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Building an ARMORY from Scratch

by Dick Clark

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GUIDE 1.0

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INTRODUCTION

Some folks collect guns and never shoot them. Some people acquire guns for the sake of owning them, showing them off to others, and generally babying them. There is nothing wrong with collecting things. And with guns in particular, all you have to do is buy one to find out that it is hard to be satisfied with just one gun. But some of us don't have the money, time, or interest to indiscriminately accumulate a collection of firearms as an end unto itself. We want to assemble an array of firearms *qua* tools, suitable for the variety of applications for which we anticipate needing that sort of tool. Each person's lot in

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POSSIBLE USES FOR FIREARMS

Guns are useful for lots of different things: hunting, home defense, personal protection outside the home, paramilitary operations, and target shooting. These different applications present their own unique demands, and the firearm that is best suited for one is often ill-suited for the others.

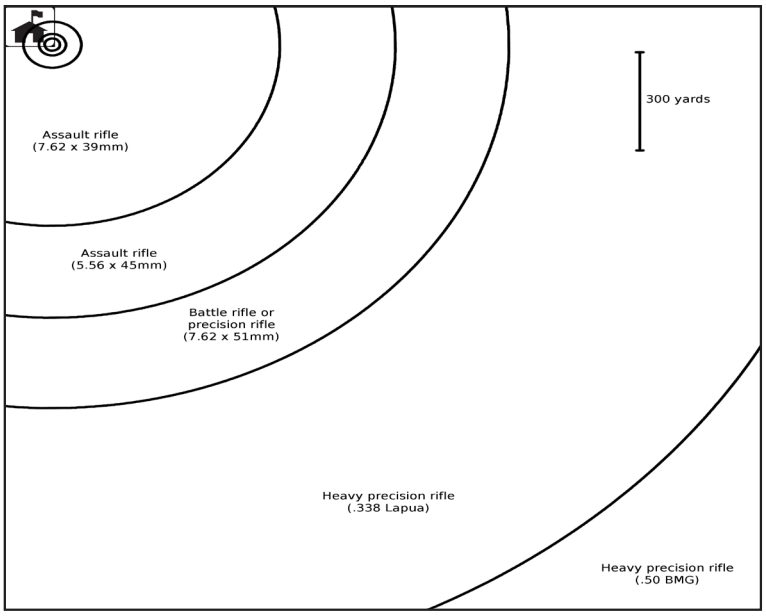
A hunter in the swamps of lower Alabama will never have the opportunity to take a thousand-yard shot in that area, because the ground cover is too dense and elevations don't provide a vantage point from which to make such a long shot on game in that region. A rifle that is capable of accurately throwing a bullet that far can be a fun hobby gun for such an individual, provided he has access to a long-distance shooting range, but the extra weight of a bull barrel, adjustable stock, large optics, and other accoutrements will reduce mobility. Likewise, a varmint hunter in big sky country might find a .22 pistol utterly useless for shooting critters to which he never gets closer than 75 yards. We can look at the different classes of firearms and determine which of these fits into our lives and what qualities we should look for in a specimen from each relevant class.

Some guns are designed to perform very well in a limited, specific role. For example, the rifle carried by a modern biathlete is a creature of the competition context and the sport's rules: .22 caliber, at least 7.5 pounds in weight, highly adjustable stock, and capability to operate reliably in cold, snowy conditions. While these specifications may make such a rifle a good rabbit gun and an excellent target gun, a shorter, lighter gun with fewer frills can be had for far less money and still serve well in those roles.

WEAPON ENGAGEMENT ZONES

A weapon engagement zone (WEZ) is a space of defined dimensions within which a particular weapon is to bear primary responsibility for engaging targets. The best way to think about this is the sweet spot for each weapon—the range for which the weapon is optimized. Working our way out from close quarters to long range, a variety of different firearms present themselves as most suited for each zone: concealable handgun, full-frame handgun, shotgun, assault rifle, battle rifle, precision rifle, and heavy precision rifle.

The outer zones beyond 800 yards are likely not of concern to individuals primarily occupied with home-defense preparations. My suggestion is to prepare for the innermost zones—concealed-carry "mousegun," full-size handgun, and



shotgun—first, and then work through to the outer zones as needed given your particular geographical and socio-political contexts and whatever shooting or hunting sports you enjoy.

