Moose Munitions

By Wayne van Zwoll
Rifle and Cartridge photos by author

The .280 Remington Improved works well for moose, given the right bullet. In this case that might be Nosler's Partition. Deer bullets fragment when driven into a moose at rocket speed. The sedate but predictable .30-30 and .303 British push heavier bullets at modest velocities.

Many years ago I ate cheap white bread under a leaky tarp while a ferocious rain strafed black Alberta mud. The old man who shared the tarp and his peanut butter had said we'd find a moose here. He wasn't a sophisticated guide, but he'd charged only $125, and that made him first pick.

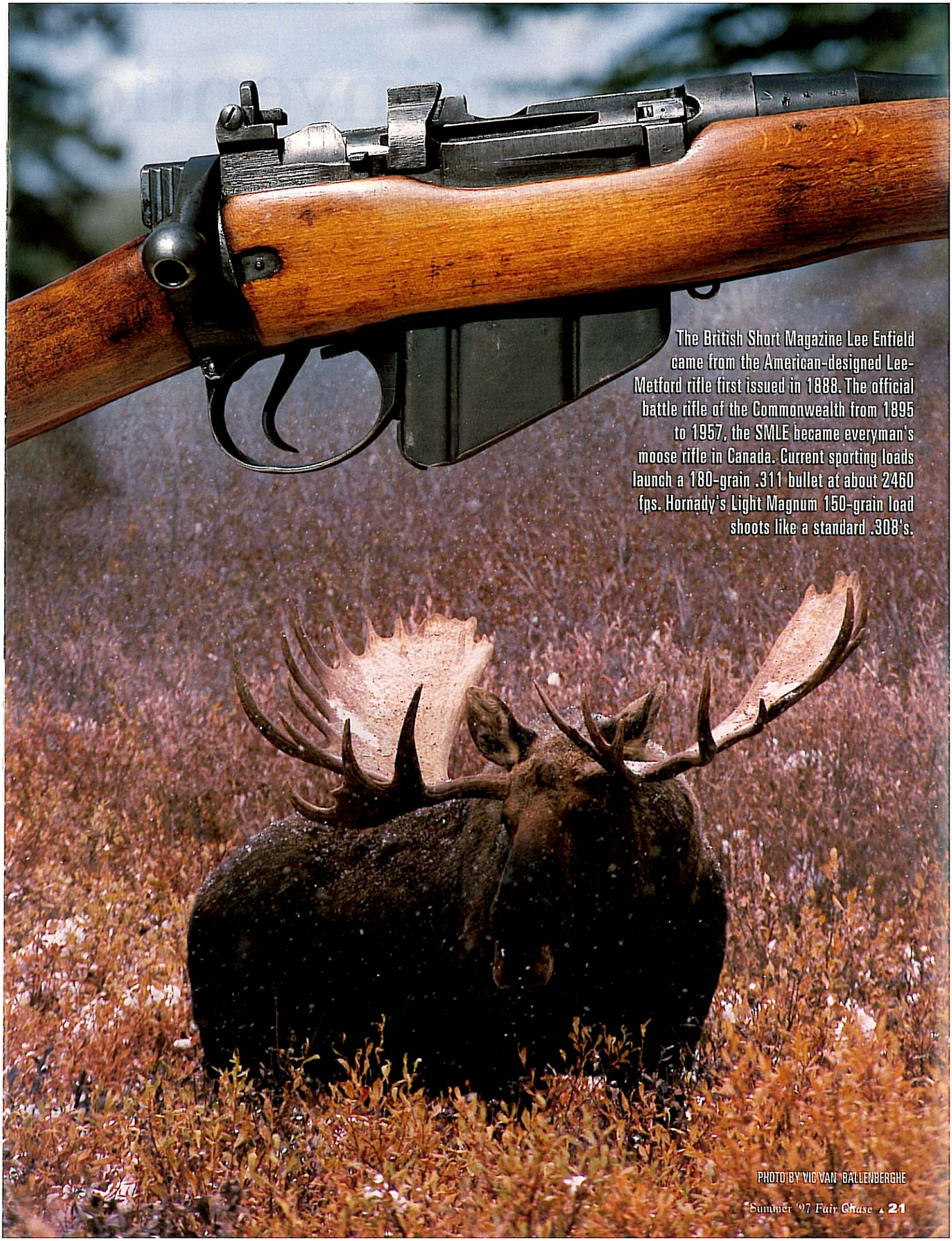
"Soon's the rain quits, we'll move out on the point. Saw a big one there week before ye came." The dough in his mouth made a sound like a horse's hoof on peat as he talked around it.

