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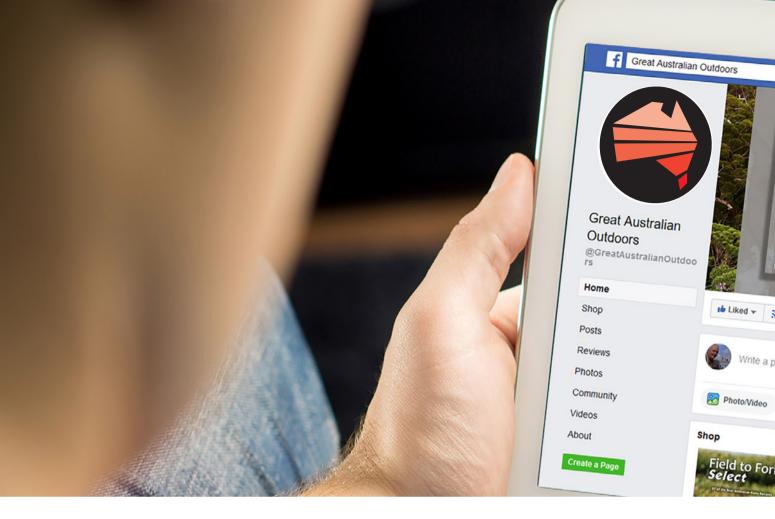
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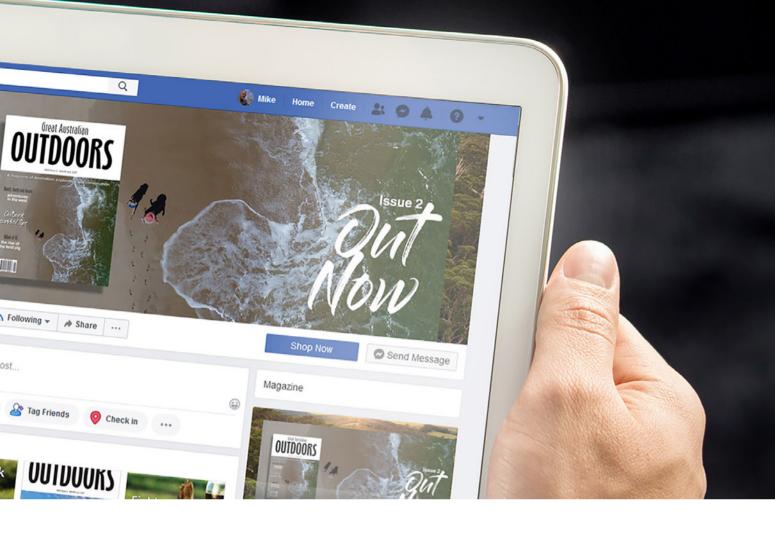
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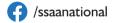


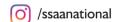


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Our December cover See page 30

NEXT ISSUE



Our February cover story features the latest ATA Arms Turqua Walnut bolt-action repeater, a rifle that reviewer Con Kapralos reckons is an affordable hunting or informal target option which, although a tad heavier than usual, is nevertheless comfortable to shoot.

Field dressing game can prove a psychological hurdle to some hunters but, with practice and sound advice, that hurdle can be overcome and seasoned hunter Sam Garro has penned an informative article on how approach the subject. Although a relative newcomer to the Australian optics market, ZeroTech have a long history of providing good quality, well-supported and affordable riflescopes and their compact Thrive Red Dot optic only adds to that reputation.



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National News

National AGM proves another 'virtual' success

he SSAA's 59th Annual General
Meeting was held in mid-October,
the second online AGM in the
Association's history. It marked
another year impacted by the COVID-19
pandemic but, focusing on the positive, our
membership numbers steadily increased.
The incumbent National Executive Board
consisting of President Lance Miller, Senior
Vice-President Denis Moroney, Junior
Vice-President Hellen Gill, Secretary Kaye
McIntyre and Treasurer and Public Officer
Alf Bastian were re-elected unopposed.

In a year largely devoid of good news, we found some after a formal agreement between firearms industry representatives and Australia Post was confirmed in late October, signalling a welcome end to uncertainty around nationwide firearms freight options. The SSAA and firearms industry representatives were among the cohort led by Nationals Senator Bridget McKenzie and Country Liberals Senator for the Northern Territory, Dr Sam McMahon, to meet with Australia Post officials on the matter. Their intervention and leadership have assisted our multi-billion-dollar industry in continuing to carry for what is our legitimate sport and pastime.

This outcome followed a decision by freight company TNT, which is owned by US-based FedEx, in refusing to transport firearms and related products without consultation and with minimal notice several months prior. The SSAA encourages all members and industry to use Australia Post for the transport of all goods, thus supporting a trusted and reliable business which caters to our needs.

For firearms and ammunition-specific freight options between dealers and manufacturers, please email firearmsenquiries@auspost.com.au Finally, as our domestic and international travel restrictions begin to ease, we look forward to spending the festive season with friends and family after another year which has tested the SSAA on local, state and national levels as we were forced to close ranges, cancel the national championship calendar and postpone international competitions. We are keen to see you at the range in 2022 and wish you a safe and happy holiday period.

Blood donations saving thousands



SSAA members have helped save 3048 lives this year through donations to the Australian Red Cross 'Lifeblood' program. More than 1000 donations of whole blood, platelets and plasma have been made via the program so far this year by the SSAA Lifeblood team.

The SSAA has been encouraging members to donate blood to the Australian Red Cross for a number of years, recognising the importance of supporting a service critical to our nation's health and wellbeing. The Lifeblood program allows workplaces, community groups and schools to band together as a team and donate blood which benefits a range of medical treatments including for people with cancer and other blood diseases, patients requiring surgery, pregnant women and for making immunisations.

If you're a SSAA member and are already donating blood or you'd like to start donating, make sure you become a member of the Lifeblood group and have your donations contribute to our tally by asking your consultant when you call the Blood Service to book an appointment on 13 14 95. Otherwise you can log on to www. lifeblood.com.au/blood/donate-as-a-group and register to join the group online.



The test of time

I READ WITH interest in the Top Shots section (Shooter, June 2021) the correspondence from Glen and answer by Rod Pascoe on the 577/450 Martini-Henry ammo box. The box would be similar to those used in South Africa. Several years ago I obtained some artefacts from the famous Zulu War battleground at Isandlwana in Natal, and after reading how the British troops' desperate attempts at replenishment were hampered by rusty screws in these ammo boxes during their defeat, these relics reveal another story.

The attached photo shows that straps were indeed snapped open during the

fighting but there's no corrosion on the screws which appear to be made of a bronze material and were found in excellent condition after more than 100 years, though the metal bases of the foil cartridge cases are heavily rusted.

Dave Finnie, via email

Bobcats all too real

IN RESPONSE TO Ray Brown's letter on bobcats (Shooter, July 2021), in 1962-1965 I was working in the Jemalong area of midwest NSW as a dairy-hand and keen shooter aged 15-18. A party of us, me the youngest and least experienced and only toting my beloved first Winchester Model 61 in 22LR, would frequent the Jemalong Range (courtesy of its then owners) and shoot your uncle's infamous bobcats. I don't recall anyone in the party having a scoped rifle.

Those crazed cats would hiss and spit and take any opportunity to jump right on you if they could from any of the large boulders which made up their mountain home. I remember one of our party being badly clawed after a cat launched itself into his ute before being shot at and running away. No-one I can recall shot and skinned one nor did any research on them as there were too many roos, pigs and foxes to chase and

those cats were kind of 'ghost-like' though very real. All the shooters who made up that party are long gone and, as far as I know, the cats were just shot out and/or trapped and poisoned.

Given half a chance I'd grab my old Sako Vixen in .222 and go back out after those cats if they were to re-appear. I spent the rest of my shooting days mainly in the Nyngan, Coolabah and Walgett areas and can assure you cats, be they bobcats or huge blacks, are still out there.

Dave Burt, SA

- I recall in the 1960s trapping rabbits with my father on the family farm at Swan Reach, SA and catching what he referred to as 'bobcats'. These were much larger than any ordinary cat and had a square, solid and muscular body, ginger or grey in colour with a bobtail about 2" long. My partner lived on a nearby property and remembers her brother catching similar cats. My father talked of them as being fairly common in his younger days (he was born in 1915) and they had a liking for chickens. They were considered uncommon by the '60s and from memory some were despatched and some released.
- I. Hocking, via emai



Insurance Q&A SSAA General Insurance Brokers

Send questions to: insurance@ssaains.com.au

Q I've had insurance all my life and know I need it. But how can I be sure I've thought of everything when it comes to taking out a policy?

Ian Bay, via email

A Insurance policies take into account your level of risk and before you can start to manage risks you need to identify them. Risk will be a combination of your circumstances, property type, value and often location - perhaps you live close to bushland vulnerable to fire, which makes you more susceptible to bushfire risks. You might live in the tropics where cyclones are common

or near a river or creek that's prone to flooding.

Not only does each individual and business have a slightly different level of risk, everyone will choose to manage the risks they face differently. Every insurer will offer products which differ significantly in their coverage, terms and conditions, exclusions and costs. When looking for insurance cover it pays to shop around to find a company and product best suited to your particular risks, bearing in mind the least expensive policy isn't always best for you.

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Statement (PDS) carefully to identify what risks are covered and not covered. If a risk isn't specified it may not be covered so it's important to understand if the wording of your policy means any risk not listed is not covered, or whether your policy covers you for certain risks by default. Our brokers will make you aware of all of this and more and offer to conduct a full review on an annual basis to ensure your circumstances haven't changed. Visit ssaaib.com.au or call our office and chat to a broker on (08) 8332 0281.

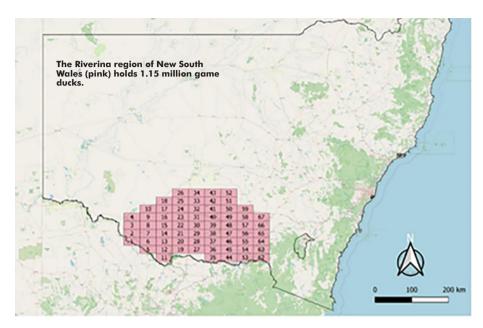


Come in EAWS . . . your number's up

s I write this column, many game bird hunters are starting to think about season 2022. Due to COVID-19 the southern states have had their game bird hunting plans decimated by lockdowns and restrictions to such a degree you could almost say the past two years have been non-events. Sure, hunting opportunities for other species in different areas have also been impacted but not to the same extent. Yet there seems to be light at the end of the tunnel that restrictions and lockdowns will ease as vaccination rates increase ahead of the new year. In short, the gloom appears to be lifting.

Looking back on this year and leaving COVID-19 to one side, the standout improvement in terms of game management has been the addition of helicopter surveys by the Game Management Authority (GMA) to provide better fit-for-purpose data in duck management. So much so that on release of the data, although it was late, hunters in Victoria were able to have a couple of extra ducks added to their bags as a result. Although the addition was still way off what most hunters were expecting as a bag limit prior to declaration, I can't recall a time when authorities increased a bag limit after a declaration had been made.

It's becoming increasingly clear the process and data for such decisions needs to be improved and the first thing that should happen is long-time reliance on the game bird abundance (index) data from the Eastern Australian Waterbird Survey (EAWS) needs to end. I put 'index' in brackets to highlight the fact the abundance data provided by Richard Kingsford and his team is



an index of abundance and not an estimated population. I now even doubt its usefulness in determining trends for nomadic species.

To make a point on how irrelevant this abundance data is to game duck management, the EAWS in 2020 reported it counted only 91,230 game ducks across Queensland, New South Wales, Victoria and South Australia. Subsequent aerial surveys by GMA using techniques which actually count and estimate the population found 2,452,100 game ducks in Victoria alone.

The NSW Department of Primary Industries recently released their latest counts prior to setting rice season quotas and found 1.149.395 game ducks in the Riverina region of New South Wales alone. All of which makes for an estimated population of 3,601,495 game ducks in that one state

and a small part of another - and I should point out those counts were made prior to this year's breeding season so boom times ahead.

We must live in hope the crew staffing the plane travelling Eastern Australia at 165kmph, 30-46m up in the sky back in October actually counted a few more birds than they have in previous years. The numbers highlighted above tell us there are millions of game ducks out there roaming the landscape and, if so, it may be time to accept their 'counts' are no longer relevant and let the helicopters and drones take over.

Send questions to: wildlife@ssaa.org.au



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Time for a quick cuppa?

nce, and I suppose like most youths, I was a great admirer of campfires which were huge and far less useful than a properly controlled and restrained creation, the type of fire you had to sit well back from, meaning that while the side facing the fire toasts, the opposite side remains cold.

But the wisdom that comes with age and having good role models - eventually resulted in my adoption of small purposeful fires which behaved well, didn't consume outlandish supplies of fuel and could be used for cooking and boiling water almost as soon as they'd been lit. More recently I've become even more frugal where fire and fuel are concerned by adopting a very small burner on which to cook, though I must say that in many ways I do miss the camaraderie of sitting around a fire having a quiet drink with mates exchanging tall tales of hunts past.

I've always felt the lighting of the fire or stove was the feature which established the camp. Before the ubiquitous BIC lighter and prior to 'Redheads' cornering the match market, you may recall competitions to discover which one of the group could split a wooden match into halves or even quarters which would each still produce a flame to ignite the campfire when dragged up the side of a matchbox. Four was a good

tally and that was well before those thick barbeque matches which can probably be split into six splints while each still retaining enough of the head to strike. Cardboard 'book' matches were despised in those days as their heads were so large they could be peeled in halves before splitting to produce up to six good 'lights.'

Recently I've become interested in a piece of camping cookware known as a 'Kelly', 'Ghillie' or 'volcano' kettle I spotted being used by a traveller on a TV programme. "Boils water in a jacketed apparatus using just a few twigs and a handful of dry grass," he said - and he proceeded to demonstrate it did just that. I'd never taken much notice of camping kettles before, being quite content with the lightweight system I adopted some years earlier.

Now I wanted to know more about this invention which seemed so innovative, so how embarrassed was I to discover that while I was peering straight ahead with my blinkered vision to what I thought was the ideal, I'd been completely by-passing a piece of camp kit issued to New Zealand Army units during the Second World War! It can't have been that bad.

A quick search of the 'world wide web' showed me just how out-of-date I was as there are now numerous producers of these little wonders all over the globe and no shortage of imitators of the original, which

may well be the Irish one developed for fishermen in the early 1900s.

My only reservation about recommending these and carrying one myself is the kettle is bulky, although more than one size is available. Depending on the size (and there are at least three) the kettle weighs about 1.4 kg, not excessive though you might think twice about putting it in your daypack. And fuel? It'll consume anything that burns, from dried camel dung to empty milk cartons and everything in between.

Did I really want to put one in my daypack or could I survive with the little thermos of hot water I sometimes carry? I'm still undecided yet there's no question about getting hold of one and putting it into the stash of gear I keep on hand for 'disaster relief.' Recently, a few days without fuel supplies convinced me of the usefulness of a box of matches, a small cache of fuel and a couple of cooking utensils. Still, I do miss the bonfires of my youth.





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I have a go at most clay target disciplines and admit I'm master of none but after watching the Olympic Games I must say those are the most boring of all the clay events. Surely there must be a way to introduce Sporting Clays to the program and at least make it spectator-friendly. Is this even a remote possibility?

Dan Upton, Vic.

Not a chance, Dan. I could leave it there but your question is worthy of an expanded answer. You'd have noticed several new events in this year's Olympics, including skateboarding and rock climbing. Now if you're like me, at first glance you wouldn't have paid the slightest attention - but here's the kicker. They rated like crazy and were watched by millions of people who've never been on a skateboard or climbed a wall in their lives.

I was one of those people, yet elite skateboarders and rock climbers have turned their sport into a TV spectacle. Both are easy to film and are now enjoying a massive influx of participants at grass roots level but, more importantly, enough people watched them to justify major networks like the NBC is the US forking out more than \$7bn on a long-term deal with the International Olympic Committee (IOC).

Here's the problem we face with Sporting Clays. While I agree Sporting is far more enjoyable for the participant than Trap or Skeet, a 40m crossing clay target is just about impossible to capture in real time for a television audience. Sure, you can film close-up slow-motion footage of almost anything, but with something as small and rapid as a clay target at that distance, it pretty much appears the competitor is shooting at an invisible object - even with the use of exploding 'flash' clay targets.

And here's the other issue. In order to make the shooting sports fair and equitable, the scheme of targets and layout they shoot over must be consistent. Possibly a few

... for the first time in history, shooting is no longer part of the Commonwealth Games

different programs might be set up which could be used over a five-stand sporting field, but to replicate those same programs on every layout worldwide becomes an enormous challenge. Olympic shooting ranges must be contained into quite small spaces due to a variety of issues including spectators, officials, security and obviously television. I agree Sporting would be fun but that horse has bolted. The IOC is looking at ways to reduce numbers in the shooting sports and are certainly not increasing the size of the field any time soon.

I'm not sure if you know, but the shooting sports at next year's Commonwealth Games in Birmingham - one of the birthplaces of shotgun shooting - has been axed from the program. Yes you read that correctly, for the first time in history, shooting is no longer part of the Commonwealth Games. Politically it was easier for the British to dump the sport instead of trying to work through a solution that would allow pistol shooting to take place in a country where it's totally prohibited.

