CANADIAN FIREARMS JOURNAL

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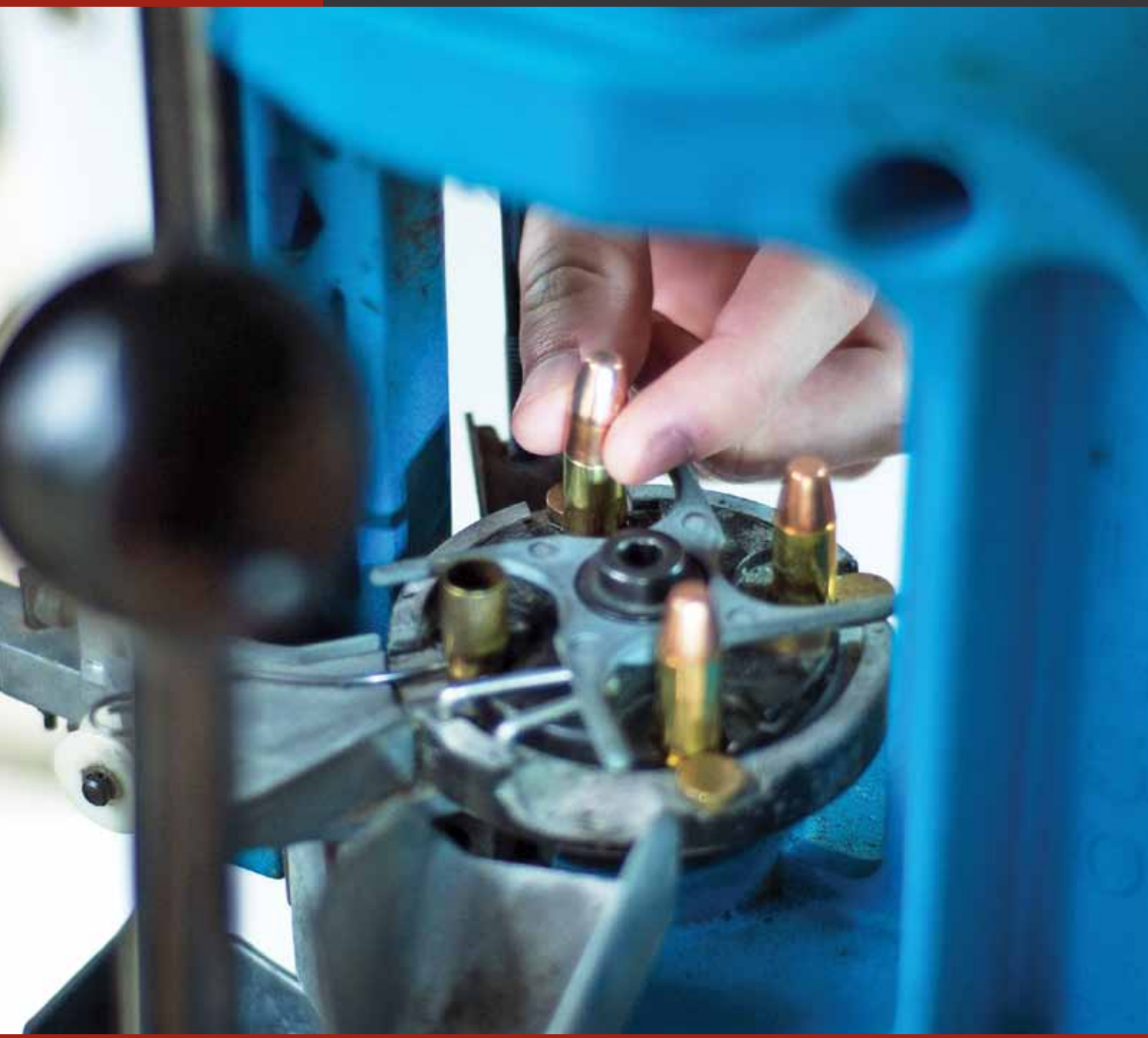

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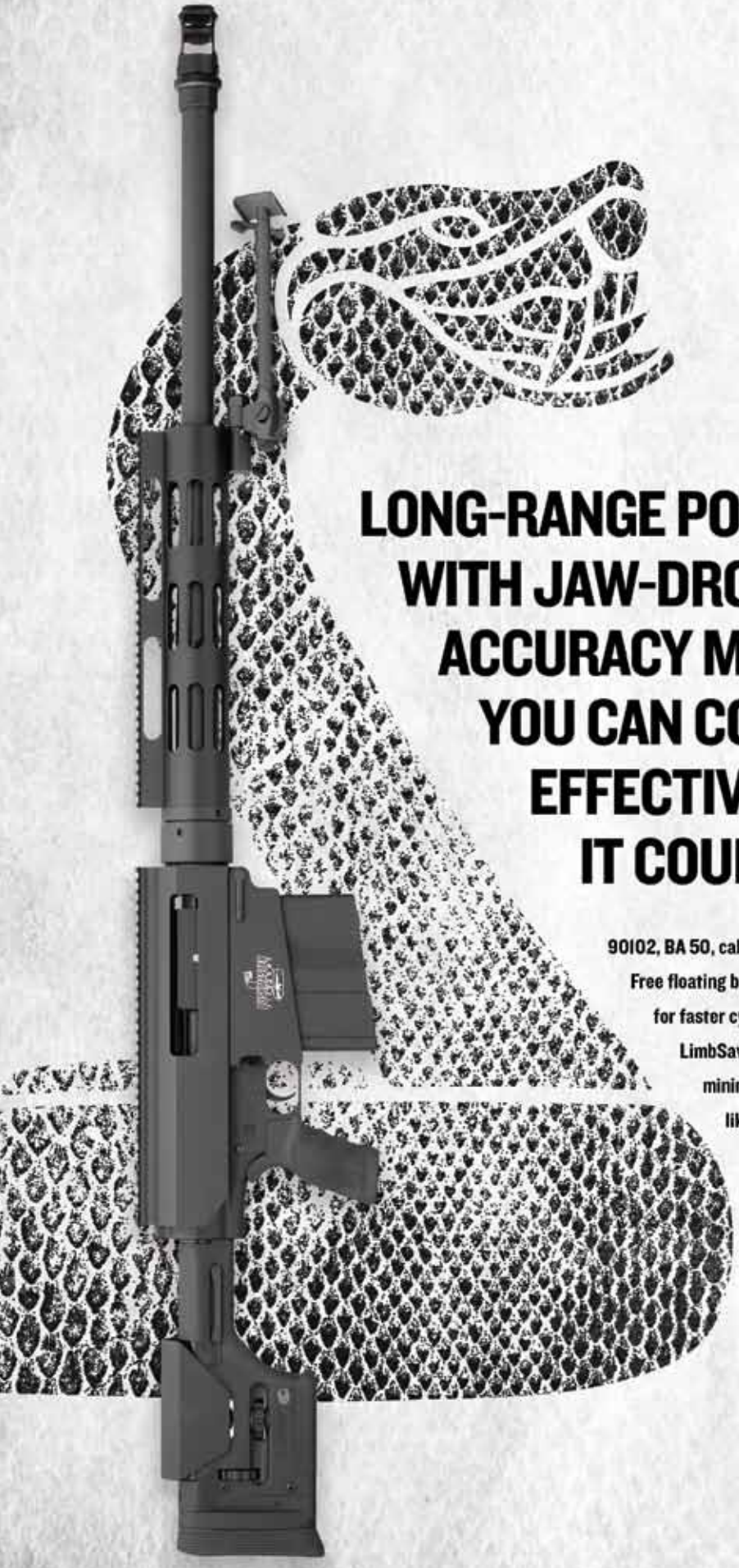

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MISSION STATEMENT

Canada's National Firearms Association exists to promote, support and protect all safe firearms activities, including the right of self defense, firearms education for all Canadians, freedom and justice for Canada's firearms community and to advocate for legislative change to ensure the right of all Canadians to own and use firearms is protected.

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On the Cover

Preparing For Summer

The cover image this month is courtesy of Newfoundland NFA member, Paul Seymour. He had time to take a photo of himself loading 9mm Luger ammunition on his Dillon 550. Apparently, a shooter's schedule there is similar to the rest of Canada: load ammunition all winter and then shoot it all summer.

Canadian Firearms Journal

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From The Editor's Desk

Al Voth

Looking Ahead

Welcome to the first 2017 issue of the *Canadian Firearms Journal.* You will, no doubt, notice a new look to the magazine. This is merely an effort to keep things looking fresh and up to date around here. There wasn't anything wrong with the old look, it was just time to redecorate. After all, the publication is getting old enough to have some history behind it. Did you know the magazine is 15 years old in its current format and title? The first issue using the current name was published in January 2002. Well before that, the NFA's regular publication was called the *NFA Journal*. Later the name switched to *Point Blank*, and then to *Canadian Firearms Journal.* That very first publication of the *NFA Journal* is dated August 1978, meaning we'll be 40 years old in less than two years. Party time!

Until then, we'll carry on bringing you the same great writers and illustrators you're used to seeing here. You'll find some new writers this year as well, and I'm excited about what we are planning to bring you.

In this issue, we are highlighting handloading, gunsmithing and air guns, all of which are great ways for Canadian shooters to spend what are typically the coldest months of the year. Jeff Helsdon takes a look at some high-tech handloading tools, while Bob Shell tells us how to make blanks. For the do-it-yourself gun owner, Lowell Strauss checks out a complete armourer's tool kit for the AR. But if working on guns isn't your strength, Ed Osborne and Don MacLean highlight a couple of gunsmith shops at opposite ends of the country. I'm sure you'll find the contrast between old-school and new-school gunsmithing as fascinating as I did.

Winter is a great time to shoot airguns, so Dean Roxby provides the lowdown on airgun systems and how they work. While Helsdon's story about his Red Ryder airgun will remind many of us about a gun we grew up with. Airguns are a fascinating field to collect, study and shoot, and one most of us should learn more about. I know my airgun collection is far too small.

And for those of us who aren't driven indoors by a Canadian winter, I take a Canadian rifle coyote hunting. The Modern Varmint, built by Alberta Tactical Rifle Services, is a non-restricted semi-custom rifle that is a coyote's nightmare. The Canadian gun industry is alive and well!

Please note that because of persistent spam we're changing the editor's email address to cfjeditor@nfa.ca. Let me know what you think about the new look. It's still your magazine.

President's Message

Sheldon Clare

Looking Back On 2016

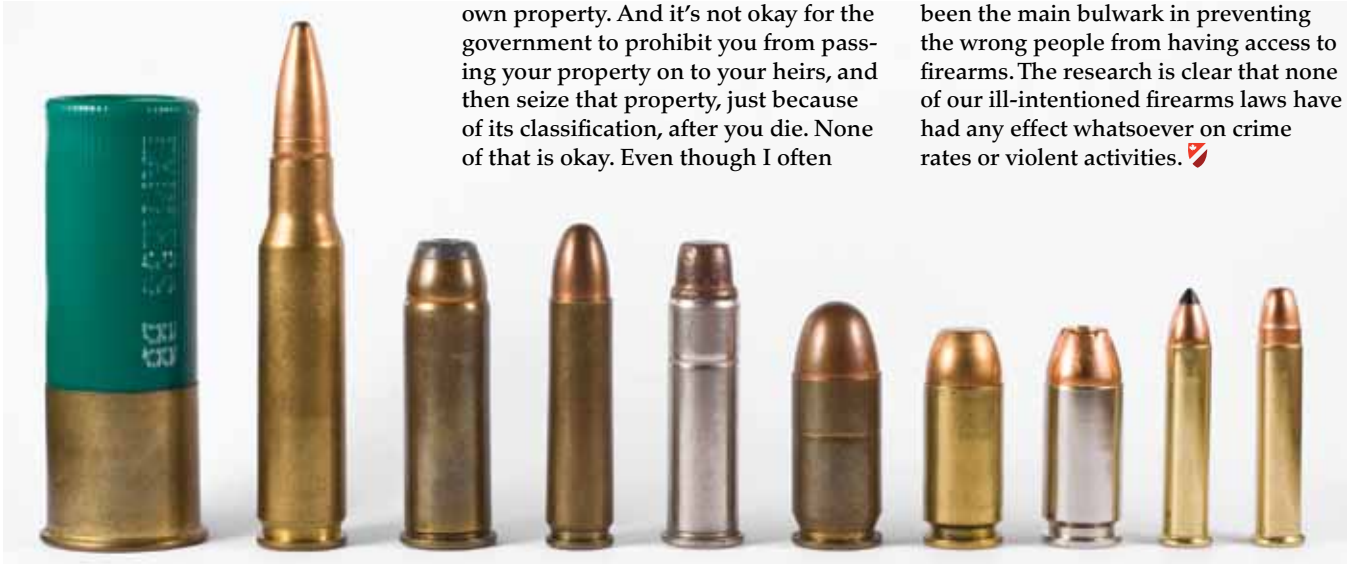
It is with some measure of pride that I look back at the NFA's accomplishments over the past year.

We have elected, by acclamation, a new executive of passionate, committed firearms activists who are keen to take the fight to the Trudeau government. We have taken the Quebec government to court over its attempt to establish a new firearms registration system in that province. And we have successfully defended threats to the NFA, and watched our organization grow.

Our efforts on publicizing the foolish decision of the government to prohibit Ruger 10/22 magazines with a capacity greater than 10 rounds is beginning to put pressure on the government. In particular, your efforts as an NFA member in contacting the Minister of Public Safety and your MP to express your concern about the Liberal firearms control agenda are critical in getting the government to listen to us. As well, Bill S-223 has died an agonizingly slow death in the Senate, due in large measure to our efforts in contacting senators directly, and through your efforts in making sure they heard our collective concerns. In addition, we have become an important, respected player on the international scene with our strong and principled stand against the *Arms Trade Treaty*, UN marking and other dumb ideas that will only harm civilian firearms owners.

Even with all these positive efforts, our major challenges remain, particularly the failed *Firearms Act* of successive Conservative and Liberal governments that gave us the successive bad legislation of bills C-17 and C-68. Unlike some organizations, the NFA has remained steadfast in its opposition to these bills and their main feature, the licensing of owners. Licensing remains the main obstacle to lawful ownership and possession of firearms. Simply put, it's not okay for the government to force you to have a licence to own your own property. And it's not okay for the government to prohibit you from passing your property on to your heirs, and then seize that property, just because of its classification, after you die. None of that is okay. Even though I often hear from knowledgeable people who have bought into the licensing regime, saying it is a way to stop people who shouldn't have firearms from getting them, the fact of the matter is that no licence, registration certificate or other piece of paper prevents subsequent bad choices or criminal behaviour. It hasn't in the past, and it won't in the future. This country had no licence or background checks for most of its existence and there was no problem with ownership and possession of firearms. The knee-jerk laws of 1968, 1978, 1989 and 1995 have had nothing whatsoever to do with preventing criminal activity, and everything to do with promoting a civil disarmament agenda.

The NFA is firm on this point. It is not a radical position; it is merely one of common sense. Certainly, there are individuals who should not have access to firearms or other dangerous equipment, and the good judgement of members of the firearms community has long been the main bulwark in preventing the wrong people from having access to firearms. The research is clear that none of our ill-intentioned firearms laws have had any effect whatsoever on crime rates or violent activities.



ISTOCK

Message du Président

Sheldon Clare

Les Propriétaires D'armes à Feu Font Face à Plusieurs Enjeux

C'est avec une certaine fierté que je jette un regard sur l'année qui se termine bientôt et les réalisations atteintes par l'ACAF. Notre nouveau comité de Direction composé de militants passionnés et dédiés à la cause a été élu par acclamation. Ils sont très motivés pour faire la lutte au Gouvernement Trudeau. Nous avons entamé une poursuite contre le Gouvernement du Québec qui tente d'établir un nouveau système d'enregistrement d'armes longues. Nous avons réussi à écarter des menaces à notre organisation, elle en est ressortie plus forte et le nombre de nos membres a augmenté. Grâce à notre publication de la mauvaise décision du Gouvernement de prohiber les chargeurs Ruger 10-22 de plus de 10 coups, la pression se fait sentir auprès du Gouvernement. Vos efforts en particulier, sont essentiels comme membres de l'ACAF, vous devez contacter le Ministre de la Sécurité Publique ainsi que vos Députés pour leurs faire part de vos inquiétudes à propos du programme de contrôle des armes du Gouvernement Libéral. Vos gestes sont essentiels pour inciter le Gouvernement de nous écouter. De plus, le Projet de Loi S-223 est enfin mort après une longue agonie au Sénat dû au fait que nous avons rencontré directement les Sénateurs et que vous les avez aussi contacté. Ils ont pris conscience de nos inquiétudes collectives. Nous sommes devenus un joueur important et respecté sur la scène internationale grâce à notre position ferme basée sur des principes, contre le Traité sur le Commerce des Armes, le marquage des armes et autres mauvaises idées mises de l'avant par l'ONU. Ces initiatives ne feront que du mal aux propriétaires d'armes à feu civils.

Malgré ces efforts positifs nos défis habituels demeurent; La Loi sur les Armes à Feu en particulier, une législation ratée qui fut le fruit d'affreux Projets de Loi C-17 et C68 apportés par des gouvernements successifs Conservateurs et Libéraux. Contrairement à d'autres organisations, l'ACAF s'est opposée sans relâche à ces Projets de Loi et leur pierre angulaire, l'obligation de posséder un permis d'arme à feu. L'émission de permis demeure l'obstacle principal envers la possession légitime d'armes à feu. Autrement dit, ce n'est pas une bonne chose que le Gouvernement vous oblige d'obtenir un permis pour posséder vos biens personnels. Ce n'est pas une bonne chose que le Gouvernement vous interdise de léguer ces biens à vos héritiers et qu'il les saisisse après votre décès à cause de leur "classification". Il n'y a rien de bon dans tout ça. Même si j'entends parler certaines personnes connaissantes qui trouvent que le système d'exigence de permis est un moyen d'empêcher ceux qui ne devraient pas avoir d'armes de s'en procurer. Dans les faits, il n'y a aucun permis, certificat d'enregistrement ou tout autre document qui ne puisse prévenir de mauvaises décisions ou des comportements criminels. Cela ne s'est jamais produit dans le passé et cela n'arrivera jamais dans l'avenir. Durant la plus grande partie de l'existence du Canada la vérification d'antécédents judiciaires pour la possession légitime d'armes à feu n'existait pas et il n'y avait pas de problèmes. Toutes les Lois créés sous le coup de l'émotion en 1968, 1978, 1989 et 1995 n'ont jamais eu comme objectif premier de prévenir le crime mais plutôt de faire la promotion du désarmement civil.

