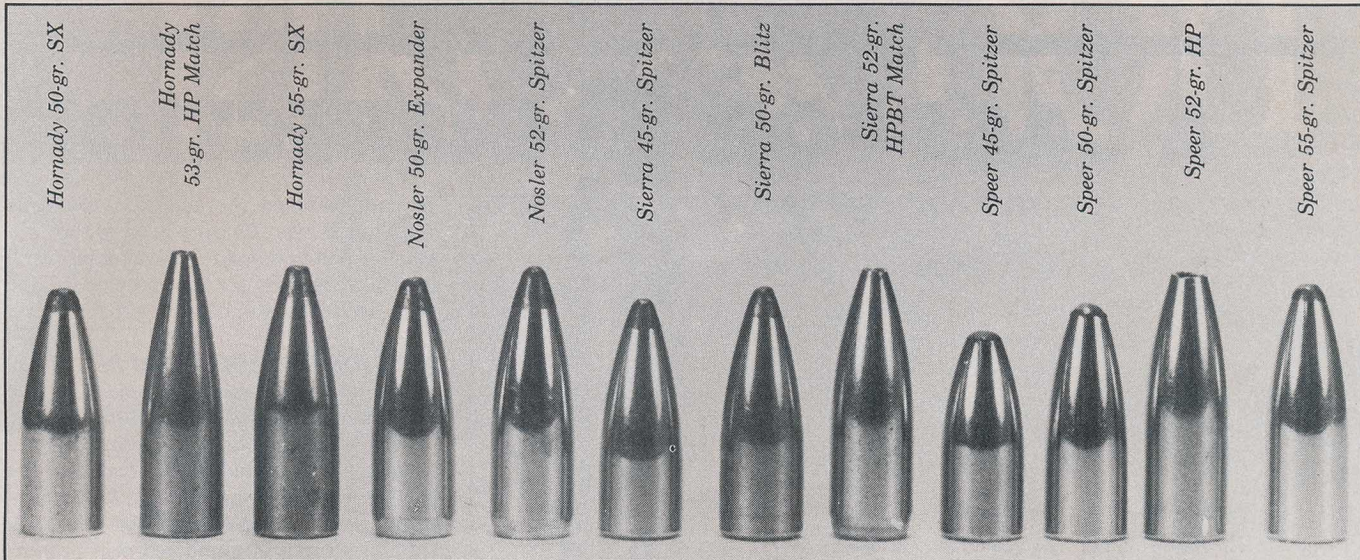
### CONTENDER SUPER 14 .222 REMINGTON FACTORY LOAD DATA

CARTRIDGE	INSTRUMENTAL VELOCITY (FPS)	AVG. 5-SHOT GROUP 100 YDS. (INCHES)
Rem. 55-gr. Power Lokt HP	2,675	2.17
Rem. 55-gr. SP	2,741	2.75
Rem. 55-gr. FMJ	2,689	—

### CONTENDER SUPER 14 .223 REMINGTON FACTORY LOAD DATA

CARTRIDGE	INSTRUMENTAL VELOCITY (FPS)	AVG. 5-SHOT GROUP 100 YDS. (INCHES)
Rem. 50-gr. Power Lokt HP	2,735	1.03
Rem. 50-gr. SP	2,704	1.87
Rem. 55-gr. FMJ	2,666	—





Both the .222 and .223 Remington cartridges use bullets that measure .224 inch (left). Above are just some of the bullets that the author found to work well in his particular T/C Contender pistols.

weights are H322 and H4198. BL-C2, a superb powder in the .222, produced sub-par velocities and only so-so accuracy with any bullet I tried in my .223. Just why BL-C2 works so well in the .222 and not in the .223 is a puzzle to me because it's a relatively slow burner and should be better in the .223.

LOADS FOR THE .222 REMINGTON					
BULLET	POWDER		PRIMER	CASE MAKE	INSTRUMENTAL VELOCITY (FPS)
	TYPE	WEIGHT (GRAINS)			
Speer 45-gr. Spitzer	H322	23.3	Rem. 7½	R-P	3,050
Sierra 45-gr. Spitzer	H4198	21.0	Rem. 7½	R-P	2,957
Sierra 50-gr. Blitz	H322	22.0	Rem. 7½	R-P	2,685
Hornady 50-gr. SX	H322	22.5	Rem. 7½	R-P	2,884
*Sierra 50-gr. Blitz	BL-C2	26.0	CCI 450	R-P	2,659
Sierra 50-gr. Blitz	H4198	20.0	Rem. 7½	R-P	2,754
*Speer 52-gr. HP	H322	22.0	Rem. 7½	R-P	2,755
Sierra 52-gr. HPBT Match	BL-C2	25.5	CCI 450	R-P	2,613
*Nosler 52-gr. Spitzer	H4198	19.7	Rem. 7½	R-P	2,713
*Hornady 53-gr. Match HP	BL-C2	25.5	CCI 450	R-P	2,613
Hornady 55-gr. SX	H322	21.5	Rem. 7½	R-P	2,652
*Speer 55-gr. Spitzer	BL-C2	25.2	CCI 450	R-P	2,584
*Speer 55-gr. Spitzer	H4198	19.1	Rem. 7½	R-P	2,567

\*Indicates most accurate loads. Grouped five shots in one inch or less at 100 yards.  
CAUTION: Reduce all powder charges shown at least ten percent for starting loads in all other pistols!

