"Only accurate rifles are interesting"
- Col. Townsend Whelen

Volume 13, Number 1
January-February 1981

Rifle
The Magazine for Shooters

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ON THE COVER

It's said that "the blacksmith's mare and the shoemaker's children are the worst-shod," yet it was for his wife, Carolyn, that stockmaker Joe Balickie had Dave Talley's metalwork engraved by Tommy Kaye after he had stocked this little .270 WCF. The seven-pound, two-ounce Mauser was photographed by Mark Edwards.

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Dear Editor

Please Tell Me Where . . .

The November-December 1980 Rifle featured a picture of a French double rifle on the cover. Please send me the name and address of the US importer of the Chapuis.

D. Wiita
Minneapolis

I hope you will find time to answer a question that has probably been asked many times since the appearance of Rifle 71: there are two beautifully executed rifles on the cover, but the address of the maker was not given. Would you please supply the missing address?

George J. Grasel, MD
Oakland

Our covers are intended to be pictorial rather than commercial; thus the usual absence of names and addresses for the makers of whatever rifles and such that we show on our covers. And we're not set up to offer a directory service, as much as we would like to be able to do so. In many cases, we simply don't know where to refer readers who ask where they can get this or that.

It just happens, however, that I do know the fellows who made the Miller rifles on Rifle 72 and the brothers who import the Chapuis rifle on Rifle 71.

The David Miller Company is at 3131 East Greenlee Road; Tucson, Arizona 85716. The Chapuis doubles are imported by Robert A. Painter; 2901 Oakhurst; Austin, Texas 78703.

Ken Howell

Magnums Ignite H-205

Regarding Mike Venturino's ignition and hangfire problems while using H-205 powder in the 7mm Remington Express and 7mm Remington Magnum loadings, (Rifle 71), I have found that the use of magnum primers such as the CCI 250 corrected this. Using this powder and primer in the .250-3000, 7x57mm, and 7mm-08 has produced very good accuracy with quite modest pressure levels.

I wish Venturino had chosen to test out my favorite bullet weight for 7mms—the 160-grain, which has proved for me to be the one bullet to use for mule deer and elk.

Stewart A. Leach
Boulder, Colorado

Number 243 Means Good Mauser

In your book review concerning the two books Gunmarks and The Standard Directory of Proof Marks (Rifle 72), you state that most German ordnance number codes are unknown. These codes preceded the letter codes (before 1940). I can suggest a pamphlet published by King & Company; 811 East Tripp Avenue; Peoria, Illinois 61603. It lists twenty-eight number codes along with fourteen pages of letter codes. I think it runs about three dollars.

I don't think you will be too disappointed to learn that your Mauser action that is coded 243 corresponds to the letter code byf for the original Mauser plant at Oberndorf.

Roy Hurst,
Mead, Washington

It's Better to Bush

I enjoyed the article in Rifle 69 by Mike Fairey dealing with the fine little rook rifles. There is one comment that I must make, however. Fairey felt that it was not necessary to bush the firing pin; let me relate a certain experience of mine pertaining to that subject.

A couple of years ago, I bought a rook rifle in .297-.250 with the shotgun-type action, made by Thomas Bland. It had a nice bore, and I had it rechambered to .256 Winchester with intentions of using it as a cast-bullet rifle. I did not bush the firing pin, as I intended to keep my chamber pressure well below where such a step would be necessary.

Everything went well for a while,
Another Low-Power Fan

Your item "Those Overlooked Lower Powers" in "Spotting Scope" (Rifle 71) was quite a fine piece of writing. I always think it's nice to find people who agree with me, and the reasons you gave for using low-power scopes on hunting rifles coincide with mine. Since Art Mashburn mounted my first scope about thirty years ago (a Weaver J-2.5 on a whittled-down Winchester Model 75), I've used scopes almost exclusively and settled long ago on the lower powers. Have tried a couple of variables and couldn't get rid of them fast enough.

When I was doing a lot of varmint hunting in New Mexico (about a seven-year period, involving lots of walking and shooting mostly from the sitting position with a tight-loop sling), I found that I couldn't handle much more than 7½x while working over jackrabbits and coyotes. Come to think of it, my best shooting on those critters was with an old-style 6x Bushnell with a two-minute dot, which I used on several rifles from a Mauser .250-3000 down through several hot-rod .22s. Got a 7½x Leupold later on, as I had to have at least two varmint rifles ready to go at any time.