La position de l'ACAF est ferme sur ce point. Ce n'est pas une position radicale mais plutôt de gros bon sens. C'est certain qu'il existe des individus qui ne doivent pas avoir accès à des armes ou tout autre équipement dangereux. Le bon jugement de la communauté intéressée par les armes à feu a toujours été un rempart pour empêcher les gens qui ne doivent pas avoir des armes, de s'en procurer. Les résultats de recherches empiriques sont clairs, il n'y a aucune de nos lois mal intentionnées qui ont eu un effet positif pour baisser le taux de criminalité ni les actes de violence.

Licensing remains the main obstacle to lawful ownership and possession of firearms. Simply put, it's not okay for the government to force you to have a licence to own your own property.

Vice President's Message

Blair Hagen

The Effects Of A Trump-led USA & The UN Marking Scheme

TRUMP WON. NOW WHAT?

The 2016 US elections are finished, and Americans elected New York billionaire Donald Trump as the 45th president of the United States. In a stunning upset over Democrat Hillary Clinton, who was favoured to win by the mainstream media and Washington establishment, Trump rode a populist wave of US voters discontented with the direction of politics in the US.

Trump's record as a *Second Amendment* supporter is mixed. After seeming to endorse increased restrictions on *Second Amendment* rights in the past, he came out reasonably strong on those rights during his candidacy for the Republican leadership and during the 2016 presidential election, even being endorsed by the National Rifle Association. His speech to the NRA annual general meeting in May coalesced the support of many *Second Amendment* supporters and American gun rights activists. For Canadians wondering what effect this will have on firearms issues in the US, it plays out something like this:

First, be aware that, in the US, firearms laws are mostly a state responsibility. There are some federal laws, such as the *National Firearms Act* of 1934, and the *Gun Control Act* of 1986, but unlike Canada, where firearms laws are largely federal, that responsibility falls primarily to individual states. Therefore, you find rational gun laws in states like Arizona and Texas, as opposed to states like California and New York, which have gun laws that are in some ways worse than Canada's.

Trump's election and a strong Republican mandate in both the US House of Representatives and Senate makes it is unlikely there will be any successful push federally for civil disarmament laws in the next four years. There is even talk of a *Second Amendment* Coalition being formed to advise the president-elect on the future of firearms law reform.

However, gun control battles have already moved to the states. While the Obama administration talked a good anti-gun game, there were few incursions into this highly controversial issue during his regime. He preferred to leave the issue alone and lend support to state governments who wished to pursue civil disarmament measures against their citizens.

That is unlikely to change. And states governed by anti-gun politicians will probably double down on their civil disarmament efforts in an attempt to force a *Second Amendment* confrontation with the Trump administration. The effect of Trump's win on the firearms issue in Canada will be negligible, except perhaps to wind down the American buying frenzy of firearms and ammunition, making both more available here. Interesting times as always in the US.

THE UN MARKING SCHEME

The UN Small Arms Marking Scheme is the plan to require additional, redundant and expensive markings on firearms imported into Canada, and manufactured in Canada. This UN effort was signed on to by the Chretien Liberals in the 1990s, as part of their civil disarmament plan. Due to the controversial politics of gun control, the failure of the Liberal firearms program and the logistical nightmare of imposing it, the plan has been delayed for almost 20 years. Most recently, the Conservative government of Stephen Harper had delayed the implementation date until December 2017. In February, Jim Brownskill of the CBC reported that the Liberal government "broke its promise" to impose the UN Small Arms Marking Scheme on Canadians. The Liberals had indicated they would impose this requirement within their first 100 days in office.

This CBC report gives a clear view into the mindset of the civil disarmament lobby within the CBC and Canadian media in general. It's not the UN Small Arms Marking Scheme they object to. It's not the Liberal government's commitment to implement it they oppose. It's the fact that the Liberal government will not impose it right away that they object to. Again, the civil disarmament lobby and their friends in media see Canadians as an inherent danger, not only to public safety in Canada, but also to the world at large.

The idea is basically this: to uniquely mark firearms imported, bought and sold in Canada so that when they wind up in the hands of international terrorists and in brush wars in the third world, they can be tracked back to the irresponsible Canadians who sold and trafficked them. Sound bizarre? It is. But that's the mentality of the politicians, bureaucrats and civil disarmament lobbyists we are so familiar with in Canada. In a time when offenses against individuals are taken so seriously, the very serious offense of such instruments of civil disarmament as the *Firearms Act* and the UN Small Arms Marking Scheme are foisted on Canadians with antagonism and glee.

With your help, Canada's National Firearms Association will continue to oppose the international civil disarmament effort.

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Preserving Our Firearms Heritage

Gary K. Kangas

Strategic Thinking For Gun Clubs

A portable air gun range is a great recruiting device for gun clubs.

Gun clubs in Canada have undergone a protracted siege since the early 1990s. Municipalities, developers, urban encroachment and anti-gun zealots have either manoeuvred the closure of, or severely restricted many gun clubs. However, gun clubs and shooting associations can employ a number of strategies to mitigate or reverse negative situations. They can fight back!

Yes, I know court time is expensive and time consuming. However, with proper counsel many gun clubs have stopped attacks by civic governments and developers. A key is to get involved with local governments and politically active associations. But it's also important to reach out to the public with events that invite. Consider using displays and demonstrations at sporting goods store openings, fairs, festivals and outdoor shows that display shooters and firearms owners as real, non-threatening people.

A stellar example is the Women's Shooting Club of the Victoria Fish & Game, who in the fall of 2015 fielded a public information event at a major hotel. These lady shooters subsequently attracted other women who became informed about firearms and the shooting sports. The meeting room was filled with interested women who went from table to table examining the various disciplines that were exhibited. The presenters were well versed in their area of expertise, engaging the visitors in informative and meaningful conversations about firearms and their safe use.

The Victoria Fish & Game Protective Association, of which these ladies are a part, is located in the Malahat district of Vancouver Island and was incorporated in 1919. The association has seen nearly a century of upheaval and prosperity. With the implementation of the anti-gun Bill C-68 in the early 1990s, the Victoria Fish & Game suffered a steady decline in membership until 2001. Rather than accepting this situation, the directors began an aggressive membership drive in 2002. Duncan Haydon, a VF&G board member at the time, had a brilliant idea. The plan he developed was to invite the public to their facility so they could experience fishing and the safe enjoyment of firearms. You see, besides a great shooting range, the club also has a private pond stocked with trout. Experienced anglers and expert range officers were on hand to teach and supervise attendees. Rifle, pistol, shotgun, trap and skeet, cowboy action, practical pistol, black powder and archery were represented.

The demonstration was a huge triumph and continues to this day. The event is called Outdoor Discovery Day and is held annually every Fathers Day. Since 2002, over 7,500 individuals have been entertained. The membership of the club has swelled to over six times

what it was in 2001. But the association has not stopped its assertive public relations campaign. In 2012, the directors approved the design, construction and deployment of a portable air gun range that could be used at various public events. This booth has proven to be a great public relations success story, plus a valuable recruiting tool. The air gun stall is easily erected at any site, indoors or out. Trained range officers supervise each station and all shooters. The targets are reeled back and forth on pulleys and cables so they can move from the shooting position to the back stop, and back to the shooting position for scoring. The entire air gun display is utilized multiple times every year at various venues, and appeals to all ages and genders. As a recruiting device, it attracts young families in particular. The Victoria Fish & Game also co-produces a junior programme with the North Saanich Rod & Gun Club. This juniors programme has introduced many young enthusiasts to the shooting sports.

Another community involvement victory comes from the Southern Vancouver Island Rangers, Inc. Gun Club. This club was conceived from the original formation of the Pacific Coast Militia Rangers, which was assembled in 1942 to defend Vancouver Island in the event of a Japanese attack. After the Second World War, members of the original PCMR incorporated the Southern Vancouver Island Rangers and purchased property out in the country. Of course, the city has now sprawled out to meet them. But the Rangers began to take positive action by inviting their neighbours to the range to become acquainted. The members of the club also enrolled in the Provincial Emergency Programme, designating their facility as a neighbourhood haven in the event of an emergency. Having a full facility kitchen and a large meeting hall, the club can feed numerous people. In conjunction with the Provincial Emergency Programme and the military, temporary housing can also be made available in a dire situation. In 2012, the Rangers also began a community picnic event that attracts up to 300 neighbours every summer.

Gun clubs are not secret societies, and should not be shrouded in mystery.

Gun clubs are not secret societies. Hunting and the shooting sports should not be shrouded in mystery. They must be shared via social media, mainstream media and invitational events. If a shooting facility is threatened, the members must resist and go legal, if needed. However, the most effective strategy is a positive, proactive approach. We must learn how to invite, entertain, inform and become valued community members by enrolling in local safety and security programmes. By the use of factual, creative courses of action, we will draw individuals in, arouse their curiosity and remove negative biases. It's another way to preserve our firearms heritage.

Nathaniel Milljour, *RightWingNation.ca*

Politics & Guns

Bruce Gold

Peace Keepers, Eh!

This is not a good time to abandon our heritage and promote candlelight vigils as the only acceptable response to acts of calculated political violence.

NATHANIEL MILLJOUR

With the rise of a new Liberal government, the "soft power" cure-all of peace keeping is back on the agenda. In part, this policy rests on Trudeau's belief that Canada is no longer a nation, but a post-national state. Whatever that means. For a used-to-be country, the default to globalism, with its rejection of our sovereignty in favour of unaccountable international bodies, seems a natural progression. After all, globalism's ultimate aim of a UN-based world government in a borderless world, run by our betters, makes sense if we no longer have any national identity worthy of protection.

Peace keeping also favours the happy belief that violence is senseless – the result of misunderstandings, hurt feelings or, as Trudeau once said, the result of social exclusion. The fault, therefore, is with us, for our failure to adapt enough, give enough, compromise enough and surrender enough. It also follows that the true requirement for the nation is not strength in defending our own interests, but in gestures of benevolent high-mindedness. It is only natural and proper that we assume our rightful place under the leadership and guidance of the UN as a subservient protectorate, happy to serve and submit our policies to the judgement of those on the high moral plateau of international norms. The Arms Trade Treaty, which submits our firearms industry and domestic law to international oversight, is part of this agenda.

Back in the real world, this ignorant ahistorical drivel does not stand up to scrutiny. Despite the well-propagated political myth that Canadians are, and have always been, a peaceful nation, our national and international experience tells a different story. Our history has been shaped by war, not peace. Our domestic gun culture, as Canadian as maple syrup, is a well-established and honourable part of this history, not a misshapen import from the US. The right to arms and the right to self-defence, both fundamental to liberty, are critical in the struggle between

those who see the state as the ultimate source of all rights and those who believe that rights are inherent in the human condition, not a gift from our masters.

OUR SHARED HISTORY

Canada's gun culture reflects our history and our history reflects the reality of violent conflict. The wars and turmoil of our history are not senseless; they reflect the use of violence as a political tool. This is not something that can be laid at the feet of European expansion or Christianity, or white people or other contemporary scapegoats. The earliest explorers found the Aboriginal tribes of Canada in a state of perpetual war, pursued with exemplary savagery. The long struggle between the Iroquois and the Hurons (the Beaver Wars) saw the Iroquois Confederacy destroy Huron, Neutral, Erie, Susquehannock and Shawnee nations. The Iroquois attacks on the settlements of New France were a continuation of this struggle, not some new European invention. Far from being innocent "children of nature," Aboriginal groups quickly adapted and exploited the new technologies, economic opportunities and alliances made possible by European settlement and trade.

New France and New England were caught up in European wars three times during the 18th century: Queen Anne's War (War of the Spanish Succession), King George's War (War of the Austrian Succession) and the French and Indian War (Seven Years' War.)

The American Revolution and War of 1812 were both wars of national survival. The first saw an invasion of Canada in 1775, and the occupation of Montreal. The failure of the Canadians to revolt and their solid opposition to the American Rebels profoundly shaped Canada. The War of 1812 was an American attempt to take advantage of Britain's desperate Napoleonic struggle and conquer Canada. Often dismissed because so little was changed by the war, it was a strategic victory that preserved a Canadian identity separate from the US.

The Fenian Raids (1866 to 1871) again saw Canada defending its existence by force of arms. These raids and the almost complete withdrawal of British troops by 1871, were one of the causes of Confederation, as the separate colonies sought military strength in unification. The Liberal party found this struggle for national survival so offensive they refused to send any representative to the commemoration of the Battle of Ridgeway.

One of the first acts after confederation was the Militia Act of 1868. This formed the backbone of national defence, with a small regular force and a voluntary militia. Under the act, every able-bodied man between the ages of 18 and 60 was liable to conscription for military service. One of its first services was suppression of the Red River Rebellion in 1870.

Canada made its international debut in 1884 when 386 men were recruited for service in the Nile Voyageurs to help rescue General Gordon from the Mahdi uprising (in part a reaction to the European suppression of the Arab slave trade.)

The Boer War (1899 to 1902) was Canada's first foreign war. It marked the arrival of Canada on the international stage, as part of the Commonwealth and as a nation in its own right. A total of 7,368 Canadians and 12 Nursing Sisters served in South Africa.

The First World War was a major step in the development of our national identity. Out of a population of eight million, 630,000 served and 425,000 went overseas. It was Canada's bloodiest war, with 60,661 killed and 172,000 wounded. Canada's army of citizen soldiers, created during the war, distinguished themselves on the battlefield. At Vimy, Canadians formed their own army (Canadian Corps of 4 Divisions.) It was said at the time that Canada went up the ridge a colony and came down a nation. It was a decisive milestone in Canada's growing independence and international recognition.

In the final days of the war, Canadian troops entered the period referred to as the "Hundred Days." During this time, Canada's four divisions broke through the best defensive lines the Germans could devise, defeating elements of 47 German divisions. The reason for this success, which saw advances of up to 20 miles in a single day, was the Canadian Army's ability to integrate infantry, artillery, tanks and aircraft into one seamless team. In 20 years, these methods would get a new name – Blitzkrieg.

The Second World War, which Canada entered as an independent nation, again saw the rapid development of a large and professional force out of a tiny standing military. This transformation, like the ones before it, was only possible due to our long military history and the culture of arms that has been part of our nation since its earliest days.

CONCLUSION

Some might consider all this rather distant from the to and fro of our current firearms debate and its regulatory disputes. Yet it forms the bedrock of our nation's experience. It is the tremendous backdrop against which our struggles to retain the right to self-defence and free access to arms, the means of self-defence, is taking place.

Wishful thinking aside, political violence is a historical constant throughout recorded history. Despite our long domestic peace, the world continues to be a violent place, where strength, or lack of it, determines the outcome of events. Political violence, whether the low-level violence of property crime protests or the murderous military attacks of organized terrorism, is never senseless. As a political act, it is carefully strategized to get the maximum benefit at the lowest cost, with political, economic and publicity payoffs. Peace keeping, aimed at correcting "misunderstandings" between those of "good will," ignores this reality.

We are now entering an age of political and social instability that we have not seen for a generation. The Middle East is destabilized and steadily moving towards a major religious war between Sunni and Shite Muslims, as they fight it out for domination of the region. The exporting of these imperialist religious doctrines to Canada has already led to murderous political violence, which will increase as significant percentages of immigrants from the region bring their religious and cultural disputes to Canada. Violent civil disobedience, currently receiving wrist slap punishments (if the cause is trendy) will increase in frequency and violence as activists realize they can make significant political gains at trifling costs. This is not a good time to abandon our heritage and promote candlelight vigils as the only acceptable response to acts of calculated political violence.

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TRANSFORMING GLOCKS

Turning a stock gun into a gamer gun

BY EDWARD OSBORNE

I used to hate Glocks. No joke. I found them boring. "It's like a brick, taped to another brick," I would say. "Sure it goes bang every time, but they're not particularly interesting or especially comfortable. Why bother?"

Maybe it was just the overwhelming popularity of one of the most recognizable handguns on the planet that had me feeling "too cool" to appreciate something so mainstream. Or maybe I just hadn't used my imagination to see what a Glock could become.

Friends, I was wrong. I have been converted. I now want a Glock in my safe. But not just any Glock; I lust for what's often called a race gun or a gamer gun – a firearm designed specifically for the shooting sports. This isn't a police sidearm, or a daily carry solution; this is a gun that's made to race against the clock in a competitive handgun discipline. The reason for the change is a recent visit I paid to Black Box Customs, where I learned what could be done with Glocks and why.

WHO DID THAT?

Black Box Customs is a trio of young gunsmiths and entrepreneurs from Calgary, Alta., who have built a business with a single core concept: to take factory Glocks and make them better. They've also expanded into colouring and texturing other guns, but the original striker fired handgun still occupies most of their time. By young, I mean that Rico, Vincent and Jay are all under 35 years old, but they've been shooting and competing with firearms their entire adult lives.

The factory Glock is a functional gun, but not a particularly comfortable one. Black Box takes all sizes of standard Glocks and applies a number of upgrades and tweaks to improve them. Combined together, the result is a dedicated gamer gun that shoots and feels very different from the factory offering. At first glance, many of the changes appear to be cosmetic, because they certainly improve the look of the "brick on brick" firearm. But as I sat down with Jay to examine the rationale behind each procedure, I learned these guns do more than look nice.

WHAT GAME DO YOU PLAY?

Where to start? The answer to this question must begin with the shooter knowing what discipline and class they want to compete in. Your most common discipline choices are USPSA, IDPA and IPSC. Each of those has a wide variety of equipment classes, which ensures people are competing only against other shooters with similarly equipped guns. The rulebooks for these sports are massive, and each uses a different name for similar classes, so consider this a rough guide only:

STOCK CLASS: Your gun is exactly as it came from the factory. It is from a major manufacturer and has seen widespread release.

ENHANCED CLASS: Your gun has undergone minor upgrades to make it more competitive. You may have changed your sights, or grips, but it still must comply with a standard dimensional requirement. From the events that I've attended and covered, this mid-range class has the majority of shooters.

