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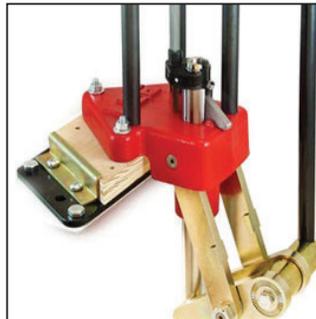
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Thanks again..... Ken

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Our February cover
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NEXT ISSUE



The Caesar Guerini Invictus shotgun is sure to attract a great deal of attention from Australian hunters and clay target shooters, with life expectancy of one million shots not beyond expectation.

Steiner's latest thermal shot optic, the Nighthunter H35, is a powerful hand-held unit, well suited to longer field use and dedicated thermal observation and hunting.

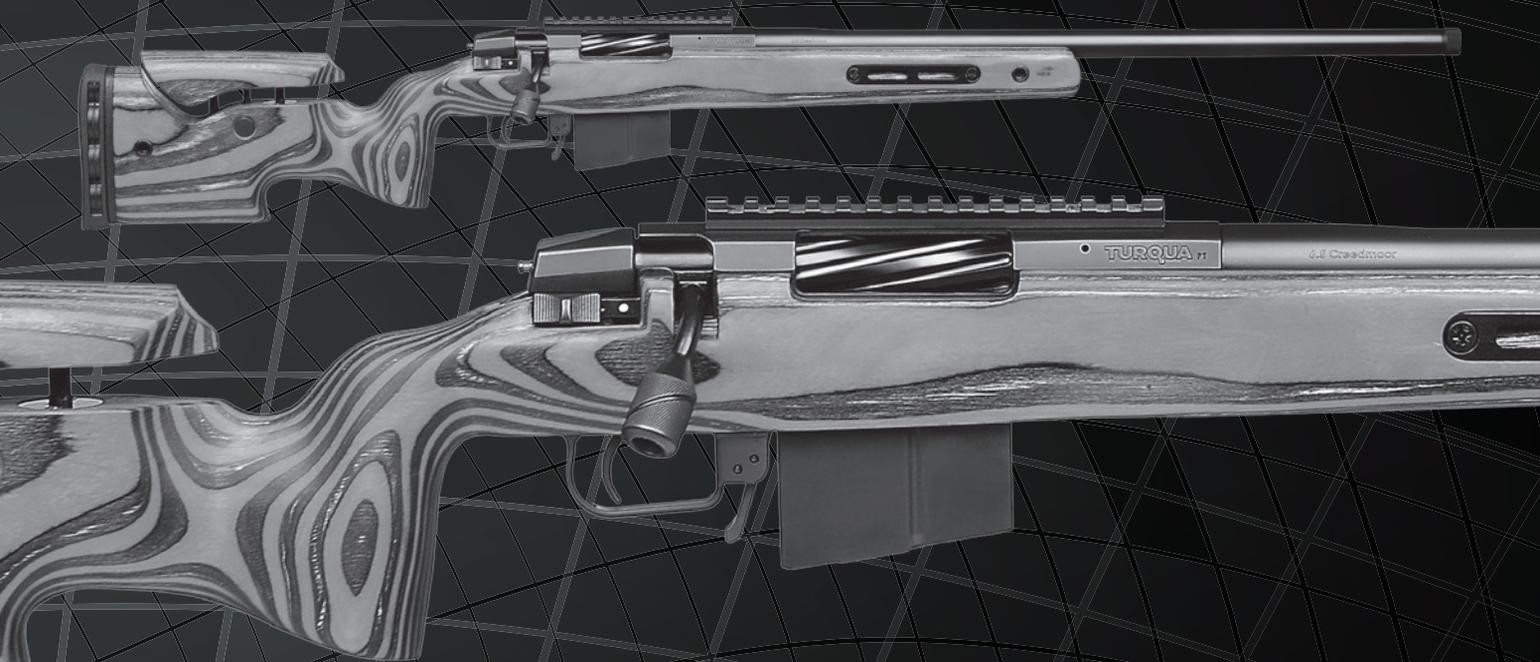
The Stoeger STR-9FA is a value-for-money handgun for the first-time pistol buyer which would also make an economical club gun for come-and-try shooters and new members.



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National News

Enjoy more of the great outdoors with *Jumbunna Volume Two*

Australian Shooter readers will be no stranger to our Senior Correspondent John Dunn's way with words through his monthly *Jumbunna* column, and now you can enjoy these tales any time with the release of *Jumbunna Volume Two: More stories from the bush*. John's latest collection will take you on some of his favourite journeys - hunting, target shooting and country life in general - so if you're a *Jumbunna* fan then this new collection should not be missed and you can buy your copy from the SSAA website www.ssaa.org.au

SSAA National wishes to advise the cost of Association membership will incur a small increase from March 1 this year. SSAA Adult membership, which includes *Australian Shooter* magazine, will increase from \$93 to \$95, Pensioner membership will rise from \$70 to \$72 while Junior membership fees remain unaffected at \$27. Your membership contribution goes towards increasing your Association and its state members' services and activities such as opening new ranges and securing their role in protecting shooters, now and for future generations.

On a sad note, SSAA National extends its condolences to the family and friends of Life Member James Stanley 'Stan' Robinson who passed away in December. Stan was a founding member of SSAA National and SSAA Queensland and held numerous executive positions in both.

Stan was actively involved during construction of the SSAA Belmont Range and was well known for devising novelty shoots such as balloons on a string in the wind, shotguns aimed at crow targets and crow targets being shot at undisclosed distances offhand. In 1964 he stepped away from executive roles within the SSAA and remained a private member of the Association. He was awarded life membership of SSAA National in 1995, recognising his contributions at a state and national level.

As we're still dealing with the effects of COVID-19, members are reminded they participate in any SSAA event at their own risk. While SSAA National supports and promotes the shooting disciplines as the backbone of our sport, national and state events are hosted by the state/territory associations and their respective health regulations must be followed.

Every endeavour will be made to ensure events will proceed as advertised, however events may be cancelled or even re-classified from a national competition if attendances are affected due to border restrictions. If you have any queries regarding events, please contact the state/territory association of which you're a member. We hope you had a safe and happy holiday season.

Membership category	Price including <i>Australian Shooter</i>
Adult	\$95
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Junior	\$27
Pensioner	\$72
Five-year adult	\$475
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Overseas	\$180

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SSAA - Protecting shooters since 1948

Cutting-edge writing

I JOINED THE SSAA in the early '70s and over the years I've been receiving the magazine I've read many excellent articles on a variety of subjects but as a 'knife man' I was especially interested in the one by Chas Harding (*Shooter*, July 2021). In my humble opinion it's one of the very best articles on knives I've ever read - Chas is clearly a practical hands-on bloke and his down to earth comments on various knife styles is first class. You can't put a price on the value of these articles from blokes who've been around the block a few times and give freely of their experience (excellent photos added to the story).