I had not yet heard the classic tale of big antlers vanishing the week before. I did know what he meant by "the point." When October's rain had started two days ago our tent had commanded a rise. Now it marked an island, a wooded jetty to the north giving us scant exercise.

Moose liked water, though. Kneading the bread with my molars, I suspected this grizzled trapper with the mustelid eyes had shot lots of the big deer. "What do you shoot them with?"

"Three oh three. More moose been killed with three oh threes than anything, 'cept mebbe the thirty thirty. An ought-six works fine too, but it's more'n ye need." Scope? "Nah."

He went on to tell me that moose weren't very bright and that if you knew what you were about you could always get close. "Found three bulls in one patch o' willas many years ago. Waded in and banged around with 'em until I ran outa shells. Got 'em all." That seemed to satisfy him for awhile, because he lit his pipe and turned away. The place seemed lonely to me, but to him one extra voice in the vastness of the Canadian Shield must have sounded like a riot in suburbia. On winter trap runs, he'd said, he forced himself to make tea. "That way it's dinner. I build a fire, boil water, soak a hot dog, warm m'self." But for the tea, he'd eat the wiener cold on snowshoes. This fellow reminded me of a storied woodsman in British Columbia after the Chilkoot rush. He'd bought an early Savage lever rifle in .303 Savage and with the first box of cartridges killed 18 big animals - including two grizzlies. Incidentally, the .303 Savage has substantially less punch than the .303 British my companion favored. A 180-grain (.308-diameter) bullet from the



The British Short Magazine Lee Enfield came from the American-designed Lee-Metford rifle first issued in 1888. The official battle rifle of the Commonwealth from 1895 to 1957, the SMLE became everyman's moose rifle in Canada. Current sporting loads launch a 180-grain .311 bullet at about 2460 fps. Hornady's Light Magnum 150-grain load shoots like a standard .308's.

PHOTO BY VIC VAN BALLENBERGHE

Savage approximates the performance of a 170-grain .30-30 bullet in game.

Canada's ties to the U.K. gave it the SMLE (Short Magazine Lee Enfield), a superb battle rifle derived from the Lee-Metford, designed by American James Paris Lee and first issued to Commonwealth troops in 1888. The Lee-Metford had shallow, segmental rifling that gave way in 1895 to deeper Enfield grooves. At that time the rifle became known as the Lee-Enfield. Its rimmed, steeply tapered .303 British cartridge initially used a compressed charge of 70 grains of black powder to kick a 215-grain .311 roundnose bullet out the muzzle at 1850 feet per second, generating 1640 foot-pounds of energy. In 1892 cordite propellant boosted velocity to 1970 fps. In 1914, nearly a decade after Germany and the U.S. pared bullet weight to flatten trajectory, the .303 began launching a 174-grain bullet at 2440 fps. That Mark VII round saw British soldiers through both world wars - until the 7.62 NATO (.308 Winchester) supplanted the .303 as the U.K.'s military cartridge in 1957.

These two European big game rounds have a small following Stateside but are among the best moose cartridges. Only Speer makes 9.3mm (.366) bullets. The 9.3x62 performs about like the .35 Whelen, the 9.3x64 like the .338 Winchester Magnum.