OPEN CLASS: Your gun has been modified to whatever your imagination can conceive, including compensators, optics, charging handles and extended magazine releases. All the fanciest guns end up here.

Jay recommends the perfect starting set up as a Glock 35. With its longer barrel and lighter trigger, the gun is smoother shooting out of the box than some of the more compact counterparts. With a .40 S&W, you can shoot in a major power division, or get a 9mm barrel and recoil spring for a reasonable price and shoot the lighter, cheaper ammunition. After most

Three different versions of the Glock 35. An open gun (top), enhanced gun (middle) and a factory Glock (bottom) exactly the way it came from Austria.

alterations, it will still fit in the different sized boxes used by the various sports to regulate firearms in the enhanced classification. That sets the stage for Black Box to go to work and tweak the gun to achieve its maximum handling and shooting potential.

WHAT CAN BE DONE?

SIGHTS: The factory Glock sights work on a ball-and-cup system that's unseen in any other handgun today. These large, coarse sights are one of the first things to go. On a factory model, they can often be pushed out by hand, without even using a tool. The best gaming replacement is a blacked-out rear sight, with a fiber optic front sight. This keeps the shooter's focus on the front sight where it belongs, and offers a workable sight picture even on plate racks at 30 metres.

STIPPLE: The molded polymer of the Glock frame can be slick to the touch. The process of applying hundreds of small indentations to that polymer, in order to create a rougher-textured grip, is known as stippling. While additive solutions like grip tape wear off, and protective gloves can bring their own smooth surfaces to the hand-to-gun interaction, stippling offers a simple and permanent solution to improve a shooter's grip. It's extremely labor intensive though, as each dot must be made individually via a soldering iron.

GRIP: The frame of a factory Glock comes with a set of finger grooves molded into the plastic. But it doesn't fit everybody. Many people with larger hands find the finger grooves annoying, while some shooters find a straight grip better fits their personal ergonomics.

UNDERCUT: I was surprised to hear Jay say that this is one of the most important upgrades they do on any gun. The undercut is a subtle removing of material under the trigger guard, which can make a drastic difference to how a gun feels and handles. Raising the grip higher puts the hand closer to the reciprocating mass of the slide and reduces muzzle flip. And the trigger guard relief gives the support hand a dedicated space to push up and further forward. It's all about getting the best and most consistent grip.

MAGWELL: I'd never noticed how thin the polymer magwell is on a Glock until Jay flipped one upside down to show me. There's shockingly little material in an area that can see a lot of abuse. An enhanced magazine well serves to protect this weak spot on the firearm, and flaring it improves the reloading speed when the clock is ticking. Suddenly, your speed reload can be off by a millimeter or two and still find its way home.

SERRATIONS AND TRI-TOP SLIDE: The angled slots on the front of the slide offer an alternate grip zone for manipulating the slide on stoppages, press checks or reloads, but I've always been skeptical of them. However, when we started talking about the biomechanics of a reload, it came together for me. Few Glock shooters use their slide release when reloading. That little lever activated by your thumb takes a lot more work to find, and a lot more muscle to activate, than using your entire left hand to rack the slide. But if you power stroke the slide, you end the reload action with the support hand at your chest, but your gun and firing hand headed back out. By gripping and racking using a forward cocking serration, your support hand ends up right next to the gun, exactly where it needs to be to get back into a shooting grip.

CERAKOTE: Factory Glock coatings have come a long way from the days when some of the Gen 2 models displayed a distinct patina associated with their unevenly applied coating. But even the current models will start to show some serious wear, with a risk of rust after thousands of rounds. A simple application of Cerakote doesn't just personalize the gun, it also provides a more robust protective layer over the metal.

TRIGGER: Out of the box, you'll find about a five-pound trigger pull on most Glocks, with a bit of creep involved. Several aftermarket manufacturers offer replacement options, but Jay pointed out the Glock 34 and 35 models ship with a three-and-a-half-pound competition trigger installed. Apparently, this

The stippling process is done by hand, and requires exceptional consistency and attention to detail.

particular configuration is only available on those factory guns. Even certified armorers don't have access to these trigger packs as an upgrade component.

OPTICS: It used to be that putting a red dot on a handgun was a serious challenge, requiring milling slides, replacing sights or even heftier modifications. But with the introduction of their MOS line of handguns, Glock is now ready to support optics mounting right out of the box. A panel on the slide can be removed and allows for various brands of micro red dots to be fit onto the guns. Although adding a red dot will often change your class of competition, the advantage of having your aiming point on the same focal plane as your targets cannot be overstated.

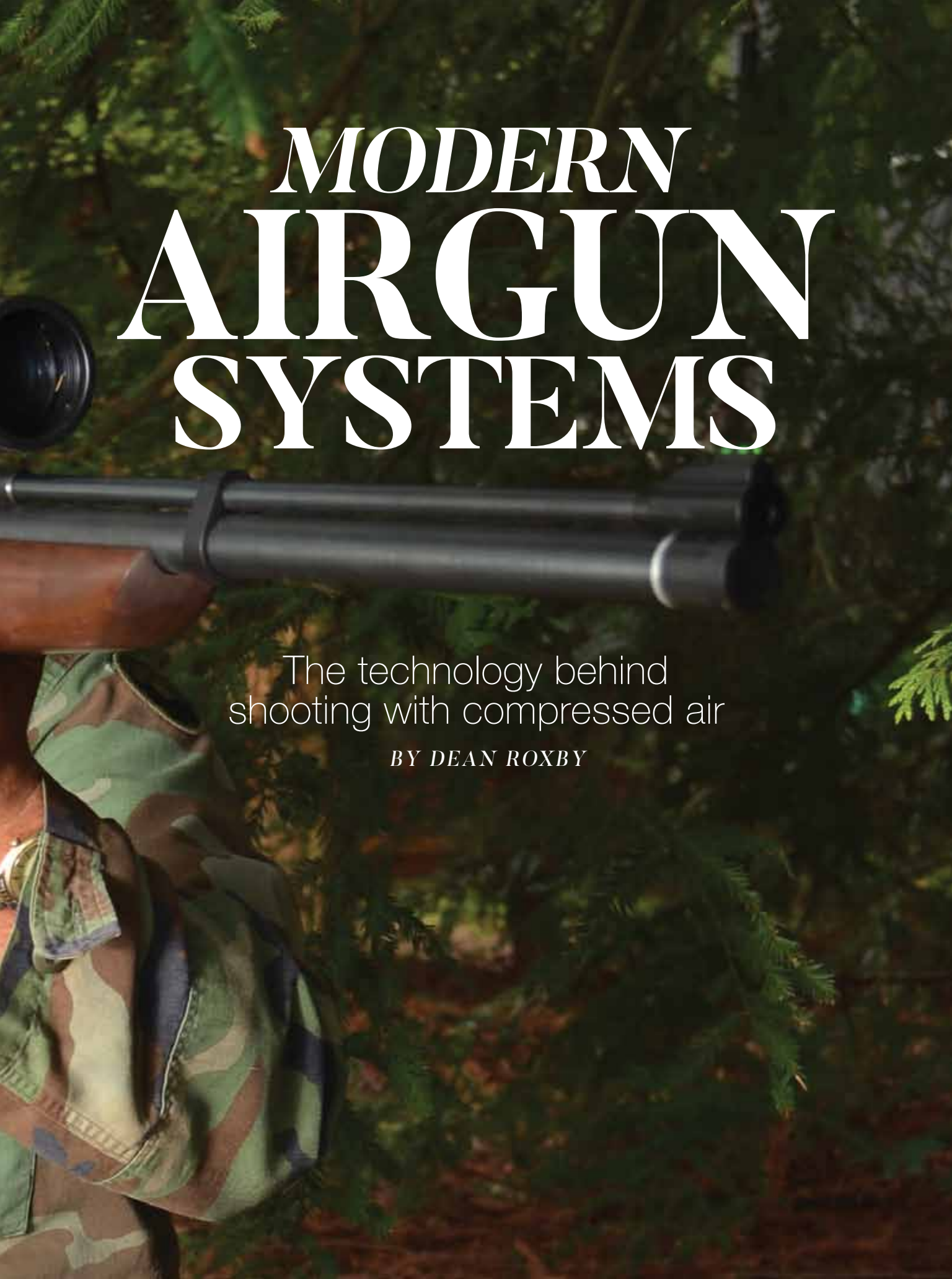
PORTING AND POCKETING: Opening up the slide might seem like something done purely for looks, but changing the mass of the slide can reduce felt recoil. If the primary part that moves when you pull the trigger weighs less, you'll feel it less. But there's a careful line to be walked here, as your recoil springs are made for a particular weight too. Adding components like an optic might require porting to balance out the weight of the slide.

A milling machine in the process of opening up a pocket on a Glock slide.

WHAT SHOULD YOU DO?

Personally, I usually shoot open class, as I have a block against people telling me what guns I can or cannot shoot. But that often puts me up against better shooters with bigger budgets than I have. There is another route to the gamer gun world, which is: build it yourself. But, be warned, I opted for this route early in my shooting career, and created a monster as a result. Hundreds of dollars and too many hours later, I have a beast of a handgun with a full-sized compensator and massive frame-mounted red dot, which still doesn't shoot the way I want it to. If I could do it all again, I'd make very different choices – like buying a Glock and taking it to the competition-focused gunsmiths at Black Box Customs.

Cabela's



MODERN AIRGUN SYSTEMS

The technology behind shooting with compressed air

BY DEAN ROXBY

There has been a revolution in airguns over the last few decades, and as with many other technologies, the bar has been dramatically raised. A product once primarily meant for the young, entry-level shooter is now aimed at the serious adult market. There are several reasons for this change, including the increased cost of conventional ammunition, restrictive laws and the inevitable desire to build a better mousetrap. No longer does the word "airgun" equate to the lowly "BB gun."

SPRING POWER

Almost every shooter is familiar with the break-action, spring-powered air rifle. Simple and sturdy, the springer is commonly available in .177, .22 and .25 calibre. No spare cylinders, air tanks or bicycle pumps are needed, just a tin of pellets and you're good for the day. Although the basic system hasn't changed, the quality and power has. Years ago, a velocity of 400 to 500 feet per second for a .177 calibre gun was the expected range. Now springers are routinely breaking 1,000 feet per second and several are in the 1,200 feet per second range with lead pellets. The Gamo Magnum rifle claims to hit 1,650 feet per second with light alloy (generally zinc) pellets.

Although this type packs a lot of performance in a reasonably priced package, there are some issues to be aware of. There is a loud mechanical sound upon firing, as the spring releases its stored energy, and the piston slams to a stop. A greater concern is that the piston impacting the receiver jars the gun forward. Conventional firearm scopes are built to handle the tremendous rearward recoil of centrefire rifles, but very few are designed to handle the forward jarring of a springer. This two-way snap means these guns need a specially designed air rifle scope.

The Benjamin Discovery is a PCP supplied with what looks like an oversized bicycle pump, but can pump up to 2,000 PSI.

GAS PISTONS

The gas ram or gas piston is a recent design, dating from the late 1970s, and its popularity is increasing. Generally credited to two Brits, Ben Taylor and Dave Theobald, they built their prototype from some old car parts. In this system, the steel mainspring is replaced by compressed gas, generally nitrogen. Upon cocking, the piston compresses the gas, then is forcefully driven forward when fired. Note that the nitrogen does not act directly upon the pellet. Rather, the nitrogen contained behind the piston drives it forward, which in turn forces air in front of the piston to act upon the pellet.

The gas piston can be thought of as a variant of a springer. Picture the gas strut in the rear hatch of a mini van. The gas is permanently sealed within, and does not vent out when the strut is extended. The gas ram system has advantages over steel springs in that it does not fatigue like a steel spring, nor does it take a set. These guns are also generally more powerful than steel spring designs, and are quieter and lighter in weight.

This technology has been adopted by many air rifle firms, and is known by various names. Besides the generic gas ram or gas piston, it is also known as Nitro Piston and NP2 (Crosman/Benjamin), IGT Inert Gas Technology (Gamo), GRT Gas Ram Technology (BSA) and N-TEC (Diana), among others.

VARIABLE POWER PNEUMATICS

Variable power pneumatics, often called pump-up airguns, were once popular with young shooters. Although not as sturdy as a springer, they are as simple to use, and also do not require extra accessories. With this system, a pumping action stores air in a reservoir, from which it is released via a trigger pull. As the system dumps all the stored air at once, it can only be a single shot, never a repeater. Pump 10 strokes, fire one shot, then repeat. All that pumping racket can be an issue if hunting pests or small game.

By pumping more or less strokes, the power level can be varied, which may be a selling feature for some shooters. Every kid that ever used a pump-up undoubtedly exceeded the suggested 10 pumps maximum, in an attempt to get more power from the gun. If I had easy access to chronographs in my youth, I would have learned that doesn't work due to a thing called valve lock. As the pressure in the tank increases, the valve that controls the flow of air into and out of the cylinder is held closed more firmly. As the hammer that knocks open the valve to release the air faces more resistance, less air is released, and the velocity actually decreases!

PRE-CHARGED PNEUMATICS

Pre-charged pneumatics (PCP) may seem to be the new kid on the block, but are actually the oldest type of airgun system. In fact, the Girandoni military air rifle used by the Austrian army was developed as early as 1780. The Girandoni holds the distinction of being the first repeating military rifle, as it had a magazine that held 20 lead balls of approximately 0.46 inches in diameter.

Modern PCP guns have integral air tanks from which air is bled in a controlled manner to launch projectiles. They can be filled from a Scuba tank, something sorely lacking in Girandoni's day. A decade or so ago, when the PCP air rifle really started to become popular, getting a Scuba shop to fill your tank was often an issue. Apparently, the dive shops were concerned about liability issues when someone with no dive certification wanted to buy a tank of air. This isn't a big problem now, but you still may be asked to sign a release form stating the air will never be used for breathing, but only for a PCP gun. Once the Scuba tank is filled, gunners often fill an intermediate-sized buddy bottle, then use this to top up the gun's built-in tank.

Alternatively, many of the smaller-calibre PCP designs allow the internal reservoir to be charged by a special, high-pressure hand pump. The Benjamin Discovery is one such gun. It comes with what looks like an oversized bicycle pump that can pump up to 2,000 PSI. It takes about 100 pumps to get to the proper operating pressure. This combines a shooting sport with an aerobic workout.

There are a couple of points to note regarding PCPs. On the positive side, they do not have the scope-breaking forward jarring motion that springers have. Also, they feel smoother during firing, so many people prefer them for this reason. However, they have a loud discharge sound, louder than other designs of similar power. As with the multi-pump system, the PCP system can also experience valve-lock if filled to a greater pressure than designed for.

Almost all Olympic-grade air guns are now of PCP design. Besides the traditional .177, .22 and .25 calibre choices, the modern PCP can be found in bores up to .50 calibre. For an air rifle, that is a big chunk of lead, propelled by a lot of air, making these rifles suitable for big game hunting. Other popular big bore sizes are .30, 9mm/.357 and .458. The number of shots per fill varies widely with the bore diameter and reservoir capacity, among other factors.

CO2 handguns are often patterned after the real thing, and are therefore frequently used for training.

CARBON DIOXIDE POWER

CO2-powered guns are often regarded as cheap toys, and many of them are just that. However, there are some high-quality air pistols patterned after real firearms. Because these CO2 pistols handle and feel like the real thing, they are often used for training. Naturally, they have no recoil, but the ability to fire 500 pellets in your own basement for only a few dollars makes up for that. Many of these copies are repeaters, and some even use the gas to cycle the action for a true semi-auto function.

A few high-quality, CO2-powered target pistols have been made, but most of these are no longer in production. The pressure produced by the CO2 varies with the ambient room temperature, which causes the velocity to fluctuate. For this reason, all serious Olympic-grade guns now use compressed air rather than CO2. However, with a full charge of CO2 and a consistent room temperature, this system can be very accurate. In the mid '90s, I took part in 10 metre air pistol competition and worked my way up to expert class (Shooting Federation of Canada, 10 M Air Pistol) with an inexpensive Brno Tau-7 pistol. At the time, I was firing 100 pellets per day.

LEGAL CONSIDERATIONS

Of course, we can't discuss guns without discussing gun laws. In the US, there are no federal laws concerning airguns of any power level, but many state and local laws exist. For instance, many airguns are now factory fitted with built-in suppressors for the US market. However, these are completely banned in Canada. The Crosman/Benjamin Trail NP2 I borrowed for this article came in a box stating that the baffles were removed for the Canadian market.

Under Canadian law, an airgun that exceeds 500 feet per second and a muzzle energy of 4.2 foot-pounds (152.4 metres per second and 5.7 Joules of energy) is considered a firearm, and requires a PAL to purchase and own. The reason for both the velocity and energy limit is that testing with extremely light pellets would tip many guns over the velocity limit. Airguns that do not exceed both these limits are not considered firearms for most administrative purposes. This makes a sub-500-feet-per-second air pistol a great training tool.

In summary, airguns are serious shooters, and well worth looking into. That classic BB gun is still available, but the options available beyond that level have exploded.

Air Gun Ammunition

Even the lowly lead pellet has evolved in recent years. No longer made exclusively of lead, there are now pellets made of zinc or moulded from plastics. This change can be a mixed blessing. The rationale for these lighter pellets is a velocity boost, but in reality, it's a poor idea. I compare these flyweight pellets to a ping pong ball. It doesn't matter how fast you launch a ping pong ball, it simply does not have the ability to retain that speed for any distance. Furthermore, the speed of sound is around 1,125 feet per second, and if a pellet is fired above the speed of sound, and then slows to subsonic speeds, it will become unstable during the transonic phase. So, you trade accuracy for speed, only to lose the speed rapidly.

The author used the rifle on a recent antelope hunt and found it easy to shoot and extremely accurate.

REMINGTON'S MODEL 700 AMERICAN WILDERNESS RIFLE

BY BRAD FENSON

Remington recently introduced a new version of their Model 700 rifle. This one is designated the 700 AWR (American Wilderness Rifle). Like the XCR II series it's replacing, this rifle is built to withstand the rigors and elements of an adventurous hunt. The first offerings will be available in 270 Win, 30-06 SPRG, 7mm Rem Mag and 300 Win Mag, with additional calibres expected throughout 2017.

