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The Sauer S100 Stainless XTA

bolt-action rifle looks certain to strengthen the model's presence in the Australian market and the stainless barrelled action with XT ERGO MAX stock and adjustable comb makes for a great hunting and shooting combination.

Mexican manufacturer Aguila Ammunition has launched a new range of ammo in Australia and we take a close look at their first release, the Super Extra HV copper-plated 40-grain solids and Super Extra 38-arain hollow-points.

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National News

Using science to underline importance of hunting

hile we're preaching to the choir when we say hunters play an important role in society and management of our environment, the science behind this sentiment has been in the public spotlight this month. ABC online coverage of a scientific study into wild meat hunting and consumption in Africa has shown hunters have smaller carbon footprints and can help preserve ecosystems. This is a study in a forest area being cleared for cattle grazing and scientists are now arguing that hunting should be supported and financially incentivised.

In Australia, where the bulk of our population can access mainstream food suppliers, there's much less need to source our own food in the wild yet for many SSAA members, recreational hunting for the table is an important part of their lifestyle. This is illustrated by the success of the SSAA's award-winning Field to Fork cookbook series and the homage it pays to our wild meat harvesting abilities in the public forum. Wild meat is healthy, environmentally friendly and presents opportunities to educate the wider Australian public about the valuable role a wild harvest can play in wildlife management.

As we work towards increasing the acceptance of hunting wild animals for food, the SSAA has engaged long-time associate Dr Graham Hall to highlight the sustainability of hunting ducks and quail in Australia. The aim of this project is to accumulate and objectively assess information which can be used for a risk assessment of hunting in relation to the adaptive management of ducks and quail.

An increasingly common tactic by the anti-hunting organisations is their use of political alliances to voice their objections



and we've seen this play out in front of us time-and-time again. Now, with the support of a science-based report, our cause will stand even stronger against these unfounded arguments.

The tertiary study space in Australia is also adapting to our favour and teaching the benefits of hunting in wildlife management with the University of Southern Queensland (USQ) launching a range of wildlife management courses in 2022. The SSAA and USQ have a long-time working relationship and it's great to see further education opportunities opening up which highlight the importance of wildlife management as a conservation tool.

Finally on the home front, SSAA National is launching an online member survey this month, results from which will provide insight into who our members are and how you want to interact with your Association. The information collected will help guide the SSAA in its publications, lobbying and initiatives and participants will go into the running to win one of five \$100 SSAA Online Shop vouchers. Visit www.ssaa.org.au for more information.

SSAA - Protecting shooters since 1948

It's a Rossi Slip-On solution

AS A BIT of an addition to the article by Daniel O'Dea on the Rossi 92 in 44 Magnum (*Shooter*, June 2021), I own the Trapper version with 16" barrel and the steel buttplate was killing me until, after several weeks of reading



forums, I finally came across a fix. The HIVIZ SP-S (S for small) Slip-On recoil pad fits like a glove and I can now shoot Magnum loads all day long with no issues.

Andrew Creevey, via email

Let's do it ourselves

AS I READ Open Season in your June 2021 issue about the proposed kangaroo ban, it dawned on me this may be a great opportunity. We have the best leather in the world - that which is made from kangaroo hides - so maybe we should employ more people in this Great Southern Land and manufacture the products here and return some wealth to this country. The US is not the only country in the world and while they may not be able to see what we have and how we manage it, they'll still use what we produce so long as we do it well. And let's face it, is there any other way for Australia to go? Because what's next - they stop buying our wool?

Dave, via email

Must be a better way

I WATCH WITH wonder the Parks Victoria gunships which fly over Bogong National Park, shooting deer. They say the deer are doing too much damage to the fragile bush but I beg to differ as I see them as our only hope of maintaining the bush.

Shoot the deer and leave them so wild dogs, cats and foxes can thrive on easy pickings. And when their easy meal is depleted they turn to our native wildlife and farmers' livestock for food, the same wildlife which maintains our forest floor. And what are they doing about polluting the waterways with decaying carcasses? As tax payers it would be nice to have clarity on how many deer are shot in a day and the cost of helicopter, pilot and shooter. Deer are now the only animal which will stand up to wild dog attacks, though young ones are still vulnerable.

I've spent most of my 50-plus years in the bush only to see it grow into a massive fire hazard. Parks Victoria claim the deer wallow on the fragile moss beds of the Bogong High Plains, yet look at the fires we experienced in December/January 2021 through lack of controlled burning, not to mention the 2003, '06 and '09 blazes which ravaged the north east.

A more productive way to control deer would be to open the national parks for a set period and let hunters in - they could also help cull feral predators and allow native animals to rebuild to a level where they can once again maintain the bush. Shooters who harvest deer from private land and sell the carcasses to processors ensure the meat isn't wasted - and contribute to the economy in the process.

David Sauervein, Vic



Insurance Q&A SSAA General Insurance Brokers

Send questions to: insurance@ssaains.com.au

Q Every time I renew my insurance I question if I have enough or not. I've heard of under-insurance and don't want to be caught out.

Pat Bamfield, via email

A Insurance is about protecting yourself, family or business from a loss from which you wouldn't otherwise be able to financially recover. Many of us don't have enough insurance and don't realise until it's too late. Under-insurance is when the value you have insured under your policy isn't enough to cover the value of the items you're insuring.

Under-insurance can occur in any type of policy though is more commonly reported in home and contents. Best practice suggests a property is under-insured if a policy covers 90 per cent or less of rebuilding costs. If you're under-insured it means you've paid for a policy which doesn't cover the full cost of your potential loss or financial impact on you and your family or business and means you'll have to pay for the additional cost of replacement over the level of the policy should you suffer loss or damage.

Some contracts have averaging provisions which reduce the amount paid out by a certain percentage when the sum insured is less than the value of the insured object. For instance, if you ensure contents for 25 per cent less than their true value and lodge a \$30,000 claim, the insurer may reduce your claim by \$7500. Being under-insured may ultimately not be a cheaper option as the cost of an event will be carried by someone whether that's you, your family, friends or community at large. Not having the correct insurance can erode your savings and investments, deplete your assets or result in significant financial hardship.

Taking time to make sure you have enough insurance and knowing what's covered means you know where you stand in the event of a loss. Contributing factors to being under-insured are a gradual accumulation of possessions, not accounting for upgraded assets and increased building costs. Call us on (08) 8332 0281 to discuss your insurance needs.



The advice offered in this column is of a general nature and does not allow for individual situations. SSAAIB recommends that you obtain professional advice before proceeding with any insurance investment. SSAAIB accepts no liability for any actions by an individual to change their insurance plans without seeking professional advice.

The soaring cost of Australia's pest species

hew research paper entitled 'Detailed assessment of the reported economic costs of invasive species in Australia' has attempted to quantify the economic costs of both deliberate and accidental invasive alien species introductions. The invasive alien species cover a variety of taxonomic classes including plant, mammal and insect species and, for the purposes of this column, I'll primarily focus on the mammal species.

To determine the cumulative costs of invasive species to the Australian economy, researchers used cost data collected from the InvaCost database and supplemented it with data from new references (containing cost information/estimates) and data from a database complied by Biosecurity South Australia.

The InvaCost is a public database of the economic costs of biological invasions worldwide. It was recently developed to provide a comprehensive, up-to-date and robust collection and description of economic cost estimates associated with biological invasions globally. It developed a systematic, standardised methodology to collect information from peer-reviewed articles and grey literature which ensures data validity and method repeatability for further transparent inputs.

To calculate total cumulative costs, researchers recalculated all annual costs for the defined periods of invasive species occurrences using a statistical program then summed up all entries according to the six descriptors in the InvaCost database. Other estimations were made to determine average annual costs using various statistical modelling.

The results of this recalculation and modelling suggested Australia since the 1960s has spent or incurred losses totalling at least US\$298.58 billion from invasive species, mammals accounting for US\$48.63 billion (16.3 per cent) of that amount. Cats, rodents, pigs, rabbits and foxes had the highest costs and accounted for 95 per cent of observed costs being calculated to be US\$20.19 billion.

The report also identified a number of native mammals often considered overabundant pest species including kangaroo species, koalas, common wombats, dingoes and Queensland fruit flies. Impacts of those species included competition for grazing resources (kangaroo), consumption of trees in eucalyptus plantations (koala), burrowing paddock damage (wombat), the killing of livestock (dingo) and crop damage outside of their native region (fruit fly).

Interestingly kangaroos, koalas and wombats together only accounted for 3.1 per cent of the total of all costs but kangaroos were responsible for 99.9 per cent of total observed costs between those three species. Dingo costs were based on 'wild dogs', 'dogs' and 'dingoes' being the same and viewed as native species. Many other native species such as birds can cause extensive damage to agricultural industry but at the time of the report no reliable estimates were available for most of the impacting species in Australia.

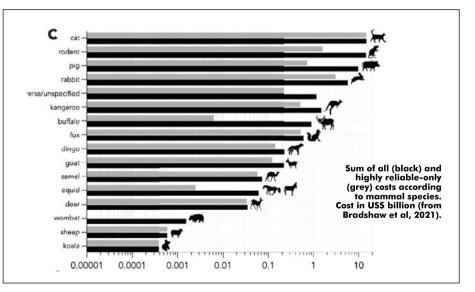
The report highlights that invasive species of many types have a large and growing cost to the Australian economy. Although the report is able to shed some light on the potential economic costs, those relating to ecological damage, loss of cultural values and erosion of ecosystem services have not been captured. These costs would indeed be highly significant if they were

able to be measured.

Send questions to:

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The .50 BMG cartridge - a long shot worth backing

he .50 Browning machinegun cartridge, also known as the .50 BMG or 12.7 x 99mm NATO, is one of the most versatile and long-lived cartridges ever produced. Developed for the M2 Browning machinegun in the late 1910s by John Browning for use in World War One, it didn't come into official service until 1921 and is now the standard service cartridge for NATO forces as well as being used by many non-NATO countries.

The cartridge is a scaled-up version of the .30-06 Springfield but with the case wall having a longer taper to help with feeding and extraction in various firearms. Its development was also influenced by Germany's 13.2 x 92mm SR anti-tank round which was used against British tanks and aircraft in WWI and the US wanted a heavy armour-piercing round to do the same thing. The .50 BMG round with armourpiercing projectiles is capable of penetrating 23mm of hardened steel plate at 200m and 19mm at 500m.

By means of power comparison a .30-06 rifle cartridge produces between 2000 and 3000 ft/lbs of energy at the muzzle, while the .50 BMG generates between 10,000 and 15,000ft-lb of energy at the muzzle. Winchester was originally contracted to design and produce the cartridge and later the Frankford Arsenal took over production. The Army then had Browning design the actual gun and he teamed up with Colt to produce prototypes for testing which was completed by November 11, 1918 - just as the Great War ended. The cartridge has also been found by the military to be very effective when used by snipers to disable vehicles by destroying their engine blocks

The .50 BMG cartridge is manufactured in a number of varieties including ball for use against personnel and unarmoured targets; tracer for observing fire, target designation and incendiary purposes; incendiary for use against unarmoured flammable targets; armour piercing for use against lightly armoured vehicles, personnel and protective shelter; saboted using a 360gr tungsten penetrator mounted in an injected moulded casing of high melting-point plastic with muzzle velocity of 4000 ft/s; and used to knock out vehicles it can penetrate 19mm of steel armour at 1400m. All these cartridges have their tips painted various colours for identification purposes.

The cartridge has also been found by the military to be very effective when used by snipers to disable vehicles by destroying their engine blocks, and the US Coast Guard uses .50 BMG rifles to disable boat outboard engines from armed helicopters. As a long-range antipersonnel cartridge it has no peer and was first used in the Korean War, while a US Marine sniper in 1967 during the Vietnam War held the record for a confirmed longdistance kill of 2090m.

More recently in June, 2017 a sniper from Canada's Joint Task Force 2 - using a McMillan Tac-50 rifle with .50 BMG cartridge - took out an Islamic State insurgent in Iraq at 3540m, setting a world record for the longest confirmed shot in military history. This surpassed the previous record set in 2009 by a British sniper in Afghanistan of 2475m using a .338 Lapua Magnum rifle.

Such is the need for firearms chambered for the .50 BMG cartridge that manufacturers from around the world - including Armalite, Barrett, Bushmaster, McMillan, Steyr and Zastava - are producing carbines, rifles, machineguns and chain guns to sell to governments for military and paramilitary use. Similarly, ammunition manufacturers have seen the need to supply super-accurate long-range cartridges for these firearms and some have stepped in to provide this type

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I just received my September copy of Australian Shooter and, to be blunt, was taken aback by your criticism of our Olympic shooting team's efforts in Tokyo. I feel you should acknowledge that just making the team in this COVID-ridden world we live in is an amazing effort. I believe your opinions on the results of pistol and rifle compared to shotgun may be a little biased - I know some of these athletes guite well and doubt you actually understand how hard it is to be competitive internationally in pistol and rifle.

Name and address supplied

Well there you go - after shooting internationally for 30 years I never knew competing in shotgun was easier than it is for pistol and rifle shooters. Go figure! I think your comment that being competitive internationally in rifle or pistol is harder than shotgun actually shows a lack of knowledge of the sport. What makes being a competitive clay target shooter easier for them? Is there any logic or fact to actually support that statement?

Firstly, you need to go back and have a closer read of my article. My concern is that during the past two decades only one competitor in either rifle or pistol has made an Olympic final, despite millions of dollars in taxpayer funds having been spent on them. I question is this the competitors' fault or the administrators' fault? I also pose the question: 'Do the governing bodies of pistol and rifle need to take back control of their sport?'

Australia is now down to just a handful of genuine international world-class shooters across all three disciplines and at this point in time they're all in clay target. If that sounds a little biased then I apologise but that statement is backed up by results on the 'athletes page' of the International Shooting Sports website. I acknowledge Australia being plunged into COVID lockdowns didn't help our chances in Tokyo but why did our swimmers do so well? Why did Australia finish so high up the medal table vet so many of our shooters finished in the bottom half of the field? We're better than that, we were and we should be again.

My greatest concern is the international selection policies of Australian shooting teams are now being run totally outside of the national bodies. Is this good or bad? Are pistol and rifle happy that only one of their athletes has made an Olympic final in 20 years? If so they should hang their heads in shame. I was lucky enough to compete during the 'golden years' of our shotgun team, where a large group of clay target shooters in the 1990s moved collectively forward internationally because we had a huge competitor base to choose from. Competition just to make the team became so intense that if you were eventually good enough, you were more than capable of competing successfully on the international

stage. Success does breed success.

Why did we have such an enormous talent pool to choose from? Because we had a simple and unobstructive national selection policy where everyone could see a clear, inexpensive and unbiased pathway to the national team. Everyone felt they were on a level playing field which meant large amounts of excellent domestic shooters tried their hand at international disciplines in the hope of representing their country. In short, if they hit the most targets at national trials they went overseas. That's the same policy Swimming Australia uses and guess which sport won most medals for us in Tokyo. The US shooting team has the same selection policy as the Australian swim team and they dominated the Tokyo shooting events. Maybe the answers to all these questions are staring us in the face.

I know most of the rifle and pistol Olympic athletes personally and agree with you it really is an amazing achievement to make the team. But again, my concern isn't with them it's with how the money is being spent on them and, secondly, why is there so little depth in our international shooting disciplines at a time when the Federal Government has never spent more on our sport? Without medals we

can't expect that level of support to continue.

Questions to: Russell@GoShooting.com.au

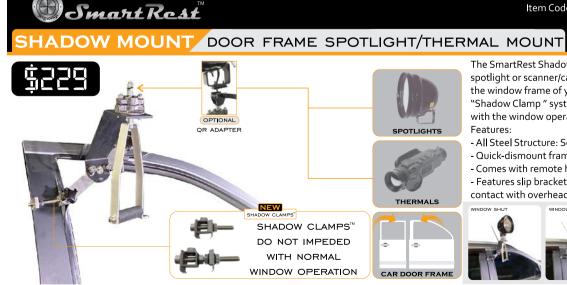
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• Rod Pascoe

I have an old double-barrelled 12-gauge hammer gun branded Clabrough and Johnstone, inherited from a relative about 1948. He was an enthusiastic duck shooter in his day and farmed near Kerang. In about 1963 he overbalanced in his boat while looking for ducks and accidentally dented the left barrel. When he later fired it there was a split in the barrel which was repaired by a gunsmith in Bendigo. I include some pictures and wonder what you can tell me about the gun and its makers. **Howard Wishart, via email**

NITRO PROPRIA

Your family heirloom was made by one of the famous Birmingham gunmaking firms and is proofed for use with smokeless powder - it was made in Birmingham after 1925 according to Wirnsberger's *The Standard Directory of Proof Marks*. My copy of Douglas Tate's *Birmingham Gunmakers* says the firm closed in 1937 which gives a 12-year timeframe into when it would have been made.

John Plumb Clabrough (1834-1895) emigrated to San Francisco as a young man where he worked as a gunsmith. He led an active life in the gun trade working between Birmingham and the USA and sold the business to Douglas V. Johnstone in 1893. The firm, now called J.B. Clabrough and Johnstone, continued to trade until 1937 when the ongoing Great Depression led to its closure.

The proof marks in the photo indicate the following: Crown over BP means the



gun was proofed in Birmingham, similarly BV means viewed during manufacture; NP is nitro proof (ie, smokeless powder proofed using 1¼oz of shot); 12/c in a diamond means it's a 12-gauge gun; I believe the 13/1 suggests the muzzle is choked down to 13-gauge (0.711") from the nominal 0.729" of the 12-gauge barrel. **Geoff Smith** What's the best way to keep a knife sharp in the field? Everyone I ask tells me something different. Vince, Tas.

I'm not sure there is a 'best' way but there are a variety of methods to choose from and, as you've already discovered, most hunters have one they consider best for their needs. I used a small sharpening stone for years, eventually replacing it with an Eze-Lap diamond hone which was lighter to carry but just as effective. I've also used an Eze-Lap diamond sharpener that's similar to a conventional steel in appearance and used in the same way.

Lately I've been using a Lansky handsharpener which has ceramic inserts that keep an edge on a blade simply by running the sharpener from one end to the other. It's quick and easy but does have a tendency to change the edge angles if used too hard or too often.

All the professional hunters I know use a conventional steel to keep an edge on their working knives, especially if they're dealing with large, thick-skinned animals though I prefer not to use a steel on my hunting knives.