I can relate to his horror when he broke the blade on his favourite Gerber Shorty as I did a similar thing with a Puma Hunter's Pal in the Moree Watercourse pig heaven in 1980 - didn't break the blade but mangled it trying to remove tusks (I was ignorant of the qualities of fine steel back then). My knives over the years are similar to his selection including a preference for a clip point - like Chas I've had to cull quite a few but am not quite down to my final four just yet and feel I may have to add a Gerber Gator. My pocket knives are now earmarked for sons and grandsons in the hope they'll have the same enjoyment and appreciation I've had over the years.

Barry 'Blade' Johnstone, Qld.

Brick does the trick

SEEING THE PICTURE of a badly corroded rifle barrel in your July 2021 edition reminded me of a carton of absorbent I had on a shelf next to an old camera. The absorbent was open and overflowed, totally ruining the camera. In my gun safe I now use a Remington 'brick' which is plug-in rechargeable and I also wipe down all my rifles with G96 as part of my cleaning regime every time I take them out.

Alfred Frater, WA

Mind games make you better

WITH REFERENCE TO the 'Mental Rehearsal' question in Top Shots (*Shooter*, August 2021), from experience this really does work. Apart from target shooting I also race a Mk2 Escort in Dirtsprints and Autocross and when I've driven a new track, I re-run that track in my mind when I go to bed. I imagine myself all toggled up in suit, gloves and helmet, belted in tight then rehearse all the corners, apexes, braking points, gear changes etc.

Next time I actually drive the track I'm a lot quicker straight off, as I've already driven it 30 or 40 times in my mind. It also means I can perform the actions I need automatically without having to think about them as they're now second nature. Results speak for themselves as I've won multiple club class and outright championships in both disciplines. So from my expe-

rience I believe it does help improve your performance - as I've done the same with pistol shooting.

Rick Baggarley, Qld.

The missing link?

I WAS ALERTED to a letter from David Mottram in an earlier edition in response to a query submitted by me in relation to .303 ammunition (I was remiss not having picked it up earlier). My query followed an article by Ian Thompson in the March 2019 edition about 'red label' .303 ammo specifically for use in synchronised machineguns.

David's reply resolved one question - the Wirraway had a pair of synchronised guns. As he rightly pointed out aircraft, and indeed modern belt-fed machineguns, use disintegrating link belts and the separated links along with fired cartridge cases are expelled out of chutes in the fuselage.

'Linking machines' were used to make up continuous belts for aircraft by pouring cartridge cases and links into two hoppers then cranking a handle. Both David and I remain at a loss to explain the packaging in 'strip-less belts' - why wouldn't they have been packed in the form in which they were to be used in the first place?

Steve Larkins, via email



Insurance Q&A SSAA General Insurance Brokers

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Q I saw in a recent edition of *Australian Shooter* an advert for SSAA Members' Income Protection top-up cover. Can you tell me exactly what that is please?

Susan Daniels, via email

A SSAA members benefit now gives the option of paying an extra fee to increase the existing income protection that comes with membership. All SSAA members are automatically covered for loss of income based

on 85 per cent of their average weekly earnings to a maximum of \$750 per week for up to 104 weeks. This covers members if they're injured while involved in the act of lawful recreational shooting activities but excludes direct travel to and from those activities.

This benefit allows a member to increase their maximum amount from \$750 a week (\$39,000 a year) to \$2000 a week (\$104,000 a year) for only \$15 extra per year. All you

do is visit www.ssaajib.com.au, click on the menu in the top right, select the members' page and scroll down to the Members' Top-Up section to complete the application form. Once completed, you'll receive the policy wording and a schedule of the cover confirming you're all covered. For any queries please call our office on (08) 8332 0281.

Let's get up to speed

I READ DON Gilchrist's article on bullet integrity (*Shooter*, March 2021) with great interest and was surprised with the target results. Don has calculated the bullet rotational speed (revs/second) assuming the bullet is travelling along the barrel at a constant speed - that is the muzzle speed - yet the bullet starts from rest and reaches muzzle velocity as it leaves the barrel.

So tweaking Don's calculations and assuming the bullet is undergoing a constant acceleration along the barrel, the bullet's rotational speed for the various muzzle velocities and twist rates he calculates are now: Muzzle speed 3100 fps, 7" twist rate = 2657 revs/second; 8" twist rate = 2352 revs/second. Muzzle speed 2480 fps, 7" twist rate = 2126 revs/second. Muzzle speed 3400 fps, 14" twist rate = 1457 revs/second.

Carey Freeth, via email

Buyback largely pointless

WHILE THE EVENTS of Port Arthur were a tragedy for all concerned, my memory of the 1996 firearm buyback by contrast can only be considered comical. I had two high-quality target grade 1911 Colts in 45ACP and 9mm which the government bought for \$9500 (I originally paid about \$3500 for them). Oh how I wished I had half a dozen. Whenever John Howard's scheme is raised among fellow shooters, which is often, I like to remind anyone who'll listen that I can have another 1911 pistol in 45ACP or 9mm today if I want to shoot a suitable SSAA match. For genuine sporting shooters there was no point in the buyback.

Name supplied



Rabbit traps: Roll on

I'VE JUST FINISHED reading John Dunn's Jumbunna column in the August edition about old rabbit traps in which he mentions other uses for them nowadays. So I thought I'd send you a photo of one which I made use of - it was for a friend's 50th birthday and she loves it. The rabbit trap is welded in the open (set) position and the flap stops any overrun. The peg on the chain goes through two flat pieces of steel I welded to the trap jaws and the toilet roll sits on the peg.

Wayne MacLeod, via email



Crate deal of interest

READING ROD PASCOE'S response to Glen's query in Top Shots (*Shooter*, June 2021) regarding an ammo crate for Martini-Henry 577/450 rounds, reminded me of a recent UK auction of a Snider ammo crate which looked almost identical to Glen's, only in worse condition. That crate sold for £600 + costs. Glen's crate is possibly more valuable as there's a very large M-H community in the US, UK as well as here in Australia.

Matt Rafferty, via email

Synthetic stock warning

I BOUGHT A new Remington Express Hunter .177 air rifle package and while I'm both impressed and pleased with its handling and performance, unfortunately I found out the hard way that the synthetic stock reacts violently to solvent gun cleaner, specifically Outers Nitro Solvent.

I spilt a few drops on the stock and it instantly dissolved the synthetic mate-

rial, converting it to a black paste. I immediately wiped it off with a water-damp cloth to neutralise the reaction and was left with a surface blemish to the overall finish of the stock. I write to inform other owners to be aware of this problem and take extra care not to let any nitro solvent in contact with the synthetic stock.

