

Matching the Gun to the Game

By Chuck Hawks

Perhaps "Matching the Cartridge to the Game" would be a better title. In any case, the point is to see what rifles are recommended for shooting some of the more common types of game animals. A good choice will have adequate killing power for the intended quarry, not too much, and certainly not too little. A sporting arm must have enough power to insure a humane kill if the shooter does his or her part.

For instance, I don't recommend using .22 caliber centerfire rifles on deer; no .22 is an adequate deer rifle. Conversely, I also don't recommend using a .458 Magnum on deer. Elephant rifles are unnecessarily heavy and cumbersome, and there is no reason to endure so much recoil when there are far better choices for the purpose. Such a powerful rifle is best reserved for thick-skinned game. In any case, its very tough bullets are not designed to expand on light framed animals like deer.

Before we start, let me say that for reasons of space I am not going to try to include every possible rifle cartridge; I am only going to name cartridges that are generally well known. If your favorite is a caliber not mentioned, look for something similar. If a cartridge with similar capabilities is included, you may conclude that your favorite must also be a satisfactory choice.

Also please note that, for the purposes of this article, it is generally assumed that the hunter will be using the cartridge within its customary and intended range and that he or she will select a bullet and load appropriate for the game at hand. Only in a few specific cases are bullet weights mentioned. At the end of each section I will give an example of an appropriate rifle that I would use myself.

On the subject of bullets I might note that for the relatively small CXP1 class animals a very fast expanding or fragmenting bullet is usually called for. Rapid, controlled expansion bullets are recommended for quick kills on medium size CXP2 game. For large CXP3 class game, deep penetrating, delayed expansion bullets are often recommended. The extra heavy, thick skinned CXP4 class animals require the deepest penetration. If expanding bullets are selected for CXP4 game they should be very heavily constructed, and traditional solid (non-expanding) bullets are still used on the

largest animals in this class. For specific bullet recommendations for the four CXP classes of game, see my article *The CXP Rating System for Hunting Cartridges*.

To insure that my recommendations were not out of the mainstream, I compared my choices with the *Winchester-Western Ammunition Handbook*, the *Barnes Reloading Manual Number One*, and the usage guides in the Federal and Winchester ammunition catalogs, plus advice gleaned from reading various articles by Jack O'Connor and Les Bowman. These sources do not always totally agree with one another, but I am happy to report that the selections below generally correspond with the experts' suggestions. Now, let's see what cartridges are recommended for some of the more common game animals.

Small game (CXP1)

The smallest animals, like tree squirrels and cottontail rabbits, are best taken with rifles chambered for the rimfire .17 M2 and .22 Long Rifle cartridges. The more powerful .17 HMR and .22 WMR are fine for head shots, but are generally too destructive with body shots. The .22 LR is about an 85 yard small game cartridge, most suitable for small animals not averaging more than about 10 pounds in body weight. The .17 M2 pushes that range to about 100 yards.

The .22 Magnum is about a 125 yard small game cartridge and the .17 HMR does for the same size animals out to about 165 yards. A 40 grain .22 WMR bullet has a sectional density (SD) of .114. To insure quick kills, always select expanding bullets for either of the .22 caliber cartridges. It is best to avoid frangible bullets intended for shooting varmints, however, as they are too destructive for use on small game intended as table fare. A fine example of a small game hunting rifle is the lever action Marlin Model 39 with a 4x scope, in .22 LR.

Varmints (CXP1)

The smallest animals typically hunted with centerfire rifles are varmints. Varmints are pests such as rats, sand/sage rats, prairie dogs, ground squirrels, jack rabbits and marmots that typically weigh up to around 15 pounds. This is where the rimfire magnums and the popular centerfire .22's shine. The lighter bullets in the high intensity .24 and .25 calibers can also be useful for shooting varmints, although their recoil and muzzle blast are unacceptable in some situations.

Among the available choices for medium to long range varmint hunting are the .17 HMR, .17 Rem., .204 Ruger, .22 Hornet, .218 Bee, .221 Fireball, .222 Remington, .223 Rem., 5.6x50, .224 Wby., .22-250 Rem., .220 Swift, 5.6x57, .243 Win., 6mm Rem., .250 Sav. and .257 Roberts.