Selecting the right knife to suit your hunting needs is important and making sure it's sharp before you go out reduces the need for field sharpening but sooner or later you'll have to. Have a look at the different methods, find one that suits you and stick with it - it'll pay dividends in the long run. John Dunn

I was thinking of buying a clay target thrower and box of clays to use on a mate's farm with his permission, but asking around there seems to be some confusion surrounding this. Could one of your Top Shots shed some light? Garry, NSW I grew up shooting clays in New South Wales on our private property with a little clay trap in a safe manner and had countless hours of fun, all of which led me to competitive shooting in Down the Line and Skeet. I then moved on to Sporting Clays and have had enormous enjoyment over many years shooting at numerous gun clubs around Australia - it's hard to imagine having more responsible fun with a shotgun than this.

I thought I'd check with NSW Firearms Registry and unfortunately in that state you can only target shoot on a registered range (the very helpful lady said there was no room to move on this rule). It seems odd you can buy a trap and clays yet can't use them on private property in a responsible manner.

The same appears to be the case with rifles where you're allowed to sight-in for hunting on private property but not target shoot or set up a range for casual plinking. Anything which even remotely involves target shooting is illegal unless you have your range approved by the Firearms Registry. I can't say what the situation is in other Australian states but suspect it will be similar so SSAA members should contact their State Registry for clarification. In NSW at least you'll need to confine

My dad passed down his VG Bentley shotgun to me and I'm wondering what I should do about its condition. As you can see in the photo it has some discolouration and I'm unsure if it's best left as-is or should I clean it up? If I were to clean it, what would be the best way to go? Paul, Vic.

From the photo I believe your Bentley is a Model 100 12-gauge side-by-side from about the 1960s. It was a popular Spanish-made shotgun and many were imported into Australia and the last one I saw was a cut-down version used in one of the *Mad Max* movies. The discolouration you mention is, in fact, intenyour shotgun shooting at clay targets to a licensed range, of which there are many under the SSAA and ACTA banners. Enjoy your clay busting. Paul Miller

tional. Case colour hardening is a technique of hardening the surface (or case) of lowcarbon steels by adding carbon and, in the process, leaving an attractive colouration.

It's a process which has been practised for hundreds of years and is still used today to add a 'vintage' look to firearms. Earlier text refers to the charcoal from bone, wood and even leather being the source of carbon, each creating its own distinctive colour. So in answer to your question don't attempt to remove the colour, instead keep all parts of the firearm oiled and away from moisture. From the small section I can see in your photo, the gun appears to be in good condition otherwise.

Rod Pascoe





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Refreshing take on enduring theme

hiappa 1886 TD wildlands left-

Daniel O'Dea

ack in the June 2021 edition of this magazine I reviewed one of the many copies of Winchester's leveraction Model 92 and commented on how this particular rifle, from arguably the world's most famous and enduring firearms inventor, John Moses Browning, is still being replicated and enjoyed.

Now 130 years on from its release the Model 92 is far from the only example of Browning's mastery which still thrives, and having not long finished that appraisal I was offered a modern take on another of Browning's early designs in the Chiappa 1886 TD Wildlands. Browning came up with the Model 1886 for Winchester to fulfil the need of incorporating larger and more powerful big game cartridges in a leveraction repeater. These larger cartridges were especially popular with hunters and market shooters such as those decimating the buffalo herds of the western plains.

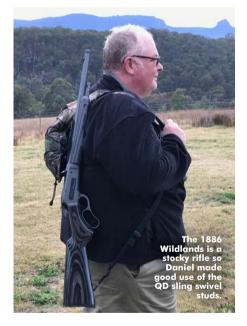
To that point these big game cartridges were predominantly chambered in rifles such as the Sharps single-shot. Previous Winchester lever guns such as the Model 1873 and Model 1876 used a simple toggle link lock-up action, a design best suited to less powerful revolver calibre rounds such as the 44/40 and .45 Colt.

Browning's Model 1886 did away with the toggle link lock-up and instead used vertical steel locking lugs not unsimilar to some of the then single-shot designs. Unlike the single-shot rifles this new leveraction design was a repeater and fed from a tubular magazine slung under the barrel, replicating the form of Winchester's other popular lever-action offerings.

Also worth mentioning is the standard US military service rifle at the time was the Model 1873 Trapdoor Springfield, another single-shot rifle chambered in 45/70. As the military round of the day the 45/70 'Government' as it was known was popular and in plentiful supply. The Winchester Model 1886 could adequately handle this big round and it became a match made in heaven as far as a rifle/calibre pairing goes.

Taking its cue from the Winchester Model 1886, Italian firearms manufacturer Chiappa's 1886 TD Wildlands in 45/70 shares the basic mechanics of the original Browning design with metallurgy and updated features and furniture - it's definitely not your grandpa's old cowboy rifle. Lifting the lid on the box the first thing that jumps out is the stunning all-weather laminated stock and fore-end and dark grey Cerakote finish. Next, once you lay hands on it, is the weight and at just north of 4.1kg it's no lightweight but, likewise with modern propellants, the 45/70 cartridge bucks as hard as it ever has so the weight is rather comforting as you know it's going to soak up some of that big bore felt recoil.

Another upgrade is the sighting and optics readiness, the TD Wildlands fitted with a raised fixed fibre optic for the front sight and an excellent Skinner peep sight for the rear. The latter is mounted at the rear edge of a three-position Weaver-type



rail, making it 'optics ready' should you wish to fit up a long eye relief scope scoutstyle or red dot optic. Being mounted on the barrel, positioning of the rail just forward of the receiver is due to the fact the 1886 design is a top ejector with spent cases ejecting straight up and out the top of the receiver.

Likewise and alluded to in the 'TD' moniker is the rifle is a 'take-down' and can literally split in two just forward of the receiver for more compact transport and storage, so it's naturally best that sights and



Refreshing take on an enduring theme

optics be left fixed to the barrel end of the deal. One last new adaptation is a threaded muzzle which is neatly covered with a knurled screw-on cap which allows for fitment of a muzzle brake or a suppressor where allowed under permit.

Functionally the 1886 Wildlands operates pretty much the same as most lever-action centrefire rifles, rounds fed into the magazine via a loading gate on the right of the receiver. Working the lever down (forward) draws the bolt rearward, cocks the hammer and releases a round from the magazine on to a cartridge lifter, the upward stroke of the lever returning the bolt to battery while loading the round into the chamber. Upon firing a full cycle the action ejects the spent case and repeats the process.

The take-down feature of this rifle is pretty nifty, allowing you to literally break the rifle in half for transport or storage. At the front on the magazine tube is a short lever on a detent - you first turn it down to 90 degrees to the magazine tube and use it to break the magazine tube's thread grip and start unscrewing it. Once you've taken a few turns off to loosen it you can fold the lever forward to speed up the process of totally unscrewing and removing the magazine tube by hand.

When removed, work the lever to open the action and gripping firmly with one hand on the barrel/fore-end and the other on the receiver, give it a firm twist to 90



degrees to break the interrupted thread that retains the barrel. This then slides out forward, separating the two sections. Now broken down you can slide the magazine tube back in place for safe-keeping and you're left with two sections, the buttstock and receiver at 510mm in length and barrel and fore-end at just 475mm, both sections compact enough to slip into a travel case or even a backpack.

For testing I was supplied with Barnes

Vor-TX 45/70 300gr hollow-point factory ammunition which I supplemented with several boxes of PMC 350gr flat-nose softpoints along with a generous amount of my personal reloads of both 400gr Speer flatnose projectiles behind 55gr of ADI 2208 with a Federal 215 Mag primer and 300gr Sierra hollow-point projectiles atop 56gr of ADI 2207 sparked off by a Winchester WLR. So I had a good selection of bullet weights and loads to try.



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Refreshing take on an enduring theme

It might be old but I do love the 45/70 round - it's big and chunky and looks like bullets did in *Looney Tunes* cartoons when I was a boy - yet it's a seriously powerful hard-hitting cartridge. But experience has shown me if you want to put the smack down on a large hog up close in the thick stuff it's a great performer. Throwing a target up at 25m to start with I found the Wildlands dead in line on paper, about an inch or so low using the factory iron sights. The Skinner rear peep and bright orange fibre optic up front leaves a sight picture that's easy to pick up.

It quickly became evident the rifle is one of those which shoots true and easy - just point, aim, trigger, repeat and the bullets land within a fist-size group offhand without a rest. I had a newly-released ZeroTech red dot optic in for review at the time and thought there could be no better test than to subject it to the stout recoil of the 45/70 Wildlands so I mounted it up and, over a rest, quickly sighted it in. Once done I fired a three-shot group clustering all rounds in the bull of a practice target at well under an inch.

Recoil-wise it was definitely stout but manageable. The weight of the rifle along with an effective soft rubber recoil pad seemed to have its measure well enough, so the gun wasn't uncomfortable to shoot at all. Muzzle blast and noise are excessive though, but that's par for the course with a shorter barrelled 45/70.

In use, the action was tight to cycle but never failed to operate as intended. If I had any criticism at all it might be that I found the loading gate stiff and also a little sharp, so stuffing ammo in took some effort and was hard on the thumb. Despite the heft



The Chiappa takes down into a compact package.





of the rifle I decided to challenge myself to a 3.5km stroll up and down the mountainsides around my farm.

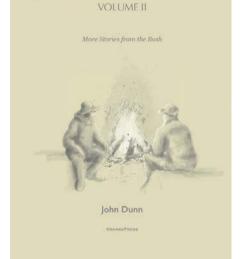
As the rifle comes standard with QD sling studs front and rear I threw a suitable sling on and, up well before sunrise, I took off in the cold looking to bump a pig or two. But Lady Luck wasn't on my side and although there was plenty of digging and sign around the place, it seemed all the little piggies had run all the way home long before my appearance. But the outing did indeed prove the rifle wasn't too bad to carry even on steep sections.

The Chiappa 1886 TD Wildlands reinvents a respected past classic in a modern take which delivers results. Chiappa firearms are distributed in Australia by Raytrade - more at raytrade.com.au ●

The Barnes Vor TX 45/70 rounds used in testing have hollow-points like buckets.

Specifications

Rifle: Chiappa 1886 TD Wildlands Action: Lever Trigger: Single-stage Calibre: 45/70 Government Capacity: Four-round tubular magazine Barrel: 18.4" (470mm) round profile Twist rate: 1:20 RH Sights: Fibre optic front, Skinner peep rear Length of pull: 14.25" (362mm) Metal finish: Dark grey Cerakote Stock finish: Laminated Weight: 4.1kg Length OA: 973mm Price guide: \$2400 (approximately)



IUMBUNNA COLLECTION

s a seasoned outdoorsman John Dunn has graced the pages of *Australian Shooter* with his entertaining and witty writings for more than three decades. For possibly longer than he may care to remember, as one of our senior correspondents John has been bringing the curtain down on the magazine with his monthly *Jumbunna* column.

Now he's put together his second collection of those columns for readers to reprise at their leisure. As well as encompassing firearms reviews and serious hunting escapades, it's comforting to know John can pen such illuminating encounters from his experiences in the Outback as well as numerous overseas treks to locations including Finland, New Zealand and Alaska.

The Jumbunna Collection Volume II: More stories from the bush picks up where The Jumbunna Collection left off back in 2000. The monthly anecdotes travel down the years until the latter part of 2020 and one of the joys is you don't have to read it from cover to cover, you can just pick and choose any tale you fancy.

And there's no shortage of choice in a volume which spans just shy of a healthy 300 pages. Hunting is one of John's passions with his pursuit of deer to the fore and his frequent references and recollections of sambar sum-up his feelings: "Like a lot of mountain hunters, I long ago succumbed to the magic of the sambar," he writes.

It's startling to learn John penned his first column for *Australian Shooters' Journal* way back in 1988 before his tales continued via *Australian Shooter* where his penchant for colourful prose continues to this day.

Assistant editor Dave Rose

His earlier career as a Ranger and Project Manager with the NSW National Parks and Wildlife Service afforded plenty of scope for his articles but as he notes in the foreword: "I'm quite sure nobody expected it (the column) to be around some 33 years later. I know I didn't but it is and for that I'm truly grateful."

The Jumbunna Collection

Volume II: More stories from the bush

As he explains, Jumbunna is an Aboriginal word from the Ngarigo dialect of south-eastern New South Wales which means talking together and that seems the perfect platform for these evergreen observations on his forays. This book is the fourth off the production line for John and follows *Hunting in Australia* (1989), the aforementioned *Jumbunna Collection* (2000) and *In the footsteps of my father: stories from an Australian hunter* (2019).

Contained in this edition are an assortment of concise and riveting episodes. John doesn't even need to be hunting as observing country life in general fits the bill with wagtails, fairy wrens, thorn bills and other birds all appearing on one outing, while errant wild dogs or prowling foxes variously distract him from the task at hand.

And his eagle eye doesn't miss much. "No matter how brilliant a documentary may be, it can never emulate the magic of seeing animals alive and real in their own environments," is his philosophy. "It doesn't take much to keep me amused," he admits in one passage, "a decoy, a duck blind and a hog deer hind filled the afternoon nicely."

A less than successful shooting outing on the range is chronicled in the chapter headed: Optimism v Reality where John realises his shooting talents are not what they were in days gone by. Things start off quite perkily when he declares: "With the possible exception of whining opposition politicians, the majority of people are essentially optimistic. We all like to think situations are never as bad as they sometimes seem, that we're invariably better or more highly skilled at all sorts of things than we actually are." In the end he concedes: "Being an optimist is fine but it's realists who reap the results."

There's even time for fishing and John's delight at helping his then six-year-old nephew land his first rainbow trout rubs off on him as much as young Justin's unbridled joy at hauling his catch from the stream. John's versatility and passion for travel are ever-apparent and he credits his late father as a major influence. "When we were kids growing up in the 1960s my Old Feller made a point of teaching us how to hunt and fish," he says. Even an enforced move of house from rural surrounds to a more urban setting hasn't dampened John's spirit. "I have lots of different interests to occupy my tiny mind and vegetating isn't one of them," he proudly declares.

With Christmas just around the corner this book of recollections by a talented raconteur would make an excellent stocking filler for any SSAA member or general outdoors enthusiast. The Jumbunna Collection Volume II is available now priced \$35 including P&P. Order via email at footsteps5350@gmail.com or the SSAA Online Shop.

Testing loads as Macen's .308 Ruger Scout Rifle is sighted-in

Just the job when you're Scout and about

Brad Allen

he modern Scout Rifle concept has been around for some time, brainchild of the great Col. Jeff Cooper in the early 1980s, the main criteria of a good Scout Rifle being it should be lightweight, compact, reliable and accurate and preferably bolt-action. To my mind it should also have a removable magazine which can hold at least 10 rounds.

I've always been a fan of neat, lightweight rifles as they're carried far more than they're shot. That said, the less weight you have to carry the better but a balance must be struck between a rifle that's too light and may kick harder and one that's too heavy to carry comfortably for prolonged periods. The Scout Rifle idea relies on a firearm on the lighter side yet still shootable, wellbalanced and capable of good accuracy.

By their nature Scout Rifles have carbine-length barrels which translates into a more modest firearm, though luckily some of the most popular Scout Rifle cartridges are capable of excellent ballistics from these shorter barrels. Although not the only choices available, two which immediately spring to mind are the .308 Winchester (7.62x51 Nato) and .223 Remington (5.56x45 Nato) rounds, both cartridges which produce excellent ballistics and accuracy from what would normally be considered short barrels of 20" or less.

My own experience during many years with the .223 cartridge has proved that good velocity and excellent accuracy can be obtained from barrels as short as 16" which makes for a compact rifle, albeit at the expense of excessive muzzle blast. Recent exposure to the .308 cartridge via my son's Ruger Scout Rifle indicated it too produces exceptional ballistics and accuracy in shorter barrels down to 16".

The proliferation of heavier premium, medium game bullets in .223 during the past decade or so, with corresponding necessity of shorter rifling-twist barrels to accommodate the heavier bullets, I believe has placed the .223 cartridge into the medium game category. With a plethora of suitable Scout-type rifles available with 10-round magazines, the .223 is an extremely viable option for Aussie feral game hunters.

Back in the day, another of the main

Brad with his Ruger AR .223 on an afternoon pig hunt.

criteria set by Jeff Cooper for a Scout Rifle was it could cleanly take down a game animal up to 1000lb. This was clearly a North American standard and ultimately restricted the available calibres which could be considered suitable for such a rifle, the .308 Winchester being an obvious choice. But in Australia the need for a Scout Rifle to be able to take an animal of that size is probably less important, with pig and goat-size critters the largest the average Aussie would need to tackle and the .223 (with suitable premium ammo) may be just the ticket.

For some time I'd been interested in a Scout Rifle in .223 with a short barrel twist which preferably used AR-type magazines. These have been reliable over many years in military rifles worldwide and come in varying capacities but for Australia the 10-round version is perfect. Made of metal and recently plastic as witnessed by the excellent PMag system, they're both reliable and affordable.

I settled on a Ruger Predator AR which came as standard with a 22" barrel, soon docked to a handy 17" and fitted with an

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M4-type muzzle brake. With a Leupold VX3 1.5-5 scope it's a handy, accurate and reliable rifle which has fast become my favourite when target species are kept realistically to medium pigs and below. It proved to be light, compact, reliable, accurate and well balanced with the ability to quickly change magazines - I keep a spare 10-round PMag in the stock pouch for handiness and Nitecore subcompact light clamped to the barrel for lowlight conditions. It's utilitarian in appearance but beauty's in the eye of the beholder and I can see the beauty in this-setup.

My eldest son Bill started this craze in our family when he bought an older Ruger M77 Paddle Stock in .223 and had the barrel cut back to 20". He mounted an older Japanese Tasco 2-7 in Ruger then had a new triggerguard and magazine floorplate assembly with 10-shot mags fitted. Again this rifle has great balance and shoots OSA 55gr ammo extremely well and with a couple of extra Ruger proprietary magazines, has ample firepower for almost any situation. There now appears to be a resurgence in the Scout Rifle concept with many riflemakers offering suitable models, one of the finest of the crop undoubtedly the Steyr Scout. A collaboration between Steyr and Jeff Cooper himself, this gun has almost everything a good Scout Rifle requires in .308, .376 Steyr and .223, only let down (in my humble opinion) by its five-shot magazine. Larger mags are available but require the fitting of a magazine well extension and expensive Steyr magazines.

A collaboration between Ruger and the Gun Site Training Centre (Cooper's own training facility) gave birth to the Ruger Gunsite Scout, a bolt gun produced on the reliable Ruger M77 action in .308 and .223 in blued and stainless versions with plastic or laminated stocks, both with Ruger proprietary 10-shot mags. All rifles have back-up iron sights and the ability to mount a scope via the outstanding Ruger scope mount system or alternately, the ability to mount a long eye relief scope forward of the action over the barrel on a Picatinny rail, as was originally intended by Cooper. My son Macen bought a Ruger Scout in .308 to which we fitted an aftermarket XS Picatinny sight rail with integral ghost peep sight and VX2 2-7 Leupold in Warne QD mounts. It's been extremely accurate with all factory fodder including 130gr OSA, 150gr Remington Cor-Lokt and Remington 168gr Hog Hammers, all rounds feeding smoothly from metal and plastic Ruger 10-shot mags. The rifle is well balanced, accurate, surprisingly light and primarily used as back-up when Macen's bow-hunting big hogs in the wetlands of the NT, as it's short enough to be slung over his back until needed.