LOADS FOR THE .223 REMINGTON					
BULLET	POWDER		PRIMER	CASE MAKE	INSTRUMENTAL VELOCITY (FPS)
	TYPE	WEIGHT (GRAINS)			
Sierra 45-gr. Spitzer	H322	26.0	CCI 450	Fed.	3,072
Sierra 45-gr. Spitzer	BL-C2	27.5	CCI 450	R-P	2,723
Speer 45-gr. Spitzer	H4198	23.1	Rem. 7½	R-P	3,068
Speer 50-gr. Spitzer	N200	24.1	Rem. 7½	R-P	2,999
Speer 50-gr. Spitzer	H335	26.5	CCI 450	Fed.	2,923
Sierra 50-gr. Blitz	H4198	22.5	Rem. 7½	R-P	2,887
*Sierra 50-gr. Blitz	H322	24.5	CCI 450	R-P	2,928
Sierra 50-gr. Spitzer	N200	24.0	Fed. 205	Fed.	2,952
*Nosler 50-gr. Expander	H4198	22.5	Rem. 7½	R-P	2,917
Nosler 50-gr. Expander	BL-C2	27.0	CCI 450	R-P	2,633
*Hornady 50-gr. SX	H322	24.0	Rem. 7½	R-P	2,870
*Nosler 52-gr. Spitzer	H4198	22.1	Rem. 7½	R-P	2,898
Hornady 55-gr. SX	H4198	21.7	Rem. 7½	R-P	2,791

\*Indicates most accurate loads. Grouped five shots in one inch or less at 100 yards.  
CAUTION: Reduce all powder charges shown at least ten percent for starting loads in all other pistols!

In fact, predicting just what a certain powder will do in my 14-inch Contender proved to be impossible. H335 gives good velocity and acceptable accuracy, yet Winchester 748, which has a burning rate similar to H335, produces sub-par velocities. RE-7, which has a burning rate similar to H322, held in there for velocity, but the accuracy with it was terrible! Nor could I get Norma 201 to work in my .223 T/C.

Norma 200 was the fastest-burning powder that I tried in the .223. Results with it weren't too bad, leading me to believe that Winchester 580 and H4227 might give decent results. However, I found that chamber pressure rises drastically with only slight increases in the charge of N200, so you must work very, very carefully with

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## HANDGUN LOADS

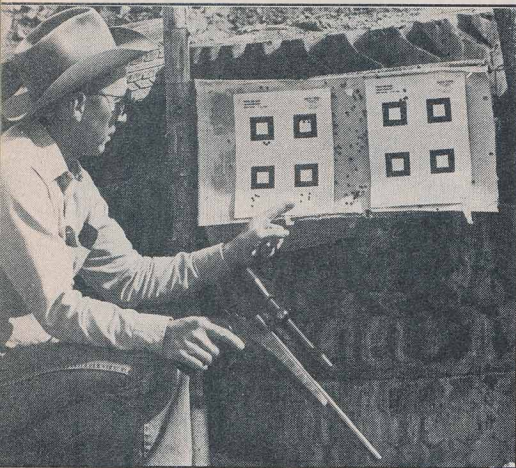
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the fast burners if you hope to stay within safe pressure limits. Then, too, the loading density is low with the fast burners and this undoubtedly contributes to the mediocre accuracy I got with Norma 200.

Although I was able to get a couple of really fine accuracy/velocity combinations for the .223, the overall accuracy of my loads for this pistol wasn't quite as good as with the .222 Remington Contender. It would be easy to look at the results and declare that the .222 is the more accurate of the two cartridges in a pistol, but this would be unfair. Before I'd go quite this far I'd have to work with several barrels chambered for both cartridges. Where my guns were concerned, though, the accuracy edge goes to the .222 Remington.

For target shooting with a pistol chambered for either the .222 or the .223, you needn't concern yourself with bullet performance. Simply choose a powder/bullet combination that's the most accurate and shoot away. But for hunting, the subject of bullets is an important one. Naturally, neither of these centerfire .22s is adequate for use on any big game, so where hunting is concerned we're talking about varmints ranging in size from prairie dogs to coyotes.

On small varmints you want to use a bullet that expands rapidly, even to the point of blowing apart, so that no matter



**These five groups were fired at 100 yards from the author's .222 Rem. None measured more than 1½ inches.**

where you hit a small animal the bullet will ensure an instant kill. Such bullet performance is difficult to achieve at .222 and .223 Remington pistol velocities. Remember, most of the .224-inch bullets on the market are designed to perform at rifle velocities. When used in a pistol, too many of them just won't expand enough.