Tony Gill, via email



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Improving kangaroo management: Choose facts over scaremongering

Within a week of the ABC's 7.30 report episode *Cull Concern* which raised questions and concerns over the NSW kangaroo culling program, there was a more credible statement released by a group of wildlife scientists to improve kangaroo management. While the ABC tried

to present an alarmist position expressing fears the species could become extinct due to landholder culling and commercial harvesting, the experts with 200 years of collective experience expressed a starkly different point of view.

Improving Kangaroo Management: A Joint Statement is a paper that's part of the special issue 'Optimum management of overabundant macropods' published in the journal *Ecological Management & Restoration* and the reference to 'overabundance' immediately pours a bucket on claims made by the ABC that kangaroos are heading for extinction.

The Statement on improving kangaroo management is said to originate from shared experiences of many peak bodies and stakeholders, suggesting existing policy and practices related to kangaroo management caused perverse outcomes for animal welfare, conservation, productivity, waste, drought resilience, climate and the health, culture and wellbeing of Australians. The Statement was developed in consultation with delegates from two 2019 kangaroo symposia (in which I participated) and broadened through contributions from other ecological, Aboriginal, animal welfare and conservation stakeholders who believe reform is necessary.

The paper which includes the Statement presents the drivers and definitions for the Statement and key references documenting the causes and recommended solutions for improving kangaroo management. An extensive inventory of conservation, agricultural, animal welfare, indigenous and scientific organisations have endorsed the Statement, the aim of which is to inform public opinions and drive necessary change to policy, attitude and actions to appropriately value, conserve and utilise kangaroos where there's a tendency for overpopulation.

Recommendations include development of a National Kangaroo Strategy which includes discussion on whether overabundant kangaroos are a legitimate sustainable resource that should be managed as such, rather than being largely wasted as the by-product of pest control to protect other industries or conservation land uses.

The Statement indicates a number of adverse outcomes which are a result of failure to manage overabundant kangaroos. Animal welfare: millions of kangaroos starve to death in droughts; Environment protection and ecosystem conservation: overabundant kangaroos directly threaten the survival of biodiversity on both private and public land; Natural Resource Management: A high kangaroo population compromises regenerative agriculture, pasture conservation and revegetation programmes; Human health and welfare: Unmanaged kangaroo populations can have significant financial and mental health impacts on landholders; Food waste: non-commercial culling results in millions of carcasses being left to rot.

The Statement recommends a number of things to manage overabundant kangaroos better including: Urgently reforming kangaroo management guided by principles designed to improve human and animal welfare, conservation and sustainability on both agricultural and conservation lands and to reduce food waste; Establishing regional kangaroo management groups with input from land managers, ecologists, indigenous, welfare, industry, government and conservation stakeholders to develop regional plans for kangaroo management; Preparing a National Kangaroo Strategy to support state and commonwealth governments and other stakeholders in decision-making around kangaroo management.

Overabundant kangaroos are a problem we have to deal with better. Nature can be very cruel, especially in times of drought, so maybe introducing a recreational harvest can be part of the solution, to allow us as hunters to make use of some of this healthy and free-range protein instead of leaving it to rot. The Statement in whole can be found online by searching for its full name above.

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More empties than you could poke a stick at

About the only comforting aspect of advancing age and the daily medication of one sort or another which invariably accompanies it, is you end up with dozens of little plastic pill bottles. I've no idea what type of plastic is used to make them but they're sturdy and small enough to put in your pocket without inconvenience.

They have variously coloured lids which are childproof, meaning the contents are safe from marauding grandchildren. The two striking edges of a box of regular-sized kitchen matches held face sides together with a rubber band easily fit into the bottle, as does the remainder of the matches from the box. My favourite matches are the green-heads which are relatively water-proof, although I've never had any ingress of water into the bottle I use regularly.

Over the years I've owned several different types of match-safes including some excellent military versions, though some were flimsy and made of very thin metal plate which wouldn't possibly withstand the rigours of modern warfare. Of all the military-style match-safes, I favour the original which was once made only in olive green high-impact plastic, had a rubber or neoprene gasket under the screw-cap and was an extremely useful piece of kit.

Recently I've seen these offered in safety orange and brilliant green and I actually



keep an orange one as back-up in my camp kit. I don't have any confidence these are made of impact-resistant plastic and no prizes for guessing where mine was made (I'm using it as a test sample to check how the rubber washer holds up). If the rubber seal fails it's pretty much 'goodbye fire.'

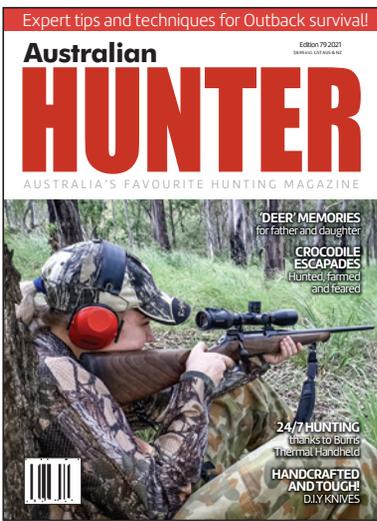
For quite some time now, tobacco smoking has been declining and it's nowhere near as simple as it once was to light a campfire by asking the nearest camper to lend you their BIC lighter. Even some non-smoking campers can oblige but all too often I've been met with the lament: "Oh no, I knew I'd forgotten something."

I often take a .22 rifle on hunting trips in the hope of collecting a rabbit or two and if I do manage to take one, I like to prepare it for the evening meal by barbecuing it over the campfire. Those of you who've tried this will know bunnies are largely fat-free and need to be wrapped in bacon or splattered with plenty of olive oil after being rubbed all over with your favourite herbs and spices.

Thinking of using some of my larger pill bottles for condiment containers and reserving the smaller ones as holders of salt, pepper, cumin and other herbs and spices, I remembered that some oils and some plastics aren't compatible. I've used plum sauce as the 'fattening' agent with some success and it didn't dissolve the plastic bottle but I haven't experimented with olive oil or any of the other regular cooking oils.

No doubt there'll be a combination of oil and plastic bottle that will be compatible and doesn't turn the pill bottle into a soggy mess at the bottom of the tucker box, though I've yet to try pill bottles as oil containers.





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Clay Target Q&A

WITH RUSSELL MARK

Q I'm relatively new to shotgun shooting but have thoroughly enjoyed every chance I've had to shoot clays. I finally decided to buy my own shotgun but this is where I'm confused. What I most enjoy shooting is Sporting Clays or 5-Stand Sporting so assumed I'd need a 'Sporting' shotgun for this but most people I speak to advise me to go for a Sporting shotgun with a 'Trap' stock. It's all too confusing . . . please help!