In the value for money stakes the Ruger American AR takes the prize for me. This bolt gun is well made, reasonably priced, accurate (as are all Americans I've used) with a bulletproof bedding system. The triggers can definitely benefit from some gunsmithing attention (as can most rifle triggers) but lightened-off to the max they perform well. The sliding tang safety is another great feature and one I'm familiar with from a Ruger Mk1 7mm Rem Mag I had



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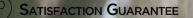
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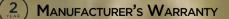
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Just the job when you're scout and about

as a teenager and the same as my current Ruger No.1 30-06. Ruger's 'Ranch' models with 16" barrels and 10-shot AR mags in .223 and Ruger proprietary 10-round mags in .308 all function and feed flawlessly.

Mossberg make their MVP range in.308 and .223, these bolt-action rifles having XS Picatinny rails as standard with back-up iron sights and use less expensive military-style AR 10-shot mags in each calibre. Howa rifles have been a favourite in Australia for many years and are available with 10-round mags in .223 and .308, just fit the scope of your choice and you're good to go. Savage also make the 110 Scout Rifle in a variety of calibres all with 10-round mags and all sport iron sights and have the forward-mounted Picatinny rail over the barrel to take an extended eye relief scope.

If you own a rifle that needs a new lease of life you might consider having a gunsmith do a bit of work on it for you to make your own version of a Scout Rifle, as Bill and I have done. Any calibre you're fond of should work provided replacement magazine/triggerguard assemblies with 10-round mags are compatible with your rifle. Have the barrel shortened to whatever length best suits vour intended purpose, have it threaded and fit a muzzle flash eliminator if you want, as it's your rifle and within reason there are no wrong choices. You might also consider the addition of a Picatinny rail for scope mounting as this upgrade will increase the utility of any Scout Rifle, with ability to also mount lights or other compact electronic sighting systems.

However I'd warn against big scopes as the easiest way to have all your hard work come unstuck is by the addition of a scope that's overly large for the concept. In my estimation a scope of about 1-4, 1-5x20 or 2-7x32 is just about perfect for the Scout Rifle, anything larger will undoubtedly disturb what should be a light and well-balanced firearm. My Ruger .223 has a Leupold 1-5 VX3 and Bill's has a Tasco 2-7x32, while Macen's Ruger .308 has a Leupold VX2 2-7x33 and all are wonderfully stable and suited to the purpose. ●









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Howa M1100 Rimfire A fresh alternative

Con Kapralos

he worldwide success of the Howa M1500 centrefire rifle platform can be squarely attributed to the Fuller Global consortium and its distribution through agencies such as Legacy Sports in the US and Highland Outdoors in the UK. In Australia, Outdoor Sporting Agencies (OSA) has represented the Howa brand for years and continues to provide our shooting sportsmen and women with everything they need in quality centrefire barrelled actions and countless rifle stock options.

Now Fuller Global and Howa in Japan have released a brand-new addition to their stable in the Model 1100 Rimfire. It was only a matter of time before they'd take the success of the M1500 Centrefire and design a rimfire rifle and from the first look at the M1100 - available in .22LR, .22WMR and .17HMR - it seems destined to be a success.

When OSA presented *Australian Shooter* with the chance to run the rule over the M1100 it was eagerly received, a review rifle supplied in .22LR with black polymer stock along with a Nikko Stirling Panamax optic and one-piece scope rings/bases. An OD green polymer stock is also available but the only metal finish currently offered is satin blue (in the US the rifle also comes with a wood stock option and that could be available here in the future).

Up close

Receiving the rifle with its compact barrel and tactical/varmint profiled stock, it's clear this is fashioned for certain sectors of the market - it would make an ideal longrange training rifle and double as a small game rifle and plinking option. The rifle is supplied with two polymer 10-shot magazines and sports a 460mm (18") #4 contour barrel with threaded and capped muzzle for accessory attachment. It measures 940mm and weighs 2.55kg bare.

Barrelled action

The rifle has a receiver milled from circular steel bar-stock with a rounded upper profile and generous ejection port tailored not only for the .22LR cartridge but also the longer WMR and HMR rimfires. What's immediately evident is the lack of any milled dovetails in the receiver, Howa deciding to stick with the circular profile of the bar-stock and drill and tap the receiver for scope accoutrement mounting. The review rifle was supplied with neat one-piece rings/bases which screwed directly into the receiver



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top, though two-piece Weaver-style bases or a Picatinny rail would be other options for scope mounting.

The left side of the receiver has 'Howa M1100 Made in Japan' inscribed into its surface as well as 'Imported by Legacy Sports Revo NV' - the US distributor of Howa rifles. Bolt removal is done by pressing a small tab on the rear left of the receiver flank, the receiver itself quite plain but for rimfire calibres perfectly functional without being over-engineered.

The barrel on the M1100 is of chromemoly construction and attached to the receiver via the pinning method, a common way of joining rimfire barrels to actions. The #4 contour gives the barrel extra rigidity and looks the part with the gun's tactical/varmint styling. Internally the .22LR bore has a one-in-16 rate of twist, standard for .22 rimfire calibres.

Towards the front end of the barrel, the



muzzle has been threaded for use with accessories (where permitted) and is supplied with a cap to protect the threaded segment. The crown is of a recessed target profile which is conducive to accuracy and appreciated on a rimfire rifle as such. The barrelled action is finished in semi-gloss blue and I gather a stainless steel version could be in the pipeline, though the blued variety still looks the part.

Bolt

This is characterised by an oversized tactical bolt handle. The body is made of several pieces with a polished steel front section which houses the twin claw extractors and travels on the internal raceways inside the receiver, which additionally eject the rimfire cartridge when the bolt is pulled rearwards.

The middle section of the bolt and handle shank are semi-gloss blued and a polymer

bolt shroud covers the rear section of the bolt mechanism. Operating the bolt on a brand new rifle in this instance didn't give the silky-smooth travel which was touted but with use I'd expect the bolt to become quite slick. For a rimfire cartridge and the short bolt travel encountered, this isn't problematic at all.

Trigger and safety

The trigger unit on the M1100 is perfectly functional with a large degree of uptake in the trigger before it breaks crisply. Measuring the trigger pull with my Wheeler gauge it clicked in at around 1.3kg which for a hunting rifle would be perfectly fine as-is but for shooting in an accuracy or training setting, tuning the trigger to a release of around 1kg would be beneficial. I'm told after-market triggers will be available for the M1100 in due course.

The safety mechanism is a two-position



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Howa M1100 Rimfire: A fresh alternative

affair with a lever just behind the bolt handle notch. The lever is easy to move between the 'SAFE' and 'FIRE' positions and while on 'SAFE' allows the bolt to be cycled but blocks the sear on the trigger mechanism. The trigger blade is made of aluminium and has a nice curved profile with longitudinal ribbing along its length.

Magazine

Two polymer magazines are supplied with the rifle and have 10-shot capacity, are easy to load in a single-stack manner and feed faultlessly through the rifle. They're simple to insert into the magazine well and clip into place, while removing the magazine is as straightforward as pressing the small spring-loaded lever.

Stock

The review rifle sported a synthetic polymer stock which is available in black (as supplied) or OD Green. The stock immediately appeals with its tactical/varmint-style ergonomics, its pronounced grip angle and rear bag-rest hook in the base of the buttstock. Handling the rifle with this stock option fitted did take some getting used to but shooting off the bench with a rear bag and front rest it worked well. As a hunting stock, shooting freehand was not a problem and the lightness of the stock contributed to a rifle well suited to hunting small game and plinking in the field.

The barrelled action is bedded directly on to the polymer surface of the stock and the barrel free-floated for its entire length. This method of bedding is fine for a rimfire platform and gives acceptable accuracy, while a decent recoil pad is supplied as are QD sling swivel studs on the toe of the stock and underside of the fore-end (two M-LOK slots are also built into the fore-end tip underside which make it handy for additional attachments).

There are other after-market stock options available for the Howa M1100, with Southern Cross Small Arms making an excellent chassis stock for the model (this will be the subject of a separate review in a future edition of Australian Shooter). A wood stock is available in the US (Legacy Sports) and this option could be offered locally in the future for owners who prefer a more classical profile.

Table 1: Howa M1100 .22LR - Accuracy testing at 50m - groups in mm

Best	Worst	Average*
28	45	35
20	33	26
19	37	25
15	27	22
12	26	18
13	20	16
	28 20 19	20 33 19 37 15 27 12 26

* Average calculated from five 5-shot groups at 50m from a benchrest



At the range

The Howa M1100 in .22LR was supplied with a Nikko Stirling Panamax optic with one-piece rings/bases which attached directly to the top of the receiver. Several brands of .22LR ammunition were earmarked for accuracy testing, including standard and high velocity options from Winchester and Browning. Five 5-shot groups were fired through the rifle at 50m with the barrel cleaned between changes in ammunition brand. Table 1 outlines results of the accuracy testing.

Even though testing didn't include any high-end match grade ammo, the resulting group averages were pleasing for both standard, subsonic and high-velocity ammunition. The rifle did particularly well with both brands of the Winchester Power-Point and if this were my rifle I'd lean towards the 42 MAX load as it did shoot very well at 50m and would make an excellent small game load out to 75m or so. All loads tested would easily anchor a rabbit, hare or feral cat at that distance and could be shot with confidence.

Overview

The Howa M1100 is destined to become a popular rimfire. It's well suited to smallgame hunting as well as use as a training rifle and lends itself to customisation with



bedding platform for the action while free-floating the barrel.

after-market stocks and accessories being increasingly available for this model. The M1100 in .22LR, .22WMR and .17HMR retails for \$690 and is available through all OSA dealers Australia-wide. If the success of the Howa M1500 is anything to go by. the M1100 rimfire looks certain to be a strong seller.

Specifications:

Model: Howa MI100

Manufacturer: Howa, Japan Action: Push-feed bolt-action, steel receiver drilled and tapped for scope mounting, semi-gloss blue finish, oversize tactical bolt knob fitted Barrel: 460mm (18") chrome-moly steel, pinned to receiver, muzzle threaded for accessories Calibres: .22LR and .22WMR (1:16

rate of twist), .17HMR (1:9 rate of twist)

Magazine: Two supplied of polymer construction, 10-shot capacity Safety: Two-position lever safety Trigger: Two-stage adjustable, set at 1.3kg from factory Stock: Synthetic polymer, tactical profile in black or OD Green, recoil pad and QD sling swivel studs fitted

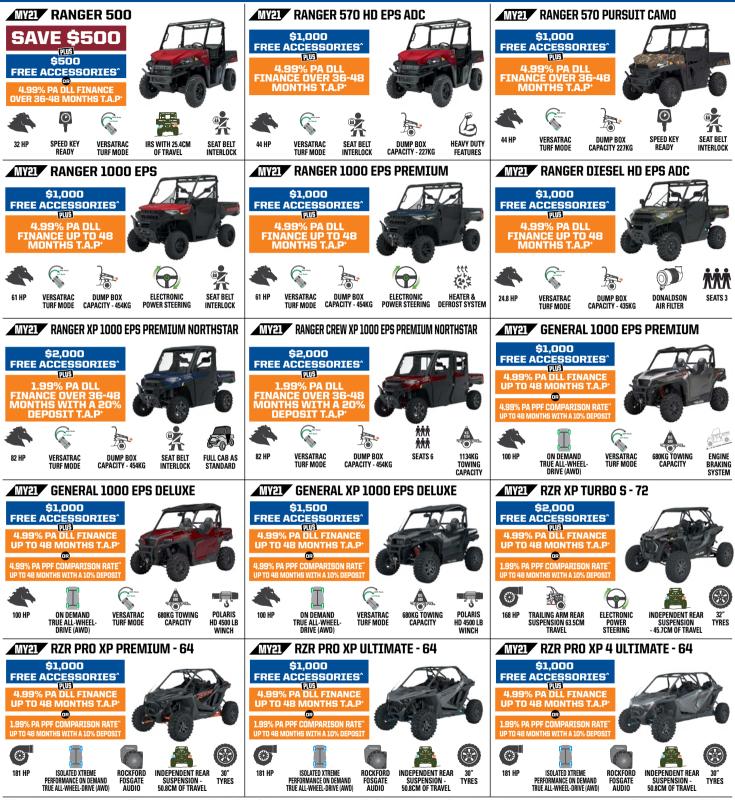
Length: 940mm

Weight: 2.55kg

RRP: \$690

Distributor: Outdoor Sporting Agencies

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My Most Challenging Hunt

Mozzies, wasps and a four-tusk trophy

ith retirement around the corner and as I'd always wanted to hunt the Top End for wild boar and eventually Asiatic water buffalo, I set about seeking a reputable outfitter for a likely outing. A couple of months later a booking for a five-day pig and wild boar hunt in late July with Glenn Giffin of Muckadilla Safaris saw me team up with hunting companion Brian Folds from South Australia.

The late-night flight arrival in Darwin meant a restless few hours in a hotel room until Glenn picked me up next morning and Brian from other accommodation. Fully provisioned and fuelled up we were soon on the way to our isolated tented camp and after crossing a few small creeks and a particularly expansive concrete causeway which forded a wide and flowing river, we stopped for a bite to eat and a rest. I took the moment to appreciate the location and sample the clear, clean water by the bank.









Mozzies, wasps and a four-tusk trophy

As Glenn continued to chew up the kilometres I spent the next few hours absorbing the awe-inspiring sights, craggy ancient escarpments, diverse landscape and wildlife that abounded, including the occasional brumby peeling off the dirt road into the bush. On the first morning we were up before daybreak and well on the way to a designated floodplain. Pulling up under the shade of pandanus palms we were greeted by flocks of screeching corellas wheeling above the trees and honking magpie geese in the middle of the floodplain, intermingled with white cranes and dancing brolgas. The pig uprooting around the edges extended as far as the eye could see, stimulating the imagination and heightening expectations of what lay ahead.

Our first stop a few kilometres around the floodplain was a section of towering, tightly-packed ancient Estonia palms

> with cool, shadowy passages beneath and muddy open patches frequented by pigs, especially in hotter months to escape the searing heat.

Eager to cross a good-sized boar I opted to venture through the palms while Brian positioned himself on the outer in the event one should exit his way.

It was only towards the end of the growth I caught a glimpse of a solitary boar breaking cover into chest-high reeds. No pigs on this occasion but halfway through the maze of palms a swarm of tiny paperbark wasps the size of match-heads made their presence felt with needle-like stings, the pain short-lived and the experience in this unique place worth the effort. As we progressed further around the floodplain and a stand of saplings, a massive banteng bull was spooked from its browsing and shot across the front of the vehicle at pace. It was an impressive animal with a wide horn span but this trophy bovine would be for another hunter or future hunt.

Cutting through a tree line we emerged into a vast open section of dry, bare ground populated by a myriad of termite mounds resembling some planetary landscape. Two dingoes not more than 80m away stood watching inquisitively before trotting off then returning as if trying to discern whether we posed a threat. Most likely they'd never seen a human before, hence their passive demeanour. While Brian and I were watching the dingoes' antics, Glenn glassed a mob of pigs uprooting the ground about 500m on the outer fringe of the floodplain and with a tree line to our left for cover, we stalked forward at pace to bring the group within shooting range before they moved on.

Reaching the spot in the heat and rush to position ourselves had the sweat beading down the side of my face as I tried to catch my breath and steady for a shot, the relentless flies also doing their best to distract us. Deciding who was going to shoot which pigs, the rapid action that followed resulted in four succumbing to Brian's Sauer Model 200 9.3x62mm using 258gr RWS PP projectiles and my 6mm Schultz & Larsen using 87gr SN, although in my case I later found that hefty mud-encrusted NT boars need a heavier calibre bullet of at least 150gn to do the job more adequately. No sooner had the shooting ended than another undetected

Outer sections of the floodplain heavily uprooted by feral pigs.

A banteng bull heads for the timber line.

Mozzies, wasps and a four-tusk trophy

mob exploded from cover to our rear and across open ground, Brian dropping three in close while I downed one on the run.

On the other side of the termite-strewn plain the faint remnant of a track eroded by the previous season's rain, constant pig uprooting and in parts now overgrown, continued through the muddy ground and sparsely populated gum forest. While we considered ourselves right in the midst of pig country with constant sightings of sows and their litters - and respectable boars - as the soggy ground gradually dried up and became more driveable, Glenn endeavoured each day to steer us further around the floodplain to even more productive pig areas where he knew we'd find some big boars. We weren't complaining and were more than eager to lend a hand clearing the occasional fallen tree across the track.

Despite wearing supportive boots the uprooted ground and potholes played havoc on our feet so we took care to maintain a steady footing so as not to sprain an ankle. For our efforts we were rewarded with more sightings and focused more on better ivory endowed bores while bypassing several others. To stay hydrated we drank plenty of water and hunted as far as possible in the shade and tree canopies and it was here while wading through muddy water my 8" high leather hunting boots came apart at the soles. Luckily it happened towards the end of the evening's hunt and I had a backup pair in camp.

Each morning we were up before sunrise, spent all day on the plains where we had lunch in the shade and returned to camp as the red sun slipped over the horizon. We walked extensively and although pretty exhausted by day's end with aching muscles, we slept soundly and couldn't wait for the next early rise and more of the same action. On the last morning of our five-day hunt we reached the furthest point accessible around the floodplain. Here, while stalking an adjoining forested area, a dingo exiting the reeds with a magpie goose in its mouth caught my attention as I watched it stroll past within a stone's throw.

Moments later a hefty boar followed by a poor-conditioned one emerged and headed

in my direction. With their heads down and oblivious to my presence - and Brian who was a safe shooting distance to the left - my rifle slowly came up to successfully place an 87gr Sierra SP just behind the shoulder of the first with Brian, who'd also picked up on the pigs, dropping the other.

While I was impressed with my boar sporting $2\frac{1}{2}$ "-thick tusks out of the jaw and later measuring a pleasing 28DP, Brian's to his disbelief and delight turned out to be an unusual four-tusk trophy. None of us had seen such a unique set and if that didn't top our boar-scoring efforts, on the way back around the floodplain and with only minutes of daylight remaining I spotted a distant bulky shape in a large patch of vellow grass. With the motor turned off Glenn had the vehicle come to a rolling stop and sure enough it was a massive, solitary boar foraging at little more than 200m - and

he hadn't spotted us.

young dingo looks on inquisitively.