For short range varmint hunting calibers such as the .22 LR (with hyper-velocity loads), .22 WMR, .25-20, .256 Win. Mag., .25-35, .30 Carbine and .32-20 are satisfactory with suitable bullets.

Be sure to select frangible varmint bullets, not bullets intended for small game, big game or military use, when varmint hunting. This is a matter of safety (to minimize ricochets) and also insures quick kills. An example of an outstanding varmint rifle is the Savage Model 12 Varminter Low Profile in .204, .223, or .22-250, ideally with about a 6-18x scope.

Small predators (CXP1)

Small predators such as foxes, coyotes and bobcats are larger and tougher than the varmints and small game animals that constitute their prey. They may weigh up to about 50 pounds and are best taken with any of the centerfire varmint calibers listed above. Within their respective MPBRs the following cartridges should be acceptable with expanding bullets: .204 Ruger, .22 Hornet, .218 Bee, .221 Fireball, .222 Remington, .223 Rem., 5.6x50, .224 Wby., .22-250 Rem., .220 Swift, 5.6x57, .243 Win., 6mm Rem., .25-20, .256 Win. Mag., .25-35, .250 Savage, .257 Roberts, .30 Carbine, .32 H&R Magnum, .32-20 and .357 Magnum. Javelina, although not predators, are in the same general weight class and are commonly hunted with the same calibers from the .223 Rem. on up.

Practically any centerfire .22, .24 or .25 caliber hunting rifle makes a satisfactory small predator gun and some manufacturers offer special predator control models. The Savage Predator Hunter is one such. A fixed 6x or a 3-9x variable power scope is all that is required.

Medium size big game (CXP2)

Okay, how about cartridges for the non-dangerous animals called medium size big game, or sometimes just medium game? In North America deer and pronghorn antelope are by far the most commonly hunted medium game animals. Worldwide, medium game would include deer, goats, sheep, caribou, boar and feral pigs and

several species of Indian and African antelope. Most mature male members of these species *average* 51-300 pounds on the hoof, although in exceptional cases they can run larger.

Suitable bullet energy levels at impact should run at least 800 ft. lbs. and the minimum recommended bullet sectional density (SD) is about .210 for small bore rifles (.24-.32 caliber), .200 for medium bore rifles (.33-.39 caliber) and .185 for big bore rifles (over .40 caliber). Greater SD is always an advantage in any caliber and a SD around .225 is probably ideal for this class of game.

Recommended bullet weights include 90-105 grain in .24/6mm caliber, 100-120 grain in .25 caliber, 120-140 grain in 6.5mm, 130 grain in .270 caliber, 125-150 grain in 7mm, 150-170 grain in .30 and .303 calibers, 170-180 grain in .32/8mm, 180-225 grain in .338 caliber, 180-225 grain in .35 caliber, 200-232 grain in 9.3mm, 220-270 grain in .375 caliber, 240-300 grain in .44 caliber and 300-405 grain in .45 caliber.

I am going to divide the medium game category into calibers recommended for short to medium range shooting (usually in the woods), and calibers recommended for long range shooting. It stands to reason that any of the calibers suitable for long range shooting should also be suitable for shorter range shooting. But some calibers are intended *only* for short to medium range shooting, or offer loads specifically tailored for moderate ranges, and those are the cartridges you will find listed in the short to medium range category.

Medium game at short to medium range

For game at short to medium range (approximately 25-200 yards) where most game is killed, any of the following would be a satisfactory choice: .25-35 Win., .250 Sav., 6.5x54, 7-30 Waters, 7.5x55, .30-30 Win., .30-40, .300 Sav., .308 Marlin, 7.62x54 Russ., .303 British, 7.65x53, .32 Win. Spec., .338 Federal, .338-06 A-Square, .35 Rem., .356 Win., .358 Win., .35 Whelen, .350 Rem. Mag., 9.3x62, 9.3x74R, .38-55 Win., .375 Win., .44 Rem. Mag., .444 Marlin and .45-70 Govt. Again, all of the calibers listed below under "Medium game at long range" are also suitable at shorter ranges. A bullet that expands rapidly is usually best to insure quick kills on these animals.

A lever action Marlin Model 336 in .30-30 Winchester with a 1.5-6x scope is an ideal woods rifle. The 150 grain .30-30 bullet hits with about 944 ft. lbs. of energy at 200 yards.