The rifle features a stainless steel barreled action, to which is added a black Cerakote finish. The finish not only helps make the components even more rustproof, but also reduces shine and glare that can spook game. The free-floating barrel comes in 24 or 26-inch lengths, depending on calibre, and the 5R rifling features angular sides designed to reduce fouling and the potential for bullet jacket deformation.

The pillar-equipped stock is made by Grayboe, a subsidiary of McMillan, and consists of fiberglass and epoxy produced under high heat and pressure, to create a strong, stable and dense platform. I find the stock attractive and it should provide a consistent base for accuracy since it is impervious to temperature swings or bad weather. The combination of the stainless action with Cerakote and custom-like stock means the 700 AWR should live up to its name as a wilderness rifle. Anyone facing adverse weather conditions will likely embrace the durability and corrosion resistance offered in this firearm.

Trigger choice is part of any accuracy equation and as such, the 700 AWR features an X-Mark Pro, externally adjustable trigger. I found it offers a crisp, clean trigger pull that is set at 3.5 pounds from the factory, but can also be fine-tuned with an adjustment screw. One revolution on the screw equates to about one pound of trigger pull.

I used the rifle on a recent antelope hunt and found it easy to shoot and extremely accurate. The rifle has a good fit and finish and will catch the attention of any avid hunter dealing with adverse conditions and rough terrain.

The 700 AWR has a MSRP of $1,150 USD and is expected to retail for about the same, or slightly higher, in Canadian funds. For more information, check out www.remington.com/rifles.

REMINGTON

DILLON
XL650
FERRIS

HIGH-TECH HANDLOADING

Tools to make handloading chores easier & faster

BY JEFF HELSDON

Of the many motives for handloading ammunition, cost savings and increased accuracy must be the top two. But, handloading can be time intensive and monotonous. However, technology and specialized tools can make the job easier, quicker and even more accurate. Here are some high-tech tools to help accomplish those goals.

GO PROGRESSIVE

Basic presses for loading shotgun ammunition require the press handle be operated for each step, as the shell is manually moved around. A pull is needed to resize the base and punch out the old primer, another one to seat the new primer, two pulls at the next station to drop the powder, seat the wad and drop the shot, one in the crimp starting station and finally one to finish the crimp. My first shotgun press also required manually inserting each primer. But, a progressive press indexes the shell automatically and, once there is a shell at each station, a completed round is generated with each pull of the handle. Typically, only the wads still need to be added manually.

For rifle and pistol loaders, there are fewer steps, but they can take longer. After applying lubricant, the first pull knocks out the old primer and resizes the cartridge. Then, when all the casings are checked for size, the die is changed to a seating die. A new primer is inserted, powder added and then the bullet is seated. This process can also be sped up with a progressive press, which can typically turn out hundreds of cartridges in an hour. Automatic primer feeds are common with these, and some models even come with a bullet feeder.

To speed up the handloading process, progressive machines are the ultimate. When shopping for one, look at the features as well as the price. Also, consider the availability of accessories, which allow adding more convenience and increasing loading speed in the future.

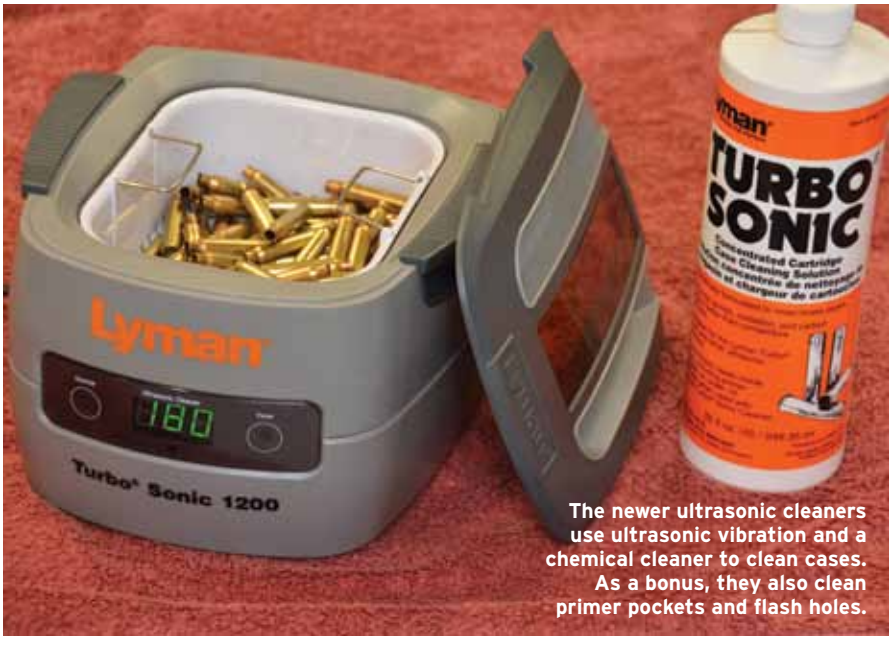
POUR POWDER PRECISELY

Some time ago, when I discovered my balance beam scale was no longer as accurate as it should be, I concluded it was time to move my reloading technology forward. Digital scales make weighing chores quicker, and can be more accurate. They can be fickle though, with some prone to inaccuracy in the presence of air movement or other electronic devices. Two main options are available for electronic scales: a stand-alone scale and a combination unit that is a scale and powder dispenser.

Simple, volume-based powder dispensers are available as separate units from several different manufacturers, and I often use one to get close to the right charge, bringing it up to final weight on a scale. These dispensers work on volume, not weight, so are less accurate than a scale. I consider myself a precision loader whose goal is to improve accuracy. For this reason, a volume-based powder dispenser is not good enough alone. For those looking to load large quantities of ammunition, these units will more than suffice, and are built into most progressive presses.

A combination scale and dispenser is the perfect tool for the precision loader,

A combination scale and dispenser is the perfect tool for the precision loader, as these units dispense powder with precision and reasonable speed.



The newer ultrasonic cleaners use ultrasonic vibration and a chemical cleaner to clean cases. As a bonus, they also clean primer pockets and flash holes.

as these units dispense powder with precision and reasonable speed. Recently, I had the opportunity to test both a Lyman Gen 6 Compact Touch Screen Powder System and a Hornady Lock-N-Load Auto Charge Powder Dispenser.

The Lyman unit is the smaller of the two and features touch screen controls. Dispensing speed can be varied by screwing a constrictor cap into the end of the dispensing tube, thus reducing the diameter of the tube and slowing dispensing. I started by testing both units with three different kinds of powder: a stick powder, a coarse disc powder and a spherical powder.

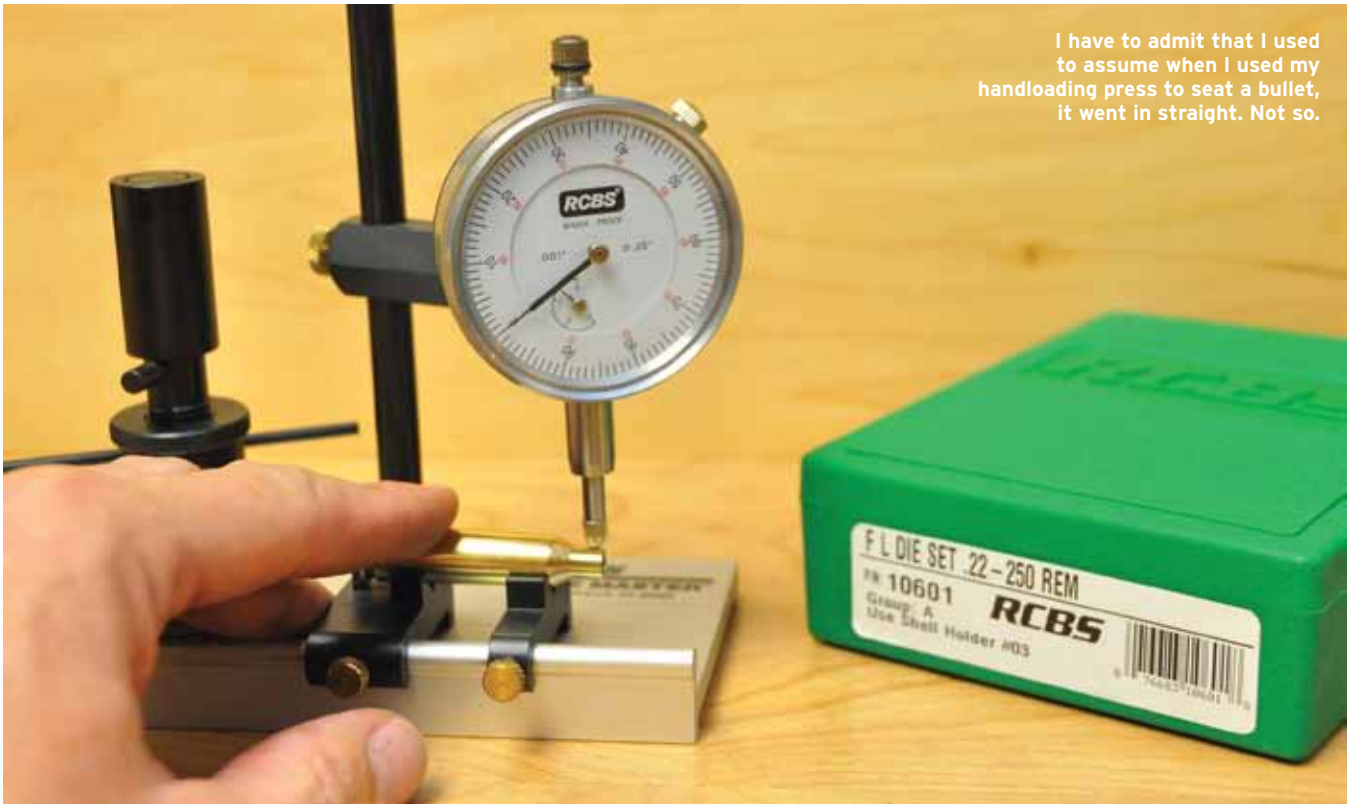
With Superformance, which is a fine ball powder, I found it worked best with the restrictor inserted. Trying a 50-grain load 10 times, it hit 50 grains once, 49.9 grains eight times and 50.1 once. Moving to IMR4320, a stick powder, I tried with both the insert in and with it removed. With it in, 50 grains was hit twice and 49.9 three times. But with the insert removed, it hit 50 four times and 50.1 once. With Unique, which is a disc powder, again I tried with and without the restrictor insert. It consistently hit 49.9 without the insert. With it in, there were three loads of 50 and two of 49.9.

The Hornady unit has raised touch controls, and allows adjustment of both trickle speed and when the unit changes from rapid dispense to trickle mode. It hit 50 grains every time once adjustments were made for each powder. When not adjusted correctly, the Hornady did go overweight. But it has a neat feature that alerts the operator to an incorrect charge, and requires clearing before continuing with the next load.

Now to be fair, Lyman's Gen5 is a larger, more advanced unit with more controls, including the ability to adjust trickle speed. I would imagine it would have performance similar to the Hornady.

Looking at the difference in the two units and their controls, the Lyman has a one-step calibration and Hornady uses a two-step process with 10 and 50-gram weights. Weights are supplied with both machines. Both units are easy to operate after reading the instructions.

With automatic dispensers, it's obviously important to empty the unit of all powder when changing powder types. These two units have similar, but different, processes for performing that task. To empty the Lyman, the loader must pull down a chute and then open a hatch. The dispensing tube can be removed to clean it and then the powder hopper removes easily. With the Hornady, the



I have to admit that I used to assume when I used my handloading press to seat a bullet, it went in straight. Not so.

area under the hopper is sloped towards the chute so cleaning this area is easier. A tap on the chute is turned to empty the powder.

A criticism of earlier electronic scales and scale/powder dispensers was that interference from cell phones and other electronic devices could alter the results. Lyman advertises it has built-in shielding from interference, but Hornady doesn't mention that. However, I didn't find either unit susceptible to electronic interference. Another caution with these units is allowing time to warm up. They are similar here, in that Lyman has a three-minute warm up built in, while Hornady advises to allow several minutes of warm up after their scale is turned on.

CASE CLEANING

Cleaning fired cases is about more than just looks. After all, cases get dirty from repeated firings. And if they land in the mud, that dirt must be removed somehow. Cleaning them individually, using a cloth and cleaner is one method, but a tumbler or ultrasonic cleaner is a much quicker alternative.

The traditional method has, for years, been a tumbler, which uses media such as crushed corncobs or crushed walnut shells to provide abrasion while the machine vibrates. The newer ultrasonic cleaners use ultrasonic vibration and a chemical cleaner to clean cases. As a bonus, they also clean primer pockets and flash holes.

The general rule is that an ultrasonic cleaner cleans, while a tumbler polishes. Some loading enthusiasts use both for exactly that reason. Others prefer one or the other.

CASE PREPARATION

A measurement metallic loaders need to keep a close eye on is maximum case length. With use, the brass stretches and the cartridge case can become longer. If it becomes too long, pressures can rise quickly and dangerously. A caliper is one way to measure case length, but Lyman also makes the E-Zee Case Gauge II, which indicates the maximum case length for several common calibers. If it's too long, it's time to trim the case. For a more exact measurement, use a caliper. And if your eyes are starting to have a tough time reading the fine lines on a dial caliper, consider moving to a digital readout model. There is no increase in accuracy, but the numbers are easier to see.

If those cases need trimming, hand-cranked case trimmers have long been the standard tool for handloaders. But now most companies make a motorized trimmer, and/or an adaptor that allows an electric drill to provide the case-trimming power. Case prep centres are another innovative tool, for the next step after case trimming. These units have a motor running the multiple tools needed in the case preparation process. My unit, a Lyman Case Prep Xpress, has separate tools for inside deburring of the case, outside deburring, a primer pocket cleaner, primer pocket reamer, primer pocket uniforming tool and a neck brush. Other manufacturers make similar units. New for 2017, Hornady released its Case Prep Duo. This unit can be used vertically or held horizontally like a drill. It holds two case prep tools at once and is more economical than an entire case prep centre.

STRAIGHT AMMUNITION

I have to admit that I used to assume when I used my handloading press to seat a bullet, it went in straight. Not so. Actually, neither factory ammunition nor handloads have the bullets inserted completely straight. And since a straight bullet is critical for accuracy, it's important to use this type of gauge for quality control measurement. These devices use a dial indicator to measure things like neck concentricity and bullet run-out. Hornady's version even allows the handloader to bend the cartridge/bullet combination to reduce run-out. The RCBS model will measure neck thickness as well, and check for possible case head separation.

As a handloader, it's easy to get overwhelmed by all the tools that are available today. But remember that you don't need to buy them all at once. Invest in just one new tool every year and you'll see a steady improvement in your handloading efficiency and accuracy.

The MODERN VARMINT RIFLE

A taste of non-restricted hunting fun

BY AL VOTH

What's the best predator hunting rifle in the world? A lot of people would vote for the AR-15 design in one of its many forms. And I couldn't disagree with them. Properly equipped, I think it's likely the best coyote hunting rifle ever made. But, of course, it's restricted in Canada, so it's not available to us in that role. Only God knows how many coyotes have been saved by this legal limitation, but I'm sure the animal rights/gun control crowd could give us an estimate if we asked.

But we don't need more propaganda from them. We need an accurate, semi-auto, AR-15-like rifle to deal with those coyotes. Fortunately, Alberta Tactical Rifle Service (ATRS) heard our pleas for help and is producing what is likely the closest non-restricted partial-clone of the AR-15 we've ever seen in Canada. They call their rifle the Modern Varmint, and I arranged for the loan of one in the fall of 2016, just as coyote season was starting.

THE SPECS

The Modern Varmint is the second of two similar rifle lines produced by ATRS. The first was their Modern Hunter, a non-restricted rifle capable of handling 308 Win.-sized cartridges. The Modern Varmint is a reduced size version of that big gun, and the correct proportions for the 223 Rem. That, of course, produces comparisons to the AR-15, but it's not a variant of that design, largely because no major parts will interchange with it. This is most obvious in the upper and lower receivers, which don't even separate in the same fashion. Notably, there is only one takedown pin located at the front of the receivers. Pulling it is the first step to field stripping. After that, simply bump the butt of the rifle and the two halves separate. The rear locking chores are handled by a trunnion mounted in the lower, which mates to a hole in the upper. It works well, as there is no discernable play between the two receivers of the rifle I examined.

Currently, the rifle is available only in the 223 Rem. chambering, but it comes standard with a Wylde chamber, to handle mil-spec or commercial ammunition. Features like a stainless-steel match-quality barrel, a match-grade single stage trigger and an ambidextrous bolt release are also standard. The rifle will accept AR furniture, meaning there's almost no limit to the choice of stocks and grips. And choice is a key word with this rifle, as anyone who looks at the online order form will see. I count 13 categories in which a buyer can select the desired features on a rifle. Some are no-cost options, while others are upgrades, but the ability to order how a rifle is equipped from the factory puts this rifle solidly into the semi-custom category.

THE MECHANICS

The operation of the Modern Varmint will be familiar to anyone with AR experience. The operating system is typical direct gas impingement, with the bolt assembly coming in as a close copy of the original. The safety, bolt hold-open and magazine release are all in those familiar AR locations. The one major difference is the charging handle. Instead of the long-standing ambidextrous T-shaped handle at the rear of the upper receiver, the Modern Varmint uses a folding non-reciprocating handle on the left side of the action. I'm right handed, so this works just fine for me,

This rifle's familiar-looking AR bolt carrier has an engagement slot for the non-reciprocating charging handle.

and I prefer it over the traditional T handle of the AR.

THE ACCURACY

With a Nightforce 2-10X optic mounted on the rifle, I ran various kinds of ammunition through the gun, looking for information on accuracy and reliability. Of course, the reliability of any AR to feed cartridges is highly dependant on the magazine and this rifle doesn't seem overly fussy about either. By the time I sent this gun back, I'd pushed several hundred rounds through it, without a malfunction of any kind. The magazines included polymer and metal versions, and the ammunition ranged from FMJ to lead-tipped soft points.