This is what the shooting sports are battling and while Trap and Skeet may not appear the most exciting of the clay target disciplines, they remain two of the easiest to broadcast on television. The 'finals' system which is universally hated by almost every competitor, is constantly being 'tweaked' to make the event more appealing to the non-shooting public (just like rock climbing) in the hope that TV ratings during the Olympics will remain healthy enough to justify keeping the sport on the program.

The short-term future of shooting at the Olympics looks relatively safe - it's on the agenda for Paris and I'd be amazed if Los Angeles doesn't keep it and of course Brisbane 2032 have tentatively said it's also to remain. This can all change but I'm fairly confident it'll be there. Don't go buying a skateboard just yet, though sadly your Sporting shotgun won't be needed if you're planning to make our Olympic shooting team.

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Got a question - ask our OP SHOTS Rod Pascoe

• John Dunn • Paul Miller • Greg Riemer • Geoff Smith • Barry Wilmot

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I recently bought this inexpensive 12G hammer gun marked Barton & Co, Liege. One barrel is marked full choke, the other says nothing and I assume it's black powder-proofed only and as far as I can tell it has 2½" chambers. It locks up tight, has a greener-type cross bolt and 30" barrels.

I handloaded some cut-down 12g hulls with 4.3cc Pyrodex P and 1oz #7.5 lead shot, emptied out the cheap clay loads and it shoots a treat. It's a lovely old piece and I intend to use it often. Can you tell me anything about this gun and its maker? PS: I'm struggling to find Pyrodex powder and lead shot in the northern suburbs of Melbourne - any idea where I might find some?

John De Luca, via email

I suspect Barton & Co was a firearms supplier who contracted the manufacture of guns within the Liege gunmaking district in Belgium around the turn of the 20th century. By coincidence I have a small .32 calibre revolver also branded Barton & Co about which, despite some serious searching, I've never discovered more than the basics from its proof marks.

I have the full six-volume set of Alain Daubresse's Liege Gunmakers Through Their Work 1800-1950, though Barton doesn't appear anywhere in these books. I tried searching the Trove website seeking any gunshops advertising these firearms but was again unsuccessful. The fact our first Prime Minister was Edmund Barton probably helped cloud the issue! Your gun





would've been made between 1897 and 1922 based on its proof marks and has been proofed for black powder only. The 'star over letters' stamps indicate inspectors' marks for provisional and then final proof.

Regarding the availability of Pyrodex, I'm afraid all propellants are becoming increasingly difficult to find. One possible source which might be worth trying is Cowboy Guns and Gear at Kendall St, Cowra, NSW (02 6342 1965 or email cowboygunsandgear@bigpond.com)

Geoff Smith

I'm planning on buying a centrefire bolt-action rifle to use mainly on foxes and rabbits in fairly flat terrain and have narrowed it down to either a .223 or .22/250. Which cartridge would you recommend for that type of work? Jim Wilson, via email

Either of those cartridges would be adequate for both rabbits and foxes. If you intend to do a lot of shooting and reload your ammunition, as the .223 uses quite a bit less powder for almost the same velocities, that's the one I'd go for. Also the .223 has guite a bit less muzzle blast than the .22/250 and is therefore guieter to use if there are farmhouses or such like in the vicinity. I'd also advise you to choose a good quality rifle and fit it with a decent 3-9 power scope.

Barry Wilmot

I recently heard about a method of skinning rabbits without a knife. How is it done? Mike, via email.

Skinning bunnies without a knife has been around for years. My father taught me how to do it back in the 1960s when an afternoon of ferreting might yield 40 or 50 rabbits. We used to speed up the cleaning and dressing process by breaking it down into a series of separate tasks - skinning, gutting and trimming which kept everyone busy until the job was finished.

With the rabbit belly-up, grab the lower part of a back leg - not the foot - and bend the main (middle) joint together. At the same time, stretch the skin tight on the inside of the leg and push the joint through the hide. Once the skin is broken it can be peeled off and pulled free of the carcass.

This method works best on young rabbits as older animals tend to have a tougher skin that's not so easy to split. Be careful though, sometimes a leg will break before it can be pushed through the skin and that could cause a serious hand injury. A knife is still required to cut the skin away at the head or neck. To disembowel the carcass, split the pelvis and trim off the legs.

I know shotguns are used for closer range shooting but would like to know how much the shot drops over 100m so I know how much to hold over in the field.

Bill, SA

John Dunn

You're right when you say shotguns are for close range shooting and the maximum range depending on the game you're hunting with very tight chokes and large, hard shot is probably no more than fifty or sixty metres. This limited distance is based on a humane kill where we're sure a sufficient number of appropriately sized pellets will hit the target and hopefully kill it instantly.

You don't mention what you're holding over but forget shooting game at 100m (110vds). It's possible to shoot clay targets at surprising ranges with the right chokes and shells. World famous multi-world champion Sporting Clavs shooter George Digweed from the UK has demonstrated killing springing teal-type targets convincingly out to 130vds but this is something of a stunt by an incredible shooter using full chokes and 34gram 5-shot if memory serves me right.

He was allowing about a seven-foot drop at this range plus whatever he was shooting above the target to allow for time and target travel. You can bet George patterned his shotgun and loads to determine that amount of drop then factored this extreme measurement into his shot. He probably shoots 50-60,000 shells a year at clays, pheasants and wild pigeons so you can imagine he knows exactly where his shot is going in relation to any target at any distance.

If you shoot a load of 7.5-shot parallel from an average five-foot shoulder height then the pellets hit the ground at about 110vds. Do the same with 9s and they touch down about 103yds - not an earthshattering difference, especially if you're shooting Skeet targets at 25yds or less. Same applies to Trap although those targets are often shot between 30 and 50yds.

Reach out for a crossing Sporting Clays target thrown face open at 70vds and the drop-out there is about two feet or half a pattern. This is where you're stretching the boundaries of a shotgun in the real world but an allowance is certainly needed at those longer ranges.

Paul Miller

My father was in the army in the 1950s around the time the FN SLR (self-loading rifle) was being evaluated as the new service rifle to replace the SMLE .303. I remember him telling me about an attempt to convert some SMLEs to take the same ammunition as the SLR - the 7.62x51mm NATO - but he never found out what happened to that plan. Can anyone tell me how it turned out?

Peter, NSW

He's right, there was an attempt to use the thousands of near-new SMLEs left in storage after WWII and convert them to the new NATO round. The converted rifles would be issued to those army units not fighting on the front line as well as to the navy, air force and school cadets. Furthermore, the conversion project would provide much-needed employment and income for workers at the Small Arms factory in Lithgow, NSW where the work was to be carried out.

Following trials on a small number of converted rifles, a report was released in September 1958 concluding the actions weren't strong enough to handle the more powerful NATO cartridge as they showed serious cracking after firing less than 1000 rounds. Now I don't have the resources to test the strength of the SMLE action but information available to me suggests that even though there was an appetite to make use of the unloved SMLEs, other factors were at play to make sure this didn't happen.

Conspiracy theories circulated that the way the trials were conducted led them to fail and results were 'manipulated' (for want of a better word) to arrive at a political outcome. Your question led me to some interesting research Peter and I'm sure we'll hear from readers who have both official and unofficial theories on the subject.

Rod Pascoe



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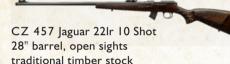
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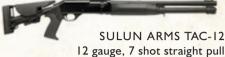
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Hard luck hog story

Mark van den Boogaart

hen the editor of Australian Shooter asked me to write about my most challenging hunt I began thinking about long hours behind the wheel driving to new locations, big hills, the cold of a Yorkshire winter deer outing, the heat of Basalt country boars and difficult days in pursuit of game. While each would make a good story - and yes it was damn cold in Yorkshire - my most challenging and rewarding hunt didn't involve extremes, what it demanded of me was about five years' worth of patience, persistence and a healthy dose of luck.

There's particular patch of forest I've hunted for many years and do to this day. It has always been a great producer of goats though that certainty has been tempered by a nagging, will o' the wisp presence of pigs.

It all began on my first hunt. Within hours of leaving camp we were on to goats and things didn't let up - we were really among them and had plenty of meat, photos and new hunting yarns by nightfall.

Day two was pretty much a repeat of the first, the goat hunting was good and at one stage involved climbing a dry waterfall to hunt an otherwise inaccessible mob. We even bumped into a crowd heading back to camp, though what followed that particular encounter was unlike any other. The reason was the lone animal we saw after the last group wasn't another goat but a good-sized boar and before I had time to switch from goat to pig mode it was gone. Thinking back, at the time I wasn't too concerned, in fact I was excited the forest held pigs and assumed I'd soon be adding bacon to the

menu. But it didn't happen and over many years my experiences would be goats yes; pigs yeah, maybe, dunno.

Hunting the forest didn't really start in earnest until the following year and over a 12-month period I visited that location on five separate weekends. Each time I was successful on goats and saw, on every occasion, the signs of pigs to the point I even started talking up my chances to hunting companions. I said things like "they're here, we'll be on to them soon" yet they always seemed to be around the next bend, along the creek line, wallowing in the next dam or moving around the following morning. While I finished off that year with plenty of goat meat and a couple of nice sets of goat horns, I never did snare that pig.

During the third year of hunting that



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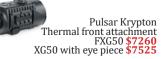
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For those who know

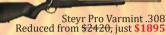
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Hard luck hog story

forest we noticed conditions slowly deteriorate - the drought was beginning to bite and everything started to dry out. The situation caused animals to think a bit more and goat hunting, in many ways, became easier. We changed our approach to locating and waiting and the goats always showed up. I assumed incorrectly so would the pigs as competition for water would force them into ever smaller ranges. Trouble was they went the other way and while in previous years I'd seen plenty of pig sign, even that began to disappear.

Our last hunt was late in the year. It was hot, dry and dusty and after another unproductive search for pigs I began to think maybe it was time to look elsewhere for bacon. The new year rolled around and with the birth of our second child it became the 'year of chance' - a chance to go for a quick hunt, a chance to garner some game meat and my best chance yet for a hog.

The resilience of goats meant throughout that dry year we were still in the game and one Saturday afternoon during a short





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ZEIKK



Hard luck hog story

weekend hunt we encountered fresh pig tracks. It looked like they were moving from a dam, across a powder-dry dirt track and into the tangle of timber and rather than follow the tracks we decided to back up and find cover. We stayed until last light and while the pigs remained elusive, our confidence was high and we decided to return the following day before dawn. The plan was sound and made sense, trouble was it didn't produce and those pigs never reappeared.

We were entering our fifth year of hunting the forest and the drought had fundamentally changed the entire landscape. Water sources which never went dry went dry. Impenetrable undergrowth was almost gone and pick had been replaced by dirt - logic dictated we find water and stay close. One morning we managed to do just that as one of the smaller dams still held water and along its soft edge were lots of prints. It looked like goats were frequenting the dam in large numbers but what really sparked our interest was a wallow. Again

we decided to pull back and return the following day.

We left early next morning with the intention of ambushing pigs on the water. Sometimes plans are meant to be broken and along the way we bumped goats or, more correctly, we heard them. Deep in the timber we could hear bleating and saw the occasional flash of white and eventually concluded it was a small mob of nanny goats making their way to the same water source.

Keeping track of the goats we followed a parallel bearing and ran into two large billies who obviously knew the score and were awaiting the girls' arrival. Some shooting followed and the goat tally for the weekend jumped up a couple of points. Being less than 500m from the dam we wondered if our luck with the two billies had inadvertently spoiled our chance of a pig but, agreeing there was no harm in looking, Tim and I moved towards the water while Simon and Darcy hung back.

In camp the previous night we'd discussed how we might approach the dam and so



were in a position where we could glass it at range, the upside being much of the dam was clearly visible, the downside that another part remained hidden from view. Taking our chance Tim and I edged ever closer. Making use of the little cover afforded by meagrely leafed trees and spindly scrub we were close to the dam lip when we spotted him - a goodsized boar in a wallow. I whispered to Tim



to take him but back came "he's yours" and, not needing to be told twice, I took aim.

On firing, the report of the short-barrel .308 filled the air and on reflex I quickly cycled the bolt. Unfortunately the boar was up on his feet and I experienced that momentary dread of a missed shot. But as soon as I saw the boar move I knew he was hit hard and, just like that, all those days, hours and minutes of patience, persistence and at times pessimism were forgotten in a moment of success. As for the pig, truth be told he was no tonner but it didn't matter as this trophy was all about the journey, a journey five years in the making.

What it lacked in size the boar made up for in condition so after the obligatory photos we began preparing him for the freezer. It was hot work and almost midday before we arrived back in camp and after packing everything up we hit the road for a long run home. I knew I'd a busy week ahead of me but didn't care - after five years I'd finally snared my hard luck hog. •







Sauer Stainless a timely update

Con Kapralos

t's hard to believe Sauer S100 boltaction centrefire rifles have been in production since 2016. Once the domain of European hunters with models like the Sauer 90 and 200 now collectable in their own right, Australian hunters for more than 20 years have been able to source such classics as the 202 and 404 switch-barrel and the S101, Sauer's re-entry into the conventional rifle (nonswitch-barrel) market.

The S100 came about because Sauer needed a quality entry-level model to compete in the hotly-contested sub-\$2000 bracket. While the S101 is an excellent rifle, its price point was probably beyond what most hunters would consider but the S100 put Sauer quality, reliability and pedigree within reach of the average hunting sportsman.

Outdoor Sporting Agencies (OSA), Australian importer and distributor for Sauer rifles has been stocking all models of the S100 since 2016 and they're highly sought after. Models such as the Classic, Classic XT, Ceratech, Atacama, Fieldshoot and more are testament the S100 has been embraced as a serious hunting rifle in Australia and it continues to sell well.

But Sauer and OSA know product lines

need constant refining and to do this have released a new model in the S100 Stainless XTA. As the name implies it's an S100 XT with polymer ERGO MAX soft touch stock, adjustable comb ('A') and stainlesssteel barrelled action. Australian Shooter received a review rifle in .308 Winchester topped with a superb optic in the Zeiss Conquest V4 4-16x44.

At a glance

The rifle arrived in a cardboard carton complete with user manual and warranty card. It's of a full-size sporter configuration, measuring 1063mm and weighing 3.2kg bare with length-of-pull of 370mm, the most obvious addition being the adjustable comb fitted to the buttstock.

Receiver

This is fashioned from a single piece of circular stainless bar stock, the front receiver ring retaining its circular profile but the receiver top immediately rearwards is of a flat profile, which forms part of the ejection port and leads back to the rear receiver ring and bolt handle notch. The left side has a scalloped flat dominating the profile with 'Sauer 100' etched into the stainless steel. The serial number, country

of manufacture ('DE') and year (2020) are engraved on the leading left edge of the front ring and to the rear left the bolt button permits removal of the bolt.

The top is drilled and tapped to accept Remington 700-style bases and took the supplied Nikko Stirling Steel-Lok twopiece bases. The receiver has a breech ring (locking bush) rather than the bolt lug recesses milled into it, which ensures more precise fitting of the barrel when screwing it into place and guarantees correct headspace. This system of fitting a breech ring is common among many rifle makers as it simplifies the manufacturing process while maintaining headspace integrity and design safety measures. The rear tang of the receiver slopes from the edge of the ring and blends in with the rear of the bolt shroud, inletting perfectly into the top of the grip.

Bolt, triager and safety

The bolt is a substantial design with the body running the full diameter and terminating in three locking lugs cut into the leading edge. The bolt body matches precisely with the tubular receiver and gives slick bolt travel without any hint of snagging or binding. Three bolt lugs make for a 60-degree lift and case ejection is via



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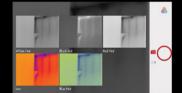


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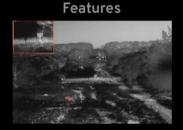


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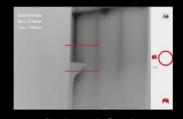
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Sauer Stainless XTA - a timely update



two plungers through the bolt-face together with a claw extractor recessed into one the lugs. Operating the bolt when firing, cases are positively ejected without any issue.

The trigger is superb and identical to other S100 models reviewed here. It's fully adjustable between 1-2kg and straight out the box was spot-on at 1.2kg. Its singlestage design gave no creep, the trigger broke cleanly and is certainly one of the best factory-fitted trigger groups in the market.

The safety mechanism is standard fare offered on the S100 model, being of a three-position linear manner located to the rear of the bolt notch, the three positions marked 'S', 'SO' and 'F'. The most rearward (S) locks the trigger and bolt, while sliding the lever forward to 'SO', the trigger remains locked but the bolt can be cycled and moving fully forward to the 'F' position enables the rifle to be fired. Additionally, there's an exposed cocking indicator which protrudes from the rear of the bolt shroud for added security.

Magazine

This is of a detachable nature and made from tough polymer. It's of a twin-stack design and hold five rounds in the standard calibres, is easy to load and clips into place well, sitting flush with the bottom of the stock. Removal is by pressing a button just forward of the magazine well.

Barrel

Like the receiver this is stainless steel and of a sporter configuration measuring 22" (560mm) and tapers from the knoxform to the muzzle where it's threaded to accept any accessories, a stainless-steel cap covering the threads to protect against accidental damage. The crown is finished in a concave fashion, conducive to accuracy when matched with the cold hammer forged manufacture of the barrels and S100 rifles all come with a five-shot sub-MOA guarantee.