SUGGESTED WEZs

- **Mousegun: 0–10 yds**
- **Full-size 9mm handgun: 0–40 yds**
- **12-gauge shotgun: 0–50 yds**
- **7.62 x 39mm: 25–400 yds**
- **5.56 x 45mm: 25–600 yds**
- **7.62 x 51mm: 75–800 yds**
- **.338 Lapua: 300–1400 yds**
- **.50 BMG: 300–1900 yds**

Firearms of each class are capable of sending rounds well past their optimal WEZ—sometimes several miles farther—so always be sure of your target and what is beyond it.

HANDGUNS

Handguns are lightest and smallest, and they are the firearms best suited for close-in confrontations and personal protection while outside of one's home. Handguns are also near the top of the list for home defense, since they can typically be fired with one hand, meaning that your other hand is free to manipulate doorknobs and light switches or to fend off an attacker as you bring the muzzle to bear. And of course, handguns are easier to carry on your person or in your car than even the smallest shotguns or rifles.

Handguns are near the top of the list for home defense.

The most easily concealable handguns are small and light for convenient everyday carry, an important consideration, but their diminutive size limits their firepower in terms of ammunition type and ammunition capacity. Compared to full-size pistols, affordable mouseguns like the Kel-Tec P3AT and Ruger LCP are tougher to shoot, with sights that are harder to see, heavier trigger pulls, and less gun to hold on to. Casual shooters will find it very difficult to reliably connect using these pocket pistols at ranges greater than 10 yards. Full-size handguns, like the SIG Sauer P226 or Glock 17, are much easier to shoot well, with the novice shooter likely maxing out at around 30 or 40 yards. Many handguns, especially

larger models chambered in major calibers, are also useful for hunting a variety of game.

I offer more substantial advice for first-time handgun buyers in my guide ***How to Buy Your First Handgun.***[1]

SHOTGUNS

Shotguns are versatile weapons that may be used for hunting, sport shooting, or defensive purposes within 40 or 50 yards. They are very different from rifles and handguns in that their barrels aren't usually rifled—grooved so as to impart a stabilizing spin to a projectile—they are capable of projecting a pattern of pellets rather than a single projectile, and they operate at much lower chamber pressures. A shotgun may be loaded with many different types of ammunition: smaller, more numerous shot pellets for smaller game, larger buckshot pellets or slugs for larger quarry, and a variety of specialty rounds, including less-lethal options, breaching loads, and others. Shotgun rounds that fire multiple projectiles in a pattern make it much, much easier to shoot moving targets like birds and squirrels.

Type	Equivalent interior walls penetrated
12 gauge shotgun, 2 ¾" birdshot	1
12 gauge shotgun, 2 ¾" #4 buck	3
12 gauge shotgun, 2 ¾" #1 buck	3
12 gauge shotgun, 2 ¾" 00 buck	4
12 gauge shotgun, 2 ¾" 1 oz rifled slug	6+
.22 LR pistol	3
9mm pistol	6+
.45 ACP pistol	6+
5.56 x 45mm rifle	6+

[1] http://liberty.me/guides/how-to-buy-your-first-hand-gun

Shotgun projectiles are propelled at a relatively low velocity. Although they are capable of imparting more energy into a target at close range than pistol rounds, this energy dissipates rapidly with smaller shot sizes that make for a vastly greater surface area for the same total mass. As a result, a shotgun may be a good choice where overpenetration is a concern, such as in a home-defense scenario. Be advised though that, like pistol and rifle bullets, shotgun slugs and buckshot are capable of penetrating multiple interior walls and still retaining enough energy to injure or kill. According to one writer's tests[2] we can expect the following penetration characteristics, depending on weapon and ammunition type:

Additionally, the pattern of shot thrown by a shotgun gives the shooter a greater chance of scoring a hit within the weapon's effective range, with the pattern spreading out to three to six feet in diameter at 40 yards, depending on the choke used and other variables. Rifled slugs greatly improve a shotgun's potential for accuracy at longer ranges and make the gun more useful for taking large game. An advantage of the common pump-shotgun models—the Remington 870 and Mossberg 500—besides the multitude of readily available accessories, is that the barrels are easily swapped out, and additional barrels are readily available in local gun stores or for purchase from online vendors. This means that budget-minded individuals can buy a sporting shotgun with a longer barrel more useful for hunting—and then later, for a modest sum, purchase a shorter barrel more suited to defensive applications.