Like any rifle, it shot tight groups with some of the loads I tried, but scattered others. When the smoke cleared, the accuracy winner was a handload I've used for years in other semi-autos. It uses Nosler 60-grain Ballistic Tip bullets behind a moderate charge of Varget powder. Seated deep enough to fit into a standard AR magazine, the rifle fired two consecutive five-shot groups at 100 yards that averaged 1.07 inches. And since coyote season was on, once I had it sighted in with this load, I went hunting.

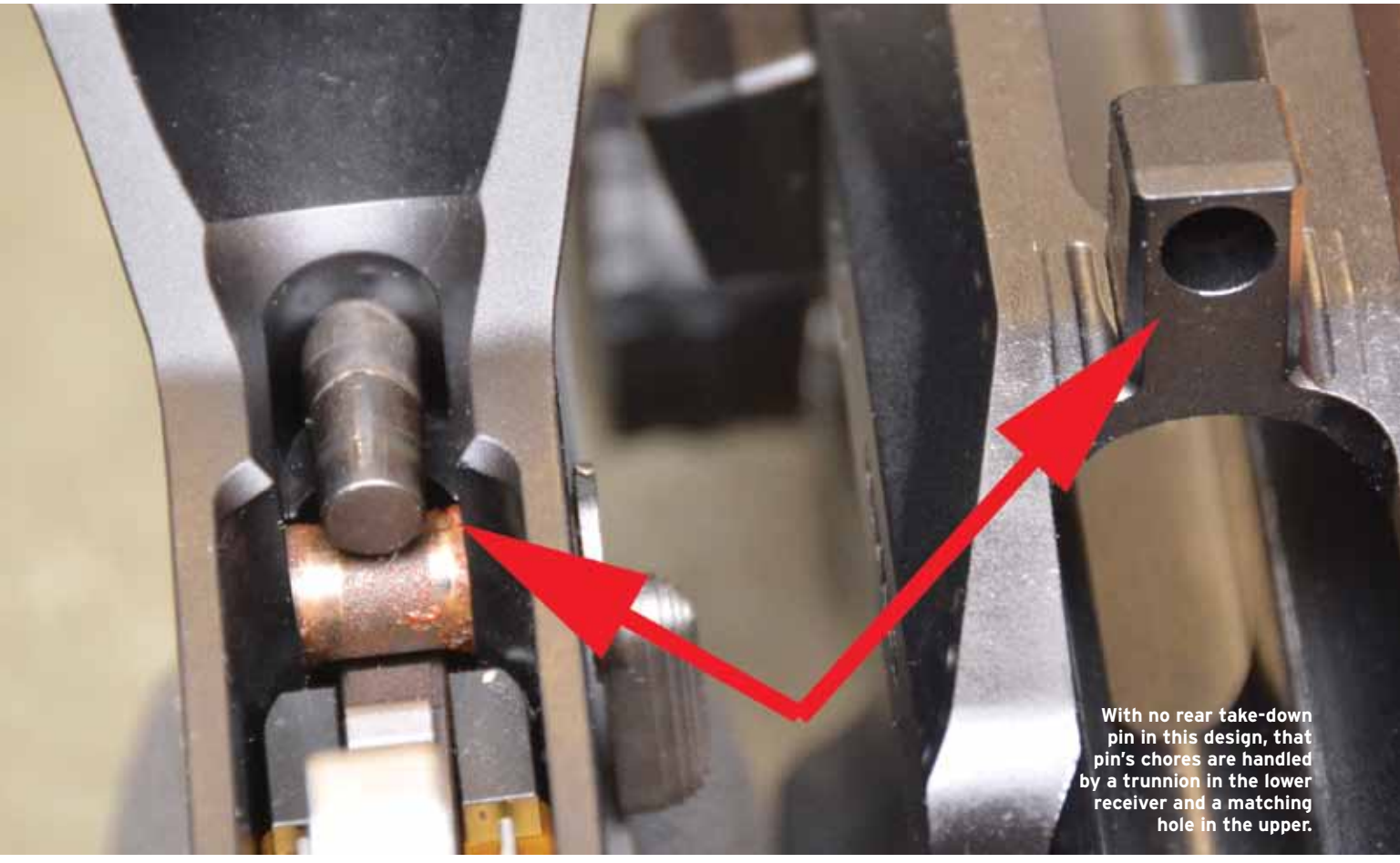
THE HUNTING

The Modern Varmint promises to be everything predator hunters have hoped for in a non-restricted rifle. Unfortunately, the rifle on loan to me wasn't perfect in that role. But that's only because it wasn't constructed for that specific purpose. The biggest problem with the rifle I used was weight – it's just too heavy. But as I've already mentioned, these are really custom rifles, and weight can be easily adjusted, merely by clicking the right boxes of the online order form.

Does that mean this rifle was a bust while hunting? Hardly. I killed six coyotes in a row with it, never missing a single one. The furthest was 247 yards and one shot dropped it in the pasture. When that one tipped over, I looked behind me and saw another trying to make it back into the safety of a cattail swamp. With an accurate semi-auto in hand, that one just died tired. Over the course of three weeks, four more met the same fate, with the closest meeting a bullet at 103 yards.

The only flaw I can find as a hunting rifle is the inability to silently load the chamber. That will annoy many hunters, because they will insert a loaded magazine, but leave the chamber empty as they cross fences, climb hills and ford creeks to get to a hunting location. That non-reciprocating handle (which the AR-15 has too) means the bolt must then be allowed to slam forward under full force to strip a cartridge from the magazine and load the chamber. The forward assist on an AR (absent on the Modern Varmint) helps alleviate this issue, but doesn't solve it entirely. A non-reciprocating handle is really the only solution, for semi-silently loading a chamber on a semi-auto. However, five of the six coyotes I killed were called in, and it's obvious they weren't spooked off by the ka-chunk sound of a cartridge being loaded. So, maybe it's really a non-issue.

Apart from that, this rifle is a coyote-killing machine. But considering its lineage, that's really no surprise. The Modern Varmint isn't cheap, as a basic model costs $3,350, but quality never is. Add the ability to order it in a variety of custom configurations and it's in a class by itself. Properly equipped, it's in the running for the best coyote hunting rifle available for the job in Canada.



With no rear take-down pin in this design, that pin's chores are handled by a trunnion in the lower receiver and a matching hole in the upper.

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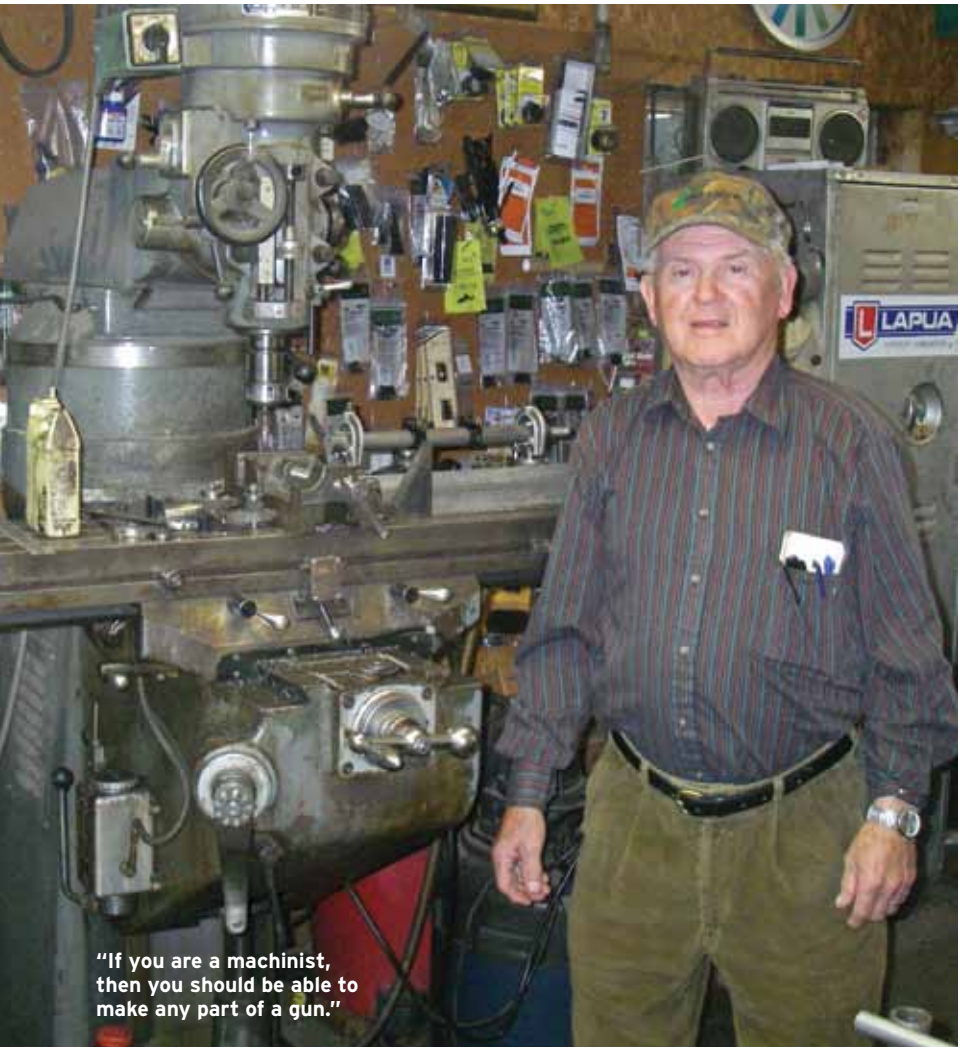
In Nova Scotia gun circles, Sam's name is mentioned in tones of respect and reverence.

SAM ADAMS
Nova Scotia's Master Gunsmith

BY DON MACLEAN

On the day I visited Sam Adams' shop in Truro, NS, Hurricane Matthew was lashing the province with record-setting rain and winds. All was calm in the shop, however, as I was warmly welcomed by Sam and his Labrador retriever, Jade.

Sam showed me around the shop with an enthusiasm and energy that belied his 79 years. This was my first meeting with Sam, but I felt I already knew him from his reputation as a master gunsmith. In Nova Scotia gun circles, Sam's name is mentioned in tones of respect and reverence, so I was excited to meet the legend in person. After a quick tour of his workshop, and a look at his lathes and milling machines, we sat down for a chat about his work as a gunsmith, as well as the state of the firearms business in Nova Scotia.



"If you are a machinist, then you should be able to make any part of a gun."

THE EARLY YEARS

Sam was born in the community of East Pubnico in southwestern Nova Scotia. Born into a fishing family, Sam's early years were spent fishing for lobster and ground fish. I asked Sam how he decided to become a machinist.

"Well, when I graduated from high school, my father told me that I would have to make up my mind. I could go to school, or go in the boat. Since I suffered terribly with seasickness, the thought of spending my working life fishing didn't appeal to me. So, I went to school."

Sam enrolled in what was then known as the machine tool trade at Yarmouth Vocational School. He caught on quickly and by his second year was teaching first-year students.

Doing good work has always been important to Sam. "I wanted to get good marks, so I worked hard at my courses."

The hard work paid off and Sam graduated with honours from the program. He wasn't content, however.

"I didn't feel that I knew enough, so I enrolled in the Nova Scotia Department of Labour's vocational school in Halifax for another year."

His education completed, Sam was anxious to begin working, but there was none to be had. Not willing to remain idle, he partnered with a friend to buy a 1937 Chevy truck with a plan to sell bait to lobster fishermen.

"I never worked a day at it," Sam told

me. "I received a call from a machine shop in Truro asking me if I wanted a job. I got on the train the next day and have been in Truro ever since."

Sam's first job was with a machine shop, where he spent six years grinding crankshafts. His skills and work ethic caught the attention of Lafarge, which has a large concrete plant near Truro. Sam would spend 43 years there as a mechanical inspector, retiring a few years ago.

STARTING OUT

I asked Sam how he began his gunsmith work.

"There was a gunsmith in Truro, Eliot Campbell, who ran a small engine shop. Eliot was ex-military and did some gunsmith work, mostly installing scopes and sighting in rifles. He also did some repair work. I began to do some work, machining barrels and installing scopes. Eliot was also into large-bore competition shooting and he got me interested in that."

Sam told me that this was a popular activity at that time. The military base in Debert had a 600-yard range and a shooting club developed.

"It wasn't a simple matter of just joining the club," Sam told me. "You had to pass a shooting test before you could join." Sam passed the test and that early experience set him on a competitive rifle shooting career which spanned 13 years.

"Did you enjoy it?" I asked.

"Very much," he replied. "I used to lie out on the lawn of the house in my shooting gear and practice my technique."

"Did it help?"

"Definitely. Once you had a rifle set up the way you wanted it, then it all came down to breathing and squeezing," he said with a grin.

Sam built his first large-bore competition rifle from a Lee Enfield .303 rifle he purchased for $45.

"Back then, the Enfield P14 and P17 actions were the standard for large-bore shooting. We used to bed the barrels using impregnated cork. It was all we had in those days. I installed a Schultz and Larsen barrel and a match trigger."

Sam was set to shoot at the Canada Games and then at Bisley in 1974, but an eye infection impacted his eyesight and he had to withdraw from the competition.

"It was the only real regret in my life," he told me. Later, it was determined a sinus infection was the problem and it was corrected, but Sam didn't go back to competitive shooting.

A MACHINIST

Sam describes himself as a machinist and gunsmith.

"If you are a machinist, then you should be able to make any part of a gun," he told me.

Sam has spent 31 years as a professional gunsmith, so I was interested in the changes he has seen in both the business, as well as the firearms.

"Well, for one thing, most guns are mass produced now, and I don't believe the quality is necessarily there if you buy a lower-end gun. I often see problems with the barrels. If the barrel isn't right, then the rifle will never shoot correctly."

One area where Sam believes things are better relates to scopes. "The quality of scopes has improved dramatically over the years, and there are very few problems with scopes these days."

Judging by the number of rifles and shotguns sitting in racks awaiting his attention, it looks like Sam is a busy guy. I asked him about the current level of interest in firearms in Nova Scotia.

"I would say it remains high. I am in the shop almost every day of the week, and I am as busy as I want to be."

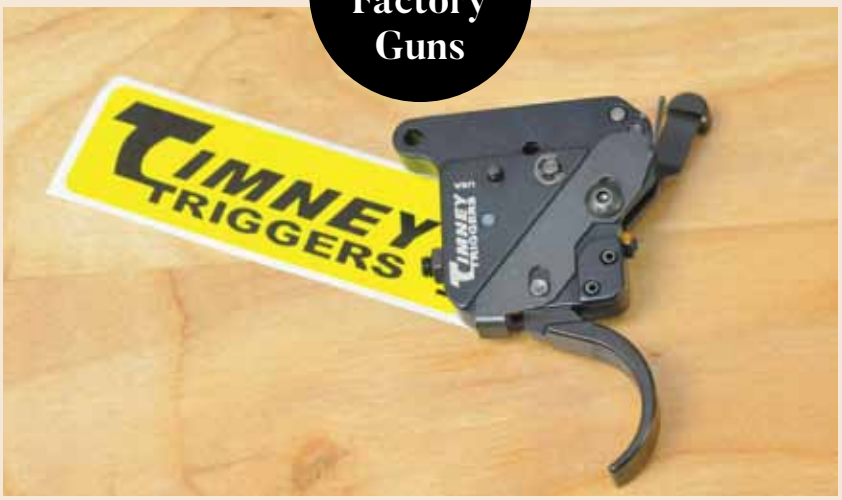
My visit was about a month before the opening of Nova Scotia's rifle season for deer, and Sam showed me a selection of rifles waiting to be worked on. While Sam specializes in rifles, he also works on shotguns and handguns, and he still builds around a dozen custom rifles a year in addition to his regular gunsmith business. For a number of years in the 1990s, he also assembled rifles for Armament Technology.

"I assembled their AT1 C24 Tactical rifle," he told me. Sam has also built rifles for police departments.

Once Sam has worked on a rifle, he takes it to the range. Only when it is shooting the way he believes it should, will he give it back to the owner, along with the target. "That way they know what the rifle is capable of. The rest is up to the shooter," Sam says.

I left the warmth of Sam's shop and headed back out into the storm with a head full of new knowledge, and renewed enthusiasm for the future of firearms in Nova Scotia.

Improving Factory Guns



Sam is well known for his abilities to improve the accuracy of a rifle and, as a hunter, I was interested in how he does it.

"I begin by dissecting the rifle and following the same basic process," he replied. "First I inspect the bore and throat. Then I check the bedding. Good bedding is important, and if the barrel is worn, I suggest a new one."

When our conversation turned to triggers, Sam showed me a drawer of triggers he had replaced on Remington 700 actions. "There is nothing wrong with these triggers," Sam told me. "The problem was that people could adjust them, and they often set them incorrectly so the sear engagement was compromised. If adjusted properly, they were, and are, a fine trigger."

I asked Sam what triggers he uses in the rifles he builds. "I am a big fan of Timney triggers. They make a fine trigger," he replied. "They never fail."

Wheeler
DELTA SERIES

The RIGHT TOOLS

Wheeler Engineering's AR Armorer's Professional Kit

BY LOWELL STRAUSS

The AR combination tool performs a number of tasks, including tightening the receiver extension nut.

The AR-15 adjustable receiver link is a simple, yet clever, device.

For the past 60 years, Eugene Stoner's rifle design has dominated North America. From its war-torn beginnings in the jungles of Vietnam, the "little black rifle" has grown exponentially in popularity. The civilian market loves its reliability, accuracy, and most of all the ability to customize this rifle with a myriad of aftermarket accessories and parts. Personalizing an AR-15 can mean various barrels, unique stocks, grips, forends, flash hiders, ejection port covers, rails, optics and the list goes on.

Dream it. Build it. Shoot it. A wealth of information exists about building AR rifles, but no matter which component parts are selected, the core rifle is the same. Pay attention to the details, get the right tools and you too can build an AR of your own design. Wheeler Engineering, a leading manufacturer of shooting gear, has developed a series of gunsmithing tools that allow anyone to build a new one from parts, or just maintain the rifle they already own. Contained in a custom carrying case, the Armorer's Professional Kit is Wheeler's most comprehensive tool set. I tested the kit's maintenance tools on an NEA carbine. And an FMK lower receiver became the test platform for the kit's installation tools.