Stock

This is identical to the one on the S100 XT, largely polymer-made on a classic American pattern, devoid of 'pancake' cheekpieces and with a well-designed grip and Schnabel-styled fore-end. The stock is termed the ERGO MAX by Sauer, in that its ergonomics are well suited to both left and









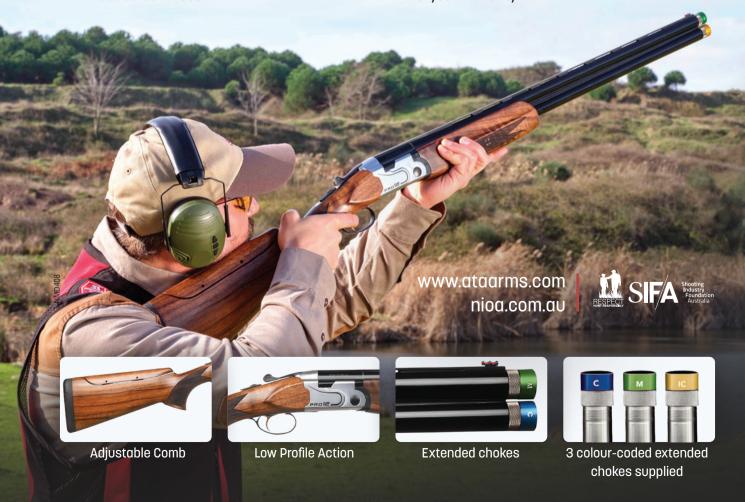
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Sauer Stainless XTA - a timely update

right-handed shooters, with its neutral cast,

The stock has a soft-touch feel which affords a positive grip in any conditions, while the well-placed textured panels either side of the grip and fore-end add visual appeal and accentuate the grip. The stock has QD-sling swivel studs fitted as standard and the buttstock terminates with a rather hard rubber recoil pad. For general use this pad will suffice but when range testing or firing quite a few shots in a day, a sorbothane-style pad would be welcome. The most obvious external feature of the stock is its adjustable comb, tweaked using the single triangular-shaped knob on the right of the stock and allowing for up to 40mm of movement.

For those using large-objective scopes which need to sit higher above the bore, ensuring proper eye-alignment and cheekweld is imperative. This adjustable comb is positioned on two guide rods and works well (once set in position it remains there). Internally the ERGO MAX stock uses Sauer's Ever-Rest system which consists of a solid alloy bedding block epoxied into the floor of the stock, this alloy block mating up with a recoil lug and tension bolt protruding from the front receiver ring. It works, though removing the stock from the barrelled action does require initial know-how.

At the range

Several sessions were needed to put the S100 Stainless XTA through its paces in .308 Winchester, the supplied Zeiss Conquest V4 optic a perfect match for the rifle and once bore-sighted and 'on paper' at 100m, accuracy testing began.

Firing five 3-shot groups, factory loads from PPU, Hornady, GECO and Australian Outback were duly assessed and the barrel cleaned between brands. With the



The polymer twin-stack magazine holds five rounds in standard calibres and functioned faultlessly.

XTA in .308 Win Accuracy testing at 100m - groups in mm Ammunition Best Worst Average* PPU Rifle Line 150gr Soft Point 41 53 50 23 51 32 Hornady GMX 165gr Australian Outback 168gr Sierra Tipped MatchKing 9 40 31 Australian Outback 165gr Sierra GameKing 22 33 29 GECO Teilmantel 165gr 28 14 42 * Average group size calculated from five 3-shot groups at 100m from a benchrest.



exception of the PPU ammunition (tested first) all others turned in group averages of less than 1.5 MOA. The PPU would probably shoot better than it did as the rifle was brand new and required some settling down and the PPU ammo had to do this first-up.

As always it's imperative that if choosing factory ammunition, find a load which performs in your rifle (as required) and stick with it, always shoot slowly and let the barrel cool down between shots. Sauer guarantees 'five shots sub-MOA' but this is done in controlled conditions with premium ammunition (what this entails only Sauer would know). But our sessions were conducted in strong wind and rain, weather usually encountered in the field and a good test for both ammo and rifle.

Overview

This addition to the Sauer S100 stable will only strengthen the model's presence in the Australian market and the stainless barrelled action to the XT ERGO MAX stock and adjustable comb makes for a great hunting and shooting rifle. It's available in various calibres and retails for around \$1585. More at www.osaaustralia.com.au

Specifications:

Rifle: Sauer \$100 Stainless XTA **Action:** Bolt-action with 60-degree bolt

Trigger: Single-stage, adjustable for

Trigger pull: 1-2kg (1.2kg as tested) Calibres: .223 Rem, .308 Win (tested), .30-06 Springfield, 6.5 CM, .300WM

Capacity: Five-round detachable polymer box magazine (four Magnum calibres)

Barrel: 560mm (Std), 620mm (Magnum)

Muzzle: Threaded MI5xI or MI4xI Sights: Compatible with all Remington 700 bases/rails

Stock: Sauer ERGO MAX synthetic polymer, Ever-Rest bedding system

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preparing to return to the range

Rachael Oxborrow

or most of us our firearms have been languishing in safe storage for much of the year but a return to the ranges and to the wild for hunting is gradually appearing on the horizon. As many Australian states and territories implement plans to steer us out of lockdowns, now's as good a time as any to take a step back to basics and consider what must be done before we return to shooting.

Inspection and cleaning

Any firearm left untouched for months or even weeks should be checked for safety or wear and tear and first port of call is to ensure the firearm is unloaded regardless of how long it's been in storage. Firearm maintenance varies by action type and much of what I'll cover here relates directly to bolt-action rifles, though the process of checking the action and cleaning as

needed is relevant to most firearm types. Look down the barrel for debris, oil the action and bolt and work the action, specifically checking the bolt face as this is often a place for wax build-up (a bore snake or general barrel clean can also be beneficial). I'm partial to a cleaning rod and microfibre cloth with solvent for my rimfire but know other target shooters who take passionate issue with any type of cleaning of rimfire barrels. If this is you, cleaning just the first 5cm of the barrel can remove hardened wax from ammunition and ensure smooth ejecting of spent cartridges without affecting the rest of the barrel.

While care of specific functions of the firearm are important, so is the condition of the exterior so check for dust build-up, rust and other points of wear and address accordingly. Humid conditions can affect a wooden stock's integrity and moisture can be a rust concern and remember to always follow manufacturer instructions when dismantling or cleaning firearms and be sure to avoid creating warranty issues.

Practice at home

Shooting is a habit, a series of actions which can be practised without going to the range. Muscle memory plays an important role in your technique, just as much as being in a competitive situation hones your skills. Aids such as snap caps can be a useful training tool but be mindful these can cause damage to the firing pin, while dummy caps can also help with training though not firing (they allow chambering and working of the action in a safe manner). For my firearm of choice - a .22 rimfire rifle - the use of snap caps isn't recommended as they'll damage the firing pin. Air rifles and pistols using CO2 or pressurised air are suited to dry



From lockdown to hammer down

firing and manufacturers often make their firearms to suit this type of practice, ideal for training in lockdown.

Our latest clutch of Olympic shooters had to prepare from home for more than 12 months to compete in Tokyo this year and this involved dry firing, procedure training, repetition and, for some, using technology to assist with training. South Australian Olympian Katarina Kowplos used a SCATT machine to practise dry firing at home while teammate Laura Coles took to the technical aspects of Skeet. She went right back to basics and said the opportunity to re-learn how to shoot, away from a hectic competition schedule, was a unique sensation.

SSAA columnist and Olympic Trap shooter Laetisha Scanlan has detailed her pre-shot routine in Australian Women's Shooter (AWS), a fine-tuned process which can be developed and practised at home by all of us. "Clay target shooting is a monotonous sport," Laetisha writes. "You're doing the same process on a repeated basis for sometimes hours on end.

"Yes, the targets may be varying in speed and direction or your foot position may change depending on different stations, but set-up and approach should be identical every time you call for the target. A pre-shot routine helps with not only your physical movement to the target but also your mental clarity, maximising that ability to perform at your best. Simply put, when we have a solid process from start to finish, confidence becomes a by-product of this and confidence is built from consistency. I urge all target shooters who don't have a routine to at least try and see if you reap the benefits as I have from a simple yet effective strategy to stay on target."

Adapting tips from Olympians to suit our needs will help us on return to the range to have some match fitness under our belts. SSAA National Coaching and Membership Development Manager and AWS editor Gemma Dunn took readers through the top five physical tips for shooting in Issue 8 of AWS, many of which can be adapted for practice at home. She lists staying hydrated, strong core, eye exercises, breathing and controlled heart rate and dry firing as key elements.

"Dry firing is arguably one of the most under-valued training tools in the shooting sports," Gemma said. "There are so many benefits to dry firing training that I simply have no idea why more people don't do this. It allows you to have a feel for the gun in your hands, so much so it becomes second nature to handle it in action.

"The last thing we want to be doing is manipulating or moving our guns differently



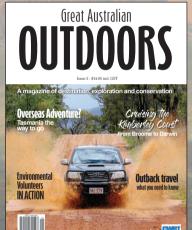




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From lockdown to hammer down

with each shot as this doesn't create a consistent base for you to perform from." The widely accepted fundamentals of a shooting technique include the following:

Aiming and sighting

It's important to distinguish between the process of using your eyes to align the gun with the sight or scope and taking aim on the target and holding the shot. Start by aligning the sight with the target using both eyes, if possible, and keep your aiming brief as errors are prone to increase the longer you hold a shot. For shooters with a dominant left eye when aiming, the process of aiming and sighting can be impacted (for more on this see Issue 1 of AWS).

Trigger

Pulling the trigger is a small but important movement in pistol, shotgun and rifle shooting and jerking or clutching the trigger can move the gun enough to affect your aim. Ensure your grip of the stock is firm and correct, rest your finger on the trigger and aim to apply slow and steady pressure.

Breathina

For pistol and rifle shooting the action of breathing moves the firearm, so controlling both your breath and heart rate is an important part of the shooting technique. Practise drawing a breath, holding and releasing then find your best point in this sequence to pull the trigger. When using a shotgun, breathing is more of a centring technique to keep you relaxed and focused in preparation for the calling of a target.

Follow through

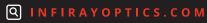
For pistol and rifle shooting, holding the firearm on the target after firing can help your triggering and control as it reduces the possibility of a jerk action forcing you off target, so aim to hold your position for two or three seconds after pulling the trigger. In shotgun disciplines the goal is to continue your swing through the target after pulling the trigger. In a practical situation when dealing with recoil from larger calibre rifles and shotguns, it's important to release the shot and follow the movement of the sight back to your neutral aiming position.

There are countless online videos and training guides which can help us work through our pre-shot routine and shot-taking technique, the goal being to develop processes which suit you as a shooter and benefit the bottom line - your score. The top five physical tips for shooting article from AWS is available on the SSAA national website.











John Maxwell

t the end of August, Australian Border Force (ABF) revealed they'd arrested a West Australian man on firearms charges which included importing gun parts from China. Earlier that month they also revealed an Adelaide man had been busted returning from the US with firearms parts in his luggage, enough to assemble a complete handgun.

But that's not all. ABF charged a Sydney man in October of last year after intercepting a parcel from overseas containing four silencers (suppressors) and the same month agents arrested another Sydney man after intercepting a number of inbound parcels, one from the Netherlands containing a silencer and firearms component, the ABF image accompanying the press release showing what appears to be a Glock frame.

Subsequent searches of premises in Sydney uncovered an unregistered firearm and silencer, all of which shows that while lockdown had restricted much activity across Australia, some have been shopping online and, it would appear, in person for gun parts then taking their chances at the Customs barrier.

These busts show the risk of being caught and charged while attempting this are high. "The ABF uses highly-trained officers, detector dogs and cutting-edge X-ray technology to identify offences and we'll continue to work with partner agencies to combat this criminality," said ABF Acting Superintendent Investigations (WA) Linda Jose in the media statement relating to the arrest of the WA man.

He was a licensed firearms owner and seized were nine licensed firearms, five handguns and four rifles along with a large quantity of ammo, five homemade silencers, tools including a lathe, milling machine and 3D printers, firearms barrels made in China and 3D-printed gun components. "People need to understand holding a legitimate firearms licence does not allow you to

import firearms or firearm parts without a permit," said Superintendent Jose. "Anyone considering importing firearms or firearm parts should be very clear about the regulations in place and ensure they comply with them."

The WA man was charged with unlicensed manufacture of firearms and ammunition, possession of a silencer, failure to comply with firearm or ammunition storage requirements and, finally, possession of cannabis. As well as the charges for importing gun parts, the Adelaide man was charged with a further 50 state firearms offences including illegal possession of guns, possessing a silencer and manufacture of firearms.

Silencers - or more correctly suppressors as they only reduce not eliminate the sound of a gunshot - appear to be a bit of a thing. In the bust last December the Sydney man was charged in relation to importing a total of eight silencers in two parcels as well as steroids and growth hormones.

ABF clearly stipulates it's entirely possible for licensed firearms owners to legally import complete firearms and components but draws a distinction between firearms accessories (for which generally no permit is required) and parts, which may require a permit. Without going into the fine detail that's generally a twostep process. Firstly, gain certification from your state or territory firearms registry that you're legally entitled to own the firearm or component you wish to import then apply for import approval.

The key form is the B709 which is available online, however a B709 doesn't guarantee ABF will ultimately approve importation as it may decide the proposed item doesn't meet other import conditions, for example safety testing or that it looks too much like a military firearm (the infamous appearance test). The ABF website explains all this and more. They make it clear civilians simply can't import suppressors and even someone in possession of a rare suppressor permit from their state or territory registry must buy a domestically-

The US is generally regarded as firearms Mecca with a vast industry supporting gun owners there. Yet anyone who's perused a US gun vendor website will appreciate that exports of many items are regulated and may require US State Department export approval - these include magazines, replacement barrels and much more. Strangely, the US seems to regulate export of some high-end optics even if the same scopes are available in Australia and other than the prospect of being slugged for GST, there are zero controls on import of optics at this end.

China is not generally viewed as gun heaven as civil ownership of firearms is tightly controlled, yet China manufactures a wide range of firearms parts and accessories which it seems guite happy to sell to anyone with the cash by way of online portals such as Ali Express operated by the Alibaba Group, one of the world's largest retailers and online commerce companies.

The diversity of products is utterly mindblowing with just about anything you can think of for sale and a lot more besides. Prices for many items are reasonable and include a wide range of firearms parts and accessories, much of them advertised as intended for airsoft competition which uses pellet-firing replica guns closely resembling the real thing. For that very reason, airsoft guns are banned in Australia though not in many other countries including the US and Japan and while nominally marketed for airsoft, rail accessories, scope rings and mounts work just fine on real firearms

subject to the immutable rule - you get what you pay for.

But there's more. A search for 'Glock' throws up 60 pages of parts and accessories, mostly sights and optics but a number of China-made internal components. Ali Express features numerous vendors offering what are euphemistically described as solvent traps or fuel filters and with minimal modification these become suppressors. One vendor claims his fuel filters are only for cars though the fitting thread sizes are a bit of a giveaway with 1/2-28 and 5/8-24 being industry standard muzzle thread dimensions for .223 and .30 calibre rifles.

The term 'solvent trap' was apparently coined in the US as a product screwed to your rifle muzzle to stop bore solvent dripping on the floor - if that's really a problem then buy a bucket! The US Bureau of Alcohol, Tobacco and Firearms, which regulates possession of suppressors, wasn't fooled and neither were Australian Border Force agents who in 2017 busted a South Australian farmer for importing three solvent trap suppressors from the US. He was lucky to retain his freedom as the maximum penalty is 10 years in jail.

Considering the volume of incoming mail, freight and the number of pre-COVID passenger arrivals, ABF has an impressive record in locating contraband whether that be narcotics, child abuse material or illicit firearms. For those busted - who may have naively assumed the prospects of being caught were remote - the consequences can be dire including jail time, sizeable fines and, for sporting shooters, loss of licence, guns and sport.

So could ABF solve the problem of illicit gun component imports from China by asking Ali Express to ensure its vendors don't sell certain items to Australian buyers? Well they've actually tried this approach and in October 2020 the ABF revealed it had worked with Alibaba to shut down the online store of a vendor selling child-like sex dolls. Yip, you read that right. It followed the seizure of 36 such objects at the Australian border in the previous three months and ABF pointed out to Alibaba that selling these items violated its platform policies, to which the company agreed.

Problem solved? Unfortunately not as ABF has since busted another seven men for importing these items from China. They may not have been shopping with Alibaba but were clearly finding them elsewhere online. So would any effort at the China end to limit sales of restricted gun parts to Australians produce a better result? •





Leon Wright

here are three methods I use for duck hunting - shooting over decoys, jumping them on dams and driving them - and with all of these I include my dogs. Through being a duck hunter for many years I've found you need a sense of humour and a thick hide, so the 2021 season was a perfect example.

Duck hunters were verbally abused, threatened, called the vilest things imaginable, cheated and lied to and I know of no other recreational activity which cops flak like duck hunting. It's all wasted on me - literally water off a duck's back - as I go hunting with my dogs more than ever. I particularly like shooting over decoys and when ducks become wary of that enticing block of imitations floating in a quiet billabong, we turn to driving the water which is usually successful before the ducks wise-up.

That's when we opt for hunting on the numerous dams on private properties I have access to. I was planning a big season on the dams as I'd another hunting companion in my curly-coated retriever Cobber, and have found in the past that out-of-the-way dams provide the peace and quiet I need to focus on training my dog properly.

