

The
Rifle
Magazine

January-February 1972
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Bullet Test in Africa

MODEL 54...

the Forerunner

The **Rifle** Magazine

"Only accurate rifles are interesting"

- Col. Townsend Whelen

Volume 4, Number 1
January-February 1972

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Cover

The Thompson/Center Hawken, featured on the cover of this issue, is the first modern muzzle loading rifle to be offered by a major U. S. manufacturer — a clear indication of the rapid growth of black powder shooting. Though the Thompson/Center Hawken is not intended to be a replica of the original, it is an excellent design for black powder competitors, as well as for hunters in areas where state laws allow the use of muzzle loaders, but not modern rifles, as Dave Wolfe reports in this issue. The biggest problem facing this growing sport is the availability of black powder, a topic discussed by George Nonte on Page 21. Transparency by Jim Sheridan.

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Loading for Bear & other critters

by John Wootters

THERE IS NO OTHER single topic of gun talk about which so much arrant baloney is passed about, in print or around the hot stoves, than long-range game shooting. Fisherman are accused of exaggerating the size of fish, but they're an honest and saintly group in comparison to hunters telling about last year's big buck or woodchuck so neatly zapped in the next county.

Among my most cherished memories is the tale so dramatically told to me by a Pennsylvania 'chuck shooter of a first-round knockout on a sod poodle at "a leetle over 1,200 yards!" A close second was the Texan who described having seen his old Daddy slay a running whitetail buck with an iron-sighted Winchester M-94 carbine in thutty-thutty, at a nice round "half a mile." I must admit that his old Daddy is said to have required several shots to connect, considering the distance and all. Such stories should be anthologized and preserved for posterity, especially since both of these gentlemen (and most of the scores of others who have so kindly enlightened me on their own "long shots") are absolutely sincere.

The truth is that a majority of hunters simply have no concept of distances much beyond 100 yards. I have proved this to my own satisfaction over and over again, but have not the space here to annotate these experiments. Instead, you can easily test yourself and your hunting friends and thus will not need to take my word for it.

In a woody location with a safe backstop, set up a life-size deer silhouette at a long (300 yards or more) but unknown distance. Assemble four or five of your buddies, with rifles, and ask them not to discuss their range estimates among themselves. Have each man assume whatever position he pleases and fire three to five shots at the deer. If it is possible to safely station yourself so that you can spot the shots of each in the order in which they were fired, it will be interesting to get up a small pot to go to the man who scores a first-round hit in a vital area. This pot will very likely go unclaimed, and can

be added to the pot for the fellow with the most vital hits in his first series of shots.

Next, get each man to write down his best estimate and collect them before measuring the actual distance. If you do this by having everybody pace off the range, shoulder to shoulder, you may be surprised to discover that even the paced-off counts among five different men will vary as much as 100 paces over 350 to 400 yards, more at longer ranges. The various estimates may begin at 250 and run as high as 500, or even 800, yards.

Now, repeat the firing part of the experiment (I assure you the target will still be in good shape!) with the same rifles and ammo, but with each man now having a realistic idea of the distance. If they are knowledgeable riflemen who know trajectories and zeroes, chances are 60 to 75 percent of all the shots in this barrage will score. This makes a pleasant way to spend an afternoon and will cause a great light to dawn on most of the participants.

After having run just such a test of some of the better hunter-rifleman I know, I consulted three ophthalmologists, asking each one how far out the human animal's binocular vision could assure accurate range evaluations. One doctor said 20 feet; the other two pegged precise depth perception ability at about the length of our arms! All agreed that at riflery ranges we have no anatomical machinery with which to

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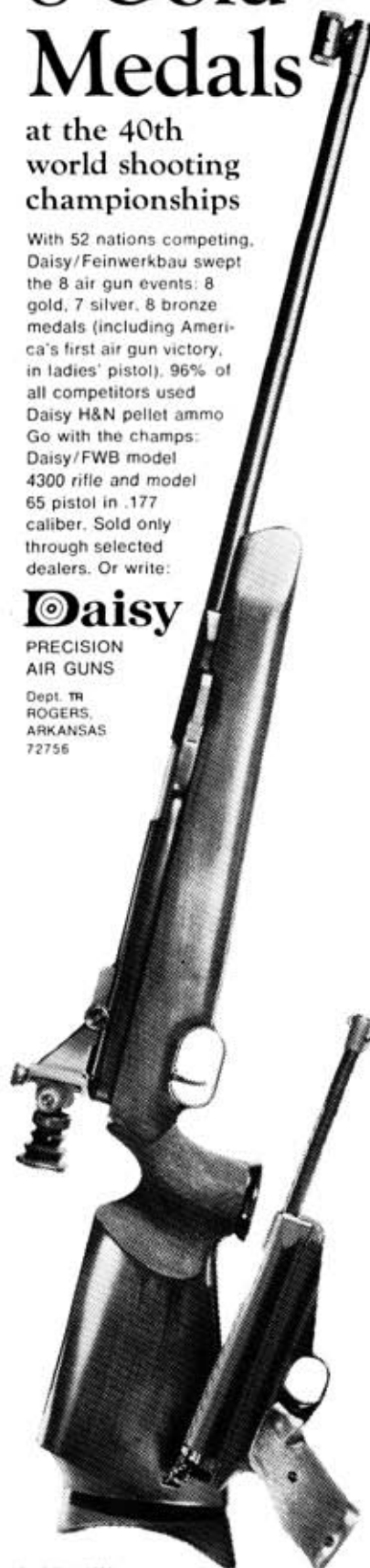
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determine distances, and must rely upon what are called "monocular clues." These are things we could perceive as well with one eye closed, such things as overlapping of terrain and vegetation features, apparent size of objects of known proportions, perspective, and so forth.