Allen Chan, NSW

A No wonder you're confused as I don't believe any manufacturer markets a 'Sporting' shotgun with 'Trap' stock attached. These are two different types of shotgun designed for two distinctly different disciplines but here's the thing - it's not bad advice. Now you're *totally* confused, right? Then let me explain.

During the past 30 years we've seen three major trends in competition shotguns - the raised rib barrel, longer barrel lengths and higher stocks, the latter in essence being stocks which make the gun's point of impact imprint well above point of aim. The higher you go the more these type of stocks fit the category of what are classed as 'Trap' stocks. Trap shooters prefer higher impacting shotguns because their targets are always rising and to shoot a Trap target correctly, a higher stock is advantageous.

As Sporting Clays grew in popularity it didn't take long for the world's best competitors in the discipline to work out this type of stock can be an advantage too. Sure, not all

Sporting targets are rising like Trap targets do, in fact a great percentage of their targets don't rise too much at all, but a higher Trap-type stock gives you the advantage of always being able to see the target clearly when pulling the trigger, regardless of the target's flight line. For clays which are dropping it simply means your sight picture dictates you'll need to see more 'space' under the target. Flatter stocks will often cause you to block the target out of your vision to hit it accurately, a dangerous and poor habit to form in any discipline of clay target shooting or hunting.

Traditional Sporting shotguns are still sold with traditional Sporting stocks but the advent of the adjustable stock comb has given this type of gun a chance to be modified to stock heights that will measure to numbers which are really Trap stock dimensions producing adequate Trap-shooting 'high' shot patterns. There are many world class Sporting Clay shooters who use the same shotgun for all clay target disciplines, proving this theory has legs.

The only disadvantage I see with stocks which are too high is when you're forced to swing through targets requiring enormous barrel speeds, a dilemma faced by Olympic Trap shooters. If your stock's too high in this discipline and you miss your first shot and a fast second shot is required, then with a stock that's too high you'll more than likely just shoot straight over the target with your next shot.

This is where the trade-offs start. For traditional domestic disciplines of Trap such

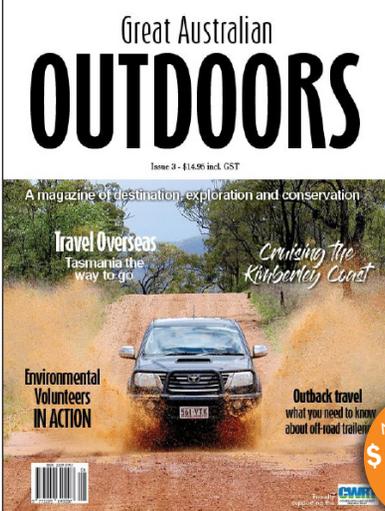
as 'Down the Line' (DTL) then shot patterns of 100 per cent above the aiming point are common. For Olympic Trap and its faster barrel movements, much lower patterns of around 70 per cent are typical - this means 70 per cent of the shot will impact above the aiming point and the remaining 30 per cent below (commonly called a 70/30 pattern). My gut feeling is if you can handle a Sporting shotgun throwing a pattern in the 70 per cent range you'll be well served. Thirty years ago a 60 per cent Sporting shotgun would've been considered too high.

These percentages are only yardsticks as everyone is slightly different and many elite competitors simply don't have a clue where their shotgun shoots - and don't want to know. In fact they're probably world class for this very reason. They just keep breaking targets and trust this will continue to happen (there's some valid rationale in this school of thought too).

The answer is to try a few different stock heights if possible before making your purchase. If I was you I'd find which stock height suits best based on how many targets you're breaking then ask if you can go and pattern the shotgun to establish where the firearm is actually shooting in relation to your point of aim. This knowledge is invaluable in my opinion. Good luck with it and welcome to our sport.

Questions to:
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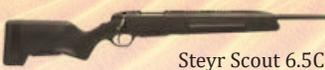


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Got a question - ask our TOP SHOTS ?

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

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Q Many years ago as a junior member of a local rifle club an old friend loaned me a Lee Enfield No.1 Mk.3* target rifle fitted with a 'Motty' sight. After his death a box of his shooting bits and pieces came back to me, including this same sight some 60 years later. I understand Motty was quite famous in his day so what can you tell me about him?
Geoff Roberts, via e-mail

A Motty was the brand applied to rifle shooting equipment marketed by a very famous shooter and sportsman of yesteryear by the name of Harry Motton. Living between 1862 and 1946 his biography is extensive - too much so for here - but he was a famous identity and had shops in Sydney and Melbourne selling a wide range of rifles and accessories, particularly for big bore rifle shooting.

As a boy Harry was a talented jockey, even riding a horse called Bella in the Melbourne Cup as a 13-year-old in 1876. He won the five-mile and 10-mile cycling championships in Charters Towers on a 'penny-farthing' and was also a champion footballer, cricketer and bowler in his day.

His rifle shooting skills were prodigious and he won his first Kings Prize at Randwick in 1905. For much more, search 'Harry Motton' online for an interesting article on the Lee Enfield Rifle Association website.
Geoff Smith

Q Can you help with a puzzle regarding handguns issued to the German Army in WWII? I read that the Walther P38 replaced the Luger P08 as the officer sidearm in 1938, yet whenever I watch a movie set in that era, German officers are shown using and carrying Lugers right up to the end of the war. Is this just cinema make-believe or was it in fact the case that Lugers were still in use so long after the P38 was issued?
Les Parrott, via email

A Cinema make-believe is certainly a factor as the iconic Luger P08 had a unique appearance and was readily recognisable as 'that German pistol' to many moviegoers. The P38 was adopted by the Nazis in 1938 and, as with any transition from old to new, there was an overlap. As production of the new sidearm ramped

up, many officers held on to their P08 until they could be replaced.

In fact extensive trials of the P38 were being conducted as the war began and I believe many of these pistols went straight into active service. Of course, to give filmmakers the benefit of the doubt there may have been a case of 'transition hesitancy' as senior officers, many of them veterans of the Great War, were reluctant to give up their favourite Luger for sentimental reasons. Who knows?

Rod Pascoe

Q I'm thinking of using one of my .223 rifles as a dedicated spotlighting rig for foxes, feral cats and the odd bunny. The problem is I mostly hunt on smaller properties and find once I've taken the first shot under spotlight on a fox the rest disappear for the night. So my question is: Instead of buying another rifle in a smaller and quieter calibre, can I safely handload some tailored lower power/velocity .223 rounds similar to a .22 Hornet or something with enough energy to knock down a feral but be a lot quieter and have less muzzle blast?

In my handloading manuals I can find no listings to suit my needs so could you offer some powder/bullet/primer options and recipes? I have a surplus of .223 cases so hope I can find something with the right amount of power without excess noise and report.