Medium game at long range

Cartridges that provide a trajectory with a maximum point blank range of at least 270 yards with appropriate loads (where the bullet never deviates more than 3 inches from the line of sight) shoot flat enough to be considered for hunting medium game at long range. Such a trajectory allows killing hits on medium size game animals out to about 300 yards without holding over the animal's back.

With appropriate loads, these .24 (6mm) to .32 (8mm) caliber cartridges meet that standard: .243 Win., 6mm Rem., 6x62, .240 Wby. Mag., .257 Roberts +P, .25-06, .257 Wby. Mag., 6.5x55, 6.5x57, .260 Rem., 6.5mm Rem. Mag., 6.5x68S, .264 Win. Mag., .270 Win., .270 Mag., 7mm-08 Rem., 7x57, 7x64, .280 Rem., 7mm Mag., .308 Win., .30-06 Spfd., .300 Mag., 8x57JS, 8x68S and 8mm Rem. Mag.

The Weatherby Mark V Deluxe in .257 Wby. Mag. caliber is about as good as it gets for long range shooting of CXP2 class game. A high quality 3-9x scope combines adequate field of view with adequate magnification for shooting medium game at any practical range.

Large game (CXP3)

How about rifles for large, non-dangerous game that averages 301-1,000 pounds in live weight? These include animals like Alg, elk, muskox, moose, hartebeest, wildebeest, waterbuck, eland, nilgai, zebra, kudu and similar size animals worldwide. Controlled expansion (premium) bullets are often a good choice for these large animals.

A bullet with a SD of at least .250 would be considered desirable for calibers between .270 and .375 and a SD of about .220 or better for the big bores. Look for a minimum remaining energy of about 1,200 ft. lbs. at impact.

Suggested bullet weights would include 140-160 grain in 6.5mm, 140-150 grain in .270 caliber, 150-175 grain in 7mm, 160-220 grain in .30 caliber, 170-220 grain in .303 caliber, 180-220 grain in 8mm, 200-250 grain in .338 caliber, 225-250 grain in .35 caliber, 250-286 grain in 9.3mm, 250-270 grain in .375 caliber, 265-300 grain in .444 caliber and 325-500 grain in .45 caliber.

The acceptable cartridge choices include: 6.5mm Rem. Mag., 6.5x68S, .264 Win. Mag., .270 Win., .270 Mag., 7mm-08 Rem., 7x57, 7x64, .280 Rem., 7mm Mag., 7.5x55, 7.65x53, .300 Sav., .308 Marlin, .308 Win., .30-06 Spfd., .300 Mag., .303 British, 8x57JS, 8x68S, 8mm Rem. Mag., .338 Federal, .338-06, .338 Mag., .340 Wby. Mag., .358

Win., .35 Whelen, .350 Rem. Mag., .358 Norma Mag, 9.3x62, 9.3x64, 9.3x74R, .405 Winchester, .444 Marlin, .450 Marlin and .45-70.

A good choice for these bruisers is a Ruger Model 77R in .350 Rem. Mag. wearing a 2-7x scope.

Dangerous game

So far we have only discussed non-dangerous game, which is all most North Americans ever hunt. I read somewhere that most dangerous animals are shot between 50 and 150 yards, which makes sense to me. This is close enough to precisely place the bullet and far enough to give time for follow-up shots if necessary. Never shoot at a dangerous animal unless you *know* you can kill it before it gets into cover.

The experts divide dangerous animals into two general categories: thin-skinned and thick-skinned. Thin-skinned dangerous game are basically the large predators: wolves, hyenas, the big cats and bears. Thick-skinned game includes the various bovine species, hippopotamus, rhinoceros and elephant.

Thin-skinned dangerous game under 300 pounds (CPX3)

I am going to further divide thin-skinned dangerous game into two categories. The first includes the smaller species, those weighing under 300 pounds. Common examples of these include the lesser big cats, like the African and Asian leopard (which average about 150 pounds in weight), the South American jaguar (somewhat larger at an average of about 200 pounds), and the sloth bear of India (perhaps 300 pounds). The wild Russian boar and their cantankerous relatives found in North America and Europe can also be both dangerous and hard to stop. A furious 200 pound tusker is nothing to trifle with and these beasts can put on weight like a, well, pig. A very large boar might run 300 pounds and specimens have been taken that exceeded 450 pounds. (Extremely large wild boar would fall into the class of large dangerous game).