Furthermore, all these clues can be distorted by all manner of common conditions, such as poor light, excitement, air clarity, the nature of intervening terrain, and many others. In short, no man alive is blessed with an unerring

sense of distance; it is not a talent, but an acquired ability which improves greatly with a little practice. And make no mistake about it, there are some riflemen whose judgments of range are very, very reliable, especially on familiar game in familiar terrain.

To become one of these requires only a little effort and, ideally, the expenditure of a good many rounds of ammunition. There are other ways to learn range estimation, but none of them is as good as actually firing a hunting rifle with hunting loads at random


targets and mentally correlating drop with the known trajectory of the load.

In areas where such activities are unpopular or impossible, the use of a good quality rangefinder like the Rangelmatic is invaluable. A group can sit around anyplace, preferably but not necessarily in the country, and make individual estimates to any visible objects believed to be within rifle range. The rangefinder is then used to check the estimates. A hint: make at least three determinations of distance on each object with the rangefinder and average them.

You can even practice on range estimation going about your daily business. As you walk along a city street, estimate the distance to a telephone pole a block or more away and count the paces until you reach it. Trees, rocks and domestic animals offer similar practice. Several friends of mine and I regularly play a game while driving on the highway, to and from hunting trips. One man will suddenly say, "How far to that horse?", pointing to an animal within long gunshot range. Every man chimes in an opinion, and we argue about it. This sort of thing permits no experimental determination of the actual distance, but it does keep our eyes in practice. It all pays off in terms of clean kills and avoiding disappointments on long and expensive hunting trips where only one trophy opportunity may be presented.

All you have to do is miss something like a bull elk (an almost unmissable target if standing) once because you misjudged the range, and you'll know what I'm talking about.

I have not mentioned the various rangefinding rifle scopes because I personally do not believe in them, preferring to rely on my hard-earned "range eye" when the chips are down. If you have no desire to work at learning how to judge distance, then perhaps one of these scopes is your best bet.

Either that, or confine yourself to short-range shooting. 



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Return of the .250-3000

By KEN WATERS

WHEN THE FIRST WORLD ruckus started in Europe in 1914, there were just two American-made rifle cartridges which might be called really high velocity — the .22 Savage High Power and, of course, the .30-1906 Springfield.

The .22 High Power had appeared in 1912 and quickly earned its nickname "The Imp" because, I suspect, of its uncertain behavior when turned on really big game for which it was never intended. But it had served to whet the appetite of shooters for higher-velocity, flatter-shooting cartridges, and it could be and was used in a dual role of deer and varmint rifle. It fired a 70-grain bullet of .228-inch diameter at 2,800 fps MV.

The .30 Government 1906, as it was called, had been around for roughly a decade by then as a military cartridge, but it was not until around 1912 that it emerged as a sporting round chambered in sporterized Model 1903 Springfields to which personal title had been acquired. These too were beginning to capture the interest and imagination of January-February 1972

American riflemen, but the average hunter of 57 years ago was not yet ready to accept bolt action rifles. They were still thought of as military weapons rather than sporting arms.

Remington was actively promoting the concept of slide action autoloading rifles, but lever actions were the bread-and-butter of Winchester, Savage and Marlin. Winchester had chambered the Model 1895 for the .30-06, but the 1899 Savage action, although strong, was too short for that cartridge. It might have been anticipated that an attempt would be made to develop a deer cartridge of the new high velocity breed, dimensioned to suit the Model 99 rifle.

The .22 High Power had demonstrated the potential of the 99 Savage action, and in doing so had helped create a market for another new round — one with more reliable killing power. The country was ready and waiting for such a combination of high velocity cartridge and lever action rifle that would take up where The Imp had left off.