Mozzies, wasps and a four-tusk trophy

My efforts with the 6mm were in vain as the boar made a dash for the outer perimeter of the tall grass before stopping and allowing Brian to place a fatal shot behind its shoulder. With the shot, darkness quickly descended as if someone flicked a switch and as we turned our headlamps on to search for the boar, a swarm of mosquitoes surfaced from their hiding and surrounded us. Eventually we found the mud-caked beast on its side and a moment was taken to appreciate the boar and take some snaps before high-tailing it out of the infested area, the final highlight to an extraordinary safari. My expectations were more than met through the sights, experiences, lasting memories and friendships made. There were unforeseen challenges, lessons learned and a new-found respect and appreciation of an untamed land with all its diversity and offerings. But I wouldn't have it any other way.







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Reminction back with a bang

Thomas Tabor

Remington and I have a friendship going back to when I was just a small Joey living on my family's minuscule working dairy farm and watching my older brother shoot cans with his single-shot Remington 22 rifle. Then when girls became more interesting to my brother than shooting cans, that rifle was passed on to me - I would've been about 10 years old. The fun which followed eventually culminated into a lifelong love affair with all things Remington and continues to this day.

Financial strife

Unfortunately Remington has experienced some major difficulties in recent years which have led to extreme financial strain for the company and to a significant degree many of those problems stem from a handful of lawsuits claiming failure of their Model 700 rifle safeties. I have my own feelings about who should bear the ultimate blame in cases like this, after all if any firearm accidentally discharges for any reason, including a possible design failure, it shouldn't result in injury if the gun is always pointed in a proper and safe direction - but that's a topic for another day.

After years of litigation and courtroom drama, in March 2018 Remington was forced to file Chapter 11 Bankruptcy. Unfortunately not even that resulted in an adequate degree of financial protection and in July 2020 a second bankruptcy was filed with even greater consequences. Not being able to survive in their current financial environment the company was forced to break Remington's operations apart and those divisions were auctioned off to the highest bidders, the winning bid for Remington's line of ammunition going to Vista Outdoor, a huge US-based sporting and firearms conglomerate.



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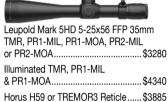
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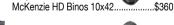


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Remington back with a bang

A new Remington is born Shortly after that acquisition Vista Outdoor announced they were introducing a new line of shotgun ammunition under the Remington brand called Premier Nitro 27 Target Loads. Primarily developed for clay target shooting, Nitro 27 quickly started showing up in winning circles and even though the focus of this shell seemed to be on turning clay targets to dust, those traits which make it a competition winner are the same ones hunters are looking for in their shells. Whether seeking to fill game pouches with fast-flying doves or other small to medium-sized fowl (even rabbits), Nitro 27 could be the ideal choice.

What's inside

I find it interesting to examine the contents of factory loads I choose to shoot, so after receiving one of the first shipments of the new Premier Nitro 27 shells to hit the market, I had to satisfy my curiosity by cutting one apart. While it's never a good idea to try and identify a particular type of powder solely on its looks, it's still interesting to me to have a general idea of what the powder looks like. In this case the Nitro 27 powder didn't look similar to either flake or ball powder, its kernels appearing more irregular and inconsistent in both shape and size.

And when the wad was extracted and removed the powder came out in small, compacted clumps which clung together due to it being compressed within the hull. The weight of charge was 18.7 grains and these particular shells were said to contain $1^{1}/_{80Z}$ of $\#7\frac{1}{2}$ shot, but when I weighed the shot charge I found it actually slightly heavier at 495.8 grains. The light green plastic shot cup-style wad had a unique double 'O' pattern just above the base and appeared similar to a Claybuster CB8100-12A wad. In this case the Claybuster wad is said to be designed for shot charges ranging from $\frac{7}{8}$ to $1^{1}/_{802}$ with the maker indicating it's best suited for 1oz loads.

Handloaders will likely be pleased with the hull construction, its compression design similar to that of the popular and long-lasting Winchester AA being a great asset which should last through many reloadings. Rather than having a separate base wad, these hulls have been extruded as a single and inclusive unit.



Performance

Shotshell performance is often judged on the competitive range but every shooter's abilities are different and shooting conditions can vary sometimes quite dramatically. While this type of performance is certainly important to consider, other evaluation methods may be even more relevant when it comes to a shell's ability to consistently perform.

Having said that, I found the Nitro 27 shells did a superb job both on clay targets and ridding my neighbourhood of some





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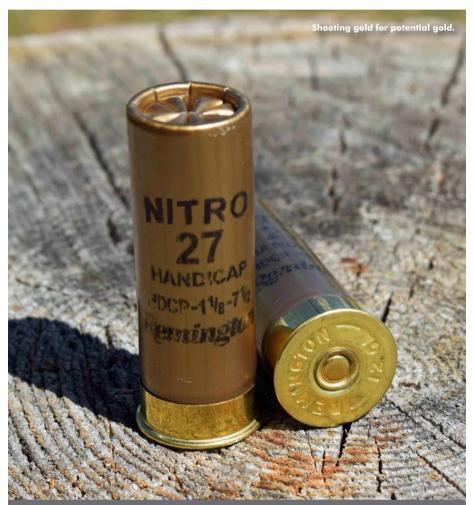
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Remington back with a bang

pest birds which seem to have an inherent desire to be an unwanted nuisance. I even threw a few mini clays which took flight at a speed seldom seen from the beads of a shotgun and in almost all cases they too were quickly turned to dust.

The factory indicated muzzle velocity of Nitro 27 shells would be 1235fps but several factors come into play affecting that, such things as temperature, elevation above sea level and barrel length all playing a key role. So using my Caldwell Ballistic Precision G2 chronograph I checked five Nitro 27 shells fired from my Browning Superposed over-and-under and while the fastest registered close to factory specs at 1226fps, the average of those five shells was somewhat lower at 1198fps (the spread between the five muzzle velocities was 44fps). In this case some factors affecting



Remington Premium Nitro 27 - Patterning at 40yds $1\frac{1}{802} \#7\frac{1}{2}$ - Browning Superposed over-and-under

Full choke

Number of shot within 76cm (30") diameter circle Percentage of shot within 76cm (30") diameter circle Number of shot within 51cm (20") diameter circle Percentage of shot within 51cm (20") diameter circle

Modified choke

Number of shot within 30" diameter circle Percentage of shot within 30" diameter circle Number of shot within 20" diameter circle Percentage of shot within 20" diameter circle

230 of 393 59 per cent 150 of 393 38 per cent velocity would likely be the ambient temperature during shooting of roughly 32C, the Superposed 28" (71cm) barrels and elevation above sea level at 1481m.

In some cases a shotshell wad can affect shot pattern if it travels too far after leaving the barrel and this can result in opening up a shot pattern and cause holes within those patterns to develop. In this case I checked how far the Nitro 27 wads were travelling and found they'd fallen to the ground ranging from about 32m to 34m from the muzzle.

Patterning is always something worthy of consideration no matter what your preferred shooting discipline might be, so I checked the pattering through both barrels of my Browning Superposed 12-gauge at 40 yards with both full and modified chokes. I found the shot impacted evenly with no obvious holes in the patterns and the percentage impacting within a 30" circle at 40 yards was typical of what I'd expect from those chokes (see chart for a more detailed look at percentages of impact).

The way I see it

It's good to know that even though Remington has undergone significant changes recently, we can still enjoy the pleasure and success which comes from dropping a Remington-brand shell into the chamber of our shotguns. So whether shooting for gold or putting a few game birds on the dinner table, I'm confident of the success these shells will provide - I even like the unique and eve-catching gold colour. ●



Specifications:

Manufacturer: Vista Outdoor Brand: Sold under Remington brand name Premier Nitro 27 Shotshell Gauge: 12-gauge Length of shell: 70mm (2¾") Shot size: 7½ or 8 Shot charge weight: 1½802 Muzzle velocity: 1235fps Shot type: Lead Packaged rounds: 25 shells/box and 250 rounds/case Uses: Clay targets, small game birds

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Though both great sambar rifles, Samuel sees the scopes differently. The little Kahles Heliia 5 2.3-7.522 sat in Redictived. Though both great sambar rifles, Samuel sees the scopes differently. The little Kahles Heliia 5 2.3-7.522 sat in Redictived. Though both great sambar rifles, Samuel sees the scopes differently. The little Kahles Heliia 5 2.3-7.522 sat in Redictived. Though both great sambar rifles, Samuel sees the scopes differently. The little Kahles Heliia 5 2.3-7.522 sat in Redictived. Though both great sambar rifles, Samuel sees the scopes differently. The little Kahles Heliia 5 2.3-7.523 both Redictived. Though both great sambar rifles, Samuel sees the scopes differently. The little Kahles Heliia 5 2.3-7.523 both Redictived. Though both great sambar rifles, Samuel sees the scopes differently. The little Kahles Heliia 5 2.3-7.523 both Redictived. Though both great sambar rifles, Samuel sees the scopes differently. The little Kahles Heliia 5 2.3-7.523 both Redictived. Though both great sambar rifles, Samuel sees the scopes differently. The little Kahles Heliia 5 2.3-7.523 both Redictived. Though both great sambar rifles, Samuel sees the scopes differently. The little Kahles Heliia 5 2.3-7.523 both Redictived. Though both great sambar rifles, Samuel sees the scopes differently. The little Kahles Heliia 5 2.3-7.523 both Redictived. Though both great sambar rifles. Sambar Rifles differently. The little Kahles Heliia 5 2.3-7.523 both Redictived. Sambar Rifles differently. Sambar Rifles different Rifles

How much scope do you need?

Samuel B. Mann

any shooters are concerned with targets and varmints but at the range I'm often told they intend using big scopes for deer hunting - and that worries me. Early hunting scopes were thin but long and highpowered, yet eventually became stockier and the magnifications shrank to average about 4x, for reasons good and bad. I recall a 1930s Zeiss advertisement asserting their 4x scopes were good to 800 yards, presumably on the basis that iron sights were adequate for 200 and magnification could simply multiply the range.

As silly as that sounds considering looping trajectories and lack of rangefinders before WWII, at least they knew you don't have to count the hairs up from a critter's brisket to make the shot. Legendary US hunter Townsend Whelen argued a 2¼x scope was good to 350 yards because big game is big and a large field of view and long eye relief are more important than magnification. But as with cars, scopemakers continually offer more power as inducement to upgrade - and why not? We have rangefinders to calculate exact trajectory of specific calibres on any incline so anything in sight should be in range. Confidence-sapping shake used to be a problem with high-powered scopes but now we have bipods, car-window rests and other aids to steady our shot. There's a place for big scopes beyond varmint shooting of course and if I was into extreme-range target shooting, I'd want a March Genesis 6-60 x 56 variable. Its fixed-reticle technology is mainly to give adjustment for both near and distant targets but also saves the 10x-multiple erector set from rocking under 50 BMG recoil inertia and avoids targetpicture depletion caused by light entering lenses obliquely at maximum elevation.

If, like me, you're a deer hunter and still consider your quarry a noble game animal deserving fair chase, perhaps there's a problem with some of the brave new scopes. It's possible to take a sambar stag at 400m with a powerful rifle - if you see an animal that far away. Assuming the bullet still has enough energy to penetrate thick hide, you might even manage to kill some cervine monarch at twice that distance, say spotted below a transmission line. But is that hunting or more an unfair advantage? At 800m even a tiger-wary deer species may not hear the snick of a safety or notice reflections from your enormous scope. Many variables now give the best of both worlds ranging from about 2x to 12x or even 20x, so you could also use them for close shots when they present, though I see these as technically questionable for the sporting hunter who tries to close with the game. Early versions had limited ranges like the Hensoldt 2½-4x and Nickel Supra 6-9x, and until recently 3x multiples like 2-7x and 3-9x were the norm. Zeiss did manage to engineer the 1-4x Zielmulti before WWII but even the post-war 1½-6x scopes were thought something of a miracle.

Why? Well obtaining higher power used to be like increasing the focal length in camera zooms - it required moving erectorset elements out. Since there's only so much space between the first and second focal planes in a short scope, this can be a problem in reaching big zoom ranges (I've heard some lenses now move rearwards when powering up).

'Constantly centred reticles' have always been smoke and mirrors in my eyes but, just maybe, real mirrors could be used to achieve the highest variable ranges. The magic might even include crystals or at least prisms for all I know. Hensoldt has long used prisms to erect the image but I'm



not sure they had any part in magnification. Whatever *is* done, high-zoom multiples must make the erector tubes heavier and more complicated than in a fixed-power scope or 3x variable.

Worse, I estimate they must weigh five or 10 times the mass of a simple reticle ring or graticule, the only movable part *possibly* subject to recoil inertia 70 years ago. Fixed powers, rare as they are now, have another weight advantage over variables. Powerscroll movement needs lubrication - but nothing likely to smudge lenses - and the traditional answer was the greasiness of brass. Aluminium might be okay in fixed powers but is more likely to gall in variables, giving problems down the line.

The mass of brass may not matter on rabbit rifles but adds to recoil inertia when heavy recoil is involved. Swarovski says the force (recoil inertia) upon an erector tube's components can be hundreds of times that of its mass at rest, hence the Austrian maker used four coil springs at the rear of the tube in their Z5 and Z6 lines instead of flat springs along the side.

Though longitudinal force can wear gimbals, allowing the erector tube to move and create parallax over time, the more common movement comes from rifles rising in recoil and erector tubes being left behind by inertia to slam against the bottom of the scope, then crash back against the turret screws as the shooter slows the process. If the scope has been crookedly mounted, flat springs may be left twisted after zeroing and break from lateral stress under recoil. This is an even greater argument for Swarovski's coil springs and may be why NightForce tumbles its erector springs for two weeks to prevent them snagging. Therefore less is more in erector-tube matters. A US contact has wrecked many scopes on the 458 Lott and 505 Gibbs, so many that Leupold finally made him a special one, possibly from bits left over in 1965 and it seems indestructible. For general use now he scours pawn shops for old Leupold 2½x compacts, the most secure modern scope he knows of, and if they're no good he sends them back to the factory for free repair.

There are other reasons big scopes can give trouble and the first is simply their size. The more objective or ocular housing extending beyond the mounts and the higher the rings have to be, the more likely they are to be damaged or wrenched out of zero by bumps. I had a Nikon Monarch 4-16x42 on my tahr rifle, a light Tikka 270 WSM. The zero was checked in NZ but while walking in to our Southern Alps hut I slipped and brought it down flat against a muddy bank. The ground was so soft I assumed it no problem but when a chamois buck was seen at 100m, my shot missed badly. Ripping the bolt out I bore-sighted the rifle and found the scope 75mm out at 25m and still can't be sure why.

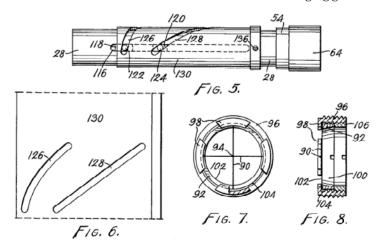
I replaced the scope with a humble little 2-7x Leupold VX-1 which survived falling on shingle slides three times on those tahr hunts without going out of zero, even in the original alloy mounts. To be sure, though, that scope is now secured in an old steel Hillver bridge mount.

Modern scopes aren't just becoming longer again - many are fat with it. The post-WWII German 1½-6x variables often had 30mm barrels long before twisting knobs for long shots made much sense. The dural bodies were thicker partly to make up for lacking steel strength but maybe the erector sets needed more diameter to achieve the 4x-zoom too. But 30mm scopes look slim compared with the new 34mm monsters. With enormous objectives and oculars enlarged to restore field of views lost to the prevailing technology's field stops and fat rubber eyepieces, some set-ups look more like telescopes with rifles attached.

Big objectives make more sense in Europe where hunters sit by moonlight and the odd young myope may justify a 9mm exit pupil. In much of Australia though, shooting game after dark is illegal and pests can be nabbed by spotlight. So as much as we embraced the Pecar 4x81 and 6x59, day glasses such as Nickel's little 6x36 would've done for most of our open-country shooting, even at night when using a light.

Another beef I have with big scopes is once you go much over 6x, target focus can become a problem. This is usually solved with parallax adjustment though the parallax and focus don't necessarily come together at the same range or where the dial suggests. With an accurate dial you wouldn't need electronic rangefinders but could just focus the target and read the distance, at least on horizontal shots. That didn't apply to my Nikon 4-16x though and thinking about the NZ possibilities I bought a rangefinder about 10 years ago. Then I made myself a plumb-bob protractor to account for steep shots, calibrated for the WSM's hot 150-grain Remington AccuTip factory loads (ballistics unattainable from any loading manual I've seen since).

Trouble was, when bull tahrs finally appeared after my long climbs I just aimed up and shot them without thought of checking the exact range, parallax or incline. So I now wonder about the utility of parallax adjustments and merits or even sporting aspects of rangefinders and other electronic elements when hunting big game. ●



A fragment of drawing from an old Redfield patent showing the limits of conventional variable power scrolls - to go any further forward there, the erector lenses would meet so higher power multiples need greater complication.

Get that rifle cleaned ... properly

Eric Evans

hen it comes to cleaning rifles some shooters advocate doing so after every use, some occasionally and others almost never. My opinion and practice are based on 45 years' experience and all my firearms have performed well, suffering no corrosion or excessive wear - I've achieved a practical, commonsense balance between effort and outcome.

Modern rifles are robust, able to withstand treatment I'd call abuse - but there are limits as they're complex pieces of kit and some periodic maintenance is necessary to keep them functioning well. Some claim it's possible to over-clean a rifle which they say poses risks such as excessive wear and/or damage while at the other extreme are target shooters, fastidious about cleaning. Ask a benchrest shooter how often a rifle is cleaned and it won't be at the end of a range session, rather between shot strings.

So what's your average shooter and in particular a beginner to make of all this? What's the correct approach? Let's start by busting some myths. Assuming the bore and moving parts of a rifle aren't excessively dirty and that rifle hasn't been in the rain or otherwise subjected to excessive moisture, there's no immediate need to clean it after use. It can go into the safe and happily remain uncleaned for two or three months (modern propellant powders and primers are non-corrosive).

As for excessive cleaning there's zero risk of extreme wear and negligible chance of damage provided cleaning is done correctly. Consider wear - quality cleaning equipment can't possibly impart anything approaching the extreme stresses of firing metal projectiles through a bore at the pressures, velocities and temperatures typical in modern rifles. The erosive force of a bullet spiralling down a bore at supersonic speeds is enormous, the friction and heat tremendous, yet barrels take this in their stride.