Keep up the high quality of the magazines, about which I have just one minor, friendly bitch: there aren't enough articles in them! How about just doubling the size of each issue?

Robert L. Jones
Conway, Arkansas

with big, gentle indentations in the primers and no signs of high pressure. Then I blew one. It had a different sound, speckled my eyeglasses, and lifted a section out of each side of the stock just behind the action. The noise and the speckled glasses I could live with, but those pieces missing from that fine stock did cause me some pain.

Unfortunately, I was standing in a stubble field at the time. It cost me my spare time for a couple of days and finally five bucks to a kid next door—who had more free time, was closer to the ground, and had younger eyes for that tedious search—before I recovered those pieces of wood. I epoxied the stock back together.

Then I bushed the firing pin.

The shotgun-type rook action has little spring pressure on the firing pin. You can lay a dime on the end of the pin and push it back into the breech against spring pressure with slight effort. A big pin, plus light spring pressure, will give problems. Perhaps a Martini action with its stronger spring would create less problem, even with the big pin. However, if you are working with a shotgun-type rook rifle, I suggest that you bush the firing pin right away.

Or stay out of stubble fields.

Gerry Geske
Halliday, North Dakota

A CASE THAT STRETCHES LESS
WILL LAST LONGER.

Trimming isn't a major headache. But when a case stretches, that brass had to come from somewhere. So the case walls get thinner. The result is cases that weaken after only a few reloads. Winchester® Western® brass cases are harder, for less brass flow. So you get more reloads... and more safety.

Something to think about the next time you buy brass.

JANUARY-FEBRUARY 1981
JUST PUBLISHED

THE
BULLET'S
FLIGHT

Franklin Mann's classic work is available in a special new edition, a replica of a single original copy with margin notes by Harry Pope!

Early in this century, Doctor Franklin W. Mann, independently wealthy and retired from medical practice, pursued his hobby of experimenting with firearms. He detailed those experiments in a famous book published in 1909 by Munn & Company. A close friend, shooter, experimenter, and gunsmith, Harry M. Pope, read it with great interest, penciling notes and comments in the margins of his copy. In some notes, he confirmed the Doctor's findings; others, he disputed. He sent this copy to Doctor Mann, who read the margin notes and made his own notations before returning it. Pope kept this particular copy in his shop — where it acquired a great deal of grime. It was, of course, a unique copy of that Munn edition — the only one with handwritten notations by Mr. Pope and a few by Doctor Mann.

When he wrote the book, Doctor Mann felt that his experiments would be little noted and appreciated. Time proved him wrong, for his work was reprinted in 1942 by Standard Publishing Company, and again in 1965 by Ray Riling. Now, both of these reprints are as rare as the original Munn edition of 1909.

It is with great pride that Wolfe Publishing Company announces the newest printing of Bullet's Flight. But it is not merely a reprint of the previous editions....

A SPECIAL REPLICA EDITION

In 1972, we located the copy of Bullet's Flight that had the Pope notes. By special arrangement, Neal Knox visited the owner of the book, Pope's son Charley. Neal interviewed him while photographer Walter Schwarz, using a special frame to hold the priceless book, photographed every page containing notes or markings of any sort. He later made prints of these pages, having difficulty getting the best reproduction of the notes through all the grime.

When Dave Wolfe decided to add books to our company's publishing efforts, a reprint of this book was planned. But technical problems arose. The photos of the notations could be used only as guides, not as reproducible copy. So artist Mark Harris began the laborious task of making meticulous tracings of the handwriting (capturing every nuance of the writing) and then putting it into proper registration with the original text. We decided that we would overprint the notes in a grey ink simulating pencil.

Printer Frank Woods took the challenge of the actual printing. Paper was selected to resemble that of the Munn edition. We naturally assumed that the photographs in the original edition would give the best reproduction. But we made the happy discovery that the 1942 Standard edition had been made with the original 1909 plates and had superior reproduction. We obtained two copies of the Standard and cut them apart for camera copy. In spite of the excellent photo halftones, the printer went to extraordinary lengths to ensure the best reproduction: numerous proofs were made and closely examined.