Charles Newton, responsible for the

.22 Savage High Power design, was naturally interested in promoting a second high speed round, and was well aware of Dr. Franklin Mann's experiments and the work of gunsmith Adolph Niedner with the Krag case necked down to .25 caliber. It is hardly surprising that he sought to alter that case by shortening it in addition to necking it down.

Rimmed cartridges were traditional with lever action rifles, and the Savage 99 had always previously taken rimmed shells, hence Newton's approach seemed a reasonable one. That is, until you consider that the Krag case has too large a rim diameter for the Savage receiver and rotary magazine. Since it was easier and less costly to work up another cartridge design than to enlarge an existing rifle action, progress was temporarily stymied until a case that would work through the Model 99's action could be developed.

Enter now one Harvey Donaldson, circa 1914, with a proposal to Savage that the rimless .30-06 case be used as the basis for the new cartridge, shorten-



The Savage Model 99-A's heritage is obvious in this comparison with Ken Waters' classic deluxe 99 lightweight takedown model with fancy walnut stock, micrometer wind gauge, tang peep sight, plus an unusual American version three-leaf express sight by W. F. Sheard. The rifles, both .250-3000's, shot almost identical groups.

ing and tapering it at the same time it was necked down to .25-caliber. This would provide a stronger case, free from any projecting rim. Of course this was the solution to their problem.

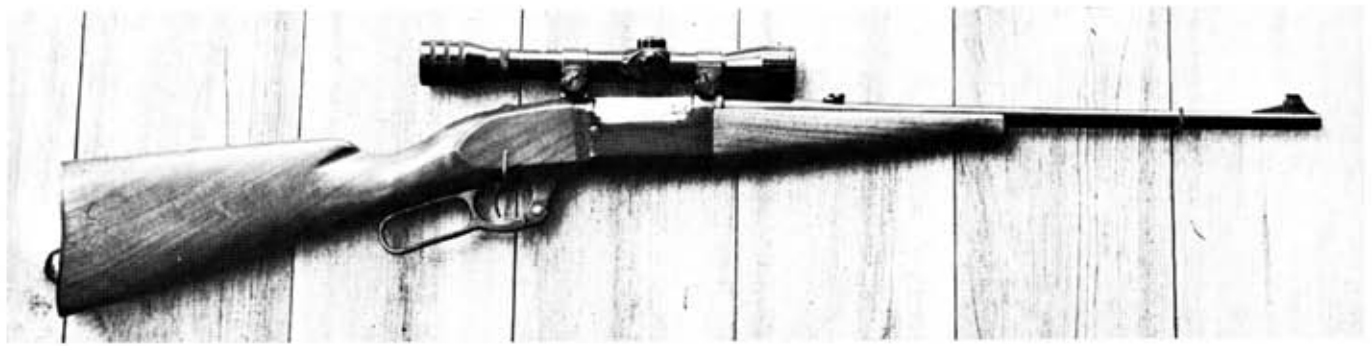
The resulting case measures 1.912 in length with a neck .275-inch long sized to hold .257 diameter bullets, and a body given considerable taper, terminating in a shoulder slope of 26½ degrees. I believe Donaldson had recommended 30 degrees, but it ended up at 26½. On the small side by today's standards, it had ample capacity for the faster-burning powders of that time.

As to the decision on caliber, in those days .25 was the next larger popular bore size above .22 caliber, and bullets of .257 diameter could be given respectably high velocity without creating undesirably high chamber pressures or recoil. Consensus seemed to be that the new cartridge should be of .25-caliber.

Newton wanted to use a 100-grain spitzer (or pointed) bullet, and the rotary magazine of the Savage 1899 rifle permitted this, in contrast to the tubular magazines then common with most other lever action repeaters (the Winchester 1895 excepted). Newton thought of this new round as a big game cartridge, and correctly reasoned that 100-grain bullets would constitute the most practical weight for such use. However, when it was found that 100-grain slugs could not be given a velocity of more than about 2,700 fps with the powders then available, he was overruled. Savage had taken the pulse of the shooters and decided it was more important to have a cartridge which could be advertised as delivering 3,000 fps.

This could be done with 87-grain bullets by tolerating chamber pressures of 50,000 psi in 22-inch barrels with .257 groove diameter and the slow rifling twist of 1-turn-in-14 inches. And so the decision was made to go with those specifications. The year 1914 was one of testing and getting ready — and in 1915 Savage offered the riflemen of America the new “.250-3000 Savage” cartridge and rifle.

Allyn Tedmon once admiringly referred to it as the “Miracle Rifle of 1915,” and so it must have seemed to the shooters of that era. Far from being just another new product, the .250-3000 was the first American-designed



cartridge to be factory-loaded to a muzzle velocity of over 2,800 fps. And the Savage 99 was the only lever action rifle (again excepting the 1895 Winchester) capable of handling these high breech pressures. A new era indeed had dawned.

