



### 6.5mm CHOICES

My bullet choices in the 6.5mm were based on shooting a 6.5-.284 or 6.5-08. I chose the Sierra® 120gr bullet for 200 yards. I used their 140 grain bullet for 300 and the 142 grain for 600: the 140 grain has a shorter, more rounded ogive and the 142 grain is longer and has a higher ballistic coefficient. These choices had to do with round construction issues and tolerance for jump. Since I couldn't seat into the lands for magazine use, the more rounded nose area gave better short range accuracy than the Sierra® 107. In some calibers there is more bullet definition than others. With a caliber that can't be set into a magazine at optimum round length, like a 6.5-08, I

would prefer to shoot a tangent ogive bullet at 300 rather than a longer, higher ballistic coefficient design with a secant ogive. It's easier to stay closer to the rifling with the tangent. Jump doesn't matter as much because the bullet is full caliber diameter farther out. With the shorter 6mms, like the 6mmXC, it's the same bullet for 300 and 600 because optimum seating depth with the secant ogive bullets is easily attained with magazine length rounds.

over known quantities such as the 6.5-.284. As this goes to press I am developing my own short magnum that will truly be designed around a box magazine. It will be called the 7mmXK and should be available in 2004. This cartridge in 6.5mm or 7mm should turn out to surpass the 6.5-.284 as my choice for a long range round.

Other cartridge choices are essentially larger, and going up in case capacity and bullet weight gets us right back to shooter endurance being a factor. A 6.5-.284 with a 142 grain bullet, for instance, will do anything the .338 Lapua factory ammo with a 250gr bullet will do. A 300gr bullet might be another story, but there's little doubt recoil would become a major factor.

As of this writing [2002] most 1000 yard records are held by the belted magnums, and one event record is still held by a .30-06. Neither item means those are the best long range rounds, and that is because there's more to long range success than cartridge selection. Most shooters now are using something smaller than a .30 caliber magnum, including

some who may have set the records shooting them in the past.

Cartridge choice in a long range rifle, I think, ultimately comes down to accuracy and consistency, not just sheer ballistics. I also add "efficiency" to my list of ideals. The term "overbore" sometimes comes up in discussions of cartridges. There are different means by which some try to quantify the term, but it essentially is a reflection of the efficiency of the cartridge: how much use does it make of the amount of propellant burned compared to penalties we might pay to burn it. It's case capacity compared to bore diameter, and it's not only in magnums — in my opinion, .243 Winchester is at least somewhat overbore. It has a lot of excess propellant burning in a small diameter bore. That, of course, results in excessive throat erosion. I have proven to myself that the 6mmXC can attain the same velocities as my .243s did, but it does it using several grains less propellant. The 6mmXC is a more efficient cartridge. Using a standard 7mm Remington Magnum for another example, let's say it's at

### THE FUTURE OF LONG RANGE

There are newer rounds that may influence choices for long range ammunition. The ideas in their design were essentially the same as my 6mmXC, which is to construct a round that can be fed from a magazine in a shorter action without unduly compromising bullet choice or seating depths. Of these rounds, I believe that the Remingtons (7mm or 30 Remington SAUM) have more promise in shorter actions, such as what's on a T2K. The WSM rounds are still a little long for optimum results as all-around cartridges, but of course that doesn't matter when the rounds are single loaded into the action.



LEFT TO RIGHT — A 6mmXC with a 107 (optimum weight bullet) and an overall length of 2.80. Then a .30 caliber Rem. SAUM with a 190gr (on the edge of optimum weight bullet — 220 would be better). The nickel case is a 300 WSM with a 175gr (below the optimum bullet weight edge). The 6.5x284 with a 142gr (the optimum bullet weight) — but look at the OAL. None of the short action magnums will allow magazine seating length (2.800 inches) of the optimum weight bullets (best long range bullet) wherein the full diameter of the bullet is in front of the neck/shoulder junction.

I have pushed the shoulder back on this Remington 7mm SAUM to allow the 175gr 7mm bullet (or 6.5mm 142gr) to be optimally seated. This round has about 58 grains of usable capacity, and when seated with a 175gr 7mm bullet fits into the 2.800 inch OAL requirement. I feel that this would be an excellent magazine length round. Keep in mind that the 7mm 175gr (optimum weight bullet) is a few thousandths longer than the 6.5mm 142gr bullet. Without modifying the shoulder thusly, this would add extra length that would not allow correct seating depth and still fit in the 2.800 inch magazine box.



A 6.5-.284 case has about 58 grains capacity; the .243 WSSM has about 50; the WSM 7mm or .300 has about 73; and the 7mm or 30 Remington SAUM will hold about 65. With the SAUM, going to a 6.5mm bullet could produce a very good round, although staying with either .284 or .30 caliber would possibly be as good. There are excellent 6.5mm bullets available, though, and this is a key to a good long range round. All these cartridges are available in the T2K; magazine capacity is 6 of these larger diameter rounds. My 7mmXK round was built around getting around all the things mentioned here and, as a result, has what I think is an optimum combination of case capacity, design, and suitability for box magazine fed rifles. Its long range ballistics are outstanding, as is its accuracy.

60 grains of propellant and getting decent velocity; add 8 more grains and increase bullet velocity only another 200 feet per second. That is an inefficient cartridge.

I'm not trying to say that an overbore cartridge can't shoot, because they can. The idea is to get competitive velocities with some-

thing we can live with in barrel life, and with no sacrifice in accuracy. It has also been my experience that more efficient cartridges tend to produce more consistent velocities better than overbore rounds.