Our staff spent considerable time "translating" Pope's notations (his handwriting was less precise than his barrelmaking): our translations appear at the back of the book. We have also included two interesting sections from the Standard edition written by Doctor Mann's daughter and by a close friend.

Art Director Dave LeGate prepared artwork to reproduce a cover nearly identical to the Munn edition — adding only an extra line of type to indicate that our edition has the Pope margin notes. It is the same size as the original, and bound in the same green cloth boards, the titles gold-stamped the same as on the Munn edition.

We are pleased and proud to offer this book. It is more than a reprint — it is a meticulously prepared replica of the sole copy of an edition annotated by two of the most famous names in firearms history. We therefore believe it is the most valuable printing of an already classic work.

Because it is a replica edition, only the one style of binding will be available. However, the first thousand copies will be numbered. Purchasers of Wolfe Publishing Company's Pet Loads can request their Bullet's Flight numbered the same. This offer will be available until March 1, 1981, when the numbered copies not reserved or sold will be available, first-come, first-served. The books are available now: unnumbered books and reserved numbered copies will be shipped immediately. All copies are priced at $22.50, postpaid, and will be shipped in sturdy boxes to protect them.

Send your check or money order (payable in U.S. funds) today: Arizona residents please add 4% sales tax.

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JANUARY-FEBRUARY 1981
ONE OF THE FIRST things I noticed upon arriving in the West from the Midwest was that the trees are taller. This probably seems like a strange observation — except of course for one who is in the timber business — but it’s pretty important if you happen to be a dedicated squirrel hunter.

At a very early age, I learned that squirrels were hunted with accurate .22 rimfire rifles. Like taking quail on the rise and ducks on the pass, that’s just the way it was done. Even though the taste of fried squirrel was one of my favorites, and I hunted the creatures with a fervor unknown to mankind since the Crusades, any mention of other methods (such as a shotgun) would have gotten me sent to bed without supper. Looking back on the situation now, I suppose this is as it should be.

At any rate, .22s worked just fine in the small stands of oak and hickory of my old home. Ranges there were seldom more than forty yards, making head shots easily possible with a good rimfire. Imagine the shock of my first hunt out here among ponderosa pines. These trees stand taller than the entire width of some of my old squirrel woods! Also, my favorite small-game animal comes in a smaller package here in Arizona — the Alberts squirrel.
is much smaller than a fox squirrel, and also slightly smaller than the familiar grey squirrel. Sounds strange, as most people think of things as bigger in the West, yet the same is also true of my second favorite rifle target, the cottontail rabbit.

One thing that is not surprising, however, is that the wind seems to blow constantly. Not always with great intensity, but its presence can pretty much be guaranteed. So, after spending a couple of seasons with my rimfire, I became painfully aware that while I could take some game, I would have to pass up many more shots because of the wind or distance. This is something all users of the .22 rimfire must do because of the inescapable fact that the little cartridge relies solely on bullet placement for its effectiveness on game. If its forty-grain bullet is placed exactly right on head or spine, multitudes of running, jumping, and hopping creatures are directed toward your frying pan. However, miss this spot ever so slightly, and you have a wounded animal that oftentimes shows no sign whatsoever of being injured.

The solution to wind and distance is obvious to any admirer of rifle-barrel firearms. Basically, it starts with the determined pronouncement “I will build a more efficient small-game rifle” uttered from between clenched teeth — generally after you’ve missed two or three shots in a row while being watched by others. The only problem is which cartridge to select. It seems that nearly everyone has lost interest in the small-game cartridges of the early 1900s, and there is no modern replacement. Today’s cartridges go directly from the .22 Long Rifle to the blow-'em-to-atoms .22 centerfires, the only exception being the .22 WMR.

Interestingly enough, virtually every rifle cartridge today, when used with jacketed bullets, in either factory loads or current handload data, starts at two thousand feet per second plus. Experience has shown that such loads are just plain too noisy, destructive, and high-powered for any small game you plan to eat. The current crop of so-called small-game cartridges, which cause a lung-shot cottontail to swell up like a furry canailoupe and then disappear in a pink mist, do not impress me in the least.