There were other things about that Savage rifle worthy of note. It was the only lever action without an outside hammer, and the only one which cocked on the closing rather than the opening stroke of the lever. It took a bit of getting used to after the others, but due to its easy opening and short "throw," it can be operated very rapidly.

Too, the "99" is strong, its breech block rising up in closing to a position

where the rear of this block bears over its entire width against the rear wall of the receiver. Not as rigid a system as a front-locking bolt it's true, but fully adequate for a sporting rifle.

Especially noteworthy is the long stock-bolt which extends from the butt up through the grip into the rear of the receiver, reinforcing the stock at its weakest point and strengthening the entire assembly to withstand the hard knocks of hunting. This feature helps explain the Model 99's claim to superior accuracy. Other reasons are the well-supported breech bolt previously mentioned, the absence of a tubular magazine, and a shorter firing pin travel that speeded up ignition.

The late Colonel (then Captain)

When scoped with a variable or medium-power scope, such as this Savage 4X, the Savage 99-A in .250-3000 is an all-season outfit suitable for deer or varmints.

Townsend Whelen conducted the initial range tests of this rifle in .250-3000 prior to its being placed on the market. Using a test rifle equipped with Lyman No. 30½ wind-gauge tang peep sight and gold bead front sight, and firing from rest at 100 yards with Savage factory cartridges, he made ten groups of 10 shots each measuring from 1.40 to 4.12 inches extreme spread, for an average group size of 2.96. Remember, this was with the original 87-grain jacketed bullets, the inferior primers of that day, and 32 grains of the old Du Pont Military rifle powder No. 21. He appears to have been impressed with this level of accuracy from a light lever action

Loads for the .250-3000 Savage

Bullet	Charge	Powder	M.V.*	Primer	Case	Remarks
60 Speer Sp. Pt.	38.0	BL-C(2)	3,308	Hodgdon	Rem.	Good short range varmint load.
60 Speer Sp. Pt.	40.0	4320	3,405	Hodgdon	Rem.	Good short range varmint load.
75 Sierra H.P.	34.0	3031	3,177	Hodgdon	W-W	1½ MOA.
75 Sierra H.P.	35.0	BL-C(2)	2,992	Rem. 9½	W-W	1½ MOA - Accurate varmint load.
75 Sierra H.P.	35.0	4320	2,945	Rem. 9½	W-W	1½ MOA.
75 Sierra H.P.	37.5	4320	3,198	CCI 200	W-W	Fast, flat-shooting load.
75 Sierra H.P.	35.0	4064	2,990	CCI 200	W-W	1½ MOA - Most accurate varmint load.
87 Sierra Spz.	32.5	3031	2,992	Rem. 9½	Rem.	Good accurate load; factory equivalent.
87 Sierra Spz.	35.0	4064	2,942	Rem. 9½	Rem.	2 MOA.
87 Sierra Spz.	36.5	4320	3,040	CCI 200	Rem.	
87 Sierra Spz.	36.0	BL-C(2)	3,020	CCI 200	Rem.	1½ MOA.
87 Sierra Spz.	36.6	748-BR	3,010	Rem. 9½	Rem.	1½ MOA - Most accurate 87-grain load.
90 Sierra HPBT	32.0	3031	2,941	CCI 200	W-W	1½ MOA - Fine load; accurate.
90 Sierra HPBT	32.3	N-201	-----	CCI 200	W-W	1½ MOA - Good load. (not chronographed)
90 Sierra HPBT	36.5	748-BR	3,050	CCI 200	W-W	1 1/8 MOA - Very hot & very accurate-MAX.
100 Gardiner SP	30.0	3031	2,646	Hodgdon	Rem.	1 MOA - Most accurate load tested.
100 Gardiner SP	33.0	H-4895	2,725	CCI 200	Norma	1½ MOA.
100 Speer H.P.	32.7	N-203	2,785	CCI 200	Norma	
100 Sierra Spz.	33.0	4064	2,723	CCI 200	W-W	1½ MOA - Accurate, but erratic pressures.
100 Sierra Spz.	39.0	4350	2,826	Hodgdon	W-W	Full-power factory equiv.
86 Rem. FNBP	16.0	4198	1,820	Hodgdon	W-W	Good small game load.
89 Cast No. 257730	16.0	4198	1,850	Hodgdon	W-W	Extremely accurate case bullet load.
89 Cast No. 257730	12.0	4227	1,656	Hodgdon	W-W	Squirrel load.

*All velocities given are for 22-inch, 1-10 twist barrel, Savage 99-A.
Overall cartridge length was 2.50 except for 60-grain loads, which were 2.42 inches overall.

sporting rifle, offering the reservation however that the takedown version of this rifle couldn't be counted on for consistent accuracy and maintenance of zero. Much later (in 1940) he reported the solid frame 99-RS Savage as giving frequent 2½-inch groups.