For these dangerous beasts the bullet should have a diameter of at least .277 inch (.270 caliber) and should deliver a minimum of 1,200 ft. lbs. of energy on target. Appropriate bullet weights include 150 grain in .270 caliber, 154-175 grain in 7mm, 180-220 grains in .30 and .303 calibers, 200-220 grain in 8mm, 210-250 grain in .338 caliber, 225-250 grain in .35 caliber, 250-286 grain in 9.3mm, 250-285 grain in .375 caliber, 300 grain in .405 caliber, 300 grain in .444 caliber and 350-500 grain in .45 caliber.

Rifles chambered for the .270 Win., .270 Mag., 7x64, .280 Rem., 7mm Mag., .308 Win., .30-06 Spfd., .300 Mag., 8x57JS, 8x68S, 8mm Rem. Mag., .338 Federal, .338-06, .338 Mag., .340 Wby., .358 Win, .35 Whelen, .350 Rem. Mag., .358 Norma Mag., 9.3x62, 9.3x64, 9.3x74R, .376 Steyr, .375 H&H, .375 Ruger, .405 Win., .444 Marlin, .450 Marlin and .45-70 should prove adequate.

Don't lose sight of the fact that these smaller (but still large) predators can be frightfully dangerous. Leopards are especially deserving of caution; they have been described as feline buzz saws, and given the opportunity may take on the entire hunting party, not just the poor unfortunate who shot at them. I remember reading that one of the record man-eaters of India was a leopard that killed literally hundreds of people. The fast handling Marlin Model 1895 with a 2.5x scope in .45-70 or .450 Marlin caliber has the power to flatten these dangerous beasts.

Cougar and black bear (CXP2)

In North America we have two potentially dangerous predators the size of those just discussed, yet they are normally shy and innocuous. I am referring to the cougar, a cat about the size of an African leopard, and the black bear. Adult male black bear may average 300 pounds, but can grow to 500+ pounds in exceptional cases. In parts of North America cougar and black bear populations are expanding and, due to restrictions on hunting, they are losing their fear of man. Dangerous cougar and black bear encounters in the U.S. are on the rise.

Black bear and cougar are routinely taken in North America with rifles in the "deer rifle" category. Adequate medicine for either of these predators includes all of the cartridges judged adequate for leopard, plus the 6.5x55, 6.5x57, .260 Rem., 6.5mm Rem. Mag., 6.5x68, .264 Win. Mag., 7x57, 7mm-08 Rem., 7x64, .280 Rem., 7.5mm Swiss, .30-30 Win., .30-40, 7.65x53, .300 Sav., .308 Marlin, .303 British, 7.62x54R, .32 Win. Spec., .35 Rem., .356 Win. and .375 Win.

A handy rifle such as a Kimber Classic 84M with a 2-7x scope in .308 Win. or .338 Federal would be an appropriate choice for hunting cougar and black bear.

Large thin-skinned dangerous game (CXP3)

My second category of thin-skinned dangerous game includes the really large predators, the African lion and the Asian tiger plus the grizzly, brown and polar bears. Full grown big cats can weigh between 300 and 500 pounds; the great bears average

about 700 pounds and can grow to twice that size in exceptional cases. These are fast moving animals that can be hard to stop and they deserve serious caliber rifles. Good bullet placement is paramount. Powerful all-around rifles that can deliver upwards of 2,000 ft. lbs. of energy at 200 yards, such as the .30-06 and 7mm Magnum, have often been used successfully. They should be regarded as the practical minimum for these dangerous beasts.

At the other end of the power scale are the big bore "elephant guns" chambered for cartridges like the .416 Rigby, .416 Rem. Mag, .458 Win. Mag. and .470 Nitro Express. When used with expanding bullets they have plenty of power. And, of course, they are ideal for stopping a charge at close range (under 50 yards). But these heavy rifles with their outsized recoil are not optimum for use at normal ranges. The rainbow trajectory of the elephant guns makes them less than ideal for shots over 100 yards. And most shooters find them more difficult to shoot accurately than rifles for the cartridges recommended below.