Surplus SMLEs of various vintages have been killing moose since the turn of the century. Factory softnose loads from Winchester and Remington feature 180-grain bullets at 2460 fps - about 100 fps more than you can get from a .300 Savage but 150 fps shy of .308 performance. A spitzer profile gives the Winchester bullet a

decided downrange edge: It cruises past the 300-yard mark at 1860 fps, compared to 1542 for Remington's roundnose. Striking energies at that range are 1318 and 950 foot-pounds, respectively. I shot my first whitetail with an iron-sighted SMLE and the 180-grain Winchester Power Point load.

Early in its career the .303 served British sportsmen in India and Africa, on game much larger than moose. W.D.M. Bell used this cartridge on elephants. Colonel Patterson hunted the famed man-eating lions of Tsavo with a .303. The full-jacketed 215-grain military bullet gained a reputation for deep and reliable penetration.

The .303 is often compared with the .30-40 Krag, adopted by U.S. Ordnance in 1892 for the Norwegian-designed Krag-Jorgensen rifle. The Krag's muzzle velocity is roughly the same: 2430 fps with a 180-grain .308 bullet. Its muzzle energy of 2360 foot-pounds compares to 2418 foot-pounds for the .303. Oddly enough, Remington's Krag bullet has a sleeker profile than the 180-grain Winchester. Velocities at

PHOTO BY DICK HANCOCK

300 yards are 1813 and 1525 fps respectively - a reversal of long-range data for the .303 British. At 48,000 psi, maximum operating pressure for the .303 exceeds that for the .30-40 Krag by 6000 psi. Also, late-model SMLE rifles are stronger than the Krag and have been successfully converted to 7.62 NATO, which generates at least 50,000 psi.

The .303's long-standing popularity in Canada's moose country has as much to do with the huge supply and low cost of surplus rifles and ammunition there than with the effectiveness of either. Just as the .30-06 remains the most popular elk cartridge in the U.S., so the ubiquitous .303 British has been a default choice for moose hunters north of the border. And as the .30-06 has been challenged by more potent rounds since the 1960s, so have magnums become more and more popular for moose. In my view they are not needed. I suspect guides and local hunters in western Canada and Alaska favor hard-hitting rounds for moose mainly because bears come with the territory. A couple of guides I've hunted with talked to me about moose rifles and cartridges.

"I shoot a two-eighty now," says Derek Sparks, who outfits hunters from Fort McMurray, Alberta. He favors 150-grain Nosler Partitions in Federal factory loads and last year shot through both shoulders of a bull, dropping it immediately. "When I was a kid the only rifles around were Winchester thirty-thirties and the three-oh-three army rifles. Not so now, eh." In his area most local hunters use the .30-06 and .300 Winchester Magnum. "The average shot is still only about a hundred yards," he points out, praising the wide field on the low end of variable scopes like his 2.5-8x Leupold. High magnification in another scope encouraged him to take one long shot at a bull that he subsequently lost, and in another case prevented quick shooting at 15 yards.

Fred Sorensen, an Alaskan outfitter operating on the Little Delta River, sees many hunters arrive with magnums, and he favors one himself: a Model 700 in 8mm Remington Magnum that he feeds with handloads featuring Sierra and Barnes bullets. Last fall he killed a record book moose at 310 yards with one shot. "I like it because it just flattens animals - moose, bears, you don't have to worry about 'em getting up." But he acknowledges that bullet placement matters more than bullet energy. Most of his clients bring a .300 or .338 Winchester Magnum or a .300 Weatherby. "Alaska and big rifles just seem to go together, I guess. Hunters who can hit with those cannons have an edge. Those who can't hit with 'em might be better off with an ought-six. Even in this open country, most shooting is between a hundred and two hundred yards."

Not long ago I hunted Alaska-Yukon moose with an iron-sighted .30-06. I fired only one round, threading a 180-grain Trophy Bonded bullet through both lungs and the top of the bull's heart at 160 yards. The animal trotted perhaps 30 yards and fell dead. It measured nine feet from nose to tail and six and a half feet from hoof to hump - not a huge bull, but a mature moose that probably weighed 1500 pounds or so. I didn't feel undergunned. The Federal High Energy load clocked a bit over 2800 fps at the muzzle, for a striking energy at the moose of 2500 foot-pounds. Moose are no harder to kill than bull elk. In fact, elk can be decidedly tough and seem a bit more eager to distance themselves from the shot. But in my experience an appropriate bullet packing 1500 foot-pounds on entry will quickly floor any elk or moose. Poor shot placement, or a bullet that disintegrates, cancels all bets.