The good colonel's writings on the Model 99 Savage contain frequent reference to its merits as a hunting rifle. Townsend Whelen was one who enjoyed probing wilderness areas, and as such appreciated a rugged arm. He refers to it as "very strong," "extremely simple," "durable" and "exceedingly reliable," offering testimony based upon 40 years of observation, much of this in the mountains of northern British Columbia. Saying it had stood the test of time while remaining free from trouble, his only reservation concerned the possibility of twigs or pine needles falling into the action while open and being almost impossible to get out, barring a difficult field stripping and disassembly.

Why anyone would ever have the action open while passing through thick stuff, he didn't say. That this would

seem to be more theoretical than actual, is borne out by his statement that he had never known one of these Savage rifles to jam. I can only conceive of such a thing happening if a hunter were moving through thick pines at the same time he operated the action.

Getting back to the cartridge, one writer has claimed the .250-3000 was 40 years ahead of its time. Tedmon thought it "the most nearly perfect of any commercial cartridge case." That it was well designed has long been a proven fact. Initial problems all centered around the original components. Primers, although non-mercuric, were corrosive. Case failures, possibly the result of improper annealing, were common, especially cracked necks. Bullet makers had had very little experience up to that time in producing jackets which would withstand these drastically increased velocities, and the powders commonly in use were generally hot as well as fast-burning, causing rifling to wash out to rapidly.

Researching contemporary reports of the 1915 to 1925 era, however, it appears that Savage attacked these problems with considerable vigor so that within a relatively few years following the .250-3000's coming on the market, ammunition performance had been improved and barrels were standing up better. In the 'Twenties, Capt. E. C. Crossman was reporting .250-3000 factory ammunition as being of "splendid quality," capable of 5-inch groups at 200 yards shooting from bench rest, and penetrating ¼-inch steel plate at 300 yards.

Crossman liked the 87-grain bullet loading at 3,000 fps, even for deer, and there are some experienced hunters who still prefer it to the 100-grain. My friend and fellow gun writer, Perc Angwin, is a staunch supporter of the 87-grain .250-3000 load, maintaining it

gives quicker kills on Vermont deer.


By the 'Thirties, with better brass, Kleanbore non-corrosive primers, improved powders, lower pressures and heightened bullet-making knowledge, the ammo problems were largely over. All that remained was the development of a 100-grain bullet factory loading and slower burning powders. The first of these came in September 1932 with an announcement by the Peters Cartridge Company of a new standard loading with 100-grain hollow-point bullet. With the appearance of IMR-4350 powder in 1940, we had the second sought-after development.

It is interesting to note at this point that one usually authoritative source has listed 1921 as the date of the first factory loads with 100-grain bullets. However, it is known that Charles Newton died in 1932 without ever seeing a development for which he had long argued. Further, the table of ballistics contained in the *Lyman Ideal Hand Book No. 29* (dated 1929), lists only an 87-grain factory loading. Hence, I think it a fair assumption that the earlier (1921) date is incorrect.

For better than a third of a century, the .250-3000 cartridge and rifle remained popular with American hunters. In the West, wranglers frequently packed the 99 Savage's smooth outline in saddle scabbards, and appreciated the hitting ability it gave at ranges far beyond the old .30-30's reach. Some of those men even used the little .250 successfully for game as large as elk and grizzly, although it is out of its class on such species.

Easterners liked it for its quick kills in heavily hunted areas, in addition to its widely heralded versatility as a first class varmint round. Tedmon summed it up when he described a scopesighted Model 99 with solid frame in .250 caliber as being close to perfection for crows, chucks, deer, black bear and similar game.

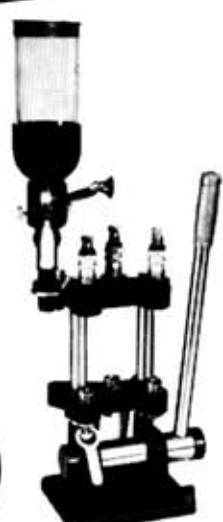
So now we come to the present. The .257 Roberts had, ever since its appearance in the 'Thirties, been cutting into the .250-3000's popularity as a bolt action cartridge, but it was the coming of the .243 Winchester cartridge in 1955, with its adaptability to lever action chambering, that temporarily lured shooters away from the .250 and induced Savage to discontinue the older round. I say "temporarily" because I believe many of us have since



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learned that we were too quick to drop an old friend. With experience (and chronographs) we found that the difference in ballistics between these two cartridges is not as great as had been supposed, and indeed that there are certain practical advantages to be derived from the .250-3000, among which are less recoil, less noise, and a greater compatibility with lead alloy bullets.

Thinking about all this, in the spring of 1967, I suggested to John Marsman, public relations manager of Savage, that the .250-3000 chambering should be returned to the Savage line-up. His initial reaction was one of surprise that I would recommend such a step when the Model 99 could be obtained in .243. Who would want rifles for the older, smaller cartridges?