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ASSAULT RIFLES

From 50–250 yards, no weapon is better suited for quick, accurate, defensive shooting than the assault rifle or its semi-automatic civilian equivalent, the modern sporting rifle. Rifles of this type are meant to facilitate shooter mobility, and they utilize intermediate-power cartridges like the 5.56 x 45mm, 7.62 x 39mm, and .300 AAC BLK. Such rounds don't offer the punch of those used in battle rifles or many traditional hunting rifles, but they are significantly shorter and lighter than their full-powered counterparts, and the magazines that feed them can typically hold 20 or 30 rounds each. The firearms designed around these less energetic cartridges can be built lighter and shorter, and their reduced recoil also allows the user to shoot, reacquire a good sight picture, and send follow-up shots downrange more rapidly than a full-powered rifle's recoil impulse would permit.

Full-powered rifle rounds are accurate out to distances of 800 yards or more, but the trajectories of bullets fired from AR- and AK-type rifles drop quickly after a couple of hundred yards. Even so, assault rifles are far more accu-

[2] http://www.theboxotruth.com/docs/bot3.htm

rate than pistols. They are much more powerful, too, with the 5.56 x 45mm round from an AR capable of transferring three to four times as much energy into a target as the 9 x 19mm round. These rifles are also capable of bringing down game as large as a deer, though the conventional wisdom is that the 5.56 x 45mm round is undersized for humanely harvesting deer.

There are many options available to American buyers, with the AR and AK designs being the most popular exemplars of this class. Because of their popularity, magazines and accessories for these models are readily available. Other options include Ruger's venerable Mini-14 and Mini Thirty rifles, the featherweight Kel-Tec SU-16, and the ultra-affordable SKS—the standard version of which has a fixed magazine that must be reloaded one round at a time or with stripper clips.

BATTLE RIFLES

Battle rifles can be differentiated from assault rifles by comparing the potency of the rounds they fire, their ammunition capacity, and weight. Rather than firing an intermediate cartridge like the assault rifles, battle rifles fire full-powered cartridges like the .30-06 Springfield, 7.62 x 51mm, or the Russian 7.62 x 54mmR. Although these cartridges are heavier than the intermediate cartridges, they are far more powerful and capable of reliably bringing down targets at greater ranges. The 7.62 x 51mm cartridge, for example, is capable of communicating twice as much energy into a target as the 5.56 x 45mm. Penetration through cover is far superior as well; and the effective range of the 7.62 x 51mm is 800 yards or greater. Battle rifles are capable of reaching and neutralizing tougher and more distant targets than assault rifles, but this comes at the cost of higher recoil, smaller magazine capacities, and heavier, more expensive ammunition.

These rifles are not as abundant on the American market as AK and AR rifles, but many options are available. Some shooters, particularly those who enjoy an AR-15, swear by rifles patterned off of Eugene Stoner's AR-10 design. Others are convinced that the Springfield M1A is the best battle rifle to be had. The Heck-

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ler & Koch G3 and Fabrique Nationale FAL have their own factions of devotees as well. Plentiful surplus magazines are available for most of these rifles, but be advised that many surplus magazines may be damaged in a way that prevents them from working properly. You may be able to buy ten surplus magazines for $50, but count on five of them failing to feed reliably.

An excellent bargain still readily available on the surplus market, due to miscalculation by twentieth-century communist central planners, is the Soviet Mosin-Nagant rifle. This bolt-action rifle has been in continuous service in one part of the world or another since 1891. It has a much lower rate of fire than the semi-automatic battle rifles listed above, but it can be had at a price that is nearly an order of magnitude cheaper: about $100. Surplus 7.62 x 54mmR ammunition is relatively inexpensive and widely available; just be warned that you will experience variations in quality and performance.

PRECISION RIFLES

Precision rifles are rifles mechanically capable of shooting groups that are one minute of angle or better within the rifle's intended engagement zone. This means that such a rifle will, in the hands of a proficient marksman, post shot groups smaller than one inch at a hundred yards. If chambered for a full-powered cartridge, like 7.62 x 51mm, and fitted with adequate optics, these sorts of rifles can reliably hit man-sized targets out to 800 yards and beyond. Since the 7.62 x 51mm cartridge (called .308 Winchester on the adoring commercial market) is a NATO standard round, it is widely available, as are ballistics tables and other information on the many different .308 loads. Modern battle rifles are typically chambered for this ammunition type, so the same ammunition will fire in both sorts of rifles. Be advised, though, that ammunition specifically intended for use in a precision rifle will be manufactured to tighter tolerances and is much more expensive than military surplus rounds that are just fine for a battle rifle.