Antony Crisafulli, via email

A Your idea of reloading the .223 cartridge with lower velocity is quite sound, as a quieter round with low muzzle blast would be good to use in built-up rural areas. The Lyman 48th Edition offers the following loads using 55gr cast lead projectiles: 5.6gr of Red Dot powder produces 1795fps; 6.2gr of Green Dot powder produces 1855fps; 6.8gr of Unique powder produces 1900fps; 11.0gr of IMR-4227 produces 1762fps and 11.5gr of Reloader 7 produces 1758fps. These are

all starting loads so could be increased if higher velocities are required but for safety reasons always keep a look out for pressure increase indicators.

Barry Wilmot

Q I recently acquired the .22 calibre rifle in the photos and would like to know if it has value and, if so, is it best left as-is or should I consider restoring it? The rifle is clearly tired and not without issues, namely a poorly repaired broken stock, silver soldered shut rear sight, missing takedown lever, missing pan on peep sight and general patina. Do you know of a Greener guru who may be able to source parts or advice on all things Greener-made Martini actions?

Dave Charles, via email

A While your rifle has been a cracker in its time, it has obviously seen better days and isn't worth much at all as a collector's item, despite the Greener name. To restore it to anywhere near original condition would require significant time and effort and unless you can do the work yourself, the cost would undoubtedly be higher than the value of the rifle - and you still wouldn't have an original.

There are still plenty of Martini parts out there so I suggest you talk to your local firearms dealer and ask if they can point you towards anyone who might be able to help with the bits you need. If there's a Firearms Collectors Guild or group in your

area, they might be able to help as well.

Realistically though, your Greener has had its day and should be retired unless it has some significance as a family heirloom or such. Good working examples of your

rifle type are still available at times through gun shows or at auctions such as those run by Australian Arms Auctions.

John Dunn



My Most Challenging Hunt

Brad Allen

Dog-tired after back-breaking ordeal

Many times down the years I've been asked which was my favourite trophy mount or most difficult or challenging to hunt and, to be honest, it's not something I often think about as I've enjoyed all my hunts no matter how difficult they may have been. That said I often advise young hunters to savour the easy hunts too, as those are usually in the minority.

Hunts can be challenging for a variety of reasons from lack of suitable animals, bad weather, tough terrain or any number of other intervening factors. Yet the hunt which tested me most in recent times was initially a trek to secure a suitable cape for an old 5x6 set of red deer antlers I'd taken many years before and at the time had no intention of fully mounting the head.

The south-east Queensland red deer rut was in full swing and I'd been hunting my

usual patch, looking for the elusive 6x6 most hunters yearn for. After several days of hard slog morning and night I'd seen more roaring stags than I care to mention, some of them awful but quite a few respectable young animals with plenty of future potential. There were also one or two older stags well past their prime with heads obviously in decline, so after five days of not finding a better head than I already had I made the decision to try for one particular old 4x5 as I needed his cape.

I had a fair idea of where I'd find him as only two days earlier he'd been holding a harem of five hinds near the top of the range. Up well before dawn I made the hard trudge up the steepest part of the climb from my comfortable tent camp to the plateau. This was my last day of hunting as I'd other commitments and had to be home later that afternoon. A text conversation

with my wife the night before advised the household was also in dire need of dog meat as the freezer was bare. No problems, I thought, I'll shoot the stag at the top of the range, cape him out and carry the cape and meat the short distance downhill to the track above camp where I could pick the lot up with the vehicle.

Dawn was breaking as I crested the range and I could hear quite a few stags roaring around me in the open basins and ridges so, with binoculars out, I searched the surrounding lightly timbered ridges and basins for the old 4x5 but to no avail. I'd already spotted several younger stags as they went about their lusty business but none suited my purpose - I wanted an older and larger animal past his prime.

At that point a roar emanated from what seemed a short distance away in the next valley. It sounded like a mature animal and

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Dog-tired after back-breaking ordeal

I thought there was a fair chance this was the old 4x5 stag I was after. He continued roaring as I stalked down the ridge along a game trail through the semi-open bush and initially didn't seem all that far down the gully.

As I continued to stalk it became clear the stag was moving further and further down into the gully and I remember hoping he wouldn't go right to the bottom as that would mean a long, hard climb back up to the top of the range. Down and down I stalked until I glimpsed several hinds feeding just 200m from the creek at the gully bottom and a roar came from the creek as I sat and surveyed the situation. He was moving around so I patiently waited where I was with a clear view of his harem, reasoning that at some point he'd be back for them, which he was.

As he turned side-on to inspect one of his ladies at around 120m I delivered a 130gr .270 Woodleigh PP between his ribs which knocked him backwards over the steep ledge towards the creek a mere 30m below. As luck would have it he didn't end up in the creek but was now just a stone's throw from it and we were a long way from the top of the ridge I had to crest to reach camp.

His antlers were by no means rubbish and there's no way I was leaving them in the bush, so after carefully removing his cape (my main reason for being there anyway) I used my short saw to cut off the skull cap and antlers. At about this time I was rethinking my plan to retrieve all the meat but, being the thrifty gent I am, I thought: 'How hard could it be to carry his carcass up the hill and back down to camp?' I was about to find out.

With his head removed and cape and antlers lashed to the backpack I wondered how the hell I was going to pick this animal up and put him on my back. I tried my best but without someone to assist with balance and lifting of the load it wasn't happening. I then remembered seeing the 'lay on your back and roll the animal on top of your shoulders and pack' method so thought I'd give that a go.

Surprisingly and without too much trouble I was on my knees, balancing the stag on top of my shoulders and pack as I raised myself up. Uneven ground and excessively heavy weights do little to assist with balance but I was soon able to slowly start moving and pick up my rifle. This isn't too bad I thought as I collected the old Ruger and gradually headed in a straight line for the top of the ridge some distance away.



Spikes hanging with hinds while the stag's busy.



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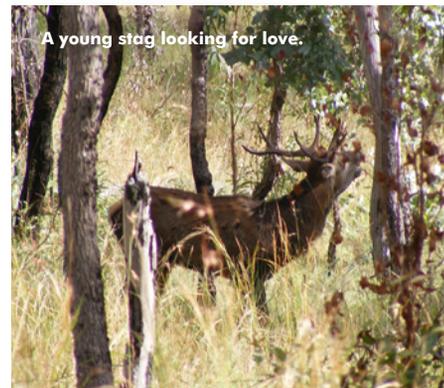
Dog-tired after back-breaking ordeal

I'd only walked about 50m when my legs began burning and I started to breathe heavily. At some point soon I'd have to rest and knew if I put this load down I'd never pick it up again. I quickly reasoned that perhaps by leaning against a tree and letting it take the weight of the stag for a while, it might give me enough respite to continue. I gave it a go and while it wasn't as good as actually dropping the whole load, it did work to some degree.