I countered with a question of my own: Who buys Model 99's chambered for the .300 Savage now that the newer, larger .308 is available in the same model? He explained that many people prefer the .300 Savage cartridge, it being a good round of proven effectiveness.

I felt he'd answered his own question. The .250-3000 is likewise a good cartridge in its own right, also proven effective, and isn't it just possible that here, too, many shooters will express a preference for it? Personally, I have little doubt but what they will, if sporting goods dealers will only stock the rifles as well as factory cartridges in both bullet weights. To this end, I've asked the boys at Remington to reinstate an 87-grain bullet loading for the .250. Winchester-Western presently offers both weights.

In that early 1967 discussion with Mr. Marsman, I outlined my thoughts for a re-issued .250 Model 99, including suggestions that it be given a straight-grip stock (and lever) free from checkering, and asked that the fore-end terminate in a schnabel tip. Nostalgic touches, it's true, but not without the practical value of holding down costs without any sacrifice in quality.

Later that same year I wrote Savage to further suggest that *if and when* they saw fit to produce such a rifle, it should be given a 24-inch barrel, for which a new factory loading of the .250-3000 cartridge could be developed to give a 90-grain bullet 3,200 fps using our modern powders.

Each year since then I have renewed January-February 1972

my plea to Savage (as I am told several other shooters have), so it was with more than a little satisfaction that I received the news that this grand rifle would again be available (although in carbine form), designated the Model 99-A, and — as a final period touch — to be referred to once more as the “.250-3000 Savage,” a grand high-sounding old title with a far nicer ring to it than the prosaic interim name of .250 Savage. Even though my voice was only one of many — and I make no claim whatever to have influenced the Savage decision — I was naturally pleased to see that all my suggestions and requests, except for barrel length, have been adopted.

The new Savage has a 20-inch barrel, admittedly handy, with 1-in-10 rifling twist rather than the standard 1-in-14 of the older .250 Model 99's. This faster twist will permit the use of bullets heavier than 100 grains without loss of stability but, theoretically at least, will be less compatible when the lighter varmint bullets are used, and pressures with full-power loads may run a bit higher as well.

Like other Savage 99's of recent vintage, the 99-A has a tang safety — a great improvement in handiness, even though positioned a bit too far forward in relation to the grip for my hand. The rotary magazine has been retained, for which I am personally grateful. Always reliable, easy to load with cold hands, free from game-spooking rattles and never separated from the rifle, this magazine is one of the features that make the Savage 99 what it is — distinctive.

Scope sights seem to locate naturally on these rifles; that is to say the close spacing of bases and therefore mount rings spanning the Model 99's short action permits positioning the scope's ocular lens closer to the shooter's eye,

providing a maximum field of view without any need for “stock crawling.” And the open rear iron sight is one of the very best — the Lyman No. 16 folding leaf, which can be folded out of the way of scope objective cells, and yet remain ready for almost instant use when needed. Because I place a value on standby iron sights for rugged all-weather hunting, I want no iron sight that bulks so large it has to be removed from the rifle when a scope is mounted.

The straight-grip stock with its absence of any unnecessary protuberances, together with a straight lever makes for sheer speed in drawing from a saddle scabbard and functioning from an off-hand position. Some will find it similarly more convenient for one-hand carrying while grasping the grip when pushing through an Eastern thicket on foot. The schnabel fore-end tip is purely for esthetic reasons, but that's not saying anything against it. After all, who doesn't enjoy carrying a rifle that *looks* like a rifle?

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hunting rifle, solid enough to take much use as well as the abuse some will inevitably give it. Quite frankly, it doesn't show the same high quality of workmanship in fit and finish that my vintage De Luxe Model 99 does, but let's give credit where it's due. Although neither as handsome nor as smooth functioning as the older rifle, it shoots just as accurately, is probably made of tougher steel, and I believe will give fully as many years of reliable service — and it doesn't cost as much as my rifle

would if it were made today.

The solid frame and stiffer barrel of the 99-A are positive advantages that show up, particularly after the third shot. I would expect my old 99 to out-group the new carbine for the first three rounds out of a cold barrel, but after that the newcomer has it all the way.

Another difference noted was the way in which these two rifles handled bullets of various weights and types. Our old .250-3000 showed a distinct preference for bullets of 90 grains and under, delivering truly surprising accuracy with the stubby little 60-grain Speer spire points. The way in which cast bullets performed in the slow 1-in-14 twist was also gratifying. Some 100-grain bullets in *some* loadings shot rather well, as did factory loads in both weights, but it was evident that the weight limit in relation to stability had been reached. The 117-grain bullets showed positive signs of tipping at only 100 yards. I would not consider any bullet of more than 100 grains or .95 length as suitable for use in the older rifles with 14 inches twist.