On opening morning I took my old curly Missy though it turned out to be a let-down with just two shots for two teal taken but, undeterred, I headed off next day to tackle the dams with Missy and newbie Cobber in tow. I always start the season by putting opening morning in over decoys and rarely do I fail to shoot the bag, this year being the exception. But what can you expect with the season starting on a Wednesday with far fewer hunters able to turn out? The cynic

in me believes that's exactly the reason for the midweek opening.

Anyway, we parked the ute atop the hill and glassed a distant dam where I could see numerous woodies but not much else. So when we popped up over the dam bank you can imagine the pleasant surprise when around 100 ducks of mixed species lifted as one, teal being the predominant species and it was teal which fell back on the water after we'd fired. We watched as the ducks departed for safer pastures and mentally marked where they'd pitched in. I knew of a dam in the middle of a 100-acre paddock and reckoned that was where they ended up so we planned on paying them a visit in a day or two but for now Greg brought up Cobber, my curly.

Cobber had all the basic groundwork and was keen as mustard - once his collar was

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slipped he was into immediate action and in next to no time had the teal at my feet and was looking for more. With the season as limited as it was and the bag limit to only five birds each per day, I planned on putting in as much time as I could with Cobber.

I'm sure every duck hunter has a favourite way of training their gundog and I have mine. The usual come, sit, stay and walking to heel are necessary for general safe hunting and Cobber had all of those mastered, well almost. He's starting to respond to hand signals which is one of the most important parts of a gundog's training. When sneaking up on a dam I stop about 20m away and, using hand movements, can have Missy sit and stay while I sneak forward and flush the ducks. Missy then comes forward and retrieves the ducks (hopefully we've downed a couple) and if I can teach Cobber to do this I'll feel I've achieved something in our short season.

A friend who lives in a neighbouring town and also owns a couple of curlys was keen to join me on a hunt. We'd planned one over decoys but with the midweek opening I thought it might be a non-event and, as it turned out, my hunch was right. Yet I knew my second choice, dam jumping, was bound to be successful as there were so many ducks about. The first dam we tried had two nervous black ducks rise and the three of

us swung on to them though Rick didn't fire as he thought they were out of range. Blake and I fired simultaneously and both ducks dropped.

With the ducks on the water it was a good opportunity for Cobber to practise. He bolted down the dam bank upon seeing the floating ducks and had the first one at my feet in a flash. I prefer to have the dog hand the duck to me after it sits down and I'll start working on that, but for now I was pleased Cobber was showing so much promise.

I thought he might swim across the dam

to retrieve the second black duck which ended up close to the far bank but instead he bolted around the dam bank and when he reached the duck, took an almighty leap and grabbed it, trotting back to drop it at my feet. While I applauded the enthusiasm I'm not keen on having the dog leaping into dams while retrieving. The last thing I want is my retriever impaled on a star picket, placed with fencing wire around the dam to avoid stock being bogged in times of drought. Missy being an old hand at this retrieving game enters the water with a more subdued approach, one I'll work on

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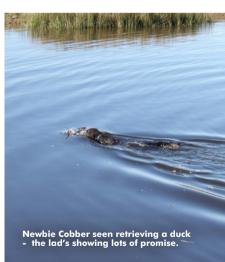
with Cobber over time. The next dam we intended to try usually produced the goods, the only downside being it's fairly wide (about 40m across) which is what I consider a long shot for steel. With luck some ducks would be sheltering on the lee side, out of the wind but well within range of steel shot. A short time later I was taking a quick peek over the bank of the big dam and what a sight greeted me - at least 100 sheltering ducks of numerous species. There were teal by the score while a mob of blackies lounged around in the shallower section. I was keen to get stuck into the mixture of teal and woodies lining the dam bank on our side as these were definitely in range.

Our initial volley of shots had ducks down with dozens more circling overhead and while I headed for the fence to collect the dogs, Blake and Rick kept an eve on the ducks to check if and where they landed again. When I returned I left Cobber with Blake and took Missy to search for a downed duck further away from the dam. Quite often the duck is lost in heavy cover but that's a minor inconvenience if you have a dog with you and that was the case here.

Missy relishes these occasions and when told to 'find it' dropped her nose to the ground and was off. The dog made locating the duck look ridiculously easy and quickly collared the teal which had come down in the scant high grass and, although dead, was still well hidden from view.

Rick headed to another dam about 200m away as some of the big mob headed that way and it was a sure bet they were on it. Indeed, Rick was soon to turn up with a few more to add to those already lying on the bank. We could probably have taken even more as while Rick was away, mob after mob kept flying over the dam with most in range. But we hadn't brought enough ammo so begrudgingly had to watch them without firing a shot. A quick head count of ducks at hand had me muttering about the farce which was loosely being called this year's duck season, as we'd nearly reached our bag limit as it was.

Another dam a short distance away has always proved fruitful and it wasn't long before we were parked. We tried to figure out how we were going to move close enough without being seen by the woodies,



eyeing us off suspiciously from atop the dam bank and others perched in a dead tree beside the dam. Eventually tiring of us the woodies waddled over the bank and down to the water to join at least 50 others resting there, which gave Blake and Rick the chance to sneak up on them and shoot the remainder of our bag. •



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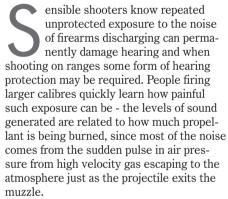






Turn a deaf ear to shooting noise

Geoff Smith



The potential for harm also depends on the environment in which the shooting is occurring. In enclosed ranges, noise levels will be higher than outside and even the discharge of a standard velocity .22 rimfire can cumulatively harm your hearing over time. The shorter barrels of handguns are doubly likely to be harmful as gases are not only released at higher pressures but the muzzle is also closer to the shooter's ears.

For years I've used a variety of hearing protection devices and in recent times it

has become increasingly popular to use electronic ones which allow ordinary spoken commands to be heard, while noises which rise rapidly to potentially harmful levels are 'chopped off' immediately by the internal electronics. During shooting matches it can be distracting to hear background noises such as bystanders talking, birds chirping, even empty cases landing on the floor, but it's easy to turn the amplification down or even off. Yet when working as a Range Officer or firearms instructor it's essential to be able to hear conversations while being protected from loud shooting noises.

Another important consideration with hearing protection is personal comfort. Earmuffs or plugs which are uncomfortable due to being too tight, the wrong shape or which fail to adequately block out sound are of no use. Those which lead to excessive perspiration should also be avoided and the ideal ones should be unobtrusive to the shooter

The subject of this review - the Epicshot Explorer Pro - is a set of earmuffs using

smart electronics to instantly reduce noise levels at the shooter's ears. Before looking at the special details though, the muffs themselves offer good hearing protection even when switched off. They appear well designed and made and have several appealing features. Firstly they feel comfortable when being worn and have a reasonably low profile so are not in the way, which is important for longarm shooters. The substantial padded headband clamps the cups firmly yet comfortably on the ears at exactly the right angle.

Adjustment is comprehensive yet simple, providing a good array of sizes to cater to everyone from smaller children through to adults and, when shooting's over, they fold up neatly into a compact package which doesn't use much room in your shooting bag. The ear cups are made of mattefinished black plastic and the vinyl pads are soft and spongy, enabling good conformity to the wearer's head to exclude external sounds. Inside the ear cups is a layer of foam separating the speakers from the ears, there are microphones in each ear cup and the volume control is on the left side.

The battery compartment is on the right at the outer top of the cup and is opened by sliding it upwards and off. The muffs are powered by two AAA batteries (not supplied) and the ear cups connected by a small cable which loops over the top of the padded headband. This unit takes earmuff technology to the next level by including a Bluetooth capacity, permitting it to pair wirelessly to a smart phone or other Bluetooth-enabled device.

While this is possibly of limited use to recreational shooters at the range or when



...even the discharge of a standard velocity .22 rimfire can cumulatively harm your hearing over time.







hunting, it would have a few advantages for professional users who need to keep tabs on devices which can be connected via this wireless link such as mobile phones or radio communication equipment. It also comes with a 600mm-long cable with 3.5mm audio plugs to connect to phones or MP3 players. Pairing the earmuffs to a smartphone is simple. The phone is opened in 'settings' and the earmuffs switched on. Pressing the BT button on the outer top of the left ear cup for one second initiates pairing and, with the blue LED flashing, selecting 'EM030BT' in the phone's Bluetooth settings links the devices.

Volume control for the Bluetooth

connected audio is the narrow dial alongside the main volume knob. To answer an incoming call the BT button is pressed briefly (a longer press of this button will hang up the phone). There's also a facility to put callers on hold, reject incoming calls and carry out a last-number redial for those who insist on having their phone with them at all times. But remember, on many ranges it's a 'disqualifiable sin' to answer calls during a match.

Primarily, so far as shooters are concerned, these muffs are claimed to provide a noise reduction rating of 22 decibels (dB). This level of attenuation would apply even with the electronics turned off

but, when activated, external noise is electronically switched off immediately on the ambient sound level exceeding 82dB. Some simple tests with a sound meter show a single loud handclap can produce approximately 100dB about 200mm from the microphone and this shuts off the earmuff's output completely.

Having used these earmuffs at a variety of matches I can confirm they adequately reduce the levels of sound from handguns up to .44 Magnum calibre most effectively. The review sample Explorer Pro earmuffs were loaned by the Xhunter online store (xhunter.com.au) at a special RRP of \$73 plus postage. •

Half measures to improve clay target performance

John McDougall

or clay target shooters looking to lighten the load which comes with a full-blown shooting vest the answer is now at hand - the half-vest by Quality Shooting Supplies of Melbourne. Company principal Arthur Rawlinson, himself a super-keen clay target shooter, lamented the unrealistic prices shooters were being forced to fork out for imported products so established his firm to offer more affordable shooting accessories, one of them being the half-vest.

It has everything the competitive clay target competitor needs in a shooting vest with the exception of the upper garment which places weight on the shoulders and seems to get heavier as you progress through a clay target event. The halfvest consists of a quick adjustable waist belt, several pockets to accommodate full cartridges and a convenient back pocket to stash the empties.

Cleverly, Rawlinson also designed the rear of the jacket with a zippered compartment to hold a rain jacket if needed or even a sweat towel for competing in hot weather, The half-vest dispenses with the weight of a full clay target shooting vest.



the zipper being top quality and the belt a quick-release design fully adjustable to 3XL. The two cartridge pockets either side of the belt catch aren't fixed in place and can be conveniently slid into a comfortable position to suit, the rear pocket fitted with a gusset which holds roughly 25 cartridges with a further 10 or 15 in the front pocket. The half-vest is priced \$40 plus postage and can be ordered by emailing arthur@qualityshootingsupplies.com.au

With Christmas fast-approaching and all



our major cities looking to vastly reduce their COVID-19 restrictions, the half-vest could be the ideal gift for the clay target shooter in the family looking to get back out on the range. Quality Shooting Supplies also offer an affordable range of gun slips and gun cases along with handy shooting sticks, one of their line leaders at a fraction of the cost of UK imports, all items having been tried and tested. .





The Austen Mk.II looked fairly advanced for its time.

Austen double rarest of the rare

Daniel O'Dea

t the beginning of World War Two the Australian army, like British and other Commonwealth forces. didn't have a standard-issue submachinegun. The stopgap was the US-made Thompson 1928A1, a modified version of the Thompson Model of 1921 made infamous in gangland wars of the prohibition era. Part of the reason the British hadn't pursued an SMG earlier is said to be they literally considered such firearms 'gangster guns' with no real practical military purpose.

But it was quickly acknowledged how wrong that thinking was when they realised this war wasn't going to be fought like WWI, indeed it wasn't going to be fought swift and overwhelming movement of

on trench-lined battlefields but in cities and towns at rapid speed. The Germans had demonstrated this when they stormed through Poland and later into France with

Lecture and demonstration of the Austen Mk.I to Aussie troops at Wagga Wagga NSW, June 1943 (image courtesy AWM).

troops in a new mobile style of warfare. They called it Blitzkrieg, translated as Lightning War.

The main Commonwealth forces of Britain, Canada and Australia all received Thompsons with Australia picking up some 18,000 but they were expensive and in short supply, especially after the British withdrawal from Dunkirk where they lost a lot of their arms in the hurried escape. Back in England by 1941 a couple of designers in Armaments, Major Reginald Shepherd and Harold Turpin had literally slapped together from scrap the Sten gun, a cheaply-made 'poverty pack' version of the Lanchester which in turn was a rip-off of the German Bergmann MP28.

The Sten was a simple tube gun, a piece of pipe with a barrel held in place by a trunnion and a threaded barrel nut and cylindrical bolt driven forward by a large spring

and rearward by blowback of the fired round. A simple sear held the bolt back when not firing with a rudimentary trigger tripping the sear as required, most parts being pressed metal and welding (even the firing pin was just a protrusion on the bolt face). The Sten wasn't a pretty gun, not overly reliable and may even be described as crude but it was cheap to make - the equivalent of \$11 as opposed to \$200 for the Thompson and easy to manufacture.

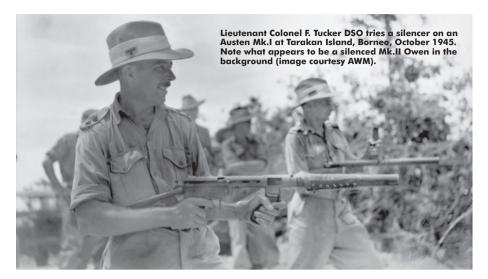
Desperate times call for desperate measures so it was quickly adopted into service and over its life continued to be updated with several models manufactured. the most common by volume being the Sten Mk.II. Back in Australia at much the same time Evelyn Owen, an army private with more than a little help from John Lysaght's steel company in Wollongong, had devised a far superior design in the Owen gun. Yet the Australian military bureaucracy didn't want a bar of it. Be it ego, ignorance, arrogance or all three, they saw Owen and Lysaght as interlopers treading on their turf.

Despite their efforts to guarantee the Owen gun's failure it was a superb format and incredibly reliable. In trials against the Thompson, Sten and even a German MP40 it performed well ahead of the Sten. Both the press and politicians became involved so the issue couldn't be ignored with the Owen gun ready to be adopted. But for Military bureaucracy it wasn't their gun and up until then on the prevailing philosophy of 'British is best', they wanted the Sten for which



Three SMGs were used by Australian forces in WWII. From top the Owen, Thompson and Austen (image courtesy AWM).

Austen double - rarest of the rare



they'd been given the drawings. As the Sten design was clearly inferior to the Owen they'd have to improve it so forged ahead with their own submachinegun format, an Australian STEN or Austen.

The Austen Mk.I turned out to be somewhat of a bastard child like the product of a one-night stand between a British Sten and German MP38/40 with a twist. They basically took the Sten's main tube and trigger mechanism and mated it with the MP40's telescoping recoil mechanism, bolt, firing pin and folding stock. The twist was the use of diecasting technology to produce both magazine and magazine housing which incorporated a vertical foregrip (like the Owen) and two specialist companies, Diecasters of Melbourne and W.T. Carmichael in Sydney, were given the job of manufacturing the guns.

I guess the most famous recorded use of the Austen Mk.I was the issue of silenced versions to members of the 'Z Force', a special forces unit which carried out covert operations in the south-west Pacific. In total fewer than 20,000 Austens were made, less than half that of the Owen, but as the latter was much favoured by the troops and proved an excellent performer in the field, the Austen was relegated to secondary use and made obsolete at the end of the war. It's accepted some made their way to Indonesia and some apparently even turned up in the Rhodesian Bush War, but I understand the vast majority were destroyed as unwanted surplus with rumours many were dumped.

Yet the Austen story wasn't quite over as by the end of the war there was an improved design on the table in experimental guise - the Austen Mk.II - a truly unique design leaning heavily on the diecasting process you could argue was pretty advanced on a manufacturing level. They only made 200 officially and likewise it was both accepted



Corporal Jock McLeod from the Parachute Battalion Training Centre, Richmond, NSW 1945 kitted out with an Austen Mk.I (image courtesy AWM).



Ladies from an Australian munitions factory check out the Austen circa 1941 (image courtesy ÁWM).







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Austen double - rarest of the rare

and retired at the same time in August 1946.

As a dealer, by sheer circumstance I had the extremely rare opportunity of being in licensed possession of both an Austen Mk.I and Mk.II so thought I should take an in-depth look at these rarities for comparison. As mentioned, the Mk.I is basically a variation of the British Sten gun though at first glance, the addition of vertical grips front and rear give the Austen a distinctively different silhouette from a side profile. A closer inspection against a Sten Mk.II reveals they have many features in common if not identical.

In fact items such as the trigger housing cover plate along with the trigger mechanism and other trigger housing internals like the sear are completely interchangeable between the two guns. The barrels too are basically cut in the same profile with both retained by a threaded barrel nut (also interchangeable). The barrels would be interchangeable except the Austen version has a keyway at the chamber end which locates in the trunnion and the Sten doesn't. An Austen barrel would most likely work in a Sten Mk.II but not vice-versa and when viewed from above, any difference in silhouette is barely distinguishable.

One issue with the Sten was the cut-out in the main tube for the reciprocating bolt handle left the receiver open to mud, sand or other gunk finding its way into the mechanism. So they thought it a good idea to dispense with the standard Sten mainspring and replace it with an enclosed telescoping recoil mechanism copied from the MP38/40. This is basically three tubes of reducing diameter which collapsed into each other, protecting the recoil spring and incorporating the firing pin at the nose.