I've guided hunters to Shiras moose but never shot one myself. They lack the muscle of a mature bull elk and seem less tenacious. A small Canada moose I killed some years ago dropped to a .35 Whelen. The short distance kept 2700 foot-pounds for delivery. Remington's 250-grain Core-Lokt performed well. It occurred to me that a .30-30 would have taken that moose handily.

A pre-war survey of Washington elk hunters showed that 27 percent used the .30-30 and .30 Remington, neither of which can claim 1500 foot-pounds at 100 yards. The .30-06 came next in popularity, then the .30-40 Krag. The .300 Savage and .35 Remington followed. I totaled 100-

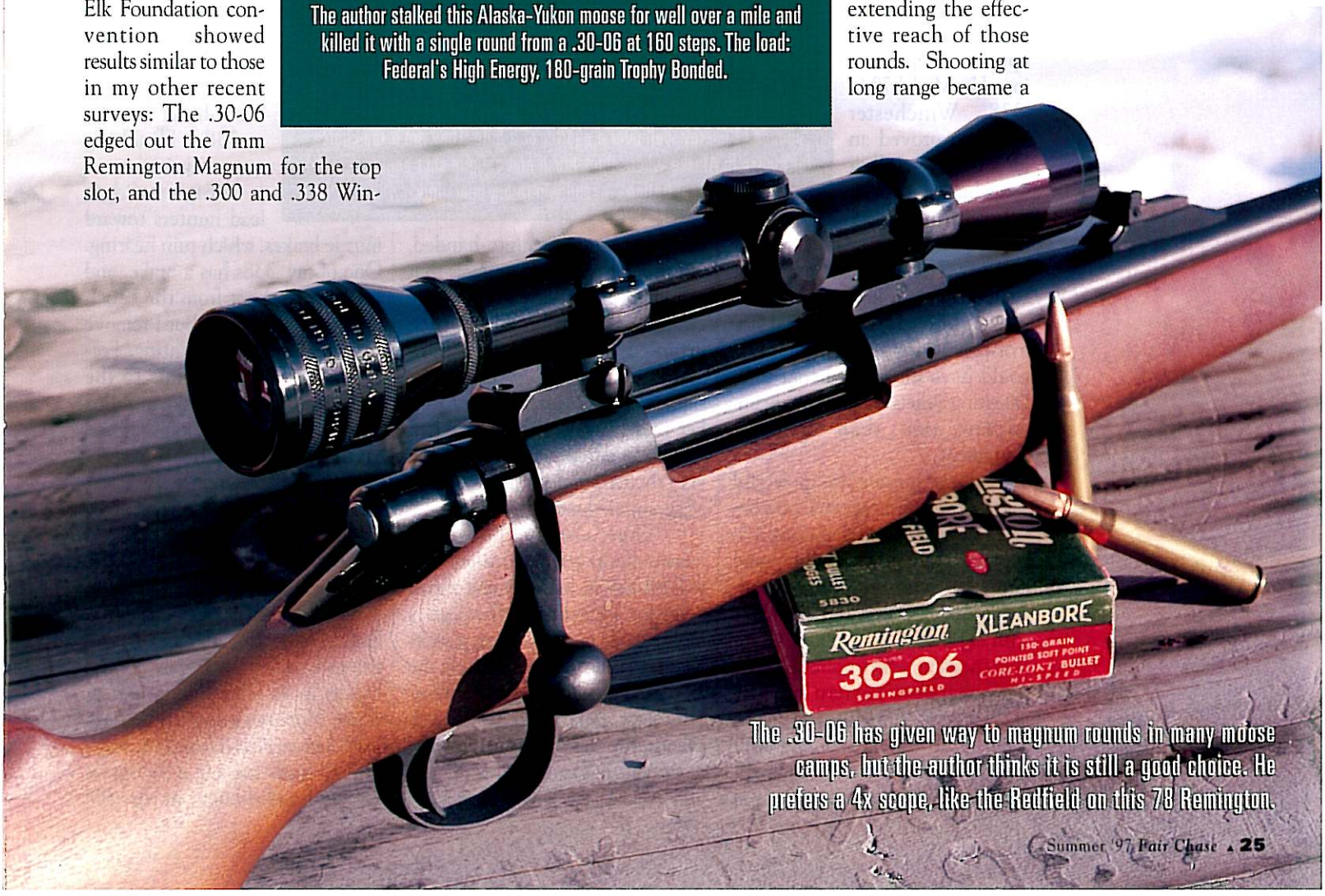
Federal's High Energy ammunition line has expanded since this initial offering. Higher speed combined with the controlled expansion of Nosler Partition and Trophy Bonded bullets make the cartridges potent beyond their size. Hornady offers an alternative in Light and Heavy Magnums.