On the other hand, the new carbine with its quick 1-in-10 twist *preferred* 100-grain bullets to anything lighter, accepting still heavier bullets as well. For those wishing to use bullets weighing more than 100 grains this steeper rifling twist is an advantage, and is probably the reason behind Savage's decision to go to a quicker twist.

And now it's time we had a look at the .250-3000 cartridge as it exists in 1971. Tedmon called it "superbly accurate." It still is, with a nearly perfect case capacity-to-bore ratio. With our better, milder-burning powders and

consequent lower pressures, the old case-stretching tendencies that at one time evoked protests of fired hulls refusing to re-enter the chamber are happily gone. Where once the .250-3000 case had been considered an unlikely prospect for reloading in lever action rifles, it is now completely practical. The other old bugaboo of metal fouling from inferior bullet jackets has also disappeared.

These changes are due entirely to the ammunition. I found I could reload cases for either rifle many times, even when using hot loads, with nothing more than neck resizing, provided of course, that I didn't allow the cases from different rifles to become mixed. Oh yes, they still stretch some with repeated use of full-charge loads, but a correctly reamed full-length sizing die and a run through the case trimmer as often as necessary to hold case length to 1.912 should get you anywhere from half a dozen to ten firings per case. For a lever action, that's not half bad.

Current Winchester-Western ballistics for the .250-3000 list an 87-grain pointed soft point load at 3,030 fps, and a 100-grain Silvertip at 2,820 fps. Remington has only a 100-grain PSP, likewise at 2,820 fps from 24-inch barrel. Lyman's chronograph check shows the 100-grain Remington load delivering 2,816 fps, again from a 24-inch barrel, while Speer confirms this with 2,803 fps, so here's a cartridge that actually meets factory specs. Of course, you won't be getting quite this much from the 20-inch carbine barrel. The Remington chart predicts a loss of approximately 20 fps at this velocity level for each inch under 24. Thus, you can expect something like 2,740 fps with 100-grain factory loads, and 2,950 fps with the 87-grain. Best of all, pressures of standard loadings are down to 45,000 psi with 49,000 psi now considered maximum.

Norma offers factory loaded cartridges in both bullet weights, a 100-grain at 2,822 fps, and an 87-grain at 3,032 fps. CIL, like Remington, has only a 100-grain load at 2,820 fps.

Handloaders can duplicate or exceed these velocities with any of the following wide range of powders: Du Pont IMR-4350, 4320, 4895, 4064 or 3031; Hercules Reloder 21 and 11; Winchester-Western 760-BR and 748-BR; Norma's 203 and 201; Hodgdon's H-414, 4895 and BL-C(2).

I didn't try H-414 or 760-BR, but

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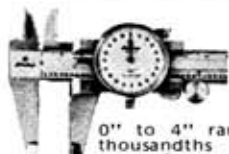
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made a pretty thorough coverage of the rest. Neither rifle liked BL-C(2) except with the lighter bullets, and 4064 proved decidedly erratic with loads approaching full power, as did Reloder 11. In general, the older rifle gave best results with 3031, 748-BR, N-201 and slightly reduced loads of 4064. The new carbine exhibited a marked preference for Hodgdon's 4895 and W-W's 748-BR. Note the fairly close similarity of burning rates of these powders.

Of all the various loads tested, were I to pick a single one to standardize on, I believe it would be the new 90-grain Sierra hollow point boat-tail bullet with 36.5 grains of W-W's 748-BR. Velocity averages 3,050 fps from a 22-inch barrel, or about 3,010 fps from a 20-inch carbine tube, thus bettering factory load ballistics while maintaining top accuracy. Game-wise, it should be suitable for either varmints or deer and antelope-size game, but nothing larger.

Good small game loads can be built around the 86-grain Remington or Winchester flat-nose soft point bullets intended for .25-20 velocities. In barrels with 1-in-14 twist especially, the 89-grain Loverin-designed Bond cast gas check bullet No. 257730 (Lyman-Loverin No. 257464) is capable of excellent squirrel hunting accuracy to a full 100 yards. For either this bullet or the 86-grain Remington FNSP, a favorite prescription is 16 grains 4198. Seated so as to just touch the rifling, we had groups of from 1 to 1½ inches for five shots. Cases used for these light loads should be color-coded and *not* used thereafter for full-power loads.

The little 60-grain Speer spire-points at 3,300 fps from 22-inch barrel with 38 grains BL-C(2) making 1 3/4-inch groups is a terribly effective varmint load where ranges aren't too long. With this same bullet, 40 grains 4320 is a still faster load giving nearly as fine accuracy.