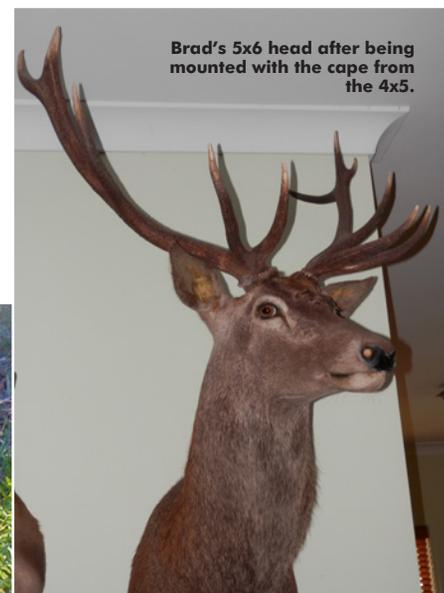
As my breathing and heart rate began to normalise I struck out again for the summit but this time didn't cover anything like my original 50m. After 20m I had to repeat the process and after another 10m repeat it again and again and so on. I've no idea how long it took to reach the top of that ridge or how many times I stopped against a tree for respite but I finally made it. Negotiating the other side was somewhat less strenuous than the uphill section but I still had a fair way to go and knew putting the stag down was still not an option.

On and on I pushed myself, resting against trees as I went until finally reaching the track. I couldn't guess how much weight I was carrying but it was substantial as the rest of the unladen stroll back to camp felt like I was walking on air. I was soon back at the vehicle and had the whole lot at camp in no time, where the cape was salted and the stag cut up and loaded into the esky. By the end of the whole process, to say I was exhausted would be an understatement and I had to question my sanity for attempting such a stunt.

Whether it was dogged determination, sheer bloody-mindedness or the fact I'm so thrifty that pushed me on I don't know, though I did learn one thing for sure - I'll never attempt anything like that ever again. I'm too old now anyway. There's no way our dogs could possibly appreciate the effort I'd just gone to for them as this was quite possibly my most challenging hunt. But my efforts did keep the wife happy - and I got the cape I came for. ●



A young stag looking for love.



Brad's 5x6 head after being mounted with the cape from the 4x5.



The old 4x5 where he fell a short distance from the creek.

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ATA updates the Turqua

Con Kapralos

Turkish-based ATA Arms has been producing quality firearms for more than 50 years and while the country has quite a few manufacturers, their production has been strictly shotguns with only government-owned armouries able to access rifles. When ATA applied to the Turkish authorities for approval to create a centrefire sporting rifle and was given the green light, it was seen as a milestone not just for the country's shooting and hunting community but also the worldwide marketplace.

The initial centrefire rifle out of ATA Arms was the Turqua, released in 2017, and it has taken several years for ATA's Australian importer Nioa to land the Turqua for the local market. Nioa was aware of the rifle several years ago though its original design - specifically the walnut stock dimensions and profile - was

'ordinary' with the current crop in their catalogue being far more pleasing on the eye. When the first shipment landed Nioa sent *Australian Shooter* the Turqua for review in .243 Winchester with walnut stock and blued barrelled action, along with a fine Leupold VX3-HD 4.5-14x40 optic and hunting ammunition from the likes of Federal and Remington.

Up close

The cardboard carton proudly declares: 'The first bolt-action rifle of Turkey', that rifle supplied with a comprehensive user manual, a couple of decals and hang-tag claiming 'Sub-MOA', a three-year warranty and black felt cover/slip for storing the gun in your safe. The rifle has a matte blue barrelled action and handsome walnut stock with overall length of 1138mm and weight of 3.67kg. The review rifle is in

.243 Winchester but is also available in 6.5 Creedmoor and .308 Winchester.

Barrelled action

The receiver is substantial and milled from a rectangular piece of steel bar-stock with its profile slab-sided even though it's bevelled, terminating at the top flat which is drilled and tapped to accommodate a one-piece steel Picatinny rail to make scope-mounting a breeze. The front receiver ring has a small gas port on either side which helps divert hot gasses away from the face.

The left of the receiver has the maker's name, calibre and serial number engraved, with the right side of the front receiver ring having 'Turqua' etched into it. Rearwards the receiver extends in a single piece to form a tang to which the trigger unit is attached, the underside of the receiver being flat with the exception of a large

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recoil lug fastened to the base.

The front action screw anchors directly into the recoil lug while the rear action screw beds into the underside of the receiver just behind the magazine cut-out. The recoil lug mates directly with an aluminium block screwed into the floor of the walnut stock forward of the magazine well, while the rear portion of the receiver bears directly on to the neatly-inletted walnut stock. The free-floating barrel is made from chrome-moly steel, button rifled and 600mm (24") in length, this barrel profile not your normal sporter and more akin to a #3 or #4 contour (semi-heavy). The .243 Winchester chambering has a one in 10 rate of twist and is well finished inside and out.

Bolt

This is another substantial piece of metal at 435 grams and consists of the bolt body (in hard chrome) with three locking lugs at the front of identical diameter permitting a 60-degree bolt throw. Case ejection and extraction is done by a plunger through the bolt face and claw extractor rebated into the edge of the recessed bolt

face, immediately adjacent to the plunger. Operation was excellent with all cases, fired and unfired, thrown well clear of the ejection port. The bolt handle is a separate piece fitted to the bolt body and to the rear a steel bolt shroud, matte blued to match the barrelled action, keeps the internal bolt componentry at bay, the bolt easy to disassemble for maintenance.

Trigger, triggerguard and magazine

The trigger unit is a single piece which incorporates the safety mechanism and is attached to the receiver tang. It's of a single-stage design, fully adjustable from 0.8-1.6kg using a supplied Allen key and the trigger pull adjusting screw can be accessed through the underside of the trigger unit by inserting the Allen key in a hole in the triggerguard. The trigger was set at 1.4kg from the factory and was crisp with only a hint of drag and overtravel, the trigger blade being of aluminium.

The safety catch is of a linear sliding design and runs on a shallow lip milled into the edge of the receiver body just behind the bolt notch. It has three positions - rearwards locking the bolt handle

and trigger, middle allowing the bolt to be cycled but still blocking the trigger and forward permitting the rifle to fire. The triggerguard/magazine well is a one-piece polymer unit as are the two supplied detachable box magazines of 3-shot and 5-shot capacity which clipped into place securely. It's a nice touch by ATA to include two box magazines as the small things often enhance brand image.

Stock

The walnut stock is well profiled in a classic American sporter pattern, the finish appearing to be oil and there's no indication of unsightly cheekpieces or Monte Carlo combs. But this wasn't always the case as the first Turqua models carried a walnut stock that could only be described as ugly. Nioa told the parent company in Turkey that had to change and the resultant stock is a huge improvement, the ergonomics good with the pistol grip comfortable to hold and fore-end slim. Panels of impressed chequering around the pistol grip and fore-end offer a degree of grip but I'm not a fan of this and on the Turqua it just earns pass marks.