Likewise the corresponding German bolt design was copied, this complete mechanism not identical and unlike the Sten and Austen no parts were interchangeable with the MP38/40 and Austen. The other thing which shares an uncanny resemblance to the German gun is the stock, again a copy but not identical.

Moving on to the Austen Mk.I versus Mk.II and in my opinion the Mk.II doesn't deserve the inference of wearing a Sten label at all. From what I can see it shares little commonality bar the fact they both use a horizontal magazine. It's another beast in its own right and apart from a similar recoil mechanism (again not identical) shares little with its Mk.I predecessor.

Starting with the main tube, the Mk.II does away with the Austen Mk.I/Sten Mk.II barrel nut and trunnion design and fixes the barrel in place as a single complete assembly. The use of diecasting, while only



The same but different

Both Austen Mk.I and Mk.II used magazines which were steel bodied but had a diecast top half or head that mated into the magazine housing. The pattern and method as far as how the magazines are retained in their relative housings on the guns are basically the same from Sten to Austen Mk.I to Austen Mk.II and I've read the magazines were interchangeable.

Yet I'd note the original Sten mags were 32 rounds, Austen Mk.I magazines are marked 30-round and Mk.II are 28 rounds. I've also found some variance in dimension and have known Mk.II 28-round magazines being too tight to fit Mk.I magazine housings. Then again, my experience is limited by the rareness of examples to test.

It's worth noting the Sten gun magazine design with its double stack/single round feed was never overly reliable. The Indian Army even came up with a conversion where they added brass guides inside the magazine to turn the 32-round double stack mag into a 19-round single stack, the logic being 19 rounds functioning were better than 32 that didn't.

In the case of the Austen Mk.I and Mk.II I'm unsure if the capacity was actually reduced from 30 to 28 rounds or just marked so for better functionality and reliability when loaded down a few rounds. Sten/Austen magazines also require a

loading tool and with the Austen, once again diecasting was used to make a tool which was quite effective. I'd note the Owen gun magazine had a double stack/ double feed design and could be loaded easily by hand which was considered another advantage in the field.

One thing undoubtedly the same for both Austens as well as their British namesake is the method of operation, all three having a horizontal magazine loaded from the left in basically the same position. Likewise the fire controls between all three are pretty much in identical positions and function the same. Bolt handle with a safety notch in the receiver, selector button, position of magazine release, firing from an open bolt all basically the same by method so I guess in that respect Austen Mk.II may qualify as a Sten, but perhaps for that reason alone.

Truth is both Austen models weren't too bad compared to many of their contemporaries and could be considered effective submachineguns. But neither could hold a light to the 'Diggers Darling' and undisputedly the best-designed SMG of WWII, the Owen Machine Carbine. As such the Austen experiment will be consigned to the annals of history as one of two interesting machineguns which never made a significant impact.

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Austen double - rarest of the rare

evident primarily in the magazine housing of the Mk.I, takes a starring role with the complete trigger housing-come-rear body being all diecast, what today might be referred to as a lower receiver.

A new trigger mechanism is accessible via a sideplate on the left of the lower receiver. Again diecast, a completely new front magazine housing-come-vertical foregrip assembly incorporates fins for heat dissipation as well as the front sight, bayonet lug, take-down button and sling swivel, the whole assembly being rather 'Steampunk' or perhaps even Buck Rogers in appearance. The MP38/40-style recoil mechanism stays somewhat the same but they do away with the separate firing pin in place of a fixed protrusion on the bolt face.

Likewise the folding stock has been retained but its location and method of deployment change. Whereas with the Austen Mk.I it was hinged from the recoil assembly retaining plate which was removeable, with the Mk.II it pivots off the diecast rear lower receiver and is actuated by a thumb button at the back of same. One feature of both guns is the arms of the folding stock contain either side a cleaning rod and screwdriver which screw into the arms for retention, perhaps the only identical parts.



	Austen Mk.I	Austen Mk.II
Action:	Open bolt	Open bolt
Туре:	Select fire	Select fire
Cyclic rate	550-600rpm	550-600rpm
Trigger:	Single-stage	Single-stage
Calibre:	9mm (9x19)	9mm (9x19)
Capacity:	30-round	28-round
Barrel:	7.8"	7.8"
Sights:	Iron sights, rear peep	Iron sights, rear peep
Finish (for issue):	Camo pattern paint	Camo pattern paint
Stock:	Metal folding	Metal folding
Weight:	8lb 8oz	7lb 10oz
Length OA:	33.25"	33.10"
(Stock folded)	21.75"	21.70"





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Man with the Midas touch

John McDougall

s an outdoors writer of 40 years' standing I've met many skilled people in the gun trade, specifically those dealing with shotguns - my specialty area. For some time I've been hunting with an Italian mate from the spud-growing areas of Gippsland and have been mesmerised by the condition of his old Winchester Model 23 side-by-side shotgun.

Upon further discussion he revealed that his father-in-law, Bruni Oles, a retired toolmaker had turned his hand to blueing gun barrels and completing minor gunsmith work. I was impressed with his blueing and decided to put his skills to the test with a lovely old shotgun I'd been using for corporate clay target shooting at my local club.

The gun initially came to me somewhat run-down so I sought Bruni's expertise to restore to its former glory what is truly a classic in the shotgun world - a Winchester 101 XTR Diamond Grade Sporter.

Negotiations were long and protracted as Bruni lived in the Melbourne outer suburb of Beaconsfield and me based on Phillip Island. Thankfully I ventured out with a camera for the last week of bird-shooting season and managed to pass the gun to Bruni. Work was about to begin.

The barrels of the Diamond Grade had been noticeably damaged by water as it appeared the gun had been placed in a



gun slip after being wet and only partially cleaned at a later date. There was extensive rusting and small pitting everywhere on the barrel except under the fore-end which remained largely unaffected by moisture. All of these imperfections would need to be caringly removed as the whole barrel was stripped down before it could be re-blued.

Although the barrels of the Winchester

were fused together with superior solder, they were to be completely stripped of all remaining blueing then slowly rusted in a cold-water tank to bring them back to peak condition, a time-consuming process which would take almost a week to do properly. The barrels are firstly totally exposed then painstakingly rubbed by hand to remove any pitting, taking great care not to buff any

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Man with the Midas touch

inscription on the barrels. There are some I've known who buff the barrels on an electric buff pad but Bruni is 'old school' and lovingly strips them by hand, decreasing the grit of the papers used to bring the barrels up to a smooth, dull finish.

Some may like a highly polished surface for blueing but I prefer a traditional matte finish on the barrels which, should the gun be used in the field for duck hunting, won't produce glints from an early morning sunrise and spook wary ducks. So once the barrels are stripped back to bare metal, when all pitting is removed they're lowered into a water tank with a few drops of a special acid added to begin the rusting process (the blueing of firearm barrels is a rusting process which ends up with the barrels finished in a matte, blued surface).

Most European and British guns are treated in this manner whereas Japanese shotguns are highly polished and given a dark blued finish, approaching black in colour. The barrels may be immersed in the blueing tank as many as six or seven times until evenly coloured and are rubbed down by hand each time as the colouring takes its course until the operator is satisfied. When the final colouring and coating is achieved, the barrels are neutralised to prevent further rusting, then oiled and clad in gladwrap waiting to be despatched or collected from Bruni.

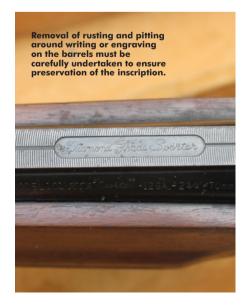
The Winchester XTR Diamond Grade Sporter also had the woodwork revitalised. To this end Bruni stripped all previous coatings from the gun and rubbed the stock and fore-end down with wet and dry sandpaper, filling the grain of the wood and steaming any dents to a level surface, another time-consuming process which takes dedication and pride of workmanship. Being a fully qualified toolmaker by trade has certainly given Bruni a great education when it comes to working on guns and his lifelong love of firearms also contributes to achieving the desired finish to the customer's satisfaction.

When I went to pick up the restored gun I was amazed by the skill of his workmanship and finished product. As he'd removed the stock from the action for restoration purposes, he also lightly buffed the action and cleaned the whole firing mechanism and relubricated essential operating parts. The mid-bead on the top rib had been squashed and damaged during the 56 years since the gun was made, so this was replaced and everything meticulously completed without any rush as I'd set no timeframe for a job which was accomplished in little more than a week.

Bruni's work area was neat and









organised, the stainless steel 'barrel bath' being clean and empty as he showed me two other barrel sets he'd just completed. Many major gunsmith shops with large overheads and staff can charge up to \$1200 for a barrel blueing but during his retirement Bruni's time is his own and he steadily turns out completed barrels.

To say I was impressed would be an understatement and for around \$600 to have a barrel set blued is indeed a saving on mainstream gunsmiths. Additionally, as many practitioners must complete a toolmaker's qualification before specialising as a gunsmith, Bruni is just one of those who've successfully turned their hand following retirement from full-time work. Refinishing a stock and fore-end will cost around \$400-\$450, again depending on the amount of work which must be undertaken to the customer's satisfaction - and Bruni's.





Man at work

Qualifications: A fully qualified toolmaker now retired, possessing the skills to maintain and service firearms with minor repairs and adjustments.

Contact: Via email at brunisbluing@ gmail.com. All prices subject to quotation depending on the level of restoration required.

Overview: As can be gathered from the review, I was most impressed with barrel blueing and stock work along with the minor fitting of a mid-bead sight and maintenance of the firing mechanism. Bruni's work on my project gun was faultless.





ack in the early 1970s and even before that, many manufacturers carried a fairly complete line of riflescopes specifically dedicated and designed for the 22LR. At that time Weaver was one of those, offering a great little 4x model built on a 7/s" diameter main tube which carried a price of less than US\$11, a 6x model for just \$2 more and even a 3-9x version with a sticker price of about \$15. And all of those even came equipped with a set of Weaver scope rings.

I still have one of those 4x scopes mounted on a Winchester Model 69A rifle and after a half a century of use it continues to work perfectly. Redfield also had a great little 3/4" tube 22 scope they called the Sportster which was sized perfectly to match the smaller-framed 22 rifles and I still have one atop my Browning 22.

Browning was also in on the act with a superb little 4x⁷/₈" model and my brother has one mounted on his Browning T-Bolt 22 rifle. Unfortunately all those scopes have long since disappeared from the market and along with them went much of the interest in rimfire manufacturing - that is until our love affair with rimfire shooting simply couldn't be ignored any longer. Even as the cost of rimfire ammunition continues to soar, the 22LR remains the most popular

cartridge ever developed and that popularity has led to a resurgence in this line of optics.

New 22 scopes from Bushnell

Today Bushnell has a great line of rimfire scopes to choose from including two brand new models. Both of these are 3-9x40mm built on a 1" main tube and come equipped with the company's newest Dropzone 22 (DZ22) reticle. Unlike the scopes of decades ago which almost always came with a simple cross-hair reticle, the DZ22 is of a duplex design with finer cross-hairs at its centre.

In addition there are three trajectory compensating aiming points in the form of small dots in descending order below the cross-hair centre. When shooting at longer range this simple design gives the option of using these dots in lieu of the cross-hair to compensate for the trajectory drop of the bullet. Within these two models there's a choice of an illuminated reticle or non-illuminated and for review I opted for the lower priced, non-illuminated model, believing sometimes *simple* is simply better.

While my DZ22 came with a set of clear plastic scope covers with the eyepiece containing a slight yellow tint, no scope rings were supplied. Being a fan of quick detachable mounts I chose to install the

scope using a set of Leupold's newest quick release-style rings - the QRW2. With the scope mounted and bore-sighted I headed to my shooting range.

On the range

I began by shooting Federal Premium cartridges which came loaded with 40-grain match hollow-point bullets, ammo said to produce what many consider standard 22LR muzzle velocity of 1200fps. With the scope adjusted to impact perfectly dead centre at 50 yards I checked at 75 yards and, using only the cross-hairs for sighting, found the bullets were about 51mm (2") low at that range but switching to the first dot they began printing dead centre of the target bull. Moving to 100 yards and using the second dot for sighting I found the bullets landing 25mm (1") low at that range and switching to the third dot they printed 76mm (3") high.

I also shot some of Federal's hypervelocity 22LR ammunition which came loaded with 38-grain copper-plated hollowpoint bullets. The factory indicated these would produce a velocity of 1260fps at the muzzle, 1000fps at 100 yards and have a bullet drop of 142mm (5.6") at that same 100yd distance. After switching to this ammo it became necessary to readjust the



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Dropzone 22 scope

point of impact at 50 yards due to bullets landing 32mm ($1\frac{1}{4}$ ") high at 50 yards.

After readjusting then using the first dot at 75 yards for aiming, the bullets struck the centre of that target and at 100 yards using the second dot I was pleased to find those bullets also found the centre at that range. Obviously even at these relatively short ranges, velocity as well as bullet design and weight have a great bearing on the trajectory and, that being the case, no-one should assume all 22 ammunition is equal when it comes to using the DZ22's trajectory compensating aiming points.

In order to achieve the highest degree of long-range accuracy, I suggest each shooter conduct their own testing in order to precisely determine how the DZ22 aiming points coincide with the chosen ammunition. In some cases you may have to accept your bullet impacting a little low or high at a given distance in order for it to strike more precisely at a different range. But even if your shot might be off dead centre by 5 or 10mm, a minor deviation like this would seldom have any consequences.

What about the DZ22 on a 17 HMR?

Based on the popularity of the 17 HMR. I thought some readers might be interested to know how the new DZ22 reticle scopes would work on that calibre, so I mounted the new Bushnell on one of my

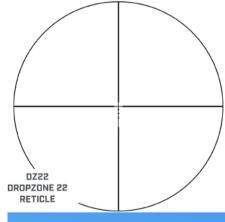


17 HMR rifles and returned to the range. The process of removing then remounting the scope to the new rifle was easy with the Leupold QRW2 mounts already on the scope. By simply lifting the two locking levers on the rings, the scope was off the 22 and soon locked in place on the 17 HMR after which I re-zeroed the rifle on the 50-yard range.

In this case I chose to shoot Hornady 17 HMR ammo loaded with 17-grain V-Max bullets, those cartridges reportedly producing 2550fps velocity at the muzzle and 1901fps at 100 yards. With the HMR ammo tallying more than twice the velocity and a bullet weighing less than half that of the 22. I found a considerable difference in trajectory.

When zeroed for the centre of the target at 50 yards I found little trajectory drop out to 100 yards and even at 150 yards bullets were only down about 25mm (1"). When the first dot was used for aiming at that same 150vd target the impact point was a full 89mm (3½") high. I suppose if a shooter was routinely using a 17 HMR for distances above 200 yards/metres there could be a slight advantage in using a DZ22 scope, though I don't believe that's the best use of either a 17 HMR or this scope.







A few specifics

- Both DZ22 reticle scopes can be used with the Bushnell Ballistic App which you can download for free from Google Play or App Store.
- A complete instruction manual didn't come with this scope but can be downloaded at www.bushnell.com.
- Both turret adjustments are protected from being accidentally changed by screwon caps.
- · Once the reticle has been tweaked you can realign the adjustment scale rings to the zero point by using a jeweller's screwdriver to loosen the Phillips-headed screws which secure the dial in place, then simply lift the adjustment scale ring up and turn it to the zero position before replacing the screws.

The way I see it

As the years start to accumulate almost everyone's evesight begins to wane and, that being the case, I sometimes found the small aiming dots in the DZ22 reticle a bit hard to see. That's not to say there's anything lacking in the quality of the reticle, it's the quality of my eyes that's lacking. Aside from that minor issue I found this design to be a simple and great way to compensate for a 22's trajectory bullet drop. •



Specifications:

Manufacturer: Bushnell

Model: Dropzone 22 (DZ22) non-

illuminated

Magnification: 3-9x40mm

Reticle: DZ22

Reticle adjustment: (1/4MOA or 1/4" per click at 100 yards)

Weight: 41 lg (14.5oz) **Length:** 309mm (12.2")

Field of view: 13m/4.3m (39ft/12ft)

Eve relief: 92mm (3.6")

Parallax: 50yds (non-adjustable set

at factory)

Tube diameter: |"

Colour: Matte black

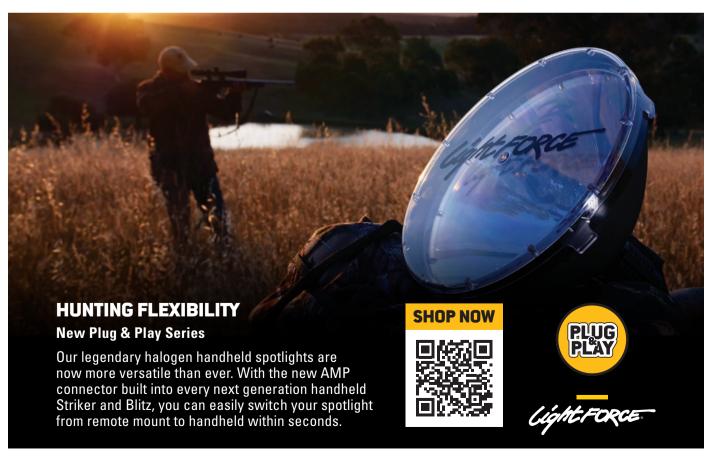
Lens coatings: Multi-coated/ultra-

wide band

Country of manufacture: China

Approximate RRP: Non-

illuminated \$206, illuminated \$247



My other favour

Senior correspondent John Dunn

I encourage others to have a go at building the dream rifle they always thought they'd like to own.



hen asked to contribute to the 'favourite rifle/scope/calibre' series of articles which ran in Australian Shooter in 2020, I must admit I was torn between two choices. Though my No.1 Ruger in 7x57 won the day it only just pipped another favourite of mine, mostly because it was a centrefire and therefore more useful than my second choice. That other option was a little Winchester Low Wall in .22LR which I've written about before but that was a long while ago. So I felt it was time to revisit

that one, if only to encourage others to have a go at building the dream rifle they always thought they'd like to own.