How is it possible a cleaning rod with a bronze brush occasionally pushed along a steel rifle bore at less than 2ft per second could cause any wear, let alone excessively so? Yet improper cleaning practice does present risk. Ham-fisted, overly vigorous or clumsy technique have ruined many a rifle bore and using some solvents incorrectly can also produce sorry outcomes. The good news is using the appropriate equipment and materials correctly will all but eliminate any possibility of damage - the benefits of regular cleaning outweigh the effort required. Target shooters will tell you regular cleaning is essential for optimum accuracy. For the average hunter, tack-driving precision is unnecessary as given the relatively low number of shots fired compared to target shooting, cleaning isn't required every time a rifle is used. Less intensive use requires less cleaning but it's prudent to clean rifles at least occasionally, like any other valuable possession. There are essential items and other pieces of kit we can deem optional, though I personally use them.

a rifle to function as intended proper cleaning is essential

Essential

A quality single-piece cleaning rod of diameter matched to calibre - if you own different calibre rifles you'll likely need a rod to suit each. It should be plastic-coated steel or stainless steel with rotating ball bearing handle - multi-piece rods and 'pullthroughs' are inferior and could damage the bore; brass jag (for patches - spear type's best); bronze brush; bore mop; flannelette bore patches available in pre-cut sizes to suit all calibres or in rolls you cut to size; powder residue solvent; copper residue solvent; gun oil; bolt lube (for lugs and other bearing surfaces); child's toothbrush; shellite or methylated spirits; clean soft absorbent fabric rags.





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Get that rifle cleaned . . . properly!

Optional

Cradle to support rifle makes the task easier and protects rifle; bore guide - seals chamber and receiver area from the bore, preventing leakage of solvent, powder residue and other grime into the breech and trigger assembly and helps align cleaning rod centrally in the bore, minimising contact by the rod. Essential items will cost less than \$200, the most expensive being the rod. For optional items a cradle can be knocked up from timber off-cuts and a bore guide will be \$50-\$80.

When a rifle is fired

What makes a rifle dirty? When the trigger is squeezed the propellant powder in the cartridge case is ignited by the firing pin striking the primer, the powder expands rapidly into high temperature and pressure gas, driving the projectile down the bore. This process has two immediate results. 1: Residue of predominantly carbon composition is deposited along the bore which accumulates with each shot. 2: The rifling will swage the bullet, leaving a residue of bullet material behind. If jacketed bullets are used (most high velocity centrefire calibres) copper residue will accumulate in the bore. Both are referred to as 'fouling'.

What's the problem? The target fraternity will tell you accumulation of fouling will affect accuracy and given the high volume of ammunition they go through that makes sense (a hunter might use 10 per cent or less of the ammo a target shooter will use in an average year). Further, the accuracy of sporter-style rifles is generally inferior to target guns to begin with. Fouling may cause accuracy to drop but won't be of any consequence unless allowed to accumulate to excess and what's 'excessive' generates much debate. In calibres such as the .223 Rem, .243 and .308 Win my preference is 100 shots maximum before cleaning powder fouling.

Corrosion from bi-metallic electrolysis between the steel bore and copper fouling is a concern for some though actual data is scarce. Some insist on maintaining a bore as free from copper residue as possible, others claiming rifles benefit from a permanent but light copper 'conditioning' of the bore none of my rifles suffered poor accuracy or developed corrosion coincident with copper fouling. For casual shooters, provided a rifle doesn't exhibit a tendency for heavy copper fouling after relatively few shots, application of copper solvent may only be needed once or twice a year.

Method

Lever, slide and self-loading types may need to be cleaned from the muzzle. If so, use extreme care as it's easy to damage the muzzle crown which will ruin accuracy - and never clean a bolt-action rifle from the muzzle. First and foremost, safety: *Never* work on a loaded rifle, *always* open the action, remove bolt, remove magazine/ drop floorplate and unload *before* starting. Chemical solvents are toxic and corrosive so comply with manufacturer's instructions and wear gloves of heavy duty household type at minimum.

1: Place rifle in cradle or other stable support with muzzle lower than breech to prevent solvent flowing back into receiver. 2: Insert bore guide if you have one, checking it's aligned by looking through it into the bore. 3: Attach brass jag to cleaning rod, spear a patch on the jag, anoint with powder solvent (enough to wet, not saturate). If cutting patches to size, experiment



until a patch passes down the bore with some resistance but doesn't have to be forced (snug fit).

4: Insert into bore guide or chamber. If the latter, position rod centrally as the jag and patch contact the throat of the bore (where the rifling begins). 5: Gently push rod forward and with practice you'll feel the point where patch exits chamber and contacts the rifling. It's important the rod is aligned centrally to avoid direct jag contact with rifling. This will be felt as an abrupt stop so don't force the jag, rather adjust rod alignment until the patch slips into the bore. 6: Push forward with slow steady pressure until the patch exits the muzzle, keeping the rod central all the way. Remove patch which will be black with powder residue and discard. 7: Withdraw rod, spear a clean dry patch on the jag, repeat steps 4-6 until patches come out clean or with little trace of fouling. 8: Insert another wet patch and leave bore wet for 10 minutes. Remove brass jag, install bronze brush on rod and using same technique, run the bronze brush through the bore.

9: Push brush all the way out the muzzle, draw it back gently until bristles just contact the muzzle and again being careful to keep the rod aligned, pull back with slow steady pressure until the brush exits the chamber

completely. Repeat three times (brush will agitate remaining fouling in the bore). Trust me, even though your last dry patch was clean, subsequent patches will be filthy. 10: Remove brush, install jag and repeat step 7. Depending on how long since the

rifle was last cleaned this may be sufficient. If not, repeat steps 3-7 until patches are clean. 11: Remove jag and install bore mop on rod, sprinkle a few drops of solvent on mop, insert into chamber as far as the throat and rotate to clean any residual fouling in





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Get that rifle cleaned . . . properly!

the chamber. Use a clean mop to remove any remaining solvent (if using a bore guide remove it for this step).

Unless you suspect copper fouling build-up you can now clean and lubricate exterior metalwork, oil the bore and put your prized possession in the safe. A wipe with a soft cloth lightly anointed with gun oil is sufficient for exterior surfaces, for the bore, wet a patch with oil and run it through. Due to rifles being stored vertically I insert a plug of patch material in the chamber to stop oil seeping from the bore and chamber into the receiver. Alternatively store muzzle-down.

Copper fouling

Carefully following maker's instructions, anoint a patch with copper solvent and run through the bore, leaving solvent in the bore no longer than prescribed. Run a dry patch through (copper fouling will manifest as blue staining of the patch). Patch out the bore repeatedly until clean and dry one treatment is usually enough for all but the heaviest fouling so if in doubt, repeat. Copper solvent is highly corrosive, much more than powder solvent and for this reason I follow up with a patch soaked in shellite or meths to neutralise any residual solvent in bore or chamber. Clean and lubricate exterior surfaces and bore and vou're done.



Other parts

Clean all surfaces paying particular attention to bolt face, extractor, ejector and locking lugs. Use bolt lube sparingly to lubricate lugs and cocking cam. On stripping the bolt if fouling is evident, clean interior of the bolt body, firing pin and spring. If using powder or other solvent, dry thoroughly before re-assembly, lubrication usually unnecessary unless manufacturer prescribes it.

So what's the toothbrush for? Bolt lugs engage recesses just behind the breech face and over time a mix of powder fouling, residual solvent and other crud will accumulate and cause binding or rough lock-up. Apply powder solvent to the toothbrush and gently scrub out the recesses. To minimise solvent splatter, line the breech area with a rag and dry with soft cloth. There are fancy T-shaped rods, jags and patches for this purpose but a toothbrush is effective and cheaper. Maintenance of bolt and lug recesses is required less frequently than routine bore cleaning.

Equipment care

Solvents, particularly copper, will corrode your rod, jag and bronze brush given time so wipe the rod down with a clean rag, immersing jag and brush in a jar of shellite or meths for 10 minutes. When stored your rod should be hung from the threaded end to ensure it remains perfectly straight, don't lean it against a safe or cabinet wall as it'll eventually deform. A bent or pitted rod must be replaced or bore damage is the alternative and barrels cost much more than cleaning rods. Bronze brushes wear quickly and easily bend so when a brush slips down the bore with little resistance, replace it.

Wrap-up

Before using the rifle again patch out oil in the bore and chamber as firing a wet bore could cause damage. *Always* check the bore for obstructions before firing the first shot regardless of when last cleaned as you'd be surprised how easily foreign objects can find their way unnoticed into a barrel. I reiterate the above is based on my own experience though in time you'll develop your own preferences and methods. ●



Automotive degreaser can be used to clean the bolt body and striker assembly.

Lightly lube the primary extraction cam at root of the bolt handle.



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Shooters take aim for vital funds

nfortunately, many families around Australia haven't gone untouched by cancer and the victims it chooses. Wayne, a long- time shooting mate of mine, told me of his son Adam who was battling an aggressive form of leukaemia which threatened to take his life and I genuinely felt his emotion when he revealed the lengths Adam and the doctors involved had gone to in battling the disease.

Compounding this was the complication of distance brought about by COVID-19 restrictions which forced Wayne to rely on phone and video communication with his family in New Zealand. Wayne's wife Dianne had managed to travel to New Zealand prior to the restrictions and remained with their son while he underwent treatment.

After numerous setbacks along with chemotherapy and a bone marrow biopsy, a stem-cell transplant sourced from the other side of the world miraculously matched his DNA and was used to help combat the disease. Losing almost 30kg from his 40-year-old frame and coming so close to losing his life, I was delighted to learn Adam was finally on the road to recovery. The medical staff involved were the answer to a prayer for Wayne and his family and they're forever grateful to all involved in helping save their son's life.

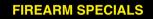
As most will be aware, many of the organisations in the cancer-fighting frontline rely heavily on donations to continue their work, though it's not too often that sporting shooters are given the chance to raise vital funds for research. So I was more than happy to accept an invitation from Wayne, an avid long-range target shooter, to take part in the inaugural Hunter/ Sportsman Rifle Match, a competitive leukaemia charity shoot at Muckadilla rifle range earlier this year.

Shooters on the mound with adjudicators scoring.



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Shooters take aim for vital funds

Muckadilla is a small rural town west of Roma in south-west Queensland and what it lacks in population it more than makes up for in character and for those in the target rifle scene, it's home to a fully-equipped 1000yd range nestled in agricultural surrounds. Wayne's been a member of the club for years and told me the Hunter Class category was an answer to those looking to shoot realistic but challenging distances competitively with what is essentially a hunting-style rifle.

This instantly appealed to me as though I don't own a genuine target rifle, I enjoy a challenge on the range with a hunting rifle. I believe testing your ability on paper at long ranges can only benefit you when the chance comes to take challenging shots in the field so what more excuse did I need for a shoot before my annual roar hunt?

With the event open to all licenced shooters and the majority being SSAA members, the Hunter Class qualifying conditions were clearly outlined to all participants (see panel). The shoot also catered to those unable to satisfy that criteria which enabled them to compete in an Open Class event.

The 400yd mound with flags indicating a testing easterly. A warm welcome greeted everyone on arrival on Saturday afternoon then it was straight down to business as I made use of the remaining daylight by sightingin my Sauer Classic hunting rifle in 6.5 Creedmoor. I was pleasantly surprised to see the various makes of rifles on display, many of them successfully configured to meet the individual needs of shooter mobility and/or ailment as the result of age or injury.

The 'Mucka' locals turned on their typical country hospitality with a magnificent spread for competitors on the Saturday night, then an open-fire nightcap rounded out the day before retiring to our swags ahead of Sunday's charity shoot.

Daybreak brought favourable weather though a stiff easterly breeze would later 'sort out the men from the boys'. With range safety briefings completed Wayne reminded us of the day's intent and, most importantly, encouraged us to have fun. Competition started at 300 yards then moved to the 400yd mound where it became apparent who was just enjoying a shoot and who was chasing the bragging rights. The state-of-the-art Silver Mountain electronic scoring system enabled shooters to inspect each shot placement while an adjudicator kept a watchful eye on official scoring. Interestingly, some of the best scores were shot at 400 and 500 yards as some of the seasoned target shooters crowed about their ability to read the wind - only to assure me later it was mostly guesswork! Completing proceedings at the 600yd mound capped off a wonderful day of target shooting and camaraderie with a handful of rookies enjoying their first Hunter Class event.

The day closed with an award ceremony and a variety of prizes generously donated by local businesses. Newcomer to the shooting scene Brett claimed the rookie award and collected a pair of driving lights for his efforts. Not surprisingly Wayne nailed first place in Hunter Class with his 6.5 Creedmoor, ending equal on points with Tom and his custom .223 Rem (Wayne edged it on more 'V' bulls).

Interestingly, Tom's .223 rifle shot outstandingly compared to others of larger bore thanks to his high BC 73-grain Rexem projectiles coupled with a 1-in-9 barrel twist.



Wayne's superb score at 500yd recorded on the Silver Mountain system.

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Tom actually scored better at 600vds than Wayne's 6.5 Creedmoor, proving smaller calibres can compete with the big boys at distance. More importantly the event raised \$1000 which was gratefully accepted by Cancer Society NZ, the weekend a resounding success for the inaugural Hunter/ Sportsman charity shoot while raising vital funds for a very worthwhile cause.



Brett enjoyed his first Hunter Class shoot and, Wayne (left) presents him with his prize.

Hunter Class regulations

Winner: Aggregate score champion decided over 300, 400, 500 and 600 yards. **Conduct of match:** Two 'sighters' plus 10 counting shots at each range, seven-minute time limit, highest score for each yardage used.

Standard rifle: Any rifle bought as a standard factory-made practical walk-around sporting/hunting/varmint rifle, without features or attachments which would place it in the style of a target, match or service rifle.

Open rifle: Custom actions, aftermarket barrels and non-commercially available cartridges. Weight: Not greater than 6.5kg including any telescopic sight or bipod. Actions may be bedded in the stock.

Barrels: Rifles may be re-barrelled if necessary but replacement must not exceed heavy varmint profile. Barrels not to exceed 26" (66.04cm), muzzle brakes not permitted. Ammunition: Muzzle energy limit not to exceed 3500 foot-pounds, muzzle velocity of ammunition not to exceed 3275fps.

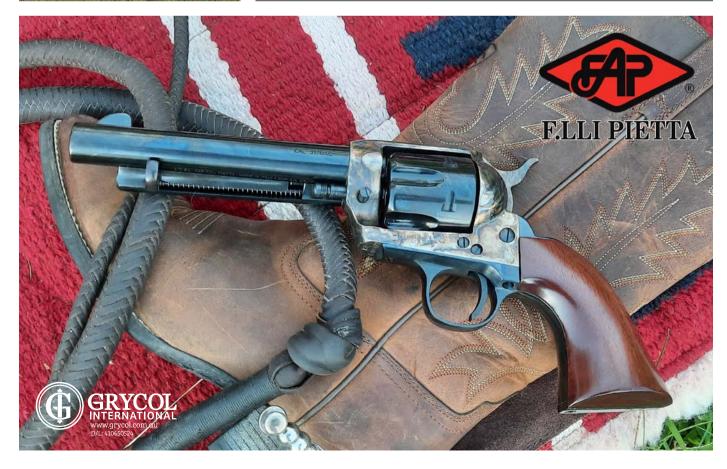
Trigger: Any safe system permitted - a trigger shall be deemed safe if (a) its activating mechanism is enclosed in suitable triggerguard, (b) vigorous cycling of the action does not cause trigger to release.

Magazine: Shooter to be in firing position before placing loaded magazine in rifle. Rounds can be fed manually by single-round loading or direct loading to chamber of the rifle. On completion the action is to be opened, chamber and magazine to be inspected by competitor and scorer to ensure both are free from live rounds or empty cases.

Sights: Any, including magnifying or telescopic (set to a maximum of 25 power). Ammunition: Factory and hand-loaded allowed.

Rests: Front of rifle may be supported by a hunting bipod (Harris or similar), rear bag permitted.

Entry fee: \$60 for Saturday sighting, practice and Sunday competition (\$50 Sunday only).





e came up from the gorse-choked river at a decent trot, obviously disturbed but not overly alarmed by my son Harry's noise or scent from downstream. His dappled red coat glistened and a set of large, bladed antlers were held regally high. I took a nanosecond to admire this wonderful animal before the rifle came to my shoulder and, indelibly etched in my mind, is the ease with which he was swiftly covering the ground, perfection in motion. He was side-on and roughly 80 yards from me as the cross-hairs tracked him - a perfect moving target. But I didn't fire.

I was willing him to stop and look back at the river to afford me the surest of killing shots but he didn't, the stag trotting over the skyline and disappearing from my life. I sat down shaking and shattered - my lack of shooting ability having blown it - so I determined there and then I'd teach myself to reliably and confidently hit a moving target with a centrefire rifle.

I'd known for a long time it was a shooting weakness which needed addressing. I'd enjoyed some success on sprinting deer and pigs when the range was below 25 yards using the swing-through from behind shotgun method - the rifle fired as the cross-hairs were flung past the chest, pure gun speed accounting for the correct lead. In fact I can close my eyes and still revisit vividly a Flinders Island pig in the 1990s dashing flat-out across a vehicle track - the only opening in the massive sea of long tussocky grass - and that rifle shot using shotgun technique remains one of my fondest hunting memories.

But the system was unreliable past short distances so I needed to develop a sustained lead methodical system for longer ranges and, most importantly, a means to practise it. I settled on a few concepts in my approach to achieving this.

1. Deer and pigs would be my main targets with almost all shots being from the offhand position. As I was relatively confident of taking offhand killing shots on these animals when stationary out to 100 yards I set this distance as maximum, together with a mid-range of 60 yards, for my moving target practice.

 All my practice would be with the .222 Remington - cheap to shoot, no recoil, little barrel wear, with reloads at 3000fps. The leads and sight pictures established would then automatically be suitable for my 7mm at similar velocity for the real thing.
 To keep it simple three animal speeds of walk, trot and gallop were chosen. I took my kelpie alongside the motorbike in all three and recorded his speed for each on the assumption a good sheepdog, pig and deer would record roughly the same velocity. Next as always came the dilemma. How to create a moving target platform capable of constant practice that could be engaged at ranges out to 100 yards and speeds of up to 60km/hr. I'd previously used rolling tyres and a target running on downhill wires without success and more recently drones had been investigated but rejected.





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Moving target practice - at last!

Then my lightbulb moment: What about a radio-controlled car or truck towing a target on a trailer? I thought it was a good idea and after its first run I knew it was more than that - I'd solved the problem. It was totally safe, repeatable, effortless, transportable, set-up time measured in minutes and not too expensive if shared between a few mates. We settled on a second-hand petrol model with a good frame and suspension and split the \$600 cost between myself and two nephews.