yard energies of modern factory loads for these rounds (more effective, by virtue of bullet design, than pre-war ammunition) and divided to get average energy values. Counting the .30-30 and .30 Remington as one, I came up with 1775 foot-pounds. Averaging 300-yard energies gave me only 1084 foot-pounds. Somewhere between 100 and 200 yards most bullets slipped below the 1500-foot-pound threshold - an arbitrary one to be sure, but one I think reasonable.

Few hunters carry .30-30s on expensive elk hunts these days. A small survey I completed this March at the Rocky Mountain Elk Foundation convention showed results similar to those in my other recent surveys: The .30-06 edged out the 7mm Remington Magnum for the top slot, and the .300 and .338 Winchester vied for third place. This year the .300 Weatherby muscled its way into the top five, displacing the .270. The average 100-yard striking energy for this formidable quintet: 2941 foot-pounds! At 300 yards they still average 2105 foot-pounds, or 19 percent more than the pre-war group at 100 yards. Just as significantly, a typical bullet from the early favorites loses 39 percent of its energy traveling from 100 to 300 yards, while one from the modern group gives up only 28 percent. That reflects differences in bullet shape and ballistic coefficient. High striking velocity at long range not only translates to more foot-pounds of energy but better bullet performance. Bullet upset becomes unpredictable at low speeds; that's why heavy, blunt bullets lose effectiveness far from the gun, regardless of their momentum.

The author stalked this Alaska-Yukon moose for well over a mile and killed it with a single round from a .30-06 at 160 steps. The load: Federal's High Energy, 180-grain Trophy Bonded.

Post-war development of rifle scopes paralleled improvements in bullets and powder and a trend toward more powerful cartridges, extending the effective reach of those rounds. Shooting at long range became a



The .30-06 has given way to magnum rounds in many moose camps, but the author thinks it is still a good choice. He prefers a 4x scope, like the Redfield on this 78 Remington.

sport of itself, for many hunters replacing the stalk as a first option after spotting game. But rifles and optics specially designed for long shooting from whitetail stands and across canyons in elk country seldom work well on traditional hunts. Elk hunters I've guided often burden themselves unnecessarily with bipods and scopes with huge front bells. They are prepared for the shot they imagine they'll get, but not for the one they're likely to get. Most big game is killed at relatively short range. Most ineffective shooting occurs at long range.

This isn't to say reach is unimportant. The best Shiras moose I've had the good fortune to see in the woods fell to a couple of bullets expertly placed from at least 300 yards. The hunter had no other option, except passing. His Model 70 in .338 Winchester Magnum proved an ideal choice. Still, it was a hunting-weight rifle with no bipod, the scope a 3-9x variable of ordinary profile. This kill says less about equipment than about marksmanship. The .30-06 packs 1500 foot-pounds beyond 300 yards and could have dispatched that bull. Directing bullets remains a more important task than choosing equipment.