In the beginning

When it came to me the Winchester was a battered, commercial version of a Third Model Winder musket in .22 Long Rifle. Though built on an 1885 Low Wall action, this rifle was known as the Model 87, its serial number indicating a late production date. As a collector's piece it had little going for it - the stock had been butchered, the original Lyman No.41 receiver sight was missing and at best the barrel was in ordinary condition.

Apart from some damaged screws the action was still in good, useable shape and it subsequently became the basis for a custom rimfire rifle I'd been planning to have built for years. By the time the rifle was finished, five different gun craftsmen had contributed to its construction.

Building a custom rimfire

To set the ball rolling I stripped the rifle

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and took the action to Lee Davidson at Howlong, on the Murray River below Albury. Over many years Lee has made a highly respected name for himself as an engraver but is also an experienced gun tinkerer and his first job was to strip, then refurbish the action to near-new condition. That included filling the holes in the right side of the receiver which originally housed screws for the receiver sight.

While he was doing that I ordered a chrome moly barrel from Robert Tobler of RDT Products at Robertson in the NSW Southern Highlands and also talked to the late Geoff Slee about a pistol grip stock like those used on the better-quality Winchester single-shots of yore. He subsequently supplied me with a couple of lovely pieces of New Zealand walnut along with a request that I ensure the wood would only be

worked on by a competent stock craftsman.

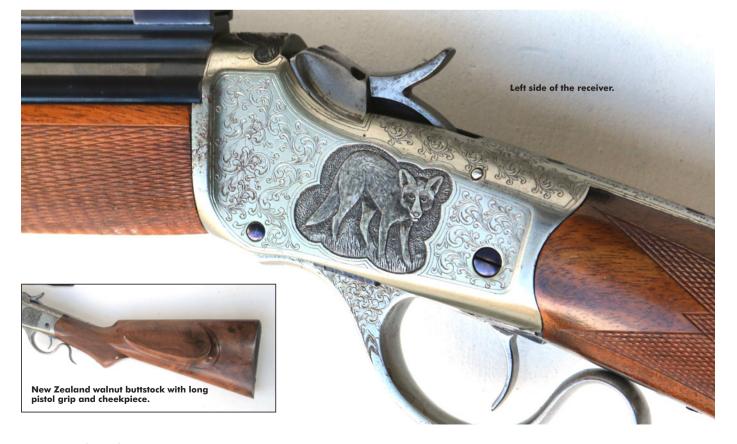
The action and barrel then went to Albury gunsmith Ian McGeoch, widely regarded as one of the best shotgun gunsmiths in Australia. At the time he was still doing some rifle work though that's no longer the case. When he finished with the Winchester he told me it was the last rifle he'd be doing and to this day I'm not sure why.

Ian profiled, screwed and match chambered the barrel in .22 Long Rifle before fitting it to the action. He then made and fitted a solid steel, dovetailed quarter rib designed to accept Warne QD lever mounts and also deep blued the barrel and rib, a finish that's as good now as the day it was applied.

With the metalwork finished the rifle and stock pieces went to Julian Sojkowski in Wodonga to be married together. He fitted a steel buttplate to the buttstock as well as shaping a beautiful pancake cheekpiece into the left-hand side and also chequered the pistol grip and forearm before completing the stock with a subdued semi-gloss finish.

From there the almost completed rifle went back to Lee Davidson for engraving. When I dropped it off he told me he'd call when it was finished, his quiet and polite way of hinting he didn't want harassed, sentiments I could understand and appreciate. After polishing the external surfaces of the receiver he engraved a high relief fox on the left and a pair of rabbits on the right. The remaining surface on each side was covered with an intricate pattern of fine scroll work, as was the top of the action grip and tang. On top of the receiver he engraved a high relief crow.

Lee applied more scroll work to either





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My other favourite rifle

side of the finger lever and outside bow of the triggerguard where he also engraved and inlaid my initials in gold. On top of the barrel forward of the quarter rib he cut the inscription: 'Made expressly for J.V. Dunn by I. McGeoch, Wilson St, Albury' and if it took a little longer than I thought, I have to say the wait was more than worthwhile.

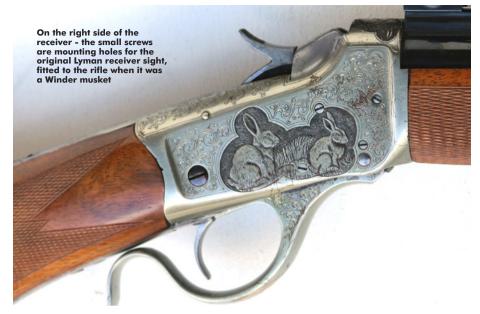
The Winchester goes to work

My original concept for the Winchester was a rifle I could use for either target or hunting work. At one stage I enjoyed shooting rimfire Metallic Silhouette and always thought one of these days I might go back to it, though I knew the rifle would probably be most used as a bunny buster.

Rightly or wrongly I reckoned a QD dovetail rail on the barrel would allow me to do both, all I needed was two different scopes, each sighted-in for the ammunition best suited to the activity of choice which would allow me to change things around as required. It hasn't quite worked out that way - I haven't shot silhouette for years and as I grow older the chances of me doing so are declining. Anyway, I never did manage to buy that target scope and extra set of mounts I knew I'd need for range work.

Poking around the paddock shooting a bunny here and there is much more my style and for some years now the Winchester has worn an old 6x Pecar Champion scope with duplex reticule. It's all the magnification I need, it sits well on the little rifle and if my life depended on it I couldn't tell you how many rabbits I've shot with the combination. 'Lots' is as close as I can reckon along with numerous hares, foxes and feral cats, the latter two mostly suckered into rimfire range with a fox whistle or predator call.

For hunting, the ammunition this rifle



prefers is Winchester subsonic hollowpoints and while point of impact may change from one batch to another, this ammo will consistently shoot 12-15mm groups off the bench at 50m. That's all the accuracy I need and out to about 70m any rabbit which sits and sticks its head up is in serious trouble, though I must admit most of those I shoot are taken much closer than that.

When the rifle was first built I tried a variety of target ammunition, Eley and RWS the brands the rifle preferred and both capable of producing 6-10mm groups at 50m. With a straight 6x scope I can't hold any closer than that so potential for the Winchester to be useful on the range is real should the need or inclination ever arise.

For all of that, as long as I own it the Winchester will probably never be anything other than a rabbit rifle, a role it has filled

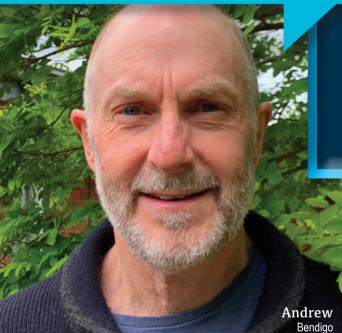
with aplomb for the past 15 years or so. With its olde-worlde workmanship, grace and style it's undoubtedly the most expensive rabbit rifle I've ever owned and I'm sure there are factory-built rifles which would perform every bit as well or perhaps even better.

I can live with that but the Winchester as it stands has my marque on it, built the way I wanted it to be and routinely delivering the level of performance I expect from it. It fits me and I shoot it well, it comes to the shoulder like an old friend and I know it will do what I ask of it provided I do my bit. If it was a centrefire it would undoubtedly be my favourite - the fly in the ointment is the fact it's not suitable for the larger game I prefer to hunt these days which means it'll never be any more than my other favourite rifle. But who's complaining? •



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The rimfire 'eagle' has landed

Sean Meagia





The batch of Aguila 38-grain hollow-

hen the struts of the Apollo 11 Lunar Module met the powdery surface of the moon on July 20, 1969, Commander Neil Armstrong marked the arrival with an immortal eight-word message - "Houston," said Armstrong, "Tranquillity base here the eagle has landed."

The Spanish word for that most majestic of birds is Aguila and in Australia the eagle has indeed landed thanks to firearms and ammunition importer Raytrade. Aguila Ammunition, founded in 1961, is made in Mexico by Industrias Tecnos, one of the largest rimfire ammunition producers in the world. Aguila uses cutting-edge technology to create quality rimfire, centrefire and shotshell ammo and offers an array of items for the self-defence, sports shooting, hunting, law enforcement and military markets. Raytrade is exclusive Australian distributor of Aguila Ammunition.

Spring had arrived and there was an abundance of rabbits on one of the properties I hunt, what a chance to run the numbers on some of the new Aguila rimfire ammo. Australian shooters consume more rimfire ammunition than any other type and the mainstay of any .22 rimfire stable is the high velocity solid, which is also my favourite rimfire round. The obvious Aguila to try was the .22 Super Extra HV copperplated solid with a 40-grain bullet and muzzle velocity of 1255fps. At 100 yards it's still doing 1036fps which delivers 140ft-lb energy at the muzzle and carries 95ft-lb energy at that distance.

Australian rabbit hunters love to use hollow-points even though the solid is slightly more accurate. It wasn't until 2018

Aguila launched a high velocity hollow-point which had been a long time in the making. Aguila's team had worked hard to ensure they were strategically delivering a premium product and were excited to put the new hollow-points into the hands of customers - naturally I had to try some of those as well.

The .22 Super Extra hollow-points have a 38-grain copper-plated bullet and feature strong penetration and expansion. It's a bit faster than the solid but drops off quicker, has a muzzle velocity of 1280fps and is doing 1010fps at 100 yards which delivers 137ft-lb energy at the muzzle and still carries 94ft-lb energy at 100 yards.

I took two rifles with me, a Savage with 3-9x40 Bushnell scope and Chiappa model LA322 Lever-Action Cub Takedown with open sights. Once at the shearing shed I had all the gear out and prepared to sight-in the rifles to the new Aguila ammo at the 50m range we use before venturing into the hunting area. The Savage was sighted-in with the solids at 50m and the Chiappa checked for point of impact with the hollow-points at 30m, both bullets proving extremely consistent with excellent groups that would prove to be a bunny's nightmare.

There was hardly a breeze, the sun was shining through the few wisps of cloud around so the rabbits would be enjoying the sunshine and munching on grass - a perfect day for wandering with a good rimfire rifle. I took the Savage with the solids and the first rabbit was a mere 10-minute walk from the shed. It was only 30m away and I had to take a standing offhand shot, the thud signalling a hit as the rabbit rolled over and kicked twice, a perfect start to the day.

A small gully was my favourite place to hunt rabbits on this farm so I started to walk it. The few trees offered shade and rabbits had their burrows in the side of the gully with fallen branches providing extra cover and hiding places from predators. The Aquila solids despatched two more at around the 40m mark then I missed one at 60m - my fault, not the rifle or ammo. I missed, it happens.

At the head of the gully I spotted a fox wandering around the paddock, too far away at 200m so I sat against a tree and tried to whistle it in. It stopped and looked in my direction but after a short pause which raised my hopes it turned and headed the other way. Either it was too well fed on lambs or just didn't like rabbits.

Another two rabbits fell to the Aguila solids on the way back to the shed, making five for the walk - an enjoyable 90 minutes. After lunch it was time for the Chiappa and Aguila 38-grain hollow-points. The Chiappa is my favourite rimfire rifle for close-range work, it just seems perfectly balanced for me and the trigger is a dream. Dare I say I rarely miss with this one, though in saying that I don't shoot at extreme distances either. Hunting for me is about closing in on the game as much as possible for an easy shot and leaving long-range shooting for the rifle range.

A small creek was to be the afternoon hunting spot where the grass was thicker and rabbits were harder to see. Several times I flushed one while walking and they'd have been great shotgun fun as they ran. The first two rabbits were sitting together only 35m away and even though they were close, I used a small sapling



The Aguila 40-grain

as a rest to take the shot. The 38-grain hollow-point made a loud 'thwack' as it struck the rabbit in the chest. The second flattened out in the grass and as I whistled he stuck his head up for a look. Big mistake - 'thwack' again.

Neither of them kicked or moved once hit and the knockout power of this highly effective round will definitely take out small game with confidence. These hard-hitting rounds delivered controlled expansion with devastating results as three more rabbits succumbed to the hollow-points, all with the same result. I'll admit I was impressed with the terminal deadliness of these rounds which also functioned perfectly through the Chiappa both at the range and in the field.

It's been said many times the .22 Long Rifle round may be the most under-appreciated cartridge of them all but I happen to be a big fan of this versatile little round. The .22 rimfire has accounted for millions of rabbits in Australia over the years and while there may not be as many rabbits as there was before calicivirus and myxomatosis, the .22 rimfire is still great for plinking, small-game hunting and target shooting.

My day in the field with the new Aquila Super Extra HV copperplated 40-grain solids and Super Extra 38-grain hollow-points was highly satisfying and this rimfire ammunition will now be a permanent resident in my locker. Aquila make a large variety of .22 rimfire ammo and their target category is said to be of exceptional accuracy. It may not be the ground-breaking event that was Neil Armstrong's feat in 1969 but the great-performing .22 Long Rifle ammunition from Aguila has most definitely landed in Australia.

• In our February magazine we run the rule over Aguila's .22LR Rifle Match, Pistol Match and Target Competition ammo.







Paul Heiser

et's imagine vou want a Martini-Henry, you have the funds and find exactly what you're after on SSAA Gun Sales. After applying for a Permit to Acquire it comes home with you only to find ammunition is no longer commercially available. One option is to fire original service rounds but I've always had an aversion to this as original cartridges somewhere between 110 and 130 years old are expensive and firing them tends to irritate cartridge collectors.

After years of trying various techniques I'll outline what works for me. Firstly, have your rifle checked by a suitably qualified person to ensure it's in a safe condition to discharge and always refer to reputable reloading books when developing loads. Modern brass cases vary in capacity from the original 19th century versions - some Martini-Henry cases will take between 85 and 90 grains of black powder while others

converted from 24-gauge shotgun shells can hold up to 115 grains (90 grains gives stout recoil and 115 is masochistic on my shoulder).

The 577/450 Martini cartridge case and .577 Snider from which it's derived are large volume cases as stated and take a lot of black powder. The flame from the primer has to travel up the case but also has to ignite a large quantity of powder throughout the large interior of the case. Recent opinion is that large pistol primers are the optimal way to go, being even better than Magnum large rifle primers.

F and FF black powder are suitable and probably the most popular powders while the smaller FFF will suffice though some shooters may notice an increase in recoil. Recently, some shooters compared modern FF black powder to the original powder used in Martini-Henry cartridges and noted the original is closer in size to the large F

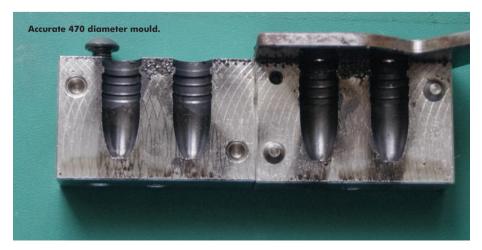
rather than FF powder. Black powder can settle with time after being loaded in a case and I'm sure we've all opened a new packet of cornflakes and seen how the flakes have settled and left a space at the top of the packet - black powder will do the same in a cartridge case.

A slight firmness of the powder (2-5mm) using a compression plug will take care of this issue and stop air pockets developing but be sure not to over compress, as this may squash kernels and crushed powder kernels have a different burning rate to uncrushed. Some people just rely on the seated projectile to provide mild compression but take care not to deform the projectile while seating it in the cartridge neck.

Air pockets in black powder cartridges can be dangerous as they give rise to a situation where a double detonation can occur with nasty consequences for shooter and rifle alike. The use of a drop tube will help overcome this as it settles the powder and allows the reloader to insert a bit more powder.

I use a piece of brass tubing about 5mm in diameter and 50cm long. Firstly I place the drop tube in a vice on my work bench in an upright position, leaving enough room at the bottom so a case can be easily placed under the tube and later removed. A funnel is placed on the top of the tube and black powder then dropped down the tube into the empty case which causes the black powder to compact and settle down (this should be followed up by use of the compression plug).

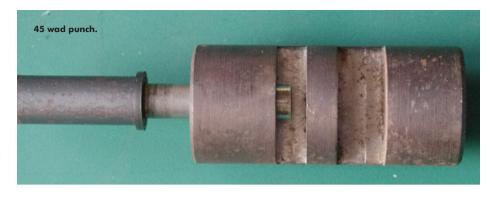
Some reloaders like to use what's known as a duplex load which involves



placing a small charge of fast-burning smokeless powder on top of the primer before the black powder is placed in the cartridge. This doesn't significantly raise pressures when done properly but must be approached with caution and there are several websites dedicated to this. The smokeless powder helps ensure all black powder is burnt off - with a service load of 85 grains of black powder, smokeless powder should not exceed eight-nine grains and three grains of black powder should be removed for every grain of smokeless. Any spare space in the case must be filled with an option such as kapok.