LET'S GET TO WORK

The first item out of the tool bag is a large 20-by-47-inch maintenance mat, a solvent-resistant neoprene surface to pad your work area. Its rubber backing grips the workbench surface, and the exploded parts diagram printed on its surface will jog your memory mid-project.

The heart of this AR toolkit is the vise. Coined the AR Armorer's Vise, this tool is designed to hold an AR firmly. The steel base has rubber feet to prevent sliding, but for heavy-duty jobs, you can mount it to a workbench with fasteners. The risers – support arms that affix to the base – have two mounting positions, providing an extra two inches (14.25 inches to 16.25 inches) of length to accommodate a variety of barrels.

At the business end of the vise is the AR-15 magwell support, which is adjustable in 15-degree increments. This support arm includes two clever features: an integral hammer stop to prevent metal-on-metal contact should the rifle be dryfired, and a built-in bolt service station to simplify maintenance tasks. The rifle is mounted on the vise by sliding the arm into the magwell and latching it in place with the magazine catch. On the other side of the vise is the forend support. It too can be rotated into a convenient position, and at 2.3-inches wide, it supports even the largest forends. Cleaning is simplified when the rifle isn't sliding around the workbench, and after driving a few pins on an AR build, you'll wonder how you ever did it without a vise.

MAINTENANCE TOOLS

After a day at the range, it's always time to clean and lube your rifle. But before you start, make sure the firearm is unloaded. Opening the receiver, of course, requires pushing out the rear takedown pin. On my rifle, it can be removed with fingers, while the forward pivot pin needs some encouragement from the kit's polymer pin tool to move.

If your rifle has a delta ring retaining the handguards, a special delta ring tool will save your fingers. Or use a strap wrench to tighten or remove screw-on, free-floating handguard tubes.

The AR-15 bore guide, includes two different sizes of O-rings. Select the best size to fit the inside diameter of your receiver.

The rubber strap is adjustable for any diameter handguard, and won't scratch the finish.

This kit includes task-specific nylon brushes for the bore, bolt carrier, chamber and magazine/upper receiver. Except for the magazine brush, all are threaded and can be used with the included handle, or any cleaning rod with 8-32 threads. A double-ended, general purpose cleaning brush is included, so you can put your toothbrush back in the bathroom where it belongs. In the tight spots, stubborn crud can be teased loose with a four-piece polymer cleaning pick set.

The AR-15 adjustable receiver link is a simple, yet clever, device. It holds the receiver open while scrubbing the chamber and bore. No more pinched fingers or cleaning rods! The width of the opening is adjusted by selecting the correct threaded lower link. Make fine adjustments by turning the link in or out.

I was impressed by the AR-15 bore guide – it includes two different sizes of O-rings. Select the best size to fit the inside diameter of your receiver. The spare set is stored in the rear of the tool. A locking groove mates with the dust cover, preventing the guide from pulling out of the receiver unintentionally. Keep your brushes wet by applying solvent in a large tapered port on the top of the guide. Don't let the gold colour fool you, this CNC machined bore guide is made from aluminum not brass, so it's safe to use with copper-removing solvents. It's a perfect fit, protecting the chamber and bore during cleaning. Wheeler sells additional bore guides for the AR platform, including versions for the AR-10 and the 300 AAC Blackout.

GUNSMITHING TOOLS

Torqueing barrel nuts, mounting flash hiders and installing buffer tubes are all possible with the AR combo tool. This tool also holds a six-piece, quarter-inch hex bit set and bit driver. The kit's beam-style torque wrench fits the combo tool's half-inch drive. Torque the barrel nut to manufacturer's specifications, and always check headspace after installing a barrel.

The Upper Vise Block Clamp with gas tube alignment tool is designed to hold an A2 upper receiver. Proper fit here is important, and if needed, Wheeler makes alternate blocks for uppers of different dimensions. My upper fit within the maximum one-sixteenth-

inch gap when closed, so I was good to go. A firm grip is important when torqueing the barrel nut on an upper receiver, so you'll need to secure the block in a bench vise. After reaching the correct amount of torque, the gas tube alignment rod is used to check that the gas tube can pass through the barrel nut. Minor adjustments can be made until everything is properly aligned.

The AR Front Sight Tool is used to adjust A2 front sights. It comes with a key ring for storage, and conveniently that key ring can be used as a handle. I have a flat-topped receiver with no front sight, so I didn't need this tool. It's included if you do.

The kit includes a handy bench block designed for assembling ARs. The block supports the lower receiver to install triggers, grips and even tricky pins such as the bolt catch roll pin. For assembling upper receiver parts, like the forward assist, the block holds the spring in place while installing the roll pin. Front sight and gas tube pins are installed with the barrel supported on the block. Taper pins can only be installed from the right side and removed from the left side, so this block is labelled "PINS IN" and "PINS OUT" to prevent frustration. There's even a spot to support the charging handle when working on the latch.

Several different roll pin fasteners, also called spring pins, hold parts on an AR. The kit's roll pin install tool kit contains several pin installation tools. Bolt catch install punches (flat ground on one side and coated), a double-sided hammer, six steel roll pin punches (each size includes a starter and install punch) in 5/64, 3/32 and 1/8 inch size, as well as an AR trigger guard install tool. By using the right tools, it's surprising how easy it is to install parts on the receiver.

FINAL IMPRESSION

The Wheeler Engineering AR Armorer's Professional Kit is a comprehensive AR tool kit. Tool quality is good and they will serve the home gunsmith well. Absent from the kit are a pin punch and a quarter-inch hex bit driver handle. Most firearms owners should already own both tools. If not, they can be purchased separately. Headspace gauges are not included, so you'll have to see your local gunsmith for that headspace check.

I enjoyed the AR maintenance and build project I did with this kit. I'd recommend it to anyone interested in working on ARs. Having a complete set of AR-specific tools at hand expedited all my work and left me with time to ponder which AR accessory to buy and install next.

RESOURCES

Wheeler Engineering:
www.wheelerengineering.com

Trigger Wholesale (AR Parts):
www.triggerwholesale.com

Multitasker Twist:
www.multitaskertools.com

Multitasker Twist

There are times when it would be nice to have a complete tool box in the field, but that isn't convenient or practical. For light-duty field maintenance tasks, the Multitasker Twist is up to the job. The Twist is not much bigger than a permanent marker, but don't let its small size fool you. This compact tool contains an Aimpoint turret adjuster tool, a heavy-duty dental pick with brass shank, a pin punch, a radial carbon scraper, an M16A2-style front sight post adjustment tool and a pocket clip that can be used as a slotted screwdriver. At the heart of the tool is the quarter-inch hex driver socket. Ten bits are carried separately in a rubber carrier strip, and an 8-32 male thread allows it to work as the handle for pull-through cleaning kits. It is machined from 6061 T6 aluminum with an anodized finish. It's a tough piece of field kit, and every AR shooter should own one.

Dean Roxby

Making blanks is a facet of reloading few people deal with. But there are a number of good reasons to use and make them. The most obvious use is in movies, TV shows and re-enactments. Other uses include dog training and for signaling. Mounted cowboy shooting requires the use of blanks, as do some forms of fast-draw competition. In the military, blanks are used in conjunction with modified rifles to launch grenades. This set up enables a soldier to launch a grenade much further than he can throw it.

Making blanks has some similarities to reloading live rounds, but in my view, is more difficult. Sure, you size and prime the case as normal, but that is where the similarity ends.

TOOLING UP

Handloading dies specifically for making blanks are available. Normally, they apply a star-like crimp to the mouth of the case, thus trapping the powder and providing some resistance so it burns more completely. CH Tool and Die Company makes the most extensive selection of blank dies I know of. But they are specialty items, so they aren't cheap. Hornady makes a blank die set, as well.

Starline makes brass cases intended for blanks, but focuses just on the cowboy calibres, as that is where the largest market seems to be. Their 45 Colt cases are headstamped with the word "Blank," because the primer flash hole is enlarged to 0.140 inch. That modification makes the cases unsafe

MAKING BLANKS

Sometimes you need the bang without the bullet

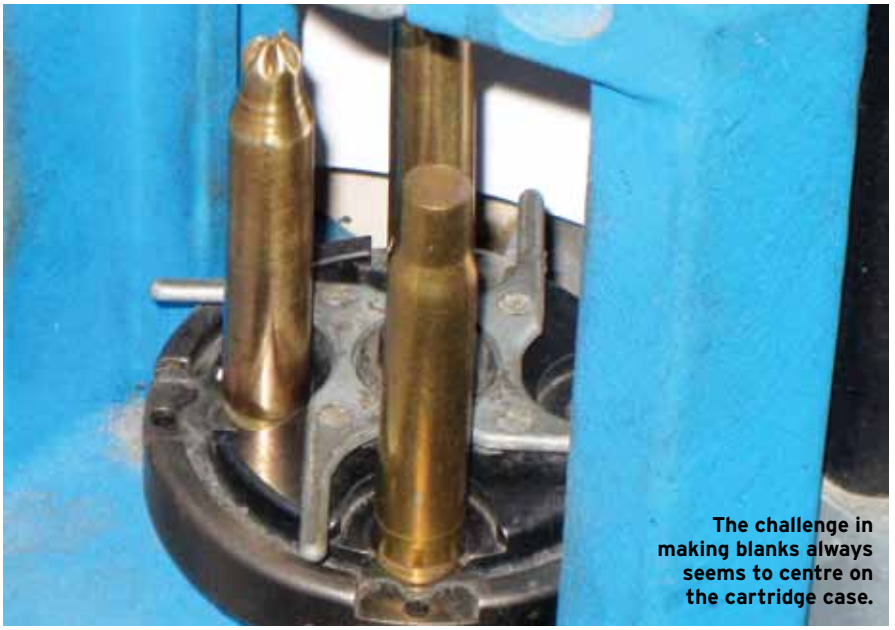
BY BOB SHELL

for conventional loads. Starline's five-in-one blank brass is intended for making blanks that will feed in lever-action rifles. These cases are long enough that when a star crimp is applied, they end up the same length as a round loaded with a bullet. They have an enlarged primer flash hole as well, so the same prohibition against using them for conventional loads applies. Five-in-one blanks will work in the 38-40, 44-40, 44 Magnum, 45 Colt and some 45-70 guns.

COMPONENTS

If you can find it, and it suits your purposes, blank powder is a top choice. It burns fast, clean and hot, but should never be used in ammunition with projectiles. But it's almost impossible to find, so I generally use either black powder or a faster-burning flake powder, such as Red Dot or Unique, depending on the size of the case. Normal primers will generally work fine. The cowboy games, which require breaking of a balloon, use coarse black powder as they count on the unburned powder particles to puncture those balloons.

The challenge in making blanks always seems to centre around the cartridge case. One problem is keeping the powder in the case. If using a star crimp, it has to be perfect without over doing it. A difference in case length doesn't have to be very much to cause a problem. Too short, and the powder will leak out of a partially formed crimp. Too long, and the case will buckle when crimped. One solution is to set the



The challenge in making blanks always seems to centre on the cartridge case.

Handloading dies specifically for making blanks, like this Hornady set, are available.

A variety of wads and crimps can be used to hold the powder in the case.

crimp low enough to firmly seal the case mouth, and if any shoulders buckle then just resize them again without the decapping assembly. I have made some 223 and 30-06 blanks on a Dillon 550 and the last die was set to size all of the cases again, focusing on the shoulder. It works well. Using flake powder will help, but not solve, all of the leakage issues. Another idea that works is a small piece of Styrofoam inserted in the case prior to crimping. I usually put some nail polish on top of the wadding to ensure there is no leakage. These methods are time consuming, but that's the nature of making blanks.

SHOTGUN BLANKS

Shotgun blanks are easy to make and a regular MEC reloader will work fine. If you want smoke, try 40 grains of black powder. For smokeless, use a flake powder such as Red Dot or Unique. Start with 15 grains and adjust according to the noise level desired. A wad packed tightly against the powder is critical. I use a thick piece of Styrofoam, cut from sheets. I have made homemade cutters of varying sizes, depending on gauge. You can use the drop tube of the reloading machine to push the wad tightly against the powder, followed by the finishing die to push the crimp down.

HANDGUN BLANKS

Revolver blanks have to be loaded strong enough to ensure the case has the usual set back of standard ammunition. If not, the primer will come partly out and jam up the revolver. Like most reloading, some experimenting may have to be done to get the desired results. Another option is to drill out the flash hole, as Starline does in their previously mentioned cases. Of course, that negates the possibility of using that brass for conventional handloads.

For revolver blanks, black powder is usually the choice, though flake powder may be used. You'll likely need to experiment with the amount of powder. If you use a Styrofoam wad, push it tightly in.

Making blanks that will function in semi-auto handguns is more challenging. Not only do the blanks need to feed from a magazine, but

Blanks should never be fired at anyone at close range. They expel a powerful muzzle blast, as well as wadding and particles of unburned powder, which can injure or even kill someone.

ISTOCK

they also must cycle the action, as well. And since most of the calibres for semi-auto handguns headspace off the case mouth, things can get difficult. The 45 Auto, for example, is usually made from a shortened 30-06 case, and then star crimped. You can also angle the front of the case to enable feeding and use a Styrofoam wad to complete the process. With semi-autos, more patience and lots of experimentation is required.

RIFLE BLANKS

Getting a case long enough to star crimp is part of the challenge in making blanks for rifles. If feeding is necessary, then they have to be long enough to cycle properly through the action. I have taken 30-06 cases and pushed the shoulder back so it will chamber in a 7X57mm or 8X57mm. If you add a star crimp to this extra-long case, they feed fine. If you have a straight case blank, such as a 45-70 and want it to feed in a lever gun, then use a case that is too long, such as a 45-90, and crimp. If single loading is okay, life becomes much simpler, as you can use the original case. Whichever way you go, for rifle blanks, I use flake powder such as Unique. In a 30-06, I use 10 to 15 grains of Unique, depending on desired noise level, and for the 223 I use from five to eight grains of Red Dot.

BLANK SAFETY

When shooting blanks, use the same precautions that shooting regular ammunition requires. For example, check to make sure there are no unintended obstructions in the barrel. Blanks generate some pretty high pressures and a plugged-up barrel can cause damage to the gun. If you have a bullet stuck in the barrel, never attempt to use a blank to shoot it out, as it will almost certainly damage the barrel by putting a bulge in it. Semi-auto weapons frequently use a blank adapter in the barrel, as the blank requires some back pressure to function the action. Just watch out for an excess accumulation of wadding in the barrel. In addition, they have a weak recoil spring to help with the cycling process. There may be other modifications, so never shoot regular ammunition in one until it is put back to specs and checked out.

Blanks should never be fired at anyone at close range. They expel a powerful muzzle blast, as well as wadding and particles of unburned powder, which can injure or even kill someone. At least two Hollywood actors have been killed by the unsafe use of blanks. And don't forget the use of ear protection as needed. Making and shooting blanks can be fun, but blanks are not toys and should always be treated with the same respect as conventional ammunition.

RESOURCES

Starline Brass:
www.starlinebrass.com

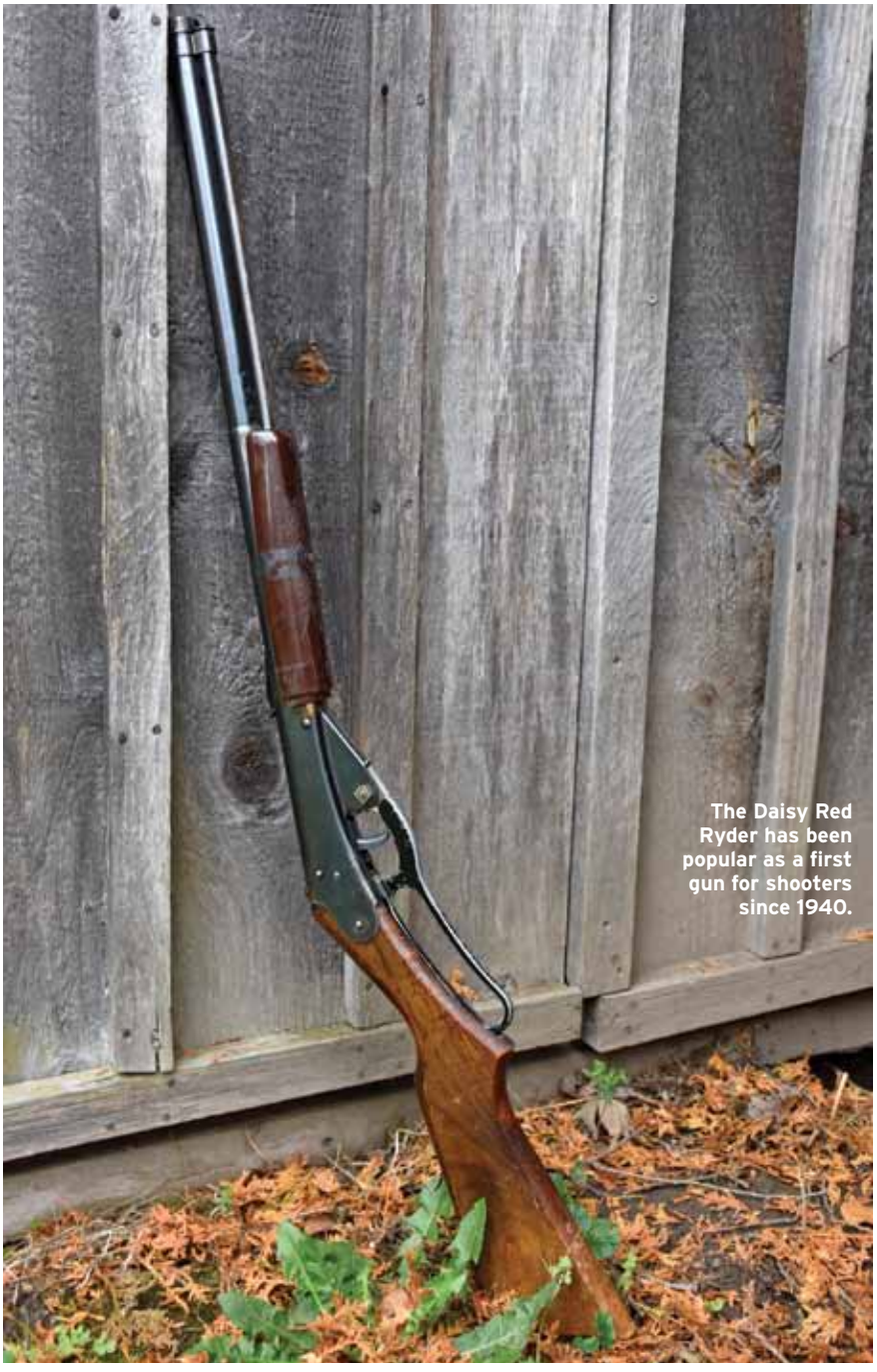
CH Tool and Die:
www.ch4d.com

Hornady Manufacturing:
www.hornady.com

One Gun's Story

Jeff Helsdon

The Daisy Red Ryder
A BB Gun That's Part Of Shooting History



The Daisy Red Ryder has been popular as a first gun for shooters since 1940.