Fully capable on an uneven paddock of speeds easily exceeding 60km/hr while towing the trailer, it's easy to drive with its single controller (electric remote-control cars another good option). Our target frame is mounted on a light trailer towed behind the vehicle, eliminating any chance of a vehicle hit. After a few trial runs we found we had to extend the trailer's wheelbase as, on windy days, the corflute target had a tendency to catch the wind and tip the trailer (provision to add weights for extra stability in wind has also been made).

One problem we did encounter was establishing the actual speed of the target, something we solved with the loan of a speed gun then marking throttle settings on the hand controller. In its present form as a moving target platform the system is unbelievably good and readers will be able to fine-tune the idea to their specific needs - I only wish I could claim royalties on remotecontrol cars which might be sold for this purpose now the idea has been 'outed'.

And so to our shooting thus far. It's a work in progress - but at least I can go to work. The sustained lead method involves putting a predetermined lead on the target, swinging with it while maintaining this lead and firing the shot with the gun still following through after the trigger release. To obtain this programmed lead for 60 and 100 yards - and the speeds of walk, trot and gallop - we aimed at the corflute target's leading vertical edge and measured the distance behind this edge



of the 'group' that formed. I use 'group' loosely here as they were far from it and we realised straight away how difficult consistent running target shooting is.

With the aid of a lead-calculating app alongside our practical calculations from the targets, we established our required leads measured in inches for sustained lead shooting out to 100 yards. However in practical terms when actually shooting, we find it easier to measure this lead in terms of visualised animal body lengths or part thereof. Knowing the actual length of deer/ pigs we allow for one quarter, half or full body length (our corflute target helps in that it's roughly one full body length). It's a simple and uncomplicated system, a bit like the concept of 'holdover' where body depth is used as a reference for bullet drop in long-range shooting.

Now if I could just stop my nephews having fun with the mover doing wheelies and burnouts, all I need now is practice, practice, practice - and keep wearing out that .222. ●



Radio-controlled petrol car - powerful, solid with good suspension and tyres.

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In the zone the psychology of shooting

Todd Hutchison

ompetitive shooting is a concentration sport which requires precise body positioning and movements with intense focus on the target. A beginner often experiences a sensory overload on their conscious mind in trying to deal with the sequence of actions they have to follow in the lead-up to squeezing the trigger.

Over time the subconscious mind starts assisting by taking up some of these control functions through a four-part learning process. When a person initially learns to shoot, the brain physically starts creating a web of synaptic relationships which forms a neuro network that later guides a series of limb movements required to position the body and hold the rifle, known as the 'unconscious incompetence' stage. The beginner may experience confusion with the process and sometimes frustration in trying to do it all correctly within those critical seconds. Fortunately, the experience of shooting also releases reward-feeling neurochemicals to maintain their ongoing interest.

The act of shooting can increase heart rate and blood pressure for novices which corresponds with the release of a flood of several neurochemicals including cortisol, adrenalin (aka epinephrine) and other hormones like serotonin, dopamine and norepinephrine which is often associated with the fight response. That's why they can feel unsettled the first few times on the range, particularly from the noise of other firearms. With more experience the shooter moves to the 'conscious incompetence' stage where the conscious mind is attempting to recall and follow a sequence of steps. They still have low performance although are starting to become more familiar and comfortable with the rifle's various parts.

The third stage is 'conscious competence' where they start improving their performance through repetition, each time reaffirming those neural networks which shape their thinking patterns, making each shoot easier. They're gaining awareness of what they're doing correctly and the errors being made and are still consciously aware of the activity's process and making adjustments needed to achieve better scores.

The final phase is 'unconscious competence' which is achieving a division of the tasks between the conscious and subconscious where certain actions are in autopilot-type mode. With the existence of stronger neural networks guiding their thinking, dependence on the conscious mind is minimal and the subconscious mind takes over much of the set-up body movements of the shooting process.

This brings higher performance as they position themselves into the familiarly comfortable body posture, holding the arms and hands in the correct position and seemingly set up to shoot without thinking too much about it. They slide the bolt more smoothly, load the rounds without much looking and find the whole process simple.

The level of concentration by the conscious mind can be greater as it now has fewer tasks to do itself. Unconscious competence supports familiarity and enables conscious focus to be on the important things - the wind, target and required adjustments. This explains how repeated experiences improve skills over time. integrating the conscious and subconscious mind's functions. Muscles and tendons are strengthened (ie, muscle atrophy and hypertrophy) with 'muscle memory' creating a strong brain and motor skills connection. Muscles suddenly know what to do when receiving the brain's signals, like the position and action of the trigger finger - muscle memory is believed to be retained for around 15 years - and it's through this persistence in repeating tasks that leads to becoming an expert shooter. Author Malcolm Gladwell spoke of the '10,000-hour rule' which is an estimated time of persistence in education and experience to build a mastery level of skill.

ord of advice can work wonders.

When a shooter takes an extended break from the sport, the related neuro networks created in the brain begin breaking down through a process known as pruning, which slowly starts destroying the neuro network to make more brain space available for learning other things, which reflects the old adage: 'If you don't use it, you'll lose it'. Interestingly, a retired professional shooter who's lost some skills will be able to obtain results faster in taking the sport up again compared to a new shooter, as the core of the neuro network will still largely be in place.

Once the procedural thinking is working and the muscles developed, a shooter has to deal with the real challenge on competition day which requires managing their emotional state. A champion-level sports person can go from being the highest performer to low on the scoring ladder as the limbic system triggers emotional responses (the paleomammalian brain) which interfere with logical thinking (the rational brain).

Business schools are using the term 'emotional intelligence' to explain the need for leaders to avoid or learn to manage the unwanted consequences of emotional, irrational responses. This is about maintaining the correct state of mind to become and retain a champion mindset and calls for the ability to concentrate and focus on the task and separate oneself from negative thoughts and distractions. Thinking capabilities are influenced by many factors such as sleep, diet, fitness and the active hormones (produced by the endocrine glands) and neurotransmitters (produced by the nervous system) which influence neurochemicals in the brain.

As we become more frustrated, irritated or distracted our emotions start impeding the higher cognitive functions needed to stay mentally sharp. To deal with this, athletes are proactive in managing the thinking patterns by practices known to program their thoughts - basically to wire their neuro networks to their advantage so they 'feel' like a champion. Thinking directly impacts a person's behaviours and actions which give them their results. If a shooter wants to change their results they're required to alter their thinking to overcome past bad habits and recurring negative thoughts. When they program their mind to believe they're a champion they'll train harder, practise with more focus and increase their performance level.

Olympians such as US multi gold medalwinning swimmer Michael Phelps have used techniques like 'visualisation' to program pre-event thoughts which can impact on their belief systems. In addition, affirmations which enable positive self-talk can also be used to program the mind which inevitably increases confidence and selfesteem as well as reducing fears, doubts and limiting beliefs. It's about achieving a



sense of control, given stress is a real or perceived loss of control - breathing exercises have proved useful on competition day to calm oneself and release stress.

Away from the range a skilled shooter can actually visualise themselves going through the motions of shooting in their mind in a form of perfect practice. Neuroscience has shown this has a direct and physical impact on wiring the neuro networks in the brain which starts to mimic a real-life experience and such techniques have been found to be beneficial in improving sporting performance.

This also explains why a person who goes to a competition feeling not very confident may have formed self-limiting beliefs about their level of skill which can then self-sabotage their performance. This appears evident watching shooters who become upset after off-target shots - where emotions get the better of them - and their results then quickly decline.

When a shooter's in the right frame of mind and achieving results, neurotransmitter chemicals like dopamine are present and have been seen to be a formidable skill-booster. The combination of all these factors puts the shooter in what neuroscience calls a 'flow' state - also known as being 'in the zone' - where their emotions are not interfering with the conscious mind's focus on the target, wind and timing while their subconscious is working in unison with the rifle. With this intense focus all other factors in the outside world are blocked out, giving them total commitment to achieving a great score.

• Professor Todd Hutchison is an author and behavioural specialist who has worked with numerous athletes and sporting teams.



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Remington's V3 Field Sport I was so impressed I bought one

John McDougall

he Remington Firearms Company has enjoyed great success with their self-loading shotguns. The Remington 1100 series set a high standard and achieved legendary status on the Trap and Skeet scene as well as finding a huge following among avid hunters. Following that was the 11-87 series which proved to be almost as popular and I shot a sponsored Remington Sporting Clays 11-87 with great success and found much favour with it.

Their latest offering - the V3 Field Sporter - is another gun quite revolutionary in design as it features dual connecting rods from the gas-operated cycling system connected permanently to the barrel. This shows real foresight by Remington designers, though having the cocking rods permanently on the barrel is something of an innovation. From the outset when I visited Australian distributor Raytrade, I was immediately impressed with the V3 when I mounted it to my shoulder. The gun felt light and lively and with a mid-sight bead fitted to the top of the rib coupled with the slight step from receiver top to peak rib of the barrels, I was sold without firing a shot. This was remarkable as there are few shotguns which excite me on initial inspection.

In the world of shotguns - from expensive models in either double-gun or overand-under configuration - I've long been a self-loading man. Having undergone four major back surgeries is genuine reason why I medically qualify for a 'C' Class licence. Reduced perceived recoil and the ability to throw the gun around using my arms and shoulders instead of rotating from the hips has become the only way I can move a shotgun and shoot, specifically due to perceived reduced recoil from a gas-operated shotgun, especially when considering 100 target-plus events.

I'm happy to use only two shells in my gun while shooting on a clay target ground but miss the additional firepower a self-loader can offer when hunting. I still enjoy the lure of the shotgun, having taken everything from mighty sambar deer to tiny stubble quail as it whirrs away to challenge the most skilled of shooters. During decades as a firearms enthusiast and 40-plus years as a gun writer, I've bought and sold many shotguns and tested all mainstream offerings. Raytrade also distribute Fabarm and I was convinced a Fabarm Velocity would be the ultimate, but after using the Remington V3 the lightness and liveliness of the gun won me over.

Barrel

Measuring $27\frac{1}{2}$ " from the receiver, the barrel is completed with a matte finish matching the receiver. This was popular with the 11-87 models and is known as a Parkarised finish, whereby the surfaces to be blued are lightly glass-bead blasted rather than polished to a high finish before blueing. The matte finish is preferred by hunters as it won't reflect sunlight which can cause glints to spook game. Being a Field Sporter it almost goes without saying Remington has built the V3 with a nod to the hunter, a point underlined by having tapped the receiver top in readiness for a scope mount and provision of a sling retaining fixture with the magazine cap for comfort on lengthy hunts.

Back to the barrel and the top rib is well constructed with a slight step upwards from the receiver top. I enjoy shooting guns with

The gas-operated system revealed - there are no retaining lugs or receiver lip for the rear of the fore-end to be stabilised.



The Remington V3 Field Sport new-model shotgun (Category 'C' licence).



a higher-than-normal rib as it allows me to hold my head more erect when pressing my cheek down on the stock instead of tilting it slightly forward and viewing the target out of the top of my eyes, tiring when doing lots of consecutive target shooting. The barrel features a white bead sight at the muzzle and smaller brass bead sight midway down the top rib, a stamp in the barrel indicating the gun is suited to either 2¾" or 3" Magnum shells.

The gas operating system is a marvel of design with the containing tubes permanently mounted to the barrels while the pistons and gas exhaust tubes can be removed for thorough cleaning, this design peculiar to the new Remington V3 with totally different gas set-ups for synthetic and walnut-stocked models (these are detailed in the instruction manual with simple directions on how to clean them). The unique gas-operating system makes for exceptional recoil reduction and excellent reliability for recycling and loading cartridges from the magazine.

Receiver

Made from lightweight and high-strength aluminium alloy the gun weighs 3.5kg. The balance of the gun with its 700mm barrel is excellent and feels comfortable and fast to swing and point - I was impressed. The cocking handle is substantial and should only be removed when the bolt is furthest forward and with the magazine empty and chamber clear - in other words when the gun is completely empty. Outwardly the receiver looks smart with all necessary components to make the V3 safe and efficient. Right of the receiver shows ejection-loading port, substantial cocking handle and scalloped opening forward of the loading port so the cocking handle can be removed for cleaning.



The magazine release button under the receiver and to the rear of the magazine carrier is simple to use, the cocking handle substantial and bolt release button ample and quick to release the bolt forward once a round is chambered, readying the V3 to shoot. The ejection port is important for loading, unloading and removing the cocking handle for thorough cleaning and a specially scalloped section forward of the ejection port allows the cocking handle to be detached while taking the empty gun down for cleaning.

With the bolt at its furthest point forward once the barrel has been removed, the cocking handle is simply pulled free. This enables the bolt and trigger mechanism to be removed for more thorough cleaning as shotguns can accumulate powder-ash residue in the action which needs regular attention. Tapping of the upper receiver is perfect for accepting a set of mounts and scope for deer hunting or slugging pigs and I'd recommend inserting a rifled choke tube for such applications to spin the slug as it leaves the muzzle for increased accuracy.

Trigger pull is good at 2kg, design of the trigger foot comfortable with its broad surface and nicely raked shape. The safety catch to the rear of the triggerguard is in a traditional position and suited to convenience and safety and, leaving nothing to the imagination, when the red line of the safety catch is showing the V3 is ready to fire.

Remington's V3 Field Sport - I was so impressed I bought one

Stock and fore-end

These are of standard grade walnut with good grain running the full length of the stock with matching colouring. Novel chequering design is expertly machine-cut around the fore-end and pistol grip affording a firm and positive grip. Remington has fitted a substantial recoil pad, not so much to reduce recoil from light trap or sporting loads but to tame more significant recoil from 3" Magnum slug and SG loads suited for deer, pigs or goats (remember to use no tighter than modified choke as recommended in the instruction manual).

A sling ring is provided within the magazine cap which retains the fore-end but an additional sling fitting would be needed to complete the necessary attachments for a sling. The stock is in standard configuration without an adjustable comb piece. Two brass screws lend strength to the split foreend piece though I was surprised at the lack of locating lugs for the rear of the fore-end, attaching to the receiver front. Without the locating lugs typically found on earlier models the fore-end felt a little unsteady.

In the field

I couldn't believe the liveliness of the Remington V3, how fast it swung and how minimal felt recoil was even with some brisk 28-gram sporting loads. Using the modified choke, all targets challenged were smashed during several rounds of sporting clays. The shorter barrel coupled with the long receiver sighting plane didn't affect accuracy and I was absolutely delighted with the feel and performance. For anyone considering a shotgun for clay target shooting I've no hesitation in recommending the Remington V3 - or for a primary producer on vermin control. I was so impressed I bought one - enough said.



Specifications:

Manufacturer: Remington, US Australian distributor: Raytrade Model: Remington V3 Field Sport 12-gauge shotgun Overall length: 1255mm/49½" Barrel length: 700mm/27½" Overall weight: 3.5kg/7lb 10oz Barrel weight: 1.29kg/2lb 13oz Bore and chamber: Bore 0.728", chamber 76mm/3" Forcing cones: Lengthened

Chokes: Improved cylinder: 0.718", Modified: 0.710", Full: 0.690" Trigger pull: 2kg/4½lb Stock dimensions: Length of pull 380mm/15", drop at comb 35mm/1³/8", drop at heel 55mm/2¼" Warranty: Two-year limited RRP: \$2450



John suggests buying a Briley 'speed wrench' for fast and positive choke location and installation.



An orange magazine follower indicates an empty magazine.

Chequering about the fore-end is novel and covers the front grip area well.



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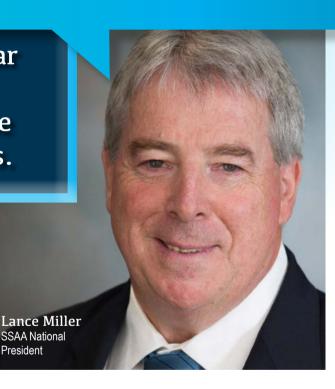
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President





Thomas Tabor

ou can always resort to buying a pair of socks, a shirt, a tie or, worse yet, maybe a can of car polish for your loved one this Christmas. But if you're buying that gift for a shooter there are better options which are almost guaranteed to put a smile on their face. During the past few years terrific innovations have been made in virtually every aspect of the shooting products we use and incorporating some of these into your holiday purchases could make Christmas even merrier.

The following are a few items I've personally found useful and would likely make a terrific gift under your own tree. In each case I've tested and used these products and found them to be of great benefit to my shooting activities.

For the reloader

While most rifle and pistol reloading presses have the capability to seat primers in the cartridge cases, a more efficient way involves the use of a hand-held priming tool like the one produced by Hornady. I prefer to seat primers in this manner as it's quicker and I believe it seats them in a more uniform and consistent manner. In this case the RRP for Hornady's Hand-Held Priming Tool runs at less than \$100. Distributed in Australia by Outdoor Sporting Agencies.





Sometimes a very simple change in a product design can result in great dividends and a classic example of this can be seen in Lyman's Bleacher Reloading Tray. By Lyman simply reshaping the design of the usual cartridge tray to display the shells in a stair-step manner provides better and easier access to the cartridges and one of these new designs should set you back less than \$20. Distributed in Australia by NIOA.



Another great product by Lyman is their Turbo Sonic 2500 Case Cleaner. Lyman makes both larger and smaller Turbo Sonic Cleaners but the 2500 is nicely sized and will accommodate up to 400 .223 or 250 .30-06 cases in a single batch. While this is a bit pricier than some of the other products here at about \$200, it clearly does a better job of polishing cartridge cases than the usual tumbler style designs which use a dry abrasive rather than a liquid. Not only does it do a great job of cleaning the tarnish on the outside of cases, it cleans the inside and even the primer pockets all in 10-15 minutes. The Lyman Turbo Sonic Cleaner also doubles as a means to degrease gun parts and can even be used to clean some types of jewellery.



Ammo storage

It matters little whether your loved one handloads his or her own cartridges or chooses factory loaded ammunition, proper storage is an important consideration for all shooters. MTM Case-Gard is possibly the world leader in ammo storage containers with an almost unending selection of items to choose from, none of which will break the bank.

If the person you're buying for has a need to store multiple boxes of ammunition the Zombie Ammo Can could be a good choice and for the ladies the bright pink Ammo Can would put a smile on their face. And in many cases these same boxes can be used just as well for storing other items like tools, first-aid supplies, snacks etc. And no-one should overlook the need when it comes to smaller quantity cartridge storage. MTM Case-Gard has those boxes too in numerous configurations and designs dedicated to the storage of shotshells, rifle and pistol ammo.