After placing the primer in the case and black powder in the cartridge case (and if necessary using a filler) we now need to insert a grease cookie. The residue of burnt black powder is filthy stuff which clogs up a barrel and plays havoc with accuracy and the use of a grease cookie lines the barrel with a thin layer of beeswax or other suitable black powder lubricant which facilitates cleaning.

Some shooters use beeswax while others prefer a mixture of beeswax and tallow, vegetable shortening or whatever's available at the time and I've even seen mink oil used for cleaning shoes recommended. Stick to natural organic substances or commercial lubricant designed for black powder and avoid synthetic lubricants for smokeless powders. Some though not all



synthetic materials react badly with black powder and form a tar-like substance that's messy and difficult to remove.

Using a hollow punch, cut out some wads of a suitable diameter from beer mats, cardboard milk cartons or sheets of beeswax. One or two wads, depending on thickness. are snugly placed over the black powder to ensure it's not contaminated by the grease cookie. The grease cookie is then put on top of the wad and this in turn has another cardboard wad placed over it (the cookie needs to be between 2-4mm in thickness). The neck of an old, condemned case is good for cutting out cookies - cut the neck off from the case at the top of the shoulder and if you feel so inclined an improvised handle can be attached.

A sufficient quantity of lubricant is placed in an old cake tin to an adequate depth

then cut out with the old case neck. Some shooters prefer to roll lubricant between their fingers until they achieve a pea shape then deposit this in the case neck. Now it's time to station the projectile into the cartridge case and this is where things become somewhat involved.

Lead projectiles for the Martini-Henry must be between .465 and .470 in diameter. any .458 projectiles are far too small and you'll be lucky to hit the side of the proverbial barn door. Do yourself a favour and slug the barrel with a small lead fishing sinker, determine the diameter and order a suitable mould. If you can't find a mould in the correct diameter then paper-patching a cast projectile is an alternate method. Several members of my SSAA Q60 Historical Arms Collectors branch have noted paper-patched projectiles appear to have a beneficial effect



Patience pays off in reloading Martini-Henry

in gently lapping the barrel and removing old fouling.

Pure lead projectiles are suitable for muzzleloaders but too soft for cartridge firearms. Projectiles must have a small amount of tin added to them - anywhere between 10 and 30 per cent tin content seems to work well - while wheel weights either on their own or stiffened with a little tin is a useful mixture. The projectile needs to be oiled with a lubricant suitable for use with black powder then loaded deeply enough to slightly compress the cookie and black powder charge. Gently crimp the projectile into place and it's good practice to make a dummy round to ensure the cartridge will load into the chamber.

Martini-Henrys have chambers made long before standard SAAMI dimensions were even thought about and what may function well in one rifle might not chamber in another. You're now ready to take the Martini to the range and take along a container with a mixture of water and dishwashing detergent in which to soak the fired cases, as this makes them much easier to clean later.

So to recap the procedure: Place primer in pocket; load cases via drop tube; powder is mildly compressed; seal any air space with filler; place over powder wad; insert grease cookie; place a wad over grease cookie; load projectile. The Martini-Henry rifle and cartridge aren't renowned for super accuracy but will do what they were designed for with a decent barrel and, with a little attention to constructing suitable cartridges, will hit gongs at 200m. The rifle is probably too long for most hunters but the carbine versions are certainly more than adequate for hunting. •



WOMEN'S SHOOTER · Custom-built Australian Women's Shooter rifle with Issue 13 inside Beretta Australia. this month's · Handy advice from one novice shooter to another. Australian Shooter • The different aspects that can make a memorable hunt. and online now at · Spotlight on Matilda McGoon: hospitality teacher and ssaa.org.au/women head of the high-school shooting team.





Senior correspondent Rod Pascoe

Shooters striving for even greater precision will fine-tune loads to their firearm, taking into account the specific characteristics of their rifle, chamber and barrel



hose of us who reload our own ammunition know the routine and while we have a choice of the primer we use, weight of powder and shape and weight of projectile, we also know when we pull the trigger these components are lost to us forever as the bullet hits the centre of the intended target. Although it's been heated to extreme temperatures and expanded by enormous pressures, the brass case can still have another chance at life and preparing our brass for reloading can be as simple as a quick clean and inspection followed by resizing either the neck or the whole case.

Others spend a lot more energy on case preparation not just to manage more reloads out of their brass but to ensure consistency in brass structure, strength and dimensions. It seems being able to reuse the brass gives

them a chance to control performance of one of the most important reloading components. As with most aspects of shooting, maintaining predictable and consistent shot-to-shot performance is the secret to precision.

Annealing brass is becoming a popular part of preparation as more and more shooters demand increased precision from their loads. Factory loaded ammunition does have a high degree of reliability and uniformity but shooters striving for even greater precision will fine-tune loads to their firearm, taking into account the specific characteristics of their rifle, chamber and barrel.

Brass too must perform exactly the same way on every shot and annealing is seen as essential for accuracy with the bonus of extending case life. Yet there are different philosophies surrounding annealing, some

swear by it and perform the operation after almost every firing while others treat it simply as a passing fad.

Some claim that by the time the brass needs annealing it's past its use-by date anyway. Lyman goes one step further by stating in their reloading manual: "It is almost impossible for the reloader to control and maintain the precise temperature required for proper annealing. Therefore. Lyman cautions against attempts to anneal case necks." The counter argument is that had annealing been done from the beginning of the cases' life, they may not have deteriorated with split necks and cracks in the first place.

Annealing is the process of softening brass by heating. Brass becomes hard by working it through repeated resizing and firing and when we see splits in case

Ugly duckling a pretty good bet

necks we know the brass has become hard. Annealing is not the same as heat treating, a process which makes steel harder when heated to a high temperature then rapidly cooled, usually by quenching in water.

There's plenty of information available on how to anneal brass but the most important thing to keep in mind is the process must be done properly otherwise absolutely no advantage will be gained - the aim is to return the brass to its original state when it left the factory. Having said that, brass goes through various stages of annealing during manufacture, ensuring the base or head of the case remains hard to withstand pressure during firing and the neck is softer to allow for uniform and controllable tension around the bullet.

Over the years many home-grown machines and techniques have been developed for annealing brass, each with design features the inventors claim have advantages in ergonomics, time and safety and thanks to Australian Tactical Precision, Australian Shooter was given the chance to put the latest one to the test. The Ugly Annealer was developed in Australia by two knifemakers and machining hobbyists who lost their jobs due to COVID-19 and spent more than a year perfecting designs, choosing materials and putting it all together. The main body is made of stainless steel, the base-plate aluminium and rotation wheel aluminium alloy, nickel-plated with a covering of natural diamond grit.

The texture of this grit resembles a fine nail file or emery board and prevents the case slipping as it's being rotated. The catching wheel rotates below the hopper and selects one case at a time and carries it to



the rotation wheel to be annealed. Mounted inside the chassis is an electric motor and gearbox which drives the catching and rotation wheels as well as the timing gears.

The top panel houses the power input socket and switch, speed controller and rotation speed indicator and there's a perspex cover to prevent brass from inching its way forward from the hopper. A brass ejection bar protrudes from the chassis and is controlled by the internal timing gears which, through a caming action, determines the time the case is held in position in front of the torch flame.

The annealer comes with a set of five calibre inserts which fit into the catching wheel and cover a wide range of case diameters (a



.22 Hornet insert is available as an optional extra). There are two rotation wheels supplied for different case lengths, a box of spare screws and washers, set of Allen keys, comprehensive manual for assembly and adjustment and a 24-volt plug pack. A clamp is included to fit the propane gas torch to the unit although the actual gas torch is not and is something you'll have to source. The other thing you'll need - available from Australian Tactical Precision - is a bottle of Tempilaq temperature indicating liquid.

As with any part of the reloading process the initial setting up is labour-intensive. The crucial aspect of annealing is having the temperature setting correct for proper and consistent operation and you'll have to sacrifice a couple of cases in setting the temperature through a trial-and-error process to perfect both the time the brass is exposed to the flame and the set of the flame itself.

This is where the Tempilaq liquid comes in. Setting the flame is well explained in the manual and I won't go into that other than to say the recommended temperature is between 400 and 500 degrees Celsius. The time and temperature settings, once achieved, are only good for that session and the whole process must be repeated each



Ugly duckling a pretty good bet

time you decide to do some annealing, so the more cases you anneal the more productive and time-efficient the session will be. The large hopper on the Ugly Annealer allows you to top-up with more cases as the level goes down, apart from that the procedure is fully automatic once set up. With the power setting indicating 65 per cent, each case is exposed to the flame for around 4.5 seconds and rotated five times.

As stated the set of the flame and its distance from the case is also a factor, so finetuning the speed settings - and therefore the time the brass is exposed to the flame - may vary from session to session to achieve the same result. However, the accompanying gas torch clamp allows the nozzle of the torch to remain in place on the unit even when removing the propane gas bottle, thereby making set-up of the flame much easier for the next session.

I used a number of once-fired 6.5mm Creedmoor cases for review, the .308 Winchester calibre conversion insert being closest to the diameter of the Creedmoor case. Unfortunately I couldn't source a gas torch to suit the gas torch clamp supplied so carefully set up the gas bottle with the stand which held the nozzle in position. After sacrificing a number of cases and with the aid of the temperature indicating liquid and adjustment of the speed control, I arrived at the recommended temperature setting.

Once the flame was set I loaded the hopper with brass, turned the unit on and let it run - in no time the job was done and with this speed setting the machine turned out about 10 cases a minute. I've yet to load the cases but expect a consistent 'feel' during neck sizing and seating the projectiles. I've seen many home-made and commercial brass annealers but this pair of inventors have put together a unit featuring all the 'good bits' from the rest of the field - and for only \$300 this is a sure-fire winner.





If you decide annealing brass is something you should explore or if you want to upgrade your current system, the Ugly Annealer is the answer. I particularly like its metal construction, simple assembly, detailed instruction manual and easy operation. More at australiantactical precision.com.au •









When 'waterproof' is not what it says

Douglas Riach



ecently I had the experience of walking a 300-acre sheep property to remove some problem foxes which were taking lambs. It was too wet and boggy to drive around so I was out on foot with the Weatherby 204 fitted with an infrared scope and a hand-held FLIR thermal device for spotting over larger

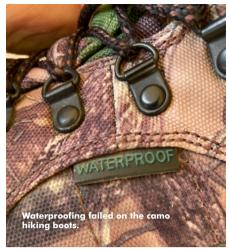
This wasn't a problem, even when it rained. The rainfall was light at first then quite heavy for 30 minutes before stopping. I wasn't concerned as I was wearing waterproof camo pants, a waterproof puffy jacket and high rubber boots but after a while I felt my backside turning damp and my right leg below the knee was decidedly wet. It took a while but I also felt the jacket becoming heavier - the PrimaLoft synthetic down was saturated and soaked through to the inside lining and I won't even mention how long it took to dry the jacket when I arrived home.

The only thing which kept my skin dry and semi-comfortable was the mid-layer durable water repellent (DWR) garment I was wearing under the jacket, a thin Kuiu brand 'Ultra' top which prevented the moisture soaking through to my body. The outer layers, both jacket and pants, didn't live up to their claim of being waterproof.

The pants were a relatively cheap Chinese-made affair which I'd worn before in light rain amid wet grass and bushland and I didn't notice becoming wet on those occasions. This time it was a serious failure of the waterproofing. Yes it was heavy rain but they were sold as 100 per cent 'waterproof' - if they were when they were made, it didn't last long.

Neither jacket nor pants had been washed so washing powder wasn't to blame for damaging the waterproofing. The pants I had, on one or two occasions, washed down with the garden hose to remove mud and







blood but nothing else. The jacket was more of a surprise as it's labelled '4 Most Repel' which in the general advertising was called waterproof, yet this was the first heavy rain I'd worn it in and it wasn't.

The episode made me think about other hunting clothes I own - good and bad. I have some of the rather expensive US Kuiu clothing, the 'Pro Down' puffy jacket, a softshell jacket and pair of 'Attack Pants'. all of which are advertised as DWR, not full waterproof, yet I found they'll withstand normal-to-heavy rain. These items haven't failed me and I wear them on serious winter hunts, so why does the DWR appear to give better water protection than other fully 'waterproof' items?

I have a pair of thermal-lined Gore-Tex hunting boots I've owned for several years and worn them in cold, wet conditions including snow in Alaska, snow and rain in Canada and many wet days in the Victorian High Country. They perform well and are still waterproof yet I have other waterproof boots which have failed. The pair of 'Dry Plus' hunting boots were waterproof the first few times I wore them before my feet started to feel wet. The waterproof element didn't last and they became a pair of dry weather boots, still in good condition but no longer waterproof.

The lightweight camo boots labelled 'waterproof' I wore for winter dog walking and bush walking were never designed to last and lost their waterproofing rapidly as the soft sole wore down quickly. Their appearance and price may have suggested rapid wear to the sole but nothing in the appearance implied the waterproofing would fail. I also use a standard-looking mid-height hiking boot which says on the side they're supposedly 'waterproof'. They're a good comfortable hiking boot but the waterproofing didn't last one winter, so what have I learnt from these experiences?

You might think don't buy on price, buy on quality and generally this is true but the Backcountry PrimaLoft synthetic down jacket which failed the rain test wasn't a cheap purchase. In its defence it states '4 Most Repel' on the jacket and not waterproof, although '4 Most Repel' is supposed to be a copy of the original Gore-Tex membrane.

The other point is some items appear to be of high quality, like the brown hiking boots or 'Dry Plus' hunting boots as opposed to cheap copies of other brands. Both the brown hiking and 'Dry Plus' hunting boots are good quality and will last another year or two, but the waterproofing is not up to the standard of the rest of the boot. You can't 'see' the waterproofing so appearance may not be a good determining factor as to the quality of waterproofing.

I understand that boots being worn, stretched and bent with movement places a lot of stress on the internal layer of waterproofing. Boots must be waterproof in wet conditions but other than wearing uncomfortable waterproof socks, there's nothing more you can do to keep your feet dry.

Gore-Tex is the original breathable waterproof membrane invented in 1969 and now the technology is used to produce several cheaper waterproof membrane copies, some obviously better than others. For me, after the experiences I've mentioned and the desire for reliability and dry feet, I'll go back to buying genuine Gore-Tex lined winter hunting boots as I can't rely on the waterproofing of other membrane copies of Gore-Tex.

With pants and tops you have more options and I still like the DWR outer layer clothing if wet weather is forecast. These DWR items are not fully waterproof and in storm conditions you're better off adding a

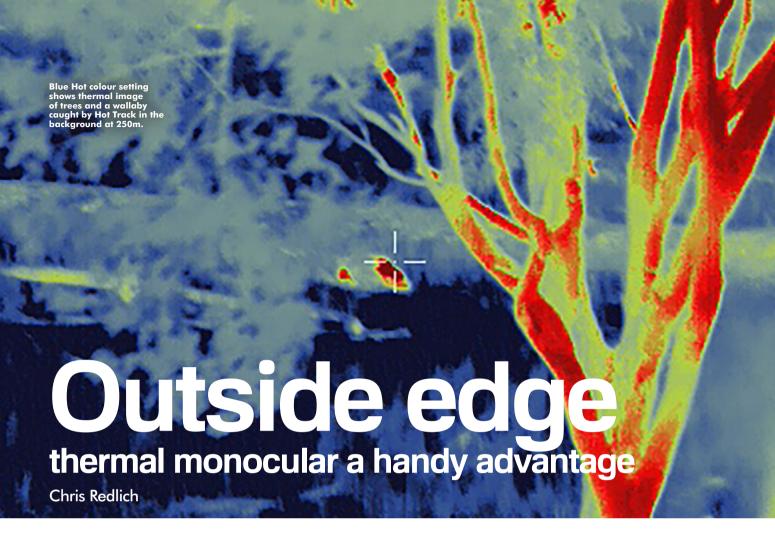


Gore-Tex hunting boots perform well.

breathable fully waterproof outer rain layer. I mix and match brands without real loyalty to a specific type. I have two different brands of rain jacket and pants, both ultralightweight, packable and fully waterproof. On serious winter hunts these two items will be in my pack in case of stormy weather. Carrying a reliable waterproof rain layer makes sense on multi-day hunts and solves the problem if so-called waterproof outer layer clothing fails in the rain.

You must also make the decision as to whether you're going to hunt wearing rain gear or just sit out the storm and, if hunting, that gear needs to be breathable and quiet. I once hunted with a guy wearing a pair of reputable New Zealand-brand waterproof hunting pants and I wouldn't go within 20m of him due to the noise from his pants when he was walking.

If not carrying rain gear in your pack or out on only short hunts it might be a good idea to test your clothing jacket, pants and boots labelled 'waterproof' by wearing them outside in the rain to ensure they're truly that before you go hunting in the rain. No-one I know enjoys being cold and wet. •



nterest fuelled by the ability to detect unsuspecting quarry is why thermal imagery has started gathering momentum in Australia. Thermal imaging optics have been around for decades and widely employed successfully for military use, but many optics manufacturers are now catering to suit a hunter or pest controller requiring the edge in lowlight conditions.

Known as a respected scope manufacturer, Burris has entered the thermal imaging scene and released a broad array of detection aids. Originally accepting an invite to test a thermal imaging scope, I actually received a BTH 50 (Burris Thermal Handheld 50mm) monocular from Beretta Australia, the largest-lens thermal monocular in a stable which includes the BTH 25 and BTH 35. Packaged impressively, the monocular came supplied with neoprene protective cover, wrist lanyard, HDMI and USB cables and all-important user manual.