Disassembled view of the Turqua.

The recoil lug and bedding arrangement on the Turqua is good.

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That's more like it! ATA updates the Turqua

One thing I didn't like was the 'ATA Arms' logo inscribed into the right side of the stock just beneath the ejection port - not necessary and a negative for me. The ATA emblem in the grip cap is fine but that should be it - only chequering should adorn the rest of the walnut stock. The buttstock has a decent sorbothane-style recoil pad with a thin polymer spacer to add a few millimetres to length-of-pull if required (length-of-pull was 370mm without the extra spacer). Two QD sling swivel studs are fixed to the stock, one on the underside of the fore-end and one on the toe of the stock.

At the range

What's evident from the outset is the perceived lack of recoil when firing the .243 Winchester rounds which could be attributed to the overall weight of 4.22kg with the Leupold VX3-HD scope fitted. For a hunting rifle I tend to look at 3-shot groups at 1.5 MOA (roughly 42mm at 100m) or less as being acceptable, even though ATA like many manufacturers give a 'sub-MOA' accuracy guarantee. Sub-MOA pledges can probably be achieved in controlled conditions such as underground testing facilities with no environmental factors but, in the real-world, 1.5 MOA from three shots or less in a hunting rifle is acceptable.

What was pleasing in the test rifle in .243 Winchester was it shot all bullet weights well, with group averages ranging from 17mm for the lighter 55-grain varmint load up to 24-35mm for heavier hunting loads using 80-100 grain projectiles. The excellent optic coupled with the semi-heavy barrel and stock dimensions of the Turqua made range time a pleasure and when testing at 100m concluded, I stretched the legs of the .243 Winchester and managed to topple over a few bowling pins out to 300m.

In the field

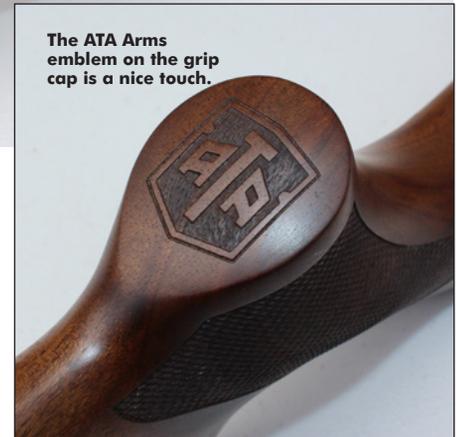
Several foxes met their end with well-placed shots out to 200m and while the Turqua was comfortable to shoot and makes an ideal hunting/informal target rifle, I feel anything over 4kg 'scoped' is too heavy as a stalking option. I carried the Turqua on



Business side of the action showing layout of the ejection port, bolt, safety and scope mounting provisions.



The Turqua comes with two detachable box magazines in 3 and 5-shot.



The ATA Arms emblem on the grip cap is a nice touch.

a morning stalk and with a total weight of 4.2kg did struggle by the end of the walk, something that doesn't happen with my normal stalking rifles. Some hunters will love the extra weight but the lighter the hunting rifle, the better for me.

In summary

The review rifle performed well though I'd like to see ATA offer future models with a shorter 22" barrel on a #2 contour profile for a lighter overall weight purely for stalking (overall weight nearer 3.2kg would make a cracking stalking rifle). The Turqua has an RRP of \$1100 but can be found below the \$1000 mark by shopping around. More at www.nioa.com.au ●

Specifications:

Manufacturer: ATA Arms, Turkey
Model: Turqua Walnut
Calibres: .243 Win (tested), 6.5 CM, .308 Win
Receiver: Manually operated bolt-action repeater, three-locking lugs, push-feed with mechanical ejection, matte-blue finish
Scope mounting: One-piece steel Picatinny rail fitted to receiver top
Barrel: Button-rifled, semi-heavy profile, 600mm (24"), free-floated, matte blue finish
Stock: Turkish walnut, American-style sporter profile with sorbothane recoil pad, polymer spacer supplied for LOP adjustment, QD sling swivel studs
Magazines: Polymer detachable box, two supplied (3 and 5-shot)
Trigger: Single-stage, fully adjustable from 0.8-1.6 kg, factory set at 1.4kg
Total length: 1138mm
Weight: 3.67kg
Distributor: Nioa
RRP: \$1100 (approx.) but have been advertised below \$1000

Accuracy testing: ATA Arms Turqua Walnut in .243 Winchester three-shot groups in mm

Ammunition	Best	Worst	Average*
Federal Premium 55gr Nosler Ballistic Tip	12	20	17
Remington High Performance Rifle 80gr PSP	18	28	24
Federal Fusion 95gr	20	32	27
Federal Power-Shok 100gr Jacketed Soft-Point	25	38	34
Remington Core-Lokt 100gr PSP	27	42	35

*Average calculated from five 3-shot groups at 100m



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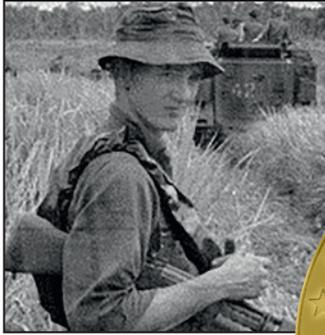
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up freely or were conscripted 'nashos', they became unwitting casualties of a war nobody understood or wanted. The worst was to face them upon their return home. Spat at, abused, denied return servicemen status that their fathers had enjoyed, they retreated from society. By 1987, our Vietnam veterans were duly given the recognition they so justly deserved. Their call to duty has reverberated through the Anzac legend, a lone voice seeking solace amongst the heroes of Gallipoli, Kokoda, Korea and other conflicts which have become part of our collective history. That voice is now given substance and form in the "Call of Duty - Vietnam 55th Anniversary Commemorative" golden proof coin



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Psychology of field-dressing game

Sam Garro

The personality of someone introduced to hunting and their overall approach and outlook to the sport can have a profound effect on how they react with certain aspects of the discipline, in particular the unpleasantness associated with field-dressing, skinning, caping and retrieving game which has been harvested.

Some, while enjoying all the sport has to offer, don't have the stomach or are reluctant to participate in the perceived 'messy' process and often experience real anxiety and emotion at the very thought of gutting or skinning an animal. Yet others aren't fazed in the least and want to be involved in every aspect of hunting from felling the game in the field to enjoying their spoils at the table.

There have been times when the hunter, whether simply gutting a rabbit or skinning a fox for its pelt, has opted to be shown first before deciding to tackle the task on their own and in such instances I've been receptive to demonstrating the process while pointing out there's no real science to it. But it's more a matter of hands-on and with practice it becomes better and, if at any stage they're still uncertain, they can put it back to me.