I've had considerable hunting experience with the .223 Contender and very little with a pistol chambered for the .222 Remington. However, I doubt that you'll see much difference in how bullets fired from

either perform, so what I've learned with the .223 can reasonably be applied to the .222 as well. I've found only three bullets that will expand rapidly on prairie dogs and chucks—the Hornady 50-grain SX, the Nosler 50-grain Expander and the Sierra Medium Velocity Blitz. This sounds like a limited choice, but I'll wager that you'll find a load with one of them that gives the accuracy you're after.

Some of the 40- and 45-grain .224-inch bullets give the desired quick expansion at pistol velocities, but with my guns I've not been able to get the accuracy with these lightweights that is required for long-range hunting. Then, too, 40- and 45-grain bullets aren't as good in the breeze as are 50-grain spitzers, nor do they retain their velocity well at long range. When you get out to 200 yards and beyond, 50-grain bullets that started a little slower will actually be moving faster than the lightweights. For these reasons I recommend 50-grain bullets for small varmint hunting. However, if your shooting will be done at 100 to 150 yards, and *if* you can develop an accurate load for your pistol with one of the lightweights, then go ahead and use it.

Large varmints present a different problem. Good bullet expansion is a must for quick kills, yet where valuable pelts are involved you don't want to do a lot of damage to the hide. The ideal situation would be for the bullet to penetrate, then disintegrate when it gets to the vitals, eliminating any exit hole. However, such radical expansion can't be expected at .222 or .223 handgun velocities. The next best thing, then, is enough expansion to do adequate tissue and organ damage, but not enough to tear a gaping exit hole.

I've done considerable experimenting on coyotes with the Contender Super 14 .223 and when everything is assessed I find that I don't really have the whole answer. At 150 yards and beyond, those same 50-grain .224-inch bullets that work so well on small varmints do a good job on coyotes. At closer ranges they seriously damage a pelt on exit. Up close I've had the best results with 55-grain spitzer bullets. The problems involved in trying to use two loads—one for close shots, one for long range—are obvious and they'll eventually cause you to botch a hunt. I've finally settled on using a load of 22.5 grains of H4198 powder behind the 50-grain Nosler expander for coyote and bobcat hunting with my .223. I occasionally mess up a pelt at close range, but at any range that I can hit a coyote I know that this load will put him down for keeps.

Finally we arrive at a subject certainly worthy of mention where the use of the .222 and .223 Remington cartridges in pistols is concerned. I'm talking about bore fouling and its effect on accuracy. Riflemen engaged in benchrest competition know that even a .222 must be cleaned regularly, often after every ten rounds, to remove powder and bullet jacket fouling from the bore and preserve the accuracy of the gun. Handgunners, though, tend to

overlook the matter of bore cleaning, assuming, I expect, that little or no fouling occurs at the under 3,000 feet per second (fps) velocities realized from the .222 and .223 Remington cartridges in pistols. *Wrong!* I've found that gilding metal fouling appears quite soon in the Contender barrels. Velocity doesn't seem to be a factor because it's no worse in my .223 than in the .222, the latter using loads 200 fps slower than the .223. The smoothness of the bores themselves, or lack of smoothness, is probably at fault. Although I didn't try it, I think handgunners might be well advised to break in their .222 and .223 Contender barrels just as they do a good target or varmint barrel on a rifle. Fire a round, clean the bore, fire another and clean, etc., continuing this for 100 rounds or so, but being careful to clean at frequent intervals until after maybe 500 rounds have been fired. In a clean, lubricated bore, the bullets will have something of a lapping effect and will smooth the surface up before fouling gets a chance to build up. Once smooth, fouling will still occur, but not as fast or to such a degree as if you just start shooting without giving any thought to the matter of bore fouling.

Yes, fouling does affect accuracy, even in a pistol. Purposely disregarding the above advice, I've seen .223 groups at 100 yards almost double in size as the fouling gets worse. At worst my groups were decent, closer to two inches than one inch after 50 rounds, but why settle for two-inch groups when regular judicious bore cleaning can result in the optimum accuracy the pistol is capable of?

My .222 and .223 Remington tests were conducted in 14-inch barrels, but what of the performance of these cartridges in the ten-inch barrels Thompson/Center makes available? My experience has been only with a ten-inch .223 barrel and it was limited, but based on what I discovered I can't recommend ten-inch bull barrels in .222 or .223 to the serious handgunner. The performance with the loads shown in the accompanying table is far less than satisfactory because the powders used won't burn efficiently in ten inches. Both velocity and accuracy suffer accordingly. Faster-burning powders get the velocities up some, but less than maximum loading densities result and accuracy is adversely affected. When a barrel no longer than ten inches is a necessity, I would suggest going to a cartridge with even less capacity, one like the .221 Fire Ball, which can be utilized to its full potential in the short barrel.

As I see it, the .222 Remington and .223 Remington are two mighty fine pistol cartridges. For all-around use—target and benchrest shooting, hunting and plinking—the .222 is your best bet. But, because of the appreciably high velocities possible with the .223 Remington in a 14-inch barreled pistol, I like this cartridge for hunting. Which you choose will depend upon your particular uses for it, but rest assured that you can't go wrong whichever way you jump.