Some hunters say powerful cartridges make more sense now because game is warier than it used to be, and hunting opportunity more limited. It's important to take advantage of each shot and, especially with big animals like moose, to anchor the game where it stands. Long tracking sessions can turn into long packing jobs. A moose that dies in water or on the far side of a swift stream will make you earn your supper. Besides, argue the magnum fans, higher velocity means flatter bullet arc and more precise (deadlier) long-range hits.

These are valid points. The less potent the cartridge, the more often you'll be compelled to refuse a shot. I hunted cow elk once with an iron-sighted .250 Savage and almost went home empty-handed. Every day I passed on animals that would have been easy to kill with a .30-06 but might only have been crippled by a little 100-grain softpoint. The last evening a cow slipped by at 70 yards in light timber, presenting her ribs. I shot her.

Some hunters choke on the very thought of declining a shot at a big-antlered bull moose.

Their aim in choosing a moose rifle is getting artillery that will hit moose far away and thrust a bullet lengthwise through a moose close up. For them, a short list of cartridges would include the .300 H&H, .308 Norma, .300 Winchester, .300 Dakota, .300 Weatherby and sundry wildcat .30 magnums that can drive 180-grain bullets 3000 fps. These carry 1500 foot-pounds a quarter mile and, given tough bullet construction, can plow from the flank to the off shoulder of a moose. Such a roster would also include the 8mm Remington, 8x68, .338 Winchester, .330 Dakota, .340 Weatherby, .358 Norma, 9.3x64 and home-brewed .33 and .35 cartridges launching 225- or 250-grain bullets at 2800 fps. Most will deliver 1500 foot pounds to 500 yards, nearly twice as far as I'm comfortable shooting under most field conditions.

Some hunters would include the 7mm magnums, others the .375s. While the 7mms have a lot to recommend them as all-around big game cartridges, they fall well short of the big .30s in downrange energy. The .375s have enough of that but too much recoil for my collarbone. I start to wince after only a few heavy-bullet loads in a .338. Flinching causes missing.

Big cartridges lead hunters toward muzzle brakes, which ruin hearing. One of my .338s has a brake, and it's a joy to shoot from the bench with ear protection. But I remove that brake when I'm hunting. Fortunately, this rifle shoots to the same place with the brake installed as with a lightweight cap screwed on to protect the barrel threads.

Because I'm not in the Can't Pass Up A Shot Club, several of my favorite moose rounds lack belts and molar-cracking kick. The .30-06 is still eminently practical for moose, especially in hyper-velocity form. Federal offers 180-grain Nosler Partitions as well as the Trophy Bonded bullets in its High Energy ammo, while Hornady's Light Magnum loads feature Hornady bullets. High Energy loads include a 165-grain Trophy Bonded bullet in the .308

The.338 Winchester and .358 Norma Magnums carry 1500 foot-pounds of energy well over a quarter of a mile. They are a top choice for moose in Alaska where thick brush and oblique shot angles demand penetration — and where big bears lurk.

case, a fine combination for moose. SMLE owners can now get .308 performance by using Hornady Light Magnum .303 British rounds. The .35 Whelen remains one of my picks with handloaded 225-grain bullets or Remington's 250-grain factory-loaded pointed softpoint. The .338-06, which some ammunition manufacturer should adopt someday, rates a spot at the top of any handloader's moose-round list. Moose hunters haven't yet shown the fixation with far-away shooting that has spread like influenza among elk hunters. So they needn't burden themselves with the obligatory bipod and 50mm scope. A one-inch leather sling with an adjustable shooting loop, like the "Latigo" sold by Brownell's of Montezuma, Iowa, is lighter than a tripod, doubles as a carrying device, is quicker to employ and steadies the rifle from a greater variety of shooting positions. It might well be the best $40 you could spend on your rifle. The only other accessory that might help you as much is an aftermarket trigger by Timney or another maker. In these litigious times some factory triggers resist adjustment. A gritty, mushy or inconsistent trigger makes accurate shooting impossible.