Others may have this problem solved, but I have never been able to get consistent accuracy and point of impact with cast bullets. Even in modern single-shots designed especially for shooting lead bullets, it seems that something — probably temperature — affects point of impact. Breech-seating seems to minimize this but is virtually out of the question in the hunting field, unless you like to carry a bag full of accessories around. I don’t.

Since all the classic small-game cartridges used lead bullets, perhaps a bit of background is in order. One thing is certain, the modern small-game cartridge is somewhat different from the earlier concept. Originally, small-game cartridges and inexpensive cartridges were pretty much one and the same. Countless numbers of inexpensive single-shots, carrying various names, were sold in the early years of this century. Since rimfire ammo was cheaper to produce, these rifles were chambered for .25, .30, .32, and .38 rimfire cartridges. Each caliber had its “short” version and at least one longer-cased variety, similar to the .22 Short and .22 Long Rifle today.

The .32 was offered in the greatest number of case lengths — five — starting with the .32 Extra Short with its stubby 0.398-inch case and culminating in the .32 Extra Long’s 1.480-inch length. The in-between types were designated Short, Long, and Long Rifle. Twenty-five and thirty calibers came in Short and Long only, the .38 in Short, Long, and Extra Long.

Time, of course, has a way of separating the good from the not so good, and so it was with this group of rimfires, until only the .32 Long and .25 Stevens (sometimes called the .25 Long) were left. While the rifles firing these cartridges died out by the 1930s, it is interesting to note that .25 Stevens ammo was loaded until World War Two and .32 Long later than this. In fact, the .32 cartridges were still available a few years ago in, I believe, the Canadian CIIL brand.

For a cartridge to last this long, it must have something going for it. Unfortunately, modern shooters can never learn these lessons at first hand, not only because small game is scarcer now but mainly because rimfire cases can’t be reloaded. It is not a simple matter of forming the case from an existing one or buying empty brass from someone who makes or imports them. Add to this the action of corrosive priming on the bores of rifles that were considered cheap in the first place and thus given little care, and it’s easy to see why so much .32 remains today with shootable bores.

Nevertheless, many shooters remember the heyday of these cartridges, when they used them for...
hunting, plinking, or informal paper-punching. One such individual, whom I knew many years ago and gave me my early samples of the .25 Stevens, used only this cartridge (never the short version) for hunting. He killed a great number of fox squirrels and rabbits for the table and woodchucks for bounty. I don't remember the make and model of his rifle, but it was a single-shot with a small scope. When I asked him why he thought so highly of this little rifle, his response was exactly what would be expected from any modern shooter and experimenter: that he had found the .25 Stevens to be more accurate than any of the other popular rimfires, and with a certain brand of cartridges, the accuracy was such that he could place the bullet with absolute certainty at just about twice the distance possible with any .22 rimfire he had ever owned. More important was his observation that the twenty-five killed noticeably better than the twenty-two.

Even though the cost of cartridges at this time was more than double that of .22s, it didn't matter, since the Stevens worked better. If memory serves me correctly, this rifle would group between two and two and a half inches at a hundred yards with his particular brand of ammo. Granted, not spectacular by today's standards, but this was back in the Midwest at a time when thirty to forty-yard shots on rabbits and hundred-yard shots on chucks were ordinary. One thing he did point out, and which I did not fully appreciate at the time, was that when shooting cartridges having rather high trajectories, one must pick the most accurate load giving satisfactory performance, learn the trajectory, then stick to it — forever! Continually fiddling with different bullets and velocities makes learning where to hold on small targets virtually impossible, and one soon loses faith in his rifle, even though the rifle isn't at fault.

The .32, on the other hand, never had a reputation for accuracy. Everyone I have ever talked to who has had experience with the cartridge says it killed very well — if you could hit anything with it. As a boy, my grandfather shot a great many gophers and woodchucks with a Stevens Favorite in .32 Long. A more typical rifle for this cartridge would be hard to find. As an interesting insight into its accuracy, he said that a sitting chuck could be hit and killed cleanly up to fifty yards with the .32 Long but not over twenty yards with the .32 Short. Also, no brand of Short cartridge was accurate, even when the rifle was new, and the Shorts were used mainly for gophers or rabbits where the range was often measured in feet rather than yards. Here again, little if anything ever got away, and the .22 was not considered adequate, even though cartridges cost as little as twenty cents a box.