If your shooter uses lots of rimfire cartridges a great gift option could be MTM's Ammo Belt Pouch, a bright red fliptop box which fits on the belt for quick and easy access to cartridges. It holds up to 100 rounds of .22LR shells and will work equally well for any of the various .17 calibre rimfire shells, airgun pellets, BBs or even 9mm pistol cartridges and for only a few dollars you could add that to your shopping list as a stocking filler. www.mtmcase-gard.com



Allen Company is another great supplier of cartridge storage products and for field use I'm particularly fond of their Allen Buttstock Rifle Cartridge Holder which is made of fabric and slips over your rifle stock to hold extra cartridges. I seldom go bush without one of these on my stock and for less than \$20 your shooter could do the same. Distributed in Australia by NIOA.



Steadier shots

Like the Allen Cartridge Holder my rifles seldom head out without a bi-pod attached, one of the great innovations of recent times. When not in use the legs collapse and fold forward out of the way and while there are several companies making rifle bi-pods, Harris Engineering was one of the first to introduce the design and are clearly leaders in this technology.

When buying a bi-pod though, it's important to understand how the shooter may use it. For example, if much of their shooting is done from the bench a shorter-legged model may be best, while for a hunter then one with longer legs would be more appropriate. With the latter, the legs on some models allow you to shoot from either the prone or sitting position by adjusting the length of the legs.

While there are plenty of copycat bi-pod designs out there, many of them inferior quality, I believe Harris bi-pods are superior in every aspect. The advantage of this design is the fact they attach to a standard sling-swivel stud on the forearm of your rifle, making them simple to switch from rifle to rifle. Depending on the model you choose, expect to pay about \$200 or maybe slightly more for the longer-legged ones. Distributed in Australia by NIOA.



Bore cleaning

One thing every shooter has in common is a need to frequently clean the bore of their firearms and that translates into a necessity for cleaning patches. While these may not be the most exciting gift to receive, they're something every shooter can use and surely will be appreciated. You'll find these patches almost anywhere shooting supplies are sold and, for only a few dollars, they'll make a nice stocking filler.



Christmas gift ideas for the shooter

Better pair of pants

Like making a better mousetrap, 5.11 Tactical has actually designed a better pair of pants called the Stryke. At the heart of the design is its fabric - 65 per cent polyester and 35 per cent cotton - they feature a total of 12 pockets which have been reinforced in strategic places for durability and their self-adjusting waistband is both practical and comfortable. The Teflon finish on the fabric resists water, dirt and stains but in my opinion what makes them stand out from the crowd is what 5.11 calls their mechanical stretch Flex-Tac Ripstop design.

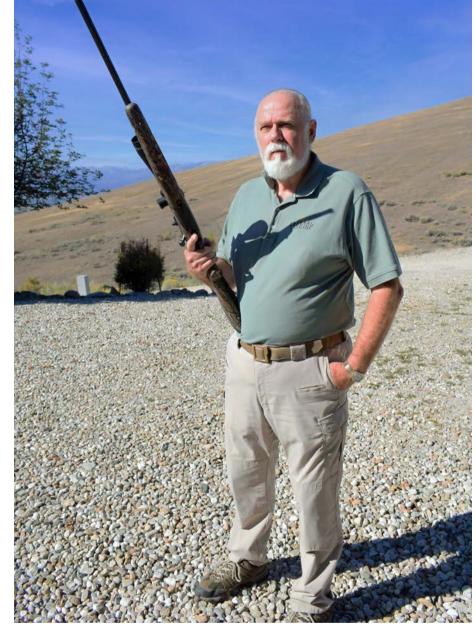
We all face obstacles and impediments in the field and those problems often result in snags and tears in the fabric of our clothing which in time will curtail their useful life. The neat thing about the Stryke pants fabric is the fact that when a snag occurs, the Flex-Tac Ripstop feature prevents it from spreading or becoming larger, something I can attest to as I've snagged my own pair on many occasions and have never found a hole to become progressively larger.

I've used 5.11 Stryke pants for 10 years and while they've often faced some pretty rugged conditions they've always held up well. Expect to pay around \$100 for a pair of 5.11 Tactical Stryke pants which might appear on the surface to be a bit pricey for field gear, but when I think of how long they've lasted it just doesn't seem that expensive in the long run. www.outdoortactical.com.au

Steady as she goes

Hawke Optics recently introduced a simple and straightforward way of holding your spotting scope steady from the comfort of a vehicle. Their Spotting Scope Window Mount is quick and easy to use and while designed specifically for use with a spotting scope, it works equally well in securing your camera for wildlife photography. The jaws making contact with the window are padded to protect the glass and the adjustment handle makes alignment quick and effortless. Best of all, the Hawke model only costs around \$20. Distributed in Australia by The Scope Store. ●







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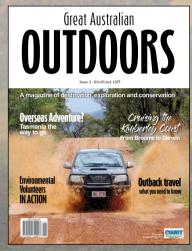
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SCAN AND ORDER



Introduce a friend to shooting ... and help them stick with it

Dave Pearce

've helped out at club 'come-and-try' days and watched new shooters struggle to sight-in poorly set-up rifles, unable to see their shots on paper through fuzzy scopes. This is discouraging for a newcomer so if we want others to share the joy of shooting and stick with this great sport, we must ensure their first experiences are with well-prepared guns which are easy to shoot accurately.

Taste of success

When a couple of my neighbours decided to try shooting I took them to my local rifle range and what's great about a trip is it reveals the potential of the latest gear and shooting techniques. As one of them said: "I never knew scopes could be so clear," referring to his blurry childhood experiences. By accessing the collective wisdom of a club, a shooter can learn in an afternoon what might take years of trial and error on their own.

My friends learned how stabilise before squeezing the trigger, how to load a bipod, use a rear bag and zero a scope. I watched their smiles grow as their groups shrunk and they made consistent hits on steel targets out to 500m. All of this was done using good hearing protection and moving gradually from mild recoiling guns so no-one was spooked.

Evaluate their needs

The next step is understanding why they want a gun - do they have specific needs like pigeons in the barn, deer trashing their orchard or do they want to compete? The first thing to explain is one gun can't do everything. Put simply, if you want to shoot moving birds you need a shotgun; if you want to practise cheaply, shoot small pests and nab a rabbit for dinner, a .22LR is perfect; if you fancy shooting longrange or hunting medium to large animals you'll need a suitably powerful centrefire rifle. The Common Cartridges table on Page 76 gives a summary of some popular cartridge strengths and weaknesses and for more details of gun uses read the SSAA's Comprehensive Guide to Shooting & Hunting in Australia.

Try before you buy

Ideally every new shooter would be accompanied to a club shooting the sort of guns

they're interested in, where they can guiz members on the pros and cons of each firearm and borrow a selection of club or private guns to fire a few hundred rounds. They should experience the recoil, muzzle blast and performance of different calibres and have a go at as many different events as possible, then they'll be well qualified to choose that first firearm. If shooting pest birds is their need, encourage them to visit a Sporting Clays club where they can observe and try an array of shotguns and events and find out what's possible with each type of gun. The other advantage of visiting a range is to see and use all the accessories available, different scope options, rests, bipods, bags, slings, tripods, spotting scopes, binoculars etc.

Consider a .22LR trainer

I encourage all new shooters to consider a .22LR as it's a perfect training platform used by many serious competitors to hone their accuracy skills. The .22LR is a great first rifle, fun and easy to shoot with low noise and scant recoil making a new shooter unlikely to develop bad habits that can come from starting with a heavy recoiling rifle. And they've nothing to lose as for the price of 1000 rounds of centrefire ammo they could have a .22LR and 1000 rounds of 22 ammo. The process of buying and preparing a .22LR will teach them a lot from setting up and zeroing a scope, testing different ammunition, learning about bedding adjustments, barrel floating and trigger release. A .22LR used often will teach them a lot more than a centrefire rifle that's only shot occasionally.

After only one gun?

A question asked by many new shooters considering their budget is "Can I go with just one gun?" While it's possible, the same way you could play golf with one type of club, it's not optimal - I know some shooters who, out of necessity, learned to shoot well with one large calibre rifle. If they're not interested in a .22LR training rifle, encourage them to check the Common Cartridges table and find the adequate-sized cartridge for their needs. I recommend anything from .243 Win upwards be fitted with a good muzzle brake to reduce recoil and, provided good hearing protection is worn, there's no downside to a muzzle brake. They'll have significantly less recoil to endure and with practice be able to spot their own shots.

First gun checklist

Hopefully the new shooter has heard some of your advice, tried a few rifles and has a good idea of what they need. While this list is written for rifle buyers the first four points also have relevance to shotgun purchase.

1. Warranty: The safest bet is a new gun with warranty from a dealer with a good reputation for aftersales support. Look for a brand with an accuracy guarantee. I'd only go second-hand if there's an option to range test or return the gun as some faults can't be easily spotted or predicted.

2. Go with a common brand and calibre: High-volume brands offer best value and greatest choices. Some will come with upgraded stocks, heavy or light barrel weight picks, some are threaded for a muzzle brake or even offer adjustable triggers. Popular brands often offer replacement parts and aftermarket upgrades which might be helpful as the new shooter develops. A popular calibre provides access to a wide range of factory ammunition and means they don't need to rush into reloading.

3. Trigger: The rifle should be dry-fired in the shop (ask beforehand), to check the trigger breaks crisply with a firm press at most. A heavy and gritty trigger which requires straining to break will detract from the rifle and need a gunsmith to fix.

4. Length of pull: The distance between trigger and butt of the rifle is the length of pull. Unless the shooter is of average arm length they'll probably need this adjusted - some stocks are adjustable while others have a spacer insert system.

5. Free-floated barrel: For a rifle to shoot its best the action should be securely held (bedded) in the stock or chassis, allowing the barrel to extend forward without any contact with the stock fore-end (a quality stock won't be able to be pushed up to touch the barrel). Check this feature is available or ask about aftermarket stocks/ chassis designed to achieve this.

6. Bolt-action with magazine: While lever and pump-action rifles are great fun, unless there's a specific reason I'd go with the simpler bolt-action. A quality boltaction is strong, reliable, simple to maintain and service, takes seconds to remove the bolt to make the rifle safe and provides easy access to inspect or clean the bore. A detachable magazine also provides options - it's often needed in competitions and is quicker to reload than a top-stacked, floorplate design.

7. Cheek-riser and vertical grip: A traditional stock's cheekrest stops in line with the bore to allow a cleaning rod to be run straight through the barrel, fine for rifles with open sights but with a scope a higher cheekrest is needed (one that's removable for cleaning). Some stocks and chassis have this feature or there are alternatives, a Velcro stock pack perhaps the simplest. A vertical grip is another desirable feature as it angles the wrist upwards, helping to reach the trigger with less tension.



8. Rests, bipods and bags: Hopefully the new shooter has tried various options but at a minimum, a bipod for the front and rear bag (or sock full of rice) will help them hold steady when sighting-in or hunting prone. You get what you pay for with bipods but at a minimum go for one with a side-to-side tilt feature to allow levelling the rifle on uneven ground.

9. Scope mounts: It's essential to have solid mounts which suit the rifle and hold the scope snug and straight. Check the scope bell clears the barrel and eyepiece is clear of the bolt (some bolts open quite high). The scope must be levelled and adjusted to the shooter so a full image can be comfortably seen, then tightened with all screws to specification.

10. Scope: A simple test of a scope's usability is how far it can spot the chosen calibre's bullet holes in paper - I recommend 75m for a .22LR and 100m for centrefire. While a fuzzy image might be adequate for body shots on large animals, if they want to spot their shots and make precise hits they'll need good resolution and a midpower (4-12x) scope with parallax focus feature should be able to do this. If buying a .22LR it's worth also checking the scope



Introduce a friend to shooting . . . and help them stick with it

can focus down to at least 25m for closer shots. Some form of hold-over lines in the reticle is an advantage and will give the shooter options for extended distance shots down the track (this is explored in detail in 'Find the right scope for you' in the May 2020 edition of *Australian Shooter*).

And finally

Make sure the gun is assembled correctly and the new shooter has the right ammunition for their needs. Suggest they practise until confident of accuracy before going hunting and encourage them to continue visiting a club to keep advancing their skills, as unfortunately shooting skills are perishable. After all these considerations your friend will end up with a gun that's comfortable, accurate and easy to shoot in a calibre which fits their purpose and, most importantly, provides many hours of satisfying and successful shooting.



COMMON CARTRIDGES TABLE				
Common cartridge/ calibre options	Bullet energy at 100m	What is this cartridge great for?	Limitations/caution	
12-gauge shotgun From 40c/shot.	A solid slug = 950 ft-lb. Pellet energy very low at 100m.	Moving targets at close range (clays, birds, rabbits, hares). Medium game (goats, pigs, small deer) with buckshot or solid loads at close range. No scope, just point and shoot.	Significant recoil especially in light single barrel guns. Short effective hunting range (less than 50m). Hitting moving targets is a skill that needs practice. Pellets can damage meat for eating.	
.22 Long Rifle (LR) From 8c/shot.	70-90 ft-lb.	Learning basic skills, practising and competing. Inexpensive ammunition with low noise and low recoil. Cleanly taking small game to about 75m (from rats to cats). Euthanising sick or injured small to medium animals.	The bullet lacks impact energy and shots must be accurately placed to be effective.	
.223 Rem From 50c/shot.	l 000 ft-lb.	A mild recoil, ideal for small game to 300m-plus. Used in competitions to over 1000m. Head shooting medium game to 200m.	Significantly louder than the .22LR. Ear protection needed. Precise head shots are needed to keep rabbit meat. Marginal for chest shots on medium game.	
.243 Win From \$1.10/shot.	l 500 ft-lb.	Shooting everything from varmints to medium game. Adequate cartridge for goats, small deer, pigs. Long range shooting especially with fast-twist barrels.	It lacks bullet-mass and penetration for large thick- skinned game.	
6.5mm Creedmoor From \$1.10/shot.	2100 ft-lb.	Efficient long-range shooting with low wind drift. All Australian hunting except for the largest game. More energy than a .243, but less recoil than a .308.	Some states require a 6.8mm or larger projectile to hunt the large deer species.	
.308 Win From \$1.10/shot.	2500-plus ft-lb.	Many competitions and medium-range hunting. Legal to hunt everything in Australia. Lots of ammunition availability and options.	Recoil can be an issue, especially in lighter rifles (can be solved with a muzzle brake). A marginal choice for the largest Australian game (buffalo, camels)	

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Wraith 4-32x50 Infrared scope by Sightmark simply superb

20062200

Ben Unten

couldn't wait to lay my hands on the new Sightmark Wraith Night Vision Scope - and when I did I wasn't disappointed as it more than lives up to the hype and is so simple and intuitive to use it doesn't even come with an owner's manual, just a quick-start guide.

This scope certainly has some heft, weighing around 1075g with mount and is 265mm long x 55mm high x 50mm wide and comes supplied with an infrared (IR) torch. Adjusting the eyepiece and the 50mm objective lens is done manually via rotational components much as you would on a normal scope. The unit has a single power button surrounded by four directional arrows for controls, a single short press of the power button activating the scope and I was impressed by the boot-up time of around two seconds.

One short press of the power button activates the scope and another takes you to the menu where options include brightness adjustment along with 10 different reticle types in nine colours. Reticle choices include duplex, single-dot, tactical, tactical





with centre-dot and many more. Other controls include video/photo record/playback as well as storage for five profiles for firearms and ammunition combinations.

The unit features 1080p quality video, these and photos stored on an internal SD card (not supplied) which can be downloaded to a laptop or device. The scope has 4-32x digital zoom as well as an external power input so you can save battery life when downloading videos or uploading updates.



The IR torch

This weighs roughly 220g with mounting accessory and the focusable lens makes a big difference to the range of this scope and torch combo. It uses two CR123 batteries and is activated by a single press at the rear, lower power options accessed by a second and third press while a fourth press turns the unit off. It can be mounted to operate on either the left or right side of the top of the scope via the reversible thumb-screw mount (this can also be tool-tightened for harder-kicking calibres).

Zeroing the scope

The process of zeroing the Sightmark is so simple I wish it was available on all my scopes as I mounted it on my .243 Remington. The Wraith features a full, natural colour digital display during daylight hours with a sight picture much like that of a regular scope.

The reticle zero is accessed via the main menu, you then place the cross-hairs on the target and pull the trigger. After firing a shot, use the directional arrows to relocate the red 'X' to your bullet hole and press enter - the rifle is then zeroed with no more measuring distances or calculating clicks. Of course some additional fine-tuning may be required and this can be done by firing a group and moving the red 'X' to the centre of that group.

In the field

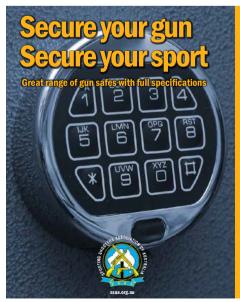
The fast boot-up is a big plus in the field as it allows you to move into position and flick the unit on. This also equates to greater battery life as you're not afraid to turn off and on as required as opposed to leaving the unit running because you're worried you might miss an opportunity while waiting for it to power-up (the Wraith uses four AA batteries with runtime listed as 4.5 hours). Unfortunately 'the game just wasn't playing the game' on the nights I took the unit into the field though I can say a pig-sized target is identifiable at 300m. This range is assisted by the 40mm collapsible soft-rubber ocular extension which provides excellent light seal for your shooting eye.

The Wraith has a green-scale night vision mode in addition to black-and-white and I personally found the latter more than adequate, though the green cross-hairs made for an excellent contrast against a prospective target. The intuitive operation of both the Wraith and IR torch made night-use incredibly straightforward and as far as accessories go, Sightmark offer a bolt-action rifle mount for around \$165.

Summary

There's a lot to like about the Wraith. The higher options for digital zoom come at the cost of clarity but as this scope is obviously more likely to be used at night where distances will probably be shorter due to safety concerns, I didn't find this to be a problem. As mentioned, this scope is no lightweight but due to the nature of night vision use you're unlikely to be wandering far in the dark, so it's more than manageable.

With the ever-increasing popularity of posting footage online and with the high-quality video recording capabilities of the Wraith, I'm sure it will prove very popular. The Wraith retails from \$1299. Sightmark is distributed by TSA Outdoors - contact your dealer for more. \bullet



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BOOK REVIEW

The Story of the Gun: History, Science and Impact on Society by Paul Hazell

Nicholas Kanizaj

et's cut to the chase - if you're a serious student of the gun you need this book. *The Story of the Gun: History, Science and Impact on Society* is a rare gem indeed, a popular science book which can be easily read by almost anyone while containing several useful and interesting facts on every page. Author Paul Hazell is Professor of Impact Dynamics at the University of NSW, ADFA campus and a world authority on the behaviour of materials subjected to impact and/or shock.