The BTH 50 feels comfortable in the hand and grasps similar to a modern high definition handicam video recorder. Burris claims the thermal imager combines precision optical instruments

and electrostatically sensitive electronics which must be handled with care, as any abuse of the thermal imager and accessories can compromise performance and product longevity.

What is the BTH 50?

It's a feature-packed handheld monocular which provides versatile and excellent thermal imaging in any conditions, a modern and lightweight device with the ability to detect the heat signature of targets more than 650m away. Weighing just over half a kilo and only 210mm long, it's ergonomically designed to stow in a daypack and fit comfortably in the hand. The BTH 50 allows observation of a target without eve strain and the access finger buttons are large enough to ensure easy use in the dark. Featuring Bluetooth connectivity, it comes equipped with recording functions controlled via an android-style mobile phone.

Key features

Unique to Burris thermal imagers is something called Hot Track. When turned on, this uses an active cross-hair which automatically identifies and tracks the hottest

image observed on screen, beneficial in identifying and observing game animals, particularly wild dogs on heat or feral pigs which move consistently back and forth from cover.

The BTH 50 comes with a 50mm-focal length and 3.3 to 13.2x magnification range providing 400x300 resolution, pixel size of $17\mu m$ and a frame rate of 50Hz (this may induce a headache in some but I include it to satisfy tech-savvy shooters). Its durable polymer housing protects the internal mechanics of the thermal and soft-touch rubber button surfaces make for simple manipulation of the key features even with wet or cold hands.

The large focusing ring surrounding the objective grips easily and allows you to fine-tune the image. The 1280x960 colour liquid crystal on silicon (LCOS) screen displays images clearly and there are five colour-palette options including black hot, iron red, blue hot, red hot and my preferred option of white hot. To enhance the display, screen brightness can be adjusted from 10 to 100 per cent.

Although not equipped with a laser rangefinder, Burris engineers have interestingly fitted the BTH 50 with a







stadiametric rangefinder which allows you to estimate the distance of a detected target by way of three stadia lines available when activated on-screen. The user manual states the corresponding measurements to game species with the lower horizontal line aligned to the base of the target image, and toggling the up and down buttons changes the width of the lines to match the target. Burris says this is not an exact rangefinding feature but rather a rough calculation of distance to target.

Requiring no disposable or external sourced rechargeable batteries, the BTH 50 is powered by internal lithium batteries. Simply plug in the supplied charge cable to recharge and with a battery run time of up to five hours you have ample viewing from a single charge. Interestingly, during Super Energy Saving Mode screen brightness is automatically reduced to a fixed 30 per cent and Wi-Fi is turned off.

Familiarisation

The user manual provides easy instructions and operation wasn't difficult at all, five buttons on top giving access to all features. By pressing the forwardmost red button to power the BTH 50, a green light

above the ocular housing indicates the unit is on. After removing the front protective lens cover, adjust the optic view using the large objective focusing ring and small dioptre knob (left) until you can clearly see a target area or object.

Pressing the 'up' button lets you zoom in and the 'down' button for the same duration zooms out, while the 'menu' button accesses control features like Hot Track, screen brightness, the stadiametric rangefinder and power-save modes. Holding the power button briefly places the unit in power-saving sleep mode and a long hold shuts the BTH down completely. Pressing the video/photo button enables you to record stills or video, the supplied USB cable used for downloading images to your laptop. Lastly but importantly, for a steady rest Burris have included a standard 1/4-20 UNC female thread to the base of the unit, allowing the shooter or night photographer to capture vibration-free images from a camera tripod.

Downloading the Burris thermal smartphone app makes it possible to view and record images on your mobile device when connected to Wi-Fi. The smartphone app is of particular importance for vehicle

mounting, where the BTH 50 can operate via the 1/4-20 UNC tripod thread parallel to your spotlight and be viewed internally on a dash-mounted phone or tablet.

I know hunters who take full advantage of this for tracking wild dogs under cover of darkness, driving their all-terrain vehicle quietly at idle in complete blackout, using only the thermal image on the tablet screen. Once a feral is clearly identified and within shooting range, the spotlight is turned on and target animal taken cleanly. I must stress that for the best picture for this purpose, the larger diameter objective is best of the BTH lens range.

Field testing

Using a thermal imaging device opens up an entirely different world of viewing after dark. Arriving at my usual hunting patch on a cool autumn night I'd no idea what ferals would be engaging in nocturnal activities. Although I had the spotlight fitted, I resisted the temptation to fire it up and decided to scan the paddocks with the thermal first. Instantly, the radiating heat signature of cottontail rabbits and hares provided a clear image of them and their movements, the zoom buttons allowing me

Outside edge thermal monocular a handy advantage

to scrutinise their activities at short and long ranges.

The automatic calibration refreshed the image quality without any adjusting while tracking the restless critters and with rabbits located and identified by the thermal, I used the spotlight and rifle to despatch them. As the night progressed I relocated to another paddock and, using the 'mode' button, turned on the Hot Track feature. A small reticle entered the view and began dancing around and as I discovered, the reticle was identifying the hottest of heat signatures within the thermal image (obviously the more I moved the monocular the reticle would shift and re-adjust).

This feature proved invaluable as it pinpointed a few sneaky hares within shooting distance in the bushes. The heat signature from trees wasn't as strong as the hares, thus enabling the Hot Track reticle to pinpoint them instantaneously. I was well impressed with this feature and believe it would be beneficial for any hunter to easily detect wild dogs, pigs and foxes. On another night's shooting trip, the BTH 50's thermal detection abilities were further reinforced when Hot Track targeted mice scurrying along a fence line and, considering their size, the thermal images were clear and easily identifiable.

Conclusion

The BTH 50 is a versatile thermal optics



monocular which allows the operator to see images and identify potential targets in complete darkness. Some may feel thermal optics are not an appropriate tool for ethical hunting and I personally wouldn't use one for deer stalking. Yet they're not a new concept and manufacturers such as Burris have refined the technology into a handy package suitable for civilian use, such as vermin shooters and pest controllers who seek an edge over their quarry at night.

It's important to remember the BTH 50 isn't exclusive to hunters and can be used to great effect by anyone looking like to locate small and large nocturnal animals or birds for research and conservation purposes. With a recommended retail price of \$3399 at time of writing (check with your dealer), the BTH 50 is backed by a two-year warranty against defects and workmanship. More at burrisoptics.com or berettaaustralia.com.au





VIXEN riflescope

a value-for-money option

Pete Kincade

Removal of turret caps reveals the elevation and windage turrets with their simple yet effective zero

hen asked to review a riflescope new to the Aussie market and labelled Vixen, I must admit I hadn't heard of the brand when it was offered by Australian distributor C.R. Kennedy. Because Vixen optics were unknown to me prior to this evaluation, I did some research and discovered they're a Japanese-based manufacturer, distributor and exporter of telescopes, binoculars, microscopes and accessories while also catering to an array of industrial and consumer markets.

The Vixen 2.8-15x56 was mounted on a testing platform of known performance for all parameters, the Tikka T3x being a work rifle which sees regular duty on deer harvests and feral pig culls, while the Harris bipod and TAB Gear butt bag combination have proved their worth many times when taking long, calculated shots on undisturbed game. The Sako 150-grain Super Hammerhead is a premium factory load for hunting and has the added benefit of providing excellent brass for reloading. These cartridges in my T3x have accounted for chital, fallow and red deer along with feral pigs and are my benchmark factory load for .308 Winchester rifle reviews.

To assess just how precise windage and elevation turret adjustments are, I prefer to perform such testing from a concrete bench certified for competition use. Fortunately my local rifle club has these benches and I regularly take advantage of them. I boresighted the cross-hairs on a 50m target, fired a shot and after checking where it printed, adjusted the turrets for windage and elevation. There was a smooth and precise feel of the turret clicks so I fired another shot, adjusted again, set both turrets to their respective zero marks and turned my attention to the 100m target.

My first shot was about 50mm low and 15mm left of the target diamond, so I calculated and turned the number of clicks to adjust for elevation only and fired another shot which arrived about 15mm high and 25mm left. Rather than adjust again I fired another two shots which were close

together and slightly higher and to the left resulting in a nominal 20mm group at 100m. I adjusted for windage and moved four clicks right, one click down and selected a fresh target, again at 100m.

The next stage would be a test of how precise and repeatable return to zero would be, not just for elevation but windage too. My test methodology comprised taking a shot at the zero mark for both and adjusting up and down, back and forth over and over in an effort to break the consistent repeatability. After 74 rounds I decided not to contribute to further throat erosion in my rifle and concluded the Vixen was 100 per cent consistent and my efforts proved it had



Vixen riflescope a value-for-money option

no tracking error in windage or elevation.

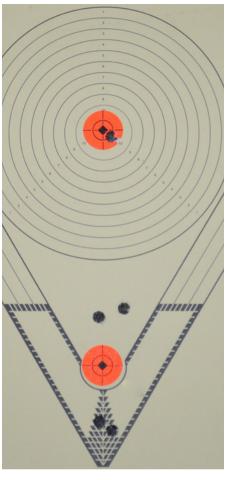
Before the final test I thoroughly cleaned all traces of carbon and copper from the Tikka's barrel and by the time I'd finished, the early afternoon sun was shining in a cloudless sky with a hint of breeze on the back of my neck - perfect for this final test. Before firing and because the target was now at 200m, I increased elevation by several clicks, settled my breathing, took aim and fired two rounds at the sighter (lower orange circle).

These rounds arrived about 35/40mm low and windage was spot-on. The 150-grain Sako Super Hammerheads grouped where they should - I hadn't increased elevation sufficiently which was my fault, not the Vixen's. Clouds were moving in and I suspected there may be a shower or two that evening so time to adjust and fire again - and this time I wasn't about to let ego get the better of me twice in one day, so I left the windage untouched and increased elevation by five clicks and fired another two shots which landed 70mm higher as expected.

By now the wind had started to gust slightly left-to-right and I suspected time and conditions would soon be against me, so I made one last adjustment of eight clicks up on the top turret, checked the Harris bipod fastener was still super-tight on the forearm and settled behind the butt. I squeezed the TAB Gear butt bag one last time and settled the Vixen's centre red dot on the little orange disc 200m downrange, at the same time waiting for that break in the breeze I knew would come - and it did. I squeezed the Tikka's trigger and the rifle bucked on the bench. Without a brake I lost sight picture for a second but followthrough showed me the bullet hole well inside the 25mm orange disc.

Premium optics manufacturers invest a great deal in research and development to reduce aberration. Glass composition, lens coatings and other aspects which affect light transmission are constantly being revised to provide us with optimal performance for our hard-earned cash. From my experience, quality comes at a price and here's the anomaly presented by the Vixen 2.8-15x56 riflescope. This is a \$1500 scope with all the features a hunter will need, punching well above its weight with low aberration and low colour distortion usually found on scopes twice the price.

Add to this the glass-etched German #4 reticle and illuminated centre red dot. The German #4 is a reticle which provides heavy outer horizontal and lower vertical cross-hairs combined with finer vertical and lower inner cross-hairs. With or without



200m accuracy and turret precision/consistency cycling from full-up/full-down and full-left/full right rotation.

the red dot switched on, the reticle is well suited to running game on low power or undisturbed game at distance on full power. The red dot is fine and doesn't obliterate even head shots on small game at distance.

When I evaluated the performance at first light and again at dusk the same day, I couldn't help but think this is a scope designed for German hunters pursuing wild boar and deer in forests where light is often waning. The 56mm objective really pays dividends and the red dot can be dialled down so low to be perfect for any hunter in lowlight conditions. For Aussie forest deer hunting, this scope presents great value and all the features you'll need.

I must say the Vixen's ability to assist the hunter make humane, terminal shots on game at distance is its greatest feature which it achieves by combining a precise and consistent turret system with a foolproof return to zero feature. Optically, the glass provides clarity and brightness with a low level of aberration you'd normally pay a lot more for.



Specifications:

Model 82281

Focal plane 2nd

Variable magnification 2.8 to 15

Dioptre range +2/-3

Reticle illumination Centre red dot,

II brightness settings with switch-off step between each setting

Internal battery CR2032 (comes with

Length 373mm

Turret type Capped with O-ring, internal

Windage and elevation 1/4 MOA

Body Aluminium, one-piece

Tube diameter 30mm

Objective lens diameter 56mm

Colour Matte black

Eye relief 85-99 mm

Exit pupil 3.7mm-11.4mm

Warranty Limited lifetime warranty to

original purchaser

Country of manufacture |apan

RRP \$1499





Only Vixen offers Japanese made optics at affordable prices.





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\$479 SRP	3-12x40
COMING SOON	3-12x50
\$549 SRP	4-16x44
COMING SOON	4-16x50

30mm EURO Series Illuminated

\$1,199 SRI		1-6x24
NEW \$1,349 SRI	NEW	1-8x25
\$1,099 SRI		2.5-10x56
\$1,299 SRI		2.5-15x50
NEW \$1,499 SRI	NEW	2.8-15x56
\$1,299 SRI		6-24x58



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National

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Program: See National website for full event details. Contact: Frank Verdini 043 I 975 425.

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 040 I 867 839 or email mnl I@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 mnl1@live.com.au

SSAA (ACT) Australia Day Benchrest Championship

January 21-23, 2022 Jim McKinley Range, ACT Program: See National website for full event details. Contact Alex Chryss: aussie6ppc@gmail.com

SSAA (Qld) 2022 Long Range Precision **State Championships**

May 27-29, 2022 Captains Mountain Complex, Old Program: See National website for full event details.

Contact: luna@ssaagld.org.au Queensland NRA Pistol Metallic Silhouette Postal Shoots 2022

All (SSAA) Old branches with approval to shoot Postal Metallic Silhouette Program: Shoot 1: February 1-May 31; Shoot 2: April 1-July 31; Shoot 3: May 1-August 31; Shoot 4: August 1-November 30. See National website for full event details. Contact: Hazel Bozic (07)4128 0467 or pms@ssaagld.org.au

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The SSAA Card Holder is a slim, lightweight and stylish leather-look wallet, it features four licensed-sized card holder slots, two large slots and a clear slot.

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• Pull sharpener, which is ergonomically designed to keep your knives sharp

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SSAA Bullet Case Pen The SSAA Bullet Case Pen has been

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- 12" slicing knife, with glow-in-the-dark knife handle



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You can use the Cobb as a barbecue, smoker or stove.

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Keep all your magazines safe and in one spot.

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These custom-made bush kettles run on a few twigs and leaves and will boil water in less than 10 minutes. Simply take a handful of twigs/leaves and kindling then place under the kettle and light it - the clever design directs heat into the kettle to boil the water.

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If at first you don't succeed . . .

ack in August of this year I wrote about rabbit traps, a relic trap my voungest grandson had brought home from the creek and the seed of an idea it had sown. After thinking about it I asked some questions in the right places and within a few days had almost enough old traps to make a modest start in the scrap steel business. Some came in bags, others were left hanging on the front gate and while some were still in good working condition, many had had seen better days.

The trap I picked out of the pile was an old Bunyip, chosen because it more or less matched Mikah's relic find (it also had a thicker spring which offered a little more steel to work with). I cut the spring free with a disc grinder, stuck it in the forge to heat up then hammered it flat on the anvil. When it cooled out I heated it again to normalise the steel then let it air-cool.

With the dimensions of the nascent knife limited by those of the recycled spring, I chalked a rough design on the steel then began to grind it to shape. It didn't go well. In short order I finished up with something that looked nothing at all what I'd envisaged or expected to produce. Disgusted with myself I put it aside, wondering how I'd gone so far wrong with no real effort and very little steel and while I was chewing that over, I remembered a line Canberra knifemaker Kevin Slattery threw at me a long time ago when I was interviewing him for a story. He reckoned knifemakers never ruin a piece of steel, they just prepare it for a smaller knife so with that in mind I went back to the drawing board, made a cardboard template which fitted what was left and tried again.



The finished knife has no ricasso and a choil that comes right up to the face of the bolster - a bit like many kitchen knives you see, only smaller. Apart from that it's just like any other handy little knife which many of us have in our respective accumulations of blade wear.

The blade is a scant 70mm long which is about as much as you need to skin an apple, cut a chunk of cheese, dress a bunny, gut and clean a fish or peel the hide from a fox or feral cat. The bolster is polished brass with a curved finger hook which blends in nicely with the sweeping contours of the knife and it's backed up by a five-layer black and white shim piece, a spacer of red gum, another piece of shim then an antler handle fashioned from a length of red deer brow tine.

The handle is attached by epoxy glue and a brass pin through the hidden half tang and finished off by a thin brass pommel with an out-of-sight, internal spigot glued into the butt end of the antler. For someone with maulers like mine it's a tad short but I expect it'll suit the boy's hand for some time to come. It was to have been a Christmas present but grandma and I decided he could have it early to cheer him up after a winter at home in lockdown.

As her father's daughter, his mum is happy for him to have the knife to be used under supervision when they're bushwalking or camping, or to dress a bunny or two when he comes to see us and go hunting with Poppy John when restrictions are lifted. Somewhere between now and then I'll have to make a leather sheath just to finish everything off and, when that's done, the boy will have a one-off knife I hope he'll be more than pleased with.

He likes to do what he calls 'craft' making things out of all sorts of bits and pieces to keep himself occupied - and last time he was here he spent a couple of wet days making cardboard knives and paper sheaths, perhaps inspired by what Poppy John was doing in the shed. I'm looking forward to seeing how he reacts when we give him his first knife with our best wishes.

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