More big predators are killed between 50-150 yards than at less than 50 yards. The medium bore rifle really comes into its own at these practical ranges and is the optimum choice. A minimum of 3,000 ft. lbs. of muzzle energy is sometimes recommended for the big cats and great bears, along with a controlled expansion type bullet with a minimum SD of .270 for small bore cartridges, .250 for the mediums and .230 for the big bores.

Recommended bullet weights include 160-175 grain in 7mm Magnum, 180-220 grain in .30 and .303 calibers, 200-220 grain in .32/8mm, 225-250 grain in .338 caliber, 250 grain in .35 caliber, 250-286 grain in 9.3mm, 270-300 grain in .375 caliber, 300 grain in .405 caliber, 300 grain in .444 caliber and 350-500 grain in .45 caliber.

Cartridges that approach or exceed this minimum include the 7mm Mag., .30-06 Spfd., .300 Mag., 8x68S, 8mm Rem. Mag., .338-06, .338 Mag, .340 Wby. Mag., .358 Win., .350 Rem. Mag., .35 Whelen, .358 Norma Mag., 9.3x62, 9.3x64, 9.3x74R, .376 Steyr, .375 Mag., .405 Win., .444 Marlin (max. loads with 300 grain bullets), .450 Marlin and .45-70 (+P loads with 350+ grain bullets).

The rifle I would most like to have in my hands to deal with one of these dangerous animals would be an autoloading Browning BAR Safari Mk. II, with a 1.5-6x scope, in .338 Win. Mag.

Thick-skinned dangerous game (CXP4)

The final category of dangerous game is thick-skinned heavy game such as buffalo, hippo, rhino and elephant. The only thick-skinned game in North America with which I am familiar is the American bison. The American bison is a really big bovine, adult males averaging about 1,600 pounds on the hoof, which is about 60% larger than the average African Cape buffalo. A very large bison may weigh 2,000 pounds.

The thick-skinned game in India include the Guar (a large bovine) and the wild water buffalo. The wild water buffalo is also found, and hunted, in Australia. These huge animals approximate the North American bison in weight and are alleged to be tougher.

In Africa there are Cape buffalo, Hippopotamus, rhinoceros and elephant. An average Cape buffalo will weigh 1,000 pounds and a very large buffalo will run about 1,600 pounds. Black rhino average about 2,100 pounds and white rhino average about 5,000 pounds, as can a hippo. An African elephant can weigh 13,000 pounds!

Bullets for all CXP4 game should have a SD of .300 or higher. 3,500 ft. lbs. of muzzle energy should be considered the minimum for Cape buffalo and the other bovines, with 4,000+ ft. lbs. recommended. The minimum calibers usually mentioned are .338 shooting a 250 grain bullet, 9.3mm shooting a 286 grain bullet and .375 shooting a 300 grain bullet. In many parts of Africa .375 caliber is the legal minimum for hunting lion and all CXP4 game, while other countries have a 9.3mm minimum, so check the regulations before you go.

For the larger CXP4 class beasts (rhino, hippo and elephant), 5,000 ft. lbs. of muzzle energy seems to be about right. Professional hunters and guides generally prefer a big bore rifle shooting solid (non-expanding) bullets in case it becomes necessary to stop or turn a charging animal. Tough, controlled expansion, premium bullets like the A-Square Dead Tough, Barnes X, Federal Trophy Bonded Bear Claw and Swift A-Frame have gained a reputation as good medicine (particularly for the first shot and often backed by a solid for the second shot).

What is left of this kind of hunting is mostly in Africa, where the following are recommended for all CXP4 game: 9.3x64, .375 Mag., .378 Wby., .404 Rimless NE, .416 Rigby, .416 Mag., .450 Nitro Express, .458 Win. Mag., .458 Lott, .460 Wby. Mag., .470 Nitro Express and .500 NE 3".

An example of a classic African rifle is my old Browning Safari Grade FN bolt action in .458 Win. Mag., which wears a 1-4x scope.

Conclusion

So there you have it, suggestions about which guns are recommended for shooting what game. Like anything else, this list is not infallible, but I think it is generally accurate.

Keep in mind that to most Americans "big game" means deer and the largest animal we might see in the wild is a black bear. It then becomes evident that the only magnum cartridge most of us will ever need is for our revolvers.