The .250-3000 Savage with either factory cartridges or heavy handloads is much too powerful for taking small edible game, although both Remington and Winchester-Western factory loads proved nicely accurate. Because of its flat-shooting and accuracy qualities it is well suited for varmint shooting, where it may well best the .22 calibers on windy days. Due to these same assets, plus consideration of its light recoil, it is hard to beat for a lady's or boy's rifle. Muzzle blast — a prime cause of flinch-

ing — is also less than that of some comparable cartridges, such as the .243.

Whelen considered it adequate for game no larger than mountain sheep, stressing the ease with which shots could be properly placed for quick, clean kills. He estimated its "sure hitting range" on deer to be in the neighborhood of 300 yards. That grand and wise rifle instructor and writer, Dr. Henry Stebbins, put the .250-3000's "effective range" at 250 yards, which seems more nearly right to me.

For such game shooting using 100-grain factory loads or their handloaded equivalent, sighted in for 200-yards, a good practical policy is to center the top of the bead front sight on a deer's shoulder at 50 yards, below the shoulder at 100 yards, again centered at 200 yards, and on the line of his spine at 250 yards. However, a good scope sight is to be preferred for this long range shooting.

It is not a particularly good cartridge for use in brush where the light, fast moving bullets are too easily deflected. An experienced hunter who is also a

skilled rifleman can effectively use a .250 in timber, however, waiting his chance and picking an open passage for his bullet between the trees.

If readers have the impression that I am enthusiastic over the return of the Model 99 Savage rifle in .250-3000 caliber, they're entirely correct. Searching for a final impression to leave with you, I recalled Allyn Tedmon's graphic description of the original .250-3000 rifle: ". . . beautiful. . . with beautiful wood, Lyman sights, a sling, and hell-on-wheels in the chamber." That about tells the story.

Postscript — Deadlines being what they are, I had performed all the tests

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there was time for, and turned in my report covering the new Savage Model 99-A carbine in .250-3000 caliber before all the various lots of factory ammunition arrived. In due time however, 100-grain cartridges bearing Peters, Remington and Western Super-X labels were obtained, and a local dealer supplied me with some 87-grain Winchesters. These were promptly fired in accuracy grouping trials from bench rest.

About the same time, a second Savage Model 99-A was delivered for comparative testing and evaluation, so it was evident that further shooting with the newest rifle and components would have to be undertaken and a postscript to our original report prepared. This has resulted in some rather interesting observations.

First and foremost, I was impressed by the parallel shooting qualities of the two 99-A carbines. Ten 5-shot groups were fired from each rifle at 100 yards, sighting with the same Savage 4-X scope transferred from one to the other with the following unusual results: with the first rifle, the smallest group was 1.07 inches, largest was 2.38, for an average of 1.85-inch; with the second rifle, the smallest group was an almost-identical 1.10-inch, the largest, 2.87, and the average was again 1.85-inch! (In both rifles, the Remington and Peters 100-grain factory loads gave average five-shot groups at 100 yards just under 1 3/4 inches, while Winchester-Western ammo, in both 87 and 100-grain loadings, averaged right at two inches.)

It will be noted from my initial report that when Colonel Whelen made a similar test in 1914, his minimum group size was 1.40, his maximum 4.12 and his average 2.96. Admittedly, his were 10-shot groups rather than 5-shot, but I doubt if our groups would have enlarged that much had we continued firing.

In partial contradiction to my origi-

nal speculation concerning the effect of the new standard 1-in-10 rifling twist rate, I have *not* found it incompatible with the lighter varmint weight bullets. Not only have 87 and 90-grain bullets performed well with the proper loads, but even the 75-grain Sierra H.P. bullet has shot into 1 1/16 to 1 13/16-inch. It is, in fact, responsible for some of the smallest groups fired to date in these steep-twist carbines!

At the same time, it was observed that the much heavier (and longer) 117-gr. Sierra spitzers with a load of 33.5-grains 4320 are so well stabilized that our second test rifle will group five shots in 1 5/8-inch — something that could never have been done with the old 1-in-14 twist.

Like the first new 99-A, the second showed no signs of balking at reloaded cartridges that had been neck-sized only. And as for functioning, this second (and later) test carbine is even smoother than the first, especially in bolt lock-up and primary extraction stages. Other hunters who have seen and handled this little rifle have, without exception, commented favorably on its balance and responsiveness.

One thing which I failed to point out earlier, however, is the absence of sling swivels on the Model 99-A. This I view as a deficiency all out of proportion to their cost. If it was felt that some shooters would object to the presence of swivels, then simple studs could be provided for affixing quick-detachable swivels. I'm not thinking here of a shooting sling, but rather of a carrying strap. My point is that every hunting rifle should have a sling, first for the long walks in and out, and secondly so that the rifle can be slung across the hunter's back following a kill, leaving both hands free to haul on the drag rope. Provision of such sling swivels or studs would add far more to convenience than to costs.

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