The book is divided into nine chapters, the first five describing the history of the gun,

how they function and how they're manufactured. The things which actually do the work - propellants and explosives - have a chapter to themselves as have projectiles, while chapter eight on terminal ballistics explains the interaction of projectile and target in both sporting and military contexts.

In the closing chapter of his book Professor Hazell tackles the big question of gun control head-on and, unlike most authors who appear to approach this issue with a pre-determined agenda, he dispassionately analyses the facts and offers a thought-provoking take on the subject. While there are several irritating typos in the text, these will no doubt be rectified in future editions.

Springer

PAUL J. HAZELL

HISTORY, SCIENCE, AND IMPACT ON SOCIETY

This book will be the go-to resource to settle those range disputes: How is armour defeated? Just how does the spin of a projectile affect its path? Is it possible to shoot a projectile into orbit? The book would make a great gift for the young shooters of today who will continue our nation's advance tomorrow.

The book is available online in both hardcopy and electronic formats from the usual sources or direct from the publisher at www.springer.com

ADVERTORIAL

Polaris pedigree offers smoother ride for hunters

n occasions, when a keen hunter enters rugged and testing terrain in pursuit of his quarry he needs something more than just sturdy footwear. To bolster whatever mission is mapped out on the hunting agenda, the shooter and his travelling companions may look to vehicular assistance to set them on their way.

And as an off-road alternative the ultimate method of transportation can be provided by various four-wheeled minijuggernauts from the impressive stable of Polaris. The US firm has come a long way since it launched in 1954. Polaris was founded in Roseau, Minnesota where it still retains engineering and manufacturing interests but expansion has made Polaris a worldwide concern and those links have spread to Australia and New Zealand. Down the years their vast array of products has included motorcycles, moto-roadsters, snowmobiles, commercial vehicles as well as parts, accessories and garments.

But of specific interest to hunters Down Under will be their all-terrain vehicles (ATVs) with Polaris having emerged as the number one retailing marque across Australia and New Zealand with its Ranger, RZR and General models to the fore. The latest off-road trail riders to take centre stage are the RZR Trail S 1000 Premium and RZR Trail Premium, these two newcomers extending the extensive Polaris collection of side-by-side vehicles to 15, the largest in this country.

The Polaris journey into the side-by-side market started in 2017 with the launch of the Ranger RZR 800 and thereafter Polaris were pioneers in trail performance and remain market kingpins of the trail sector. With their new additions, Polaris has upped the ante and shown Outback enthusiasts - both hunters and adventurers - the company can cater to all their needs.

In the Polaris stable the Ranger and General models would be the most appropriate for hunting purposes. The Ranger EV is an electric vehicle for two people and is ideal for hunters seeking a stealthy way to access remote locations with its ultraquiet running. It boasts a box capacity of 226kg with towing capabilities of 680kg.

Then comes the Ranger 570 which is petrol powered and accommodates two mates in 'mid-sized' mode or a trio in the 'full-sized' bracket. Its narrower design is ideal for negotiating tight terrain and the three-people carrier Ranger XP 1000 has more strength and comfort to extend its abilities as well as 1134kg towing potential and 33cm ground clearance.

Next step up is the Ranger XP 1000 Big Game Edition which can be viewed on the US website. It features crucial upgrades which mean greater ground clearance and active descent control which assists on sharp inclines, both up and down. Also factored in is a 2041 winch, LED headlights, larger tyres and robust front bumper and, as well as the threeseat model, the Crew vehicle can carry six.

"The demand from hunters seems to be growing every year judging by the feedback from our dealers," said Kris Matich, marketing manager for Polaris ANZ. He said the vehicles are so appealing to hunters because they can basically go anywhere. "You can have two, three or up to six seats so you can take all your mates," said Kris. "You can go further than a four-wheel drive and you don't have to worry about things like getting bogged down or punctures. So it means you can go deeper into the Outback.

"There's plenty of room to load up with tents, food and shooting gear and they can actually become a secondary base away from your original starting point. They have great strength and make more ground accessible then just by walking, they're not noisy and with all these myriads of advantages are a great option for hunters." **For the latest updated prices visit www.polarisaustralia.com** ●

Take things to the next level with the Polaris Ranger XP 1000.

Job done with the Powa Beam Pro250 mounted up.

Powa Beam spot the difference

or me there's only ever been one choice for remote mounted spotlights - Powa Beam. In saying this I mean no disrespect to other brands on the market, the simple fact is I've only ever had to make one decision as I bought mine almost 20 years ago and it's still going strong. Mounted on my Feroza shooting buggy, hundreds of ferals and roos under permit have literally 'seen the light' before moving on to the great animal hereafter.

My 100W Pro9 (9" or 245mm) has served me well and I really had no thought nor reason to change it. Then I heard from Darren at Powa Beam telling me they'd a new 250W Quartz Halogen unit available in 7", 9" and 11" versions and asking if I'd give one a whirl. A short time later a 9" Pro250 showed up for us to take a look at.

On unboxing, apart from the colour which was gloss black rather the standard anodised alloy, the light looked quite familiar as it pretty much, unless I'm mistaken, shares the same outer case (or housing) as my original Pro9. Digging further into the box and pulling out a 12v/24v step-up converter was when I started to think, now this is different. The package includes the light itself, step-up converter, 3.5m of cable from the light, 1.5m of cable from the converter including a Maxi fuse holder and 30-amp fuse ending in an Anderson-type plug. Completing the kit was a toggle switch, handful of electrical connectors, information sheet and warranty certificate with Powa Beam bumper sticker.

Specification-wise for the 9" Pro250 we have a 245mm reflector sitting in a 265mm case with overall depth of 190mm. Designed for use with a remote system the base is an all-steel bracket with 12mm mounting hole, the light source as standard being a Quartz Halogen 24v 250W Osram horizontal filament bulb which is claimed to produce optimal light output vs heat and lifespan ratio. As an optional accessory you can swap this for a vertical filament bulb for an even longer and tighter beam if desired. All new Powa Beam spotlights also feature durable ultra-clear tough glass for the lens and adjustable focus of the bulb for a tighter beam or broader spread.

When it came to installation, after reading the information sheet at first I must say I felt a little daunted. The 250W light with step-up converter has a high current draw up to 22-amp - so there's a warning to only use it with full battery on a running vehicle with capable alternator (Powa Beam also recommend using an auto electrician for installation or seeking professional advice). My concern was whether the old Feroza with its smaller battery than your standard ute or 4x4 - and which only gets turned over every other week or so - would handle the big light. Likewise would the alternator be up to it? So I heeded the advice and called my mate Johnny, a professional automotive accessory installer who assured me I'd nothing to fear.

Hooking it up was actually no problem as all the essentials are supplied, the only thing not provided being another Anderson plug and some cable to connect to the battery. A quick search online found exactly what was needed and for \$15 I bought an Anderson plug with short heavy 6mm cable to 8mm cable lugs, perfect for the job. This bolted up straight on to the existing battery terminal clamps so, once I had the rest wired in, I just had to join the Anderson plugs together



to power it all up. On standby the light still draws 100mA so the Anderson plugs can also act as an effective isolation point by just unplugging when not in use.

I made a small metal mounting plate for the step-up converter to take advantage of some unused bolt holes on the firewall of my Feroza which I assume would've been for air-con had it ever been fitted. Likewise there was a grommet in the firewall I could also use so I ran the cable through that to behind the dash, up along the B-pillar trim, into the hood lining to the remote handle, all-in-all a neat installation. The light itself was just a straight swap on to the remote handle replacing the old light and, as stated, everything I needed was otherwise provided.

Of course my spotlight is roof-mounted but if you want to run the same type of rig without punching a hole through your roof, Powa Beam also do their 'Powa Strut Window Mount' set-up which lets you fix the spotlight to your door frame without modifying the vehicle. In use, the 250W over my old 100W unit is basically more of a good thing made better. My country is pretty steep around parts with several valleys and gullies and a bit of flat land towards the front. I'm mainly shooting well below 200m under the spotlight though the occasional longer shot across a gully isn't unusual.

I have a 300 x 300mm gong on a hillside 400m away and in darkness could pick it up as clear as day with the big 250W on it, so this new light should prove

BEAN

popular for targets at distance across Australia's long plains. Each Powa Beam spotlight is hand-focused at the factory before it leaves to produce the optimum beam. The Pro250 delivered a light beam tight enough to spy things at long distance, at the same time providing ample spread for holding the beam just off target on flighty quarry and picking them off on the edges of the beam. I often find roos sit better too with this approach rather than lighting them up like daylight with the beam straight on them.

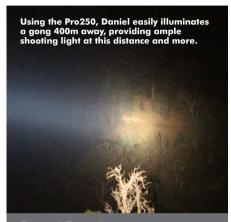
Apart from being a great product there are other reasons to consider Powa Beam if vou're after a new spotlight, as never more so than in recent times have we heard the call for more local resilience and the need to support local manufacture. Well, all main Powa Beam components including cases and reflectors are made in Victoria before being shipped to their facility in Billinudgel, NSW where they're assembled and tested before distribution. And in the unlikely event anything goes wrong with your spotlight you can rest easy knowing any spares, accessories or upgrades required are available direct from Powa Beam in Australia. The spotlights come with a three-year

BEAN

POWAGBERM

limited warranty but based on my experience you're unlikely to need it.

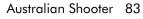
After more than 60 years in business Powa Beam are a genuine Australian success story and, based on the quality of their products, I'm sure they'll be around for many more years to come. Find more at www.powabeam.com.au



Specifications:

Reflector size: 245mm (diameter) Casing size: 265mm (diameter) x 190mm (depth) Voltage: 12v with step-up converter to 24v Power: 250W Light type: Quartz halogen (QH) Beam type: Adjustable from spot to spread Base: Steel bracket with 12mm mounting hole

Pro250 Powa Beam spotlight kit, Anderson plug lead in foreground not included.



Competition News

National

SSAA National Big Game Rifle Postal Shoot

Jan I-Nov 30, 2021 Participating Big Game Rifle clubs See National website for event details. Contact shoot captain at your local club.

SSAA National Rifle Metallic Silhouette Rimfire Postal Competition

June 1-November 30, 2021 See National website for event details. Contact: Kathy Tobler toblerkathy@ gmail.com

SSAA National Muzzle Loading Postal Match

Loading Postal Match July I-Nov 30, 2021 All participating clubs. See National website for event details.

SSAA National 10m Precision; NRA 3x40 3-P; and Field Rifle Postal Shoots

September 1-November 30, 2021 Nationwide locations Program: See National website for event details. Contact: Jennifer Ingram jenniingram 1978@gmail.com

ACT

Early Australia Day Rifle Metallic Silhouette Summer State Championships January 14-16, 2022

SSAA Majura Range, ACT See National website for event details. Contact: Mark Lovell 0401 867 839 or email mnII@live.com.au

ACT Black Powder Cartridge Rifle Silhouette State Championships

January 17, 2022 SSAA Majura Range, Act See National website for event details. Contact: Mark Lovell 0401 867 839 or email mn11@live.com.au

Tas

SSAA (Tas) Single Action State Championships

November 27-28, 2021 Westbury Shooting Club, Tas See National website for event details. Contact: Steve Collins 0428 631 322.

SSAA (Tas) Handgun Metallic Silhouette Big Bore State Championships November 27-28, 2021

Oakdale Pistol Club, Tasmania Program: See National website for event details. Contact: codyabel@spin.net.au

WA

SSAA (WA) Practical Handgun State Championships

November 6-7, 2021 Boulder Branch, Egan St, Kalgoorlie Program: See National website for event details. Contact: Steve Genovese 0437 442 884, Paul Fitzgerald 0407 773 286 or Shane Livingstone 0409 596 959.

SSAA National Event Cancellation/ Postponement Policy

SSAA National championship events may be subject to border controls and other COVID-19 impacts. In addition to general border closures, many states and territories may prohibit persons from known COVID hotspots. An event may be postponed or cancelled at any time by SSAA National, SSAA State Office or club directive.

It is recommended competitors consider any potential COVID-19 impacts on travel, accommodation plans and insurances etc. SSAA National will not be liable for reimbursement to competitors for any costs associated with a postponed or cancelled SSAA National championship event for any reason, including COVID-19. Competitors planning to attend an event should consider options for free cancellation or refund of travel and accommodation costs where available.

OUTDOORS

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Scan the code or visit the link below www.surveymonkey.com/r/SSAA







SSAA National's 'Sign up a Junior' campaign was launched to help introduce youngsters to recreational shooting. Juniors are essential to the ongoing strength and vitality of the SSAA and we are seeking your support to protect and ensure the future of the shooting sports in Australia.

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SSAA Member Alert

Please be aware that state and territory police firearms registries regularly cross-check firearm licences and your member status. To support your genuine reason and keep your firearms licence and to make sure that SSAA can support you, make sure you renew your SSAA membership.

ssaa.org.au



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SSAA Razor Polo

The new SSAA Razor Polo Shirt is a stylish and comfortable grey polo shirt with contrast panels and lime-green fluro piping. Made from 100% BIZ COOL Polyester Sports Interlock material, the polo shirt has grid mesh underarm and side panels for breathability and a knitted collar with contrast placket.

The polo comes is sizes ranging from S to 5XL





SSAA Buffwear

Look stylish in the great outdoors with one of the new SSAA Buffwear which come in five great options – Iron Bark, Bullet, Coloured Leaf, Distressed Leaf and Oz Flag.

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SSAA Traditional logo belt buckle

The SSAA Traditional Logo Pewter Belt Buckle measures approximately 8cm x 6cm, comes with protective pouch and Care Instructions – just add your favourite belt!



SSAA Cool-Dri Polo Shirt

SSAA Cool Dri JB Polo is navy blue with white trim and made with a moisture wicking material, so you will always feel dry and cool.

The polo comes is sizes ranging from S to 5XL

\$42



Ladies Polos

The SSAA Ladies Polo has a feminine styled 'V' neck with contrasting piping panels. The easy care fabric is 160gm 100% DriWear polyester with moisture removal and mini-waffle knit.

Wear the SSAA logo with pride!

The polos comes is sizes ranging from 8 to 26.

\$42





Trigga measures 32cm in length, is fully machine washable and is made from 100 per cent polyester fibre.

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The SSAA Multi Tool, with stainless steel handles, comes with 11 functional tools in one handy unit.



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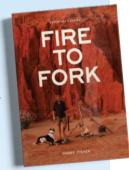
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do, and how, to survive in the great Australian aspect of a survival situation from bush tucker Based on Bob's tried and tested Big 5 survival techniques, supported by diagrams and photos.

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The reinforced tip of the tanto blade is extremely strong, making this knife not only an excellent everyday carry option but also a great tactical tool for puncturing tough objects. It features a non-reversible tip-down pocket clip and gunmetal grey stainless-steel bolsters. For more information, see the website.

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Email	n	aw, membership fees are not efundable, nor can they be ransferred.			
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(Name of competition) SSAA National PO Box 2520 Unley SA 5061



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Australian Shooter SEPTEMBER 2021

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Junior Prize – SSAA Cool-Dri Polo Top & SSAA Cap Dominic Widt, Qld

> Best Shots Mug Douglas Bartimote, NSW

Australian Women's Shooter 12

Winchester women's prize pack Shanyn Lea, Qld

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And all too soon . . . history repeats itself

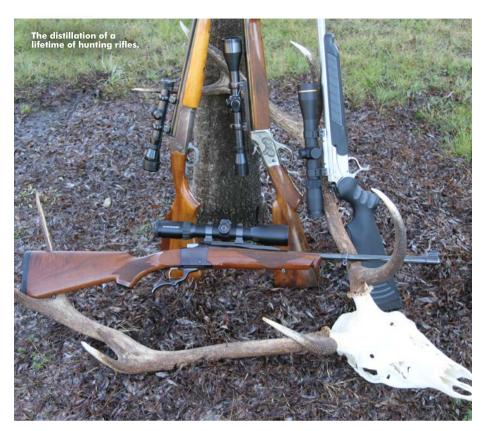
Ithough it happened such a long time ago I remember us all being surprised when the Old Feller decided to get rid of his guns, including his collection of muzzleloading shotguns. I'm not sure how many of those he had but a modest boot-full would be close to the mark (most were English-made and if none were cased they lacked nothing in terms of quality or condition).

He offered no explanations for his decision, telling those who asked it was just time. For a while I couldn't understand what that meant, mostly because I knew how much effort it had taken him to put the collection together. In retrospect I'd realise he was simply moving on, flagging a change in direction and acknowledging his shooting days were over. Realistically they had been for a while and his interests had switched elsewhere.

As his time wound down he turned his attention to clocks, an affliction he enjoyed until age and arthritis crippled his hands and he could no longer tinker with their innards. Memories of that shift came back to haunt me earlier this year when, eerily as he'd done before me, the last of my single-shot collection was delivered for auction. There was no particular reason for the decision, just a range of interconnected factors and a personal certainty it was my time, much as I now know it had been for the old man all those years ago.

None of my immediate family has any interest in firearms and I didn't want to saddle Denise with the responsibility of disposing of my guns if anything unexpected should happen. I'd enjoyed owning, researching and writing about all of them, so none owed me anything. Perhaps more importantly, none of them rang any bells any more - clearly a sign they needed to be in someone else's care.

In hindsight it was probably the inevitable final act in a disposal process which began when we moved into town last year and I let my Dealer's Licence go. The Old Feller always said we're nothing more than care-



takers of whatever firearms we handled in our respective times, that sooner or later everything moved on to someone else. He was right about that as he was on so many other things in life.

As I write this, for the first time in more than 50 years there isn't a muzzleloader in the cupboard, nor are there any of the Olde World collectable single-shots that have been my primary collecting interest since I was a boy. The few firearms which remain are the distillation of a lifetime spent looking hard and learning, picking and choosing, using and evaluating firearms to see if they'd meet my needs, even if there were times I'd no idea what I was looking for. Not surprisingly, three of them are single-shots.

The longest-standing resident is a Savage Model 24 combination that was the Old Feller's. He gave it to me as an early inheritance before he died on the understanding it was never to be sold. In my time it never will. There's also a custom-built Model 1885 Low Wall Winchester, one of only two custom rifles I ever had made and I love it dearly for the great memories it recalls every time I pick it up.

Then there's Baby, a semi-custom No.1 Ruger in 7x57 Mauser that's my favourite firearm of all time. It's a classic hunting rifle for an old school hunter like me who's never been able to muster any enthusiasm for the trappings of these tactical times we live in.

The final rifle is a break-action, stainless steel, synthetically stocked Thompson Center Professional Hunter, the last rifle I bought and one I still haven't done as much work with as I'd like. It's a thoroughly modern rifle which shoots well, designed and built with an obvious nod to the great utilitarian single-

shot rifles of yore but, given I'm not hunting as much as I used to, I really don't it need any more. It's time to move on. \bullet



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