My grandfather naturally preferred the .32 Longs when he could get them, but they were eight cents a box more than Shorts, and sometimes that eight

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### .25-20

<table>
<thead>
<tr>
<th>charge (grains)</th>
<th>powder</th>
<th>velocity (fps)</th>
<th>notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>87-grain Sierra</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.0</td>
<td>H-110</td>
<td>1,554</td>
<td>good low-velocity load, complete combustion</td>
</tr>
<tr>
<td>9.0</td>
<td>2400</td>
<td>1,696</td>
<td></td>
</tr>
<tr>
<td>9.0</td>
<td>SR-4759</td>
<td>1,838</td>
<td>accurate, but</td>
</tr>
<tr>
<td>10.0</td>
<td>SR-4759</td>
<td>1,803</td>
<td>unexplained fliers</td>
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<td>8.5</td>
<td>IMR-4227</td>
<td>1,456</td>
<td></td>
</tr>
<tr>
<td>11.0</td>
<td>IMR-4227</td>
<td>1,908</td>
<td>well under minute of angle</td>
</tr>
<tr>
<td>11.0</td>
<td>IMR-4198</td>
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<td>very accurate</td>
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<tr>
<td>13.0</td>
<td>IMR-4198</td>
<td>1,929</td>
<td></td>
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<tr>
<td>75-grain Sierra</td>
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<td>H-110</td>
<td>1,783</td>
<td>minute of angle</td>
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<tr>
<td>10.0</td>
<td>SR-4759</td>
<td>1,889</td>
<td></td>
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<tr>
<td>12.0</td>
<td>IMR-4227</td>
<td>2,151</td>
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<tr>
<td>11.0</td>
<td>WW-680</td>
<td>1,960</td>
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<tr>
<td>60-grain Hornady</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.0</td>
<td>Unique</td>
<td>1,956</td>
<td>too destructive for small game</td>
</tr>
<tr>
<td>9.5</td>
<td>H-110</td>
<td>1,991</td>
<td></td>
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<tr>
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<td>SR-4759</td>
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<td>13.0</td>
<td>WW-680</td>
<td>2,143</td>
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<tr>
<td>13.0</td>
<td>IMR-4198</td>
<td>2,045</td>
<td></td>
</tr>
<tr>
<td>15.0</td>
<td>IMR-4198</td>
<td>2,292</td>
<td>highly compressed load — very accurate</td>
</tr>
</tbody>
</table>

All velocities instrumental at ten feet. All loads used Remington 6½ Small Rifle primers. These loads are not for use in any Winchester or Marlin rifle, or other vintage firearm.
cents was hard for a boy to come by. Keep in mind that this was when these cartridges were fifty-eight cents a box. Ammo has never really been cheap.

To understand these cartridges more fully, it is necessary to look at the factory ballistics. All started with black powder and lead bullets. While the more popular varieties graduated to smokeless powder, the bullet weight was retained along with the blackpowder velocity. Thus, trajectories did not change for shooters who had learned where to hold their rifles at various ranges—the ammo makers understood the concept of the small-game cartridge very well indeed!

If these cartridges worked so well, why have they been ignored for so long by gunmakers? That’s a hard question to answer, but it probably involves the facts that totally new cartridges are more exciting than old ones, and higher velocities with their attendant flatter trajectories always look good on paper. However, one can always have too much of a good thing, and this seems to be what happened to the small-game rifle. Its development has been left in the dust of the rush to faster twenty-two and even seventeen calibers.

There are, however, signs that this attitude could be changing, or at least that someone has noticed there is no such thing as a true small-game rifle anymore. The chambering of Ruger and Harrington & Richardson single-shots in .22 Hornet seemingly leans in the right direction. Yet the Hornet, with its forty-five-grain bullet at nearly twenty-seven hundred feet per second, is just too destructive on small game under a hundred yards. If the little twenty-two is loaded down, the wind drift and poor killing of the .22 rimfire loads begin to crop up.