"What's a BB gun?" my daughter, Abigail, asked.

I was a little shocked at the question, as she had completed her Canadian Firearms Safety course, is into her second year of hunting and has been around guns most of her life. Then, when I thought about it, the shooting sessions at the outdoors courses she attended and our time at the gun club were all with a pellet gun, not a BB gun.

"A BB gun is like a pellet gun, except it shoots round steel balls instead of lead pellets," I answered.

A short while later, I dug out my grandfather's BB gun, a Daisy Red Ryder, and Abigail, sister Aliyah and I made a trip to a safe shooting area. Putting the gun in my hands brought back a flood of memories of my grandfather, my youth and a different time in the world.

MEMORIES

For as long as I can remember, that BB gun sat on the back porch of my grandparent's home in Norwich, Ont. My grandfather loved to have a bird feeder outside the window to feed the squirrels and birds. He detested seeing starlings taking the bird feed, or neighbourhood cats stalking "his" squirrels. The BB gun was his solution to that problem.

The interesting thing to note is my grandparents lived in town, and in the middle of the block. Taking shots at pesky birds in town is not something I would consider today – not only because it's illegal, but also for safety reasons. That is not to say my grandfather was unsafe with guns. He was a First World War veteran, but there was a different philosophy a few decades ago.

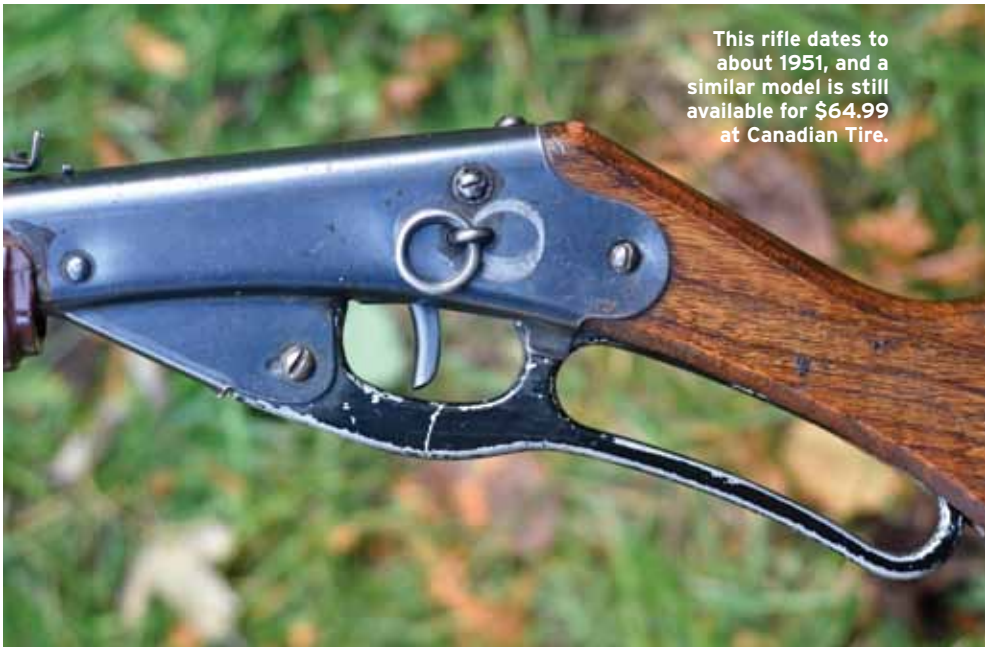
Although my grandfather was a hunter, my father was not. That BB gun was my first connection with a real gun,

and was likely an influence in my love of guns and hunting. In fact, my first hunting experience was with that gun and my grandfather. I was about 10, and was staying with my grandparents' for a couple of days during the fall squirrel season. My grandfather announced we would be going hunting. He packed up the BB gun, a supply of BBs and we stopped to pick up my uncle's beagle, Snoopy, on the way.

I don't remember a lot about that trip, but recall we did see some squirrels. My grandfather shot at them, but didn't connect. There was a little target practice in the woods, which I was allowed to participate in. My grandfather was 80 and that was the last time he went hunting. I am proud I was the one with him. Years later, when I inherited the BB gun, I discovered it was a little lacking in both accuracy and power. That could have been why we didn't take home any squirrels that day.

My daughter piqued my interest in the history of the gun and I asked my dad, who usually remembers everything, about its history. He remembered when it wasn't there, but is unsure of when it was purchased. What my dad does remember is deciding to shoot at a picture of a deer on the wall of the porch when he was 12 or 13, and breaking the glass. Perhaps the discipline he received from that shot is why he didn't become a hunter.

I do remember, as a kid, we were always warned not to touch the gun without supervision. My grandfather built a target consisting of an open-front wooden box filled with foam and cardboard on the front to practice in the basement. I am unsure how often he practiced, but do know my older cousins were allowed to take part in those shooting sessions. Eventually, I was considered old enough to finally get to shoot the gun.



This rifle dates to about 1951, and a similar model is still available for $64.99 at Canadian Tire.

THE RED RYDER NOW

To put it politely, this Red Ryder has character and has seen better days. The bluing is faded and it looks like a coat of black paint, which has chipped off, was applied to the lever at one time. The wooden buttstock, which is in better shape than most of the gun, is loose. And I've always been suspicious of the lineage of the gun's plastic forearm. Epoxy in the screw hole, holding the forearm to the barrel, added to my suspicions. As a kid, I never saw Red Ryders in the store with a wooden buttstock and plastic forend. I often wondered if something had broken and my grandfather fixed it with what was available.

Handling the gun, and not getting a lot of answers from my dad in regards to the history of this Red Ryder, prompted me to try and fill in a few of the blanks. So, I contacted Daisy to see what I could find out. My communication revealed a lot about the Red Ryder and this time in the company's history.

My grandfather's gun is a Model 111, and was manufactured between 1940 and 1954. If the gun had a serial number, it would reveal the week it was manufactured. But, my gun doesn't, and I learned that was the case for Models 111s made between 1940 and 1952. I also found Daisy started using plastic stocks and forearms in 1950. The combination of a wooden stock and plastic forearm finally told the tale.

"In 1951, the company produced a limited number of guns with a wood buttstock and a plastic forearm," wrote Joe Murfin, vice president of public relations for Daisy Outdoor Products. "Presumably they had a parts mismatch and began using the plastic forearms, even though they still had wood stocks left to use up. Today, this is called a transition model and should be preserved just the way it is." He also said the gun is worth $75 to $300 – not that I have any interest in selling it.

Getting back to that target session with my daughters, they found it fascinating to shoot a gun belonging to their great-grandfather. Aliyah, who shares a birthday with her great-grandfather, quickly discovered it wasn't as accurate as her pink pellet gun. But as we packed the gun back in a case, both girls asked if we could bring the Red Ryder along on our next shooting session.

Abby, right, gives her younger sister Aliyah some pointers on using their great-grandfather's Red Ryder.

EDITOR'S NOTE: We all know every gun has a story to tell. So, if you have a gun with a fascinating story behind it, let us know. The gun can be old or new, and the story can be funny, sad or historical. It doesn't matter, as long as it's a great tale. If need be, we'll help you write the story, or maybe even assign one of our writers to tackle it. Write the editor at cfjeditor@nfa.ca.

Point Blank

Gary A Mauser

RCMP Confuses PAL Holders With Criminals

PAUL SEYMOUR

Is a national police force a help or a threat to democracy? Unquestionably, professional police are the best deterrent to crime, but robust democracy cannot exist when the police are too powerful or if they are corrupt. Just compare Russia with New Zealand. To keep our democracy, we must continually monitor the political power of the RCMP. Recent events suggest the RCMP invents its own firearm rules under the cover of interpreting regulations.

Apparently, the RCMP views lawful firearms ownership as a questionable activity, and possibly even as a fundamental threat to public safety. One example is the recent prohibition of magazines for the Ruger 10/22. This came out of the blue, even though these magazines have been safely owned by thousands of Canadians for decades.

Another questionable policy is the RCMP crackdown on firearm owners

in BC. Kim Bolan in the Vancouver Sun (14/4/2016) has the RCMP boasting that Surrey gangsters are now forced to get their guns locally because the police have been so effective in stopping smuggling. The RCMP will now focus on expired PAL holders, and this strategy is based on a secret study done by the National Weapons Enforcement Support Team that found, "61 per cent of crime guns in the province were domestically sourced."

It is difficult to believe NWEST's claim that lapsed licence holders are the prime source of crime guns in BC. First, it is doubtful that the police have been able to successfully thwart smuggling (whether guns or drugs). Smuggling continues to be big business. There has been no indication that drug crime and the violence associated with it have decreased in recent years. Second, no available statistics corroborate allegations that licensed Canadian gun owners (lapsed or not) are a major source of crime guns. Secret studies aside, the facts show that previously registered firearms constitute only a small fraction of crime guns.

Statistics Canada recently reported that drug crime and criminal violence are growing again. A recently released report shows that homicide rates increased 15 per cent from 2014 and attempted murder rates jumped 22 per cent. Importantly, drug crimes (other than cannabis-related charges) have swelled by five per cent (Allen 2016). Drug trafficking is estimated at $44.5 billion in 2014 (CISC 2014). It is no surprise that demand remains high for illegal guns and drugs, and smugglers are inordinately challenging to catch. With billions of dollars of shipping crossing the Canadian border monthly, the Canada Border Services Agency can only physically check a small percentage of cross-border shipments for illegal goods. The CBSA relies primarily upon manifests submitted by shippers to know what's being imported. Drugs remain big business, and Canada's gangsters lust after the flashiest guns to stake out their turf. In sum, despite the police publicly patting themselves on the back, there are no hard statistics showing that either the police or the CBSA has been successful in curtailing smuggling.

ARE LICENSED FIREARMS OWNERS THE SOURCE OF CRIME GUNS?

Previous police reports have systematically pointed to smuggling being the dominant source of crime guns in Canada, with BC and Ontario remaining the prime corridors for Canadian smuggling. The Ontario Provincial Police reported in 2014 that 20 per cent of crime guns were locally sourced in 2011, while 60 per cent were smuggled and 20 per cent were unable to be traced (Press 2014). Unfortunately, the OPP do not specify how many had ever been registered. Toronto Police Service studies found between two per cent and 20 per cent of the crime guns (depending upon the year) had domestic origins. Bill Blair, former Toronto Police Chief, says smuggling accounts for 70 per cent of crime guns. In BC, the smuggling percentages reported are even higher. One Vancouver Police spokesperson even claimed 99 per cent of crime guns are smuggled.

DOMESTIC SOURCES OF GUNS

Statistics Canada data does not support the claim that lawful gun owners are the major domestic source of crime guns. In a special request to Stats Can, I found that only six per cent of the guns used in murder had ever been registered (Mauser 2015). Whether recently smuggled or long held in Canada but never registered, the overwhelming number of guns used in crime has long been outside the system. Authorities are too embarrassed to admit that a large number of guns are held by owners without a firearms licence. At least two million Canadian gun owners never bothered to get a PAL or POL when licensing was imposed (Mauser 2007). Some are merely scofflaws, while others are hard-core criminals.

One domestic source for crime guns is the police or military themselves. It is impossible to know how many guns go missing from evidence lockers or are "lost or stolen" from serving members, because neither Canadian police nor the military routinely report lost or stolen guns. Not to Parliament, not to the Canadian Firearms Program, and certainly not to the public. Occasionally, a scandal reveals that guns previously held by police or military are sold to criminal gangs (Duncanson and Rankin 1997). Recent access-to-information requests by Dennis Young found that the RCMP admitted losing track of 125 firearms and the DND disclosed missing 20 firearms (Young 2016).

HOW MANY CRIME GUNS ARE STOLEN FROM LAWFUL OWNERS?

To determine whether guns stolen from lawful owners are a major source of crime guns, it is necessary to first know how many crime guns there are. In 2012 (the most recent year statistics are readily available), Stats Can reported that there were 5,575 violent crimes "where a firearm was present," 3,166 of which involved a handgun. If each of these incidents involved a unique firearm, the number of crime guns that year can be estimated as between 3,166 and 5,575 depending upon whether "crime guns" are limited to handguns.

According to Statistics Canada, about 3,000 firearms were reported as stolen in 2012. Thanks to Dennis Young's access-to-information requests, we know that 661 (22 per cent) stolen firearms had been previously registered in 2012 (Vautour 2016). This ATI report did not specify whether long guns were included. It would be reasonable to do so, given that the long gun registry was still in effect during 2012. If so, then 14 per cent (661/5,575) of crime guns were stolen from lawful owners. If long guns were excluded from the count, then 21 per cent would have been stolen (661/3,166) from lawful owners, since there were 3,166 violent crimes involving handguns that year. Thus, we have at most 21 per cent of crime guns as stolen from lawful owners. Thefts from lawful owners are hardly the prime source of crime guns. There is no research supporting claims that tighter gun storage laws yield public safety benefits (Greenwood, 2007; Lott 2016).

WHAT ARE THE TRENDS?

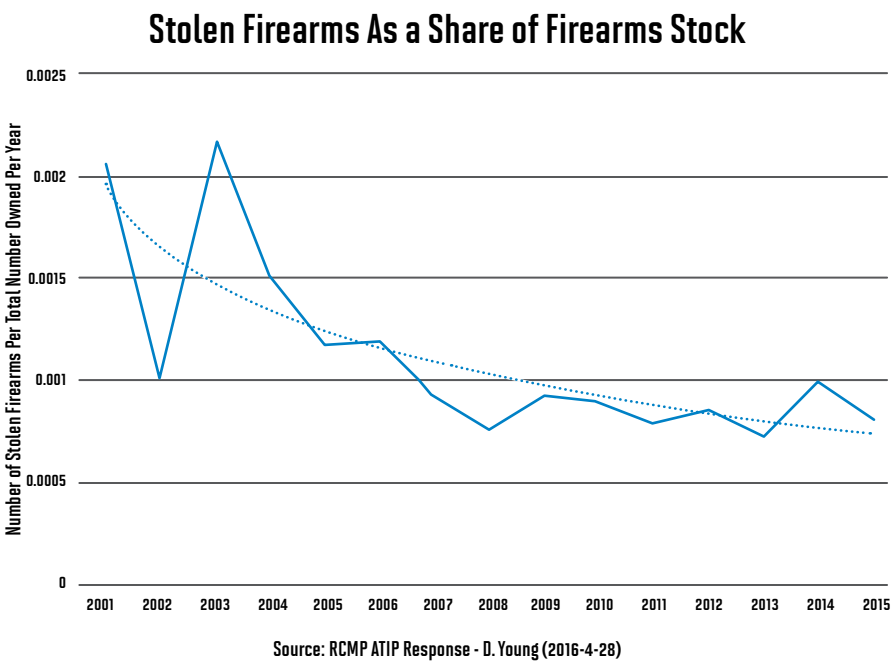
Despite the small percentages of crime guns stolen from PAL holders, thefts of restricted or prohibited weapons rose by 27 per cent from 2010 to 2015 (from 633 to 805). However, this increase is at least partially explained by the

41 per cent jump in the number of legally owned restricted or prohibited weapons over the same five-year time period (from 703,000 to 991,000). Not even one out of 1,000 legally owned firearms were stolen in any given year. It is important to remember that all owners of restricted or prohibited weapons have been thoroughly vetted by the police and are monitored daily. It is a tribute to the trustworthiness of the lawful owners that a smaller percentage of lawful restricted or prohibited guns are being stolen. But the RCMP sees this as an excuse to crack down on PAL holders. If the police were concerned about lawful owners, perhaps education would be more effective than threats and bluster. The wild gyrations in the numbers of thefts in 2002 and 2003 are not mirrored in trends of either violent crime or drug offences. Rather these wild swings are most likely due to problems with the computer system in the Canadian Firearms Program during the early years (Auditor General 2002). Setting up the CFP was enormously challenging, and necessitated the CFP being transferred from the Department of Justice to the RCMP.

CONCLUSIONS

I am concerned that the police would justify a change in enforcement policy with secret studies. NWEST's claims that BC gangsters now get 61 per cent of their guns from domestic sources are unsubstantiated. This claim flies in the face of all available statistics implying that only 20 per cent or so of crime guns are "domestically sourced," while around 80 per cent of crime guns are smuggled. Moreover, few of the domestically sourced crime guns could have been stolen from lawful owners. The fact police do not wish to admit is that large numbers of firearms have never been in the system – meaning, never registered or never owned by a licensed owner. Nor does the government publish the number of guns that were lost or stolen from the police or military. Cracking down on PAL holders targets innocent people and squanders valuable police resources. Recent police claims begin to look more like a public relations set up rather than an honest effort to deal with real problems. Illegal drugs remain big business and the US is a close and tempting market for gangsters exchanging Canadian drugs for American weapons.

It is important to continuously police the police. While police are necessary in a democracy, they should not be above the law. If the police are not reigned in, abuses like these will continue.



Source: RCMP ATIP Response - D. Young (2016-4-28)

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http://dennisryoung.ca/category/access-to-information/

Team NFA

Megan Tandy

Looking After The Details

Winter. As a biathlete, it's naturally my favourite season. After seven months of training, I finally get to put all my shooting, speed drills and dry firing to good use – not to mention the 650 hours of physical training.

From a shooting perspective, my winter seasons follow a similar pattern. Usually I compete in nine to 12 competitions, each in a different country, with an average of two to four events/races per competition. With around 40 races each season and twice as many training days, one might think the routine of packing up my rifle, travelling, unpacking, training and racing might get mundane. It's the same routine every time. After all, biathlon ranges are all the same, aren't they?