Many modern bolt-action deer rifles would serve well in this role, as has been proven by the military track records of the Remington Model 700 and the Winchester Model 70, the former of which was the basis for the United States Army's M24 and the United States Marine Corps' M40, the latter of which was used for a number of years by US Army and Marine snipers, including the legendary Carlos Hathcock. An excellent choice in this class is the Savage Model 10FP, which boasts an extremely strong action and features an adjustable trigger assembly, free-floated barrel, and other accuracy-enhancing features.

Hathcock's 1967 record-setting 2,500-yard single-shot kill with his Browning M2 machine gun and Unertl scope inspired gunmakers to create a new class of heavy precision rifle based around the .50 BMG cartridge. The cartridge was originally designed by John Browning for antiaircraft use at the end of the First

World War, but as a scaled-up version of the successful .30-06 Springfield cartridge, it had the potential for excellent accuracy at previously inconceivable ranges. Barrett Firearms Manufacturing is far and away the best-known maker of .50-caliber rifles. These extreme long-range capabilities come at a substantial cost, both in terms of weight (25 to 30 pounds to lug around) and purchase price ($3,500–$8,000 before you've even bought the requisite optics or the $3-per-round ammunition).

The size of the .50 BMG round also means that there is a tremendous recoil impulse to deal with, something that Barrett and other designers tackle with gargantuan muzzle brakes. While the Barrett brake is very effective in taming the recoil generated by the .50 BMG, it does so by directing a substantial amount of pressure and noise back toward the shooter, kicking up a sizable dust cloud, and making serious (perhaps even redundant) ear and eye protection absolutely mandatory for safe shooting.

A more portable and cost-effective substitute for the .50 BMG rifles can be had in rifles chambered for the .338 Lapua Magnum cartridge. The .338 was conceived in 1989 specifically for use in long-range sniper rifles, and since its inception it has proven effective in that role, with the longest .338 Lapua Magnum kill logged at 2,707 yards by a British sniper in 2009. The Savage 110 BA is a nicely equipped .338. With a sticker price of nearly $2,000, it also represents the lower end of what one might expect to spend on a precision rifle built around this special-purpose round.

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There are many ammunition types that have been developed for precision shooting, and many of these are not widely available through retail storefronts, or are available only at very high prices. Because of this, dedicated precision shooters very often load their own ammunition at home. With experimentation, the home reloader can develop custom load formulas that perform optimally with his particular rifle.

All precision rifles, no matter how finely tuned, depend on the skill of the shooters employing them. Mastering the fundamentals of rifle marksmanship can guarantee that a shooter connects with his targets within a few hundred yards, but at longer ranges an assortment of factors affect the trajectory of a bullet, including wind, temperature, and humidity. At extreme ranges, gyroscopic drift and even the rotation of the Earth may have to be accounted for in plotting a point of aim. While the sticker price for these rifles is substantial, accumulating the knowledge and experience necessary to take full advantage of their capabilities is even more daunting.

PRACTICE

Before tying up a substantial sum in a precision rifle with all the bells and whistles, it is worthwhile to establish good shooting habits through lots of practice. A .22 LR rifle can be had for a very modest sum and fires a low-recoil, inexpensive, and ubiquitous ammunition type that is perfect for practicing. Although the extremely successful Ruger 10/22 semi-automatic rifle is more versatile for applications like small-game hunting, as an old Boy Scout I prefer the bolt-action rifles with which I learned basic marksmanship. The process of opening the breech, manually loading each round, sliding the bolt forward, and locking the bolt down before firing incentivizes the shooter to make each shot count. This works to counteract the urge that a frustrated or excited shooter might have to just start banging away without really concentrating on trigger control, breath control, and sight picture.

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Dick Clark

Dick Clark first became a firearms enthusiast when he learned to point his finger and say "bang." He grew up in southeastern Louisiana shooting with his father. He taught riflery, shotgunning, and archery at the Salmen Scout Reservation for two summers as a youth staffer and worked at a retail gun store during his time as an undergraduate student at Auburn University. Dick now works in public policy in Nebraska, advocating free markets, individual liberty, and personal responsibility. He also maintains a niche legal practice catering to entrepreneurs in the firearms industry as well as individual gun owners, and he is editor of **silencernews.com**.

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