The swing toward lightweight rifles a few years back hasn't yet reversed - but barrels on some hunting rifles have grown. Borrowing form and dimensions from sniper rifles, makers are offering "long-range" models designed to be fired from artificial support, and other versions that simply feature longer hunting-weight barrels that milk velocity from big cases and slow-burning powders. Fluting reduces barrel weight without compromising stiffness. While I like barrels that add bullet speed and give the rifle a slight tilt to muzzle, I'm not enthusiastic about target-weight hunting rifles or any that are slow to shoulder. Moose live in thick places. I've jumped moose at shotgun ranges and would have been ill-served by a long-barreled rifle that didn't fly to my cheek like - well, like a shotgun. Depending on the cartridge, I prefer rifle barrels of 23 to 25 inches, number 3 or 4 contour, or number 5 fluted.

There's nothing wrong with a 26-inch barrel on a dropping-block single-shot like Ruger's Number One or the Dakota 10, or with using lever rifles like the reintroduced Models 71 (.348) or 95 (.30-06) Winchester, or Marlin's .45-70. Remington's pump rifle is quick in thickets. You may find like me that you can't bear to scope a classic woods carbine and must install a receiver sight. A big bead, flattened at an angle to the sky, makes sense up front.

While I prefer fixed-power scopes for all-around rifles, variables have a solid grip on the market. The most useful power range for moose, in my opinion, is the 1.5-6x or 2-7x. I'll stay with an objective no bigger than 42mm so I can mount that scope in low rings - and because a bigger glass offers no added brightness at the top ends of these magnification ranges. The human eye can dilate to only about 7mm in total darkness. Figure 6mm in the dimmest hunting light. A 42mm objective yields an exit pupil of 6mm at 7x. More powerful scopes offer greater precision, but it is precision that's seldom needed. A bull moose showing you its ribs presents a target the size of a gas range. At normal hunting ranges that's pretty easy to hit, even with iron sights. The big, bright field of low-power optics can be a decided advantage in the willows.

Incidentally, there's no rule mandating a shot as soon as you see a moose - or as soon as you get as close as your guide wants to! The most exciting part of a hunt is the approach. On my last moose hunt, I managed to stretch that out over a mile and a half and two hours. What a great time I'd have missed if I'd not had the iron sights pulling me ever forward!

The trick at long range is judging that range and the effects of wind, then holding the rifle still and executing the shot smoothly. Seeing a bigger target won't help you do that. In fact, the reticle jerk induced by high magnification can make holding and trigger control more difficult.

Sometimes a moose will give you less than full exposure, and you might want to snake a bullet between branches. Magnification helps here, but magnification beyond 6x requires a very steady shooting position. If clear aim mandates more power, you're either far enough from the animal to sneak closer, or the cover is just too thick for a shot.

Many hunters mistakenly buy high-power scopes as substitutes for binoculars. There's no future in that! Binoculars take less strength and movement to use and eliminate squinting. They offer greater depth perception, and you'll never find yourself accidentally pointing your rifle at another hunter. The best binocular you can afford is a good investment. Inferior glass tires your eyes and hides detail. Lens coatings enhance light transmission; fully multi-coated lens systems give you a brighter image at dawn and dusk. Binoculars must be of manageable size and weight. I prefer 8x42 glasses but have also used 7x35s a great deal. For extended long-distance glassing 10x40s make sense. Objectives bigger than 50mm add weight and bulk. The "binocsock" sold by Antelope Trading Company in Kaysville, Utah, protects a binocular from weather and bumps while snugging it to your chest, where it won't feel so heavy.

Moose hunting, like elk and deer hunting, is less a test of equipment than of people. Top-quality gear can't find animals or direct bullets. The taciturn Alberta trapper who cornered three mulligan moose in a thicket could not have gathered them in any quicker with a scoped magnum. In fact, he may have found such a rifle awkward. With modern controlled-expansion bullets, the .30-06, .338-06 and .35 Whelen are deadly. In bolt rifles of modest length and weight, with low-mounted, low-power scopes and finely-tuned triggers, they work as well in tight quarters as for occasional 300-yard pokes across the tundra. A lightweight binocular just costly enough to pinch a budget completes your kit. The only other moose-hunting hardware you should need is iron in your legs.

MOOSE MUNITIONS