This may sound like an insurmountable problem, but actually it isn’t. In my opinion, the answer has been around since at least 1895 and has been overlooked ever since, largely because of the limited accuracy of the rifle it was first chambered in, coupled with the availability (at less cost) of all the previously mentioned rimfire rounds at the same time this cartridge was introduced. I’m talking about the .25-20 Winchester Center Fire, or .25-20 WCF for those who like the quaint, restrained terminology of this era.

I should hastily add, before serious riflemen begin to think I have been sniffing too many spent shotshell hulls, that I’m not talking about the .25-20 in its original home, the Model 92 Winchester. While it was a very interesting rifle, it has the same characteristics common to all the lever-actions of its time, mainly that while it functions and fires very well, there is no way you can say it will shoot. It was perhaps this rifle, which gained the .25-20 its early popularity, that also guaranteed its later demise, because it could not be made to deliver the greater accuracy shooters came to expect.

I unabashedly admit a preference for Ruger single-shots, but at the time my rifle was planned, a Number One barreled action could not be found, and complete Number 3s were just as scarce. A Falling Block Works Model J single-shot action had been stored away for just such an emergency, and emergency it was, as I had vowed not to let another fall pass by without an adequate rifle. But doesn’t the .25-20 still have too much capacity for the little sixty-grain bullets that would logically be used?

The answer is an unqualified yes, since the sixty-grains can be driven up over twenty-three-hundred feet per second in a strong single-shot. These stubby little bullets become a bit fragile when they strike things at such velocities, producing targets with various parts missing. This doesn’t...
MISSING any of these BACK ISSUES?

Handloader
The Journal of Ammunition Reload
Numbers 32, 38, 39, 43, 46, 59, 60, 62, 71, 72, 78, 79, 84, 85, 86
Rifle
The Magazine for Shooters
Numbers 6, 6, 7, 9, 15, 18, 20, 24, 27, 30, 31, 32, 33, 34, 43, 45, 47, 48, 50, 51, 52, 54, 55, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 70, 71, 72
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The Numbers 62, 71, 72, 78, 79, 84, 85, 86
Incidentally, these Ruger bases provide an excellent means of mounting a modern scope on any single-shot that is being rebarreled. They are all steel, and since the stubby Ruger barrel is rather thick back near the receiver to accommodate the .45-70 cartridge (all Number 3s have the same outside contour, regardless of caliber), the bases can be easily adapted to most of the heavier sporter contours so popular with single-shot buffs. Also, these rings look like they belong with the bases on a fine rifle, instead of something that was just "made to work."

Of perhaps greater interest, though, is headspace. One would normally think that all this would involve was the setting of this dimension at the minimum given for the .25-20 and letting it go at that. However, it's not all that easy, especially with this particular case. If the lots of brass I have measured are typical, it seems that the rim thickness from case to case is none too uniform. In fact, variations were such that a couple of cases that seemed to be near minimum were selected from a fairly recent lot and used to set the headspace for my rifle. This turned out to be some 0.003 inch under minimum specs for this cartridge.

No big thing, you say — but it may be a bit hard to get a gunsmith to fit up a barrel this way, especially if he puts his name on it. This smith can just see the rifle being sold someday, and the buyer not as knowledgeable about such matters as the original owner. Said new man is sure to come up with a shoebox full of .25-20 cartridges that have been stored in Uncle Earl's attic since the fire sale at Johnson's Sporting Goods in the spring of 1928. Of course, these ancient cartridges will all have rims that are near maximum allowable tolerances, won't fit in the gun, and will be brought back to the gunsmith by the irate owner, who can't understand why all this good ammo won't fit in his rifle marked .25-20. Naturally, this is also six months after the shoebox was first discovered, and the good old boy has told every shooter in ten states about his lousy rifle before thinking to question the smith who made it or the fellow he bought it from.

At any rate, tight headspacing is definitely an aid to accuracy, but what do you do with cases having rims a thousandth or so too thick to chamber? That's a question that I pondered more and more till I checked the cases for primer-pocket depth. Suffice to say, this dimension was a bit less uniform than the speed of light. Since I was not about to buy the several hundred cases necessary to come up with a box with uniform primer pockets, I did a little testing to determine what effect this would have in my rifle.