The simple answer is, no! Of course, they all have the same technical specifications: target size, 50-metre distance, lane spacing, etc., but beyond that, the list of differences is long and well worth noting. As a result, I've come to know the World Cup biathlon ranges well. Including features like the direction the range faces. After all, if I have to zero on a target in the shade and then shoot on a target in the sun during my race an hour later, I want to be prepared. I also want to be ready if I need to contend with bright sun in my eye while shooting. The wind patterns are distinctly different everywhere, depending on the terrain and side berms, meaning I can count on some shooting lanes to be calmer than others. In Ruhpolding, Germany, for example, the range is sheltered, so there is rarely wind. But when it is windy, one must make aggressive sight corrections. In Hochfilzen, Austria, the wind always seems to be blowing.

Another factor is whether the range entrance is uphill, downhill or flat. This determines at which point I need to begin slowing down. Generally, about 100 metres before lane 30 does the trick, although I usually slow a bit sooner when racing at high altitude venues, such as Antholz, Italy. The range entrance also determines how soon I can see the wind conditions on the range. Hochfilzen takes the prize for the trickiest range entrance, with an uphill tunnel leading right to lane 30. This means athletes cannot make a decision about sight corrections due to wind until they are on their shooting mat – remember that speed is a huge factor!

There is also a long list of day-to-day factors to react to: lighting determines diopter size, precipitation requires closed sights while skiing and ice or slippery shooting mats can force a narrower stance in standing position to avoid the back leg sliding. Even the position of other athletes shooting must be considered. For apart from the mental factor of shooting right next to a competitor, there can also be an advantage to taking the lane immediately beside a standing shooter, if their body blocks some wind.

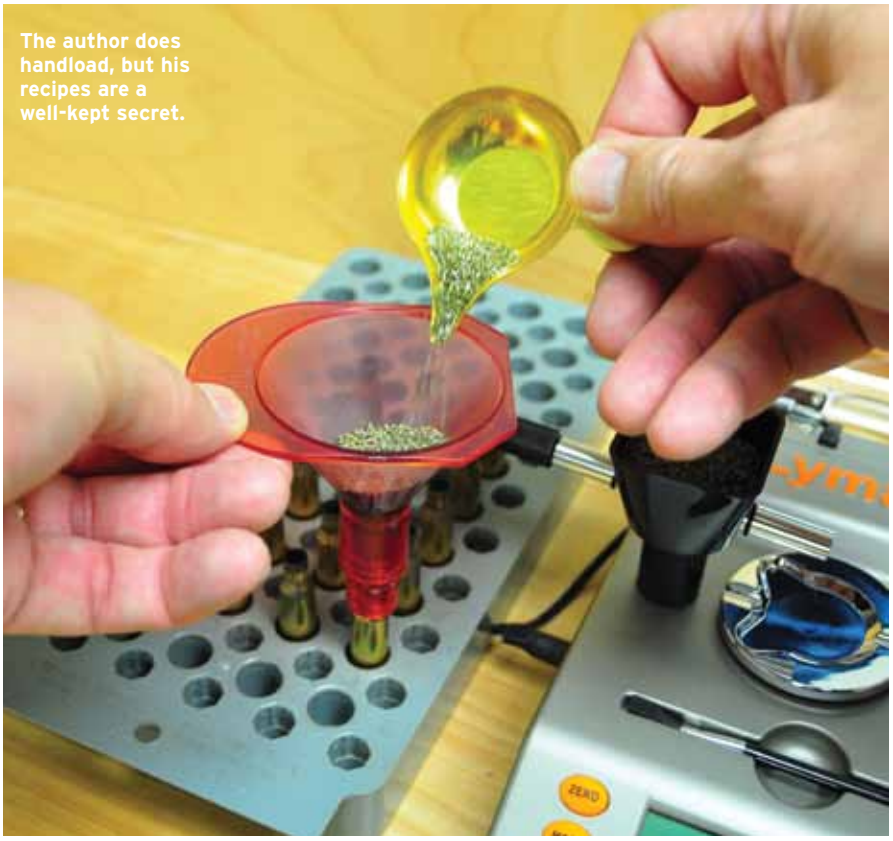
These details contribute to the fascination biathlon has for me. But I think all competitive shooting is a detail sport, and you can never go wrong by paying strict attention to your shooting environment, whether it's a biathlon range or anywhere else!

CHRISTIAN MANZONI

Legal Corner

Guy Lavergne, Attorney at Law

A Legal Perspective On Handloading



The author does handload, but his recipes are a well-kept secret.

Many of us handload our own ammunition, or at least know of someone who does. People do it for a myriad of reasons, ranging from cost savings, to a desire for custom ammunition and improved accuracy. Because of the pressures involved when a cartridge fires, making ammunition is a potentially dangerous proposal. Thinking of a rifle cartridge as a small pipe bomb, and of a rifle as an explosion containment device, helps clarify the picture. The potential for something to go terribly wrong raises a number of legal issues.

SELLING HANDLOADS

In Canada, manufacturing ammunition for resale requires, at a minimum, a business firearms licence issued under the authority of the *Firearms Act*. This licence provides specifically for the manufacturing of ammunition, and it's one most handloaders don't have. This does not mean we cannot legally make ammunition, but we are restricted to making it for our own personal use, as opposed to making larger quantities for resale to other users. Additionally, reselling of ammunition also requires a business licence issued under the authority of the *Firearms Act*.

Irrespective of trade and legal restrictions, it is not advisable to sell handloads, or to buy handloaded ammunition from other people. Factory ammunition is made to certain quality and pressure standards. The identity and quality of materials used in factory ammunition is tightly controlled. So are pressure levels, which are tested and confirmed to comply with published standards. This is not true of handloads. Although some handloaded ammunition may be perfectly safe for others to use, there is no way of knowing for sure.

SAFETY CONCERNS

Factory ammunition is loaded to fairly safe pressure levels, so that it can be used in all rifles chambered for a particular cartridge. Sometimes, it is loaded to fairly lame pressure standards on purpose. A case in point is the 45-70 Govt. Most, if not all, of this commercial ammunition is loaded to low pressure levels, so that it is safe to use in old Sharps and other rifle actions, many of which were manufactured in the 19th century. Conversely, shooters who own modern rifles chambered for the 45-70 often handload to higher pressure levels, which their rifles, such as the Ruger No.1 and Marlin 1895, can handle without endangering the shooter. Obviously, usage of such ammunition in older, weaker actions poses a safety risk, with potentially catastrophic consequences.

LEGAL RISKS OF SHARING HANDLOADS

Risks are not limited to older, weaker rifles. A handload may be perfectly safe to use in one rifle, and unsafe to use in a different rifle, irrespective of their age and strengths. The higher the load, the more likely this will be true. One of the recommendations you can read in every reloading manual is to start load development with the minimum load, and to work up from there, always watching for excessive pressure signs. Once a load is deemed safe in a particular rifle, does not mean it is safe in all other rifles. Another rifle, although of the same nominal calibre, may have an ever-so-slightly tighter bore, which will result in higher pressures. If only for that reason, one should never use another person's handloads or data.

Sharing handloading data, especially over the Internet, is a risky proposal for both the person who publishes the data and the one who elects to give it a try. Under the common law of negligence, a person may be liable to others, whom that person may reasonably foresee may be injured by that person's negligent actions and/or omissions. Injury is not limited to personal bodily injury, but also includes damage to physi-

cal property and resulting financial loss. The standard for determining negligence will be what the accepted standard of care is in particular circumstances. As mentioned above, manufacturers publish loads with numerous caveats and warnings. If you do not do the same, when you disclose your personal handload recipe, you are likely being negligent. Quebec's law of extra-contractual liability is essentially to the same effect. Loosely summarized, it means that you may get sued by someone who is injured as a result of trying your personal handload recipe.

Including caveats and warnings about appropriate safety steps may obviate or diminish your potential liability, but not necessarily so. Publishing your favourite recipe on a firearms forum or other social media, without appropriate disclaimers and warnings, is asking for trouble. Let us not forget that the Internet is accessible to most of the world's population. There is no way to ascertain, with any degree of certainty, if those caveats and warnings are sufficient to mount a defence against an action for negligence, or the local equivalent, in every potential jurisdiction in which a person might be injured as a result of trying your favourite handloading recipe.

PURCHASING, TRANSPORTATION & STORAGE OF HANDLOADING SUPPLIES

Purchasing handloading components does not require a firearms licence. Although a non-licensed person may not legally buy factory ammunition, that same person may legally purchase all of the components and tools required to make said ammunition.

Smokeless powders and black powder are classified as explosives under Canadian federal legislation. They cannot be shipped by mail, and can only be transported by carriers who are licensed to transport hazardous materials.

Storage of gun powder is subject to quantity and location limitations, as well as mandatory safety warnings. I will not discuss those at length, as the topic is complex and could, in and of itself, be the subject matter of a full article, or two!

WHAT ABOUT MUZZLELOADERS?

If you wonder whether the foregoing considerations also apply to shotguns and to muzzleloaders, wonder no more. They do apply. Any person who uses a muzzleloader is, by definition, a handloader. A powder or load that is safe to use in another rifle may not be safe in yours. Just because you have successfully used a particular load without getting hurt, it is not advisable for you to recommend that load to others. I vividly remember a YouTube video of an individual recommending a particular load of LIL'GUN as a miracle smokeless propellant for muzzleloaders, and purporting to demonstrate its use in a CVA rifle that was not approved for any smokeless powder. For those unfamiliar with LIL'GUN, it is a shot shell powder, and it is not approved for use as a muzzleloader propellant by any powder or firearms manufacturer. Amazingly, the rifle remained in one piece and the individual survived. Irrespective of whether that individual spoke the truth or not, I could not help thinking, "That guy is either going to get injured or sued by someone who got injured." That was, of course, an extreme example.

In case you're wondering, I do handload and also own and shoot a few muzzleloaders. As for my favourite loads, they are a well-kept secret!

Publishing your favourite recipe on a firearms forum or other social media, without appropriate disclaimers and warnings, is asking for trouble.

NFA Book Shelf

Bill Rantz

Volcanic Firearms – Predecessor to the Winchester Rifle

Author: Edmund E. Lewis & Stephen W. Rutter

Title: Volcanic Firearms – Predecessor to the Winchester Rifle

Publisher: Andrew Mowbray Incorporated – Publishers (Published 2011)

ISBN: 1-931464-48-0

Pages: 160

Size: Hard cover with dust jacket, 11 by 9 inches

Illustrations: Colour photographs

Volcanic Firearms – Predecessor to the Winchester Rifle features a cover photo displaying two rare Volcanic pistols and a handful of self-contained ammunition. The aged brass frames, ivory grips and patina steel will attract the eyes of firearm enthusiasts of all generations, raising many questions regarding the function and heritage of these unusual firearms.

Edmund Lewis, M.D., and Stephen Rutter, M.D., are both long-time firearm collectors now enjoying their retirement years. Together they set out to write a reference book that would provide the most accurate information ever available on the development and production of Volcanic Firearms. The result of their collective efforts is an incredible, well-researched book. Covered (in detail) is the history of the men and companies that were responsible for the development of Volition Repeaters, Jennings Rifles, Smith & Wesson lever-actions and, subsequently, the Volcanic Firearms Company.

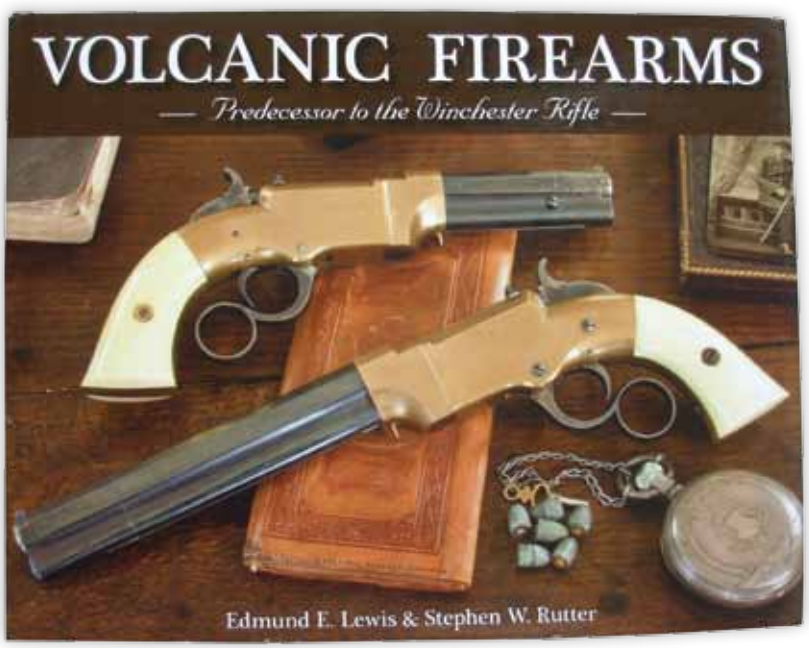
Herbert G. Houze, past curator of the Cody Firearms Museum, introduces this book, acknowledging the history and production of these historic firearms has never been "fully laid out in print." And, as a result, much of the knowledge accepted and faithfully passed down by collectors over the years is simply not valid.

Volcanic Firearms contains 340 colour photographs of rare carbines, pistols, ammunition, patents and advertisements from private collections and firearm museums. These photos outline the development of both firearms and ammunition from the days of cap and ball to rimfire rifles. However, this is not a coffee table book. Instead, collectors will use this reference to positively identify specific variations, based on features such as barrels and barrel markings, serial numbers, engraving, extractors, sights, ejection ports, magazine blocks and calibres.

The history of Volcanic firearms cannot be told without understanding the development of the self-contained ammunition they fired. The authors cover this in detail, from Walter Hunt's first patent of Rocket Ball ammunition, to the many problems that hindered sales and resulted in the bankruptcy of the Volcanic Repeating Arms Company. Oliver Winchester formed the New Haven Arms Company in 1857, but kept the name "Volcanic" until he had B. Tyler Henry develop the 44 rimfire cartridge and adapted the Volcanic to fire the new ammunition, thus creating the famous Henry rifle.

Lewis and Rutter have included features expected in a quality reference book. The table of contents lists 10 chapters, each with subtitles to allow readers to locate specific information easily. Additionally, the bibliography, endnotes and index support the detailed information provided throughout the book.

Volcanic Firearms – Predecessor to the Winchester Rifle lists at $49.99 USD. As the most informative resource available on this topic, it will be a great addition to the reference library of any firearm enthusiast.



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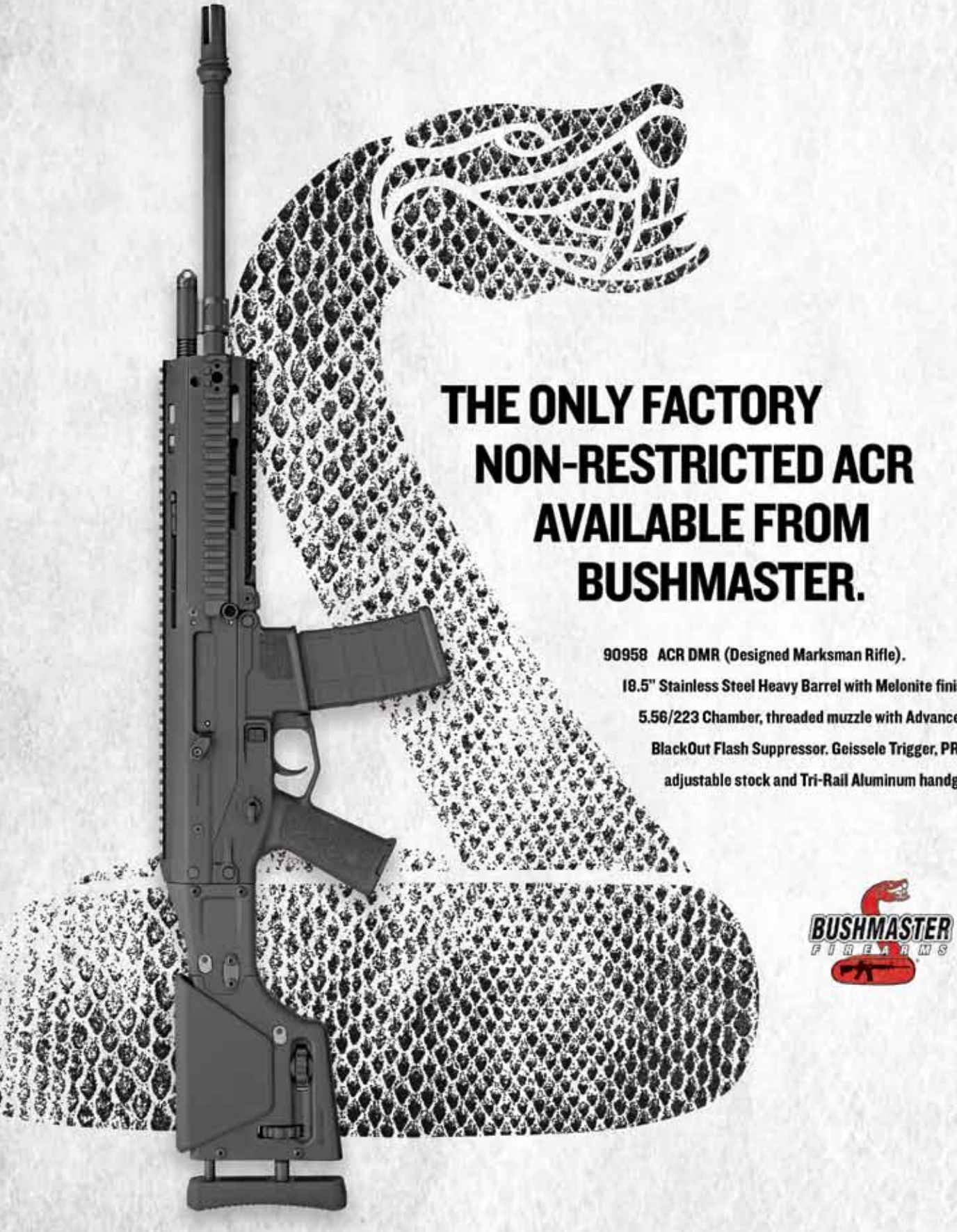

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