Fortunately, I could detect no difference whatsoever in a few thousandths variation, and this offered an answer to the thicker rimmed cases. Basically, it consists of locating a fine-cut mill file, laying it on a flat benchtop, holding the thick-rimmed case base-down on the file with the fingers, then sliding it across the cutting surface. While this is not the way to go about thinning rims when re-forming cases, it provides an accurate way to remove a couple of thousandths and have perfectly fitted cases. The face of a seated primer averages some 0.015 inch below the
As an added note to anyone who may consider building up a rifle for this little cartridge, it is difficult to find a smith with a .25-20 chamber reamer. That should be no surprise. Therefore, the customer may have to supply the reamer. It would not be a bad idea to pay a little extra to have the reamer made up as a "special" that will cut a chamber of minimum dimensions. The chambers of lever guns are a bit generous, to make up for their lack of camming power, and a so-called standard reamer would probably reflect this.

The chamber of my rifle was cut with a reamer that had no extra metal on it at all. In fact, while properly coarsest factory loads drop in without a hitch, the necks (at 0.100-inch wall thickness) expand only enough to release the bullet. Body expansion above the solid case head is exactly one thousandth of an inch. Not surprisingly, when the proper load is used in this rifle, it shoots small groups.

After two seasons of use, a couple of really good loads have come to the forefront. Both use the eighty-seven-grain Sierra spitzer seated to just miss the lands in a barrel with a standard .25-20 throat. The first, eleven grains of IMR-4198 over Remington 6½ primers, has been my mainstay for all small-game hunting. The load's average velocity of 1,566 feet per second seems to strike a good balance among trajectory, noise level, and shocking power. If sighted a quarter of an inch or so high at fifty yards, it allows sure hits out to a hundred, but not much over, unless one is very good at range estimation. However, up to this distance, a good number of squirrels who thought themselves safe while peering over a limb have discovered they were badly mistaken.

The second load uses a different powder, IMR-4227, and extends the sure hitting range another thirty yards, but this must be paid for in more noise and destruction. Fact is, this load of eleven grains of IMR-4227, at an average of just over nineteen hundred feet per second, is just too darn noisy for me. Even though it does average a bit tighter groups than the slower load (5/8 versus 3/4 inch), the velocity rules out shots under eighty yards because of meat destruction on small game. It could, however, provide interesting possibilities for larger animals such as fox and coyote brought in with a predator call.

My sole reason for working-up the faster load was to see how this bullet would perform. The eighty-seven-grain spitzer at 1,550 feet per second is really all that is needed, but it is interesting to compare the performance of the two loads on small animals. Out to a hundred yards, the slower load produces thirty to thirty-five-caliber exit holes on squirrels or cottontail, with the animal either stopping in its tracks or taking only a couple of steps before succumbing. The bullet, upon striking the ground on the far side of the target, creates no rockslides nor uprooted vegetation.

One would not think the addition of 350 feet per second of muzzle velocity would make much difference, but it certainly does. Exit holes double in size at ranges under approximately eighty yards, with head-shot squirrels spinning out of the trees like boomerangs. Beyond a hundred yards, the bullet settles down to perform like one from the slower load at fifty yards.

Keep in mind, however, we are talking only about animals weighing two or three pounds at fairly short ranges. Performance would change on larger game or at longer ranges. It might be comforting to know that a couple of the higher-velocity rounds were residing in a shirt pocket just in case a forty-dollar coyote hide came walking by during the weekly bunny hunt.

None of the loads listed in this article should be used in any Winchester Model 92 or any other .25-20. Some may be a bit hot, and of course, pointed bullets are just not used in tubular magazines by wise men.

A few of the rifle's better loads for the seventy-five-grain Sierra hollow-point are also included. This bullet produces groups of well under a minute of angle, but only with velocities exceeding twenty-one-hundred feet per second. By the same token, the sixty-grain Hornady flat-point comes very close to such accuracy above twenty-three-hundred feet per second. At fourteen hundred feet per second, the little Hornady, which closely resembles an upside-down flower pot in profile, prints groups that should more properly be called patterns.

One would normally think the culprit here was the rate of twist, which happens to be one turn in twelve inches for this rifle. Perhaps a ten-inch twist would help the lighter and shorter bullets group better at lower velocities for shooters who desire such performance. However, as was so aptly stated by my friend with the .25 Stevens so many years ago, one bullet and one accurate load is enough for one true small-game rifle.