Psychological barrier

The fact some can't cope with the notion is not purposeful intent by an individual but an emotion genuinely felt and expressed. A show of empathy, leading by example and demonstrating a willingness to help goes a long way in encouraging the person rather than applying ridicule or indirect pressure.

When we consider buying meat, poultry or fish from the butcher or supermarket, no thought goes into the procedure before it reaches the shelves - it's all done behind the scenes and out of mind of the buyer. Game harvested is no different but as hunter-gatherers we do it all, hence why I derive greater satisfaction and appreciation from that personal involvement.

Overcoming trepidation

Reflecting on my primary school days (a millennium ago) dissecting a frog with some trepidation during a chemistry lesson to



Sam with a red deer spiker ready to begin skinning and dressing the carcass.

study how the bodily organs functioned, in a way gave me my initial insight. Thinking simply, creatures including game hunted or harvested anatomically have body organs and parts - principally the heart, lungs, kidneys, liver, stomach and intestines - remarkable pieces of equipment in themselves and really not in the least offensive.

It's a bit like the workings of a motor vehicle with the engine as its heart and all the other components, except one is flesh, blood and bone and the other mostly metal. This is all about how you perceive things and at a very young age, my experiences on my grandfather's farm, watching and learning how they relied on and

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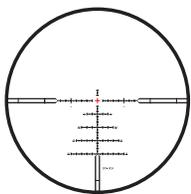
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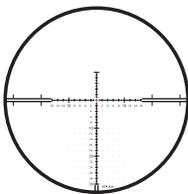
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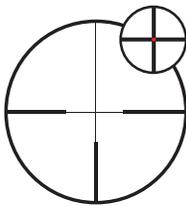
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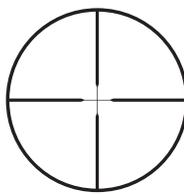
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Psychology of field-dressing game

ethically despatched farm animals or game for consumption, stood me in good stead for later life as documented in my article 'Long journey in the making of a hunter' (*Australian Shooter*, November 2020).

Focusing on the more positive aspects of how cooked game presents on the table in all its finery must in itself be an attractive thought. Different cultures, tribes and people of various persuasions the world over make the most of the farm animals or game hunted by also using organs like the heart, liver and kidneys in a variety of delectable dishes, even pig and cattle blood mixed with other ingredients, spices and herbs to make black pudding with intestines used for sausage casing.

A clean affair

Field-dressing harvested game early and removing the innards whole can be quite a clean affair, as in the case of the rabbit. In my experience I've found once an individual handles the first field-dressing on his own the exercise becomes easier and acknowledgement of a job well done also helps boost morale and confidence.

In the case of medium-to-larger game like goats, pigs or deer which may be inadvertently gut-shot resulting in a messy recovery or felled in a remote area and difficult to fully extract, the logical action is to recover prime cuts like the hind legs and backstraps or what you can comfortably carry out. Nothing goes to waste in the bush as opportunistic crows, birds of prey and foxes clean up the rest, though head shots or shot placement just behind the shoulder through the rib cage should result in greater meat recovery.

Positioning for dressing

In the case of a rabbit, hold the back just past the rear legs with its belly facing upwards. With the point of your knife pierce the skin at the start of the belly between the rear legs and maintain a slight upward pressure with the blade under the skin. Cut forward to the breast bone, taking care not to puncture the stomach lining then, with thumb and forefinger inserted in the rib cage cavity, crab the top of the heart/stomach section and pull down and out to remove the intestines in one piece.

The other method after slitting the length of the belly, is to hold the rabbit's ears with one hand and rear legs with the other then flick the intestines out (this usually takes a few attempts or a little practice to master). Should the stomach be accidentally punctured, continue the process and wash any of the contaminated area with clean water.



Removing backstraps from a red deer for carry out from a remote location.

Insert: Venison backstrap, oven-cooked medium rare.



Clean rabbits make excellent table fare.

With animals such as goats, pigs or deer, raising the carcass off the ground through the use of a gambrel hoist, vehicle winch or similar method makes the process a whole lot easier. Start removing the innards from the top by cutting the tendons or tissues along the inside length of the spine which hold the contents in place and work your way down past the stomach region to the rib cage.

On the ground it's a matter of holding the animal on its back or to one side and gradually working through the method as described and gradually rolling the innards out. Once skinned the carcass can be likened to one hanging in the butcher's shop ready for carving into the desired cuts. Participating in shooting or hunting club field-dressing demonstrations will also assist and there are various YouTube videos on the subject.

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Psychology of field-dressing game

Coaching from early on

Over the years I've shown young and adult hunters how to skin and field-dress game from rabbits to deer with the meat roasted or a whole carcass on a spit, cooked over an open pit campfire to be appreciated for its unique flavour and texture, relative to the game harvested. And if caught in a survival situation it's good to know you can rely on nature's bounty and today these hunters are more than likely passing on their experiences and knowledge to others.

Involving young hunters early will go a long way to establishing a solid grounding before they can be adversely influenced by animal liberation activists and some sections of the media, which can cloud their judgment and outlook without any real substance or foundation to their findings. And if certain affected hunters are hesitant or show reluctance to involve themselves in the mentioned areas, give them space and they'll come around in their own time. If not that's also fine as they're still part of our great sport.

Pitfalls of delaying

Rabbits feeding on rye grass need to be gutted within 15 minutes or stomach acids will leach through the stomach lining and spoil the meat. With larger game, bleeding the animal with a quick cut or incision to the throat will remove any toxins from the possible build-up of lactic acid through stress, fleeing or in an adrenalin-charged state. The longer the dressing is delayed the larger the stomach also tends to bloat from the fermenting contents, making it

more difficult to make an incision without puncturing the stomach wall and having to endure unpleasant smells.

Safety and hygiene

It's also a sensible practice to wear latex or rubber gloves when field-dressing or skinning game, initially for sanitary reasons when retrieving meat. It can also protect against possible infection from unclean or potentially bacteria-carrying animals like wild boar which feed on carrion, billy goats, and the like. It's also a cleaner process with gloves discarded on completion.

The right tools

It helps when you have the appropriate knives for the task relative to the game type and quality knives and honing rods or stones to maintain a fine edge are essential.

Messing around with a blunt knife can prove dangerous and add frustration if already hesitant or unsure how to start. To minimise the chance of puncturing the stomach lining, a back-hook gutting knife or purpose-built blunt-point knife will assist greatly. ●



Sam's field knives: Small game folders, top, and from left, bigger game fixed blade knives and drop-point knives for skinning and meat retrieval.



A goat harvested by Peter who learned at a young age and became an experienced hunter - a clean carcass just like at the butcher's shop.



Gutting a freshly-shot rabbit being careful not to puncture the stomach lining.



Young goat slow-cooked on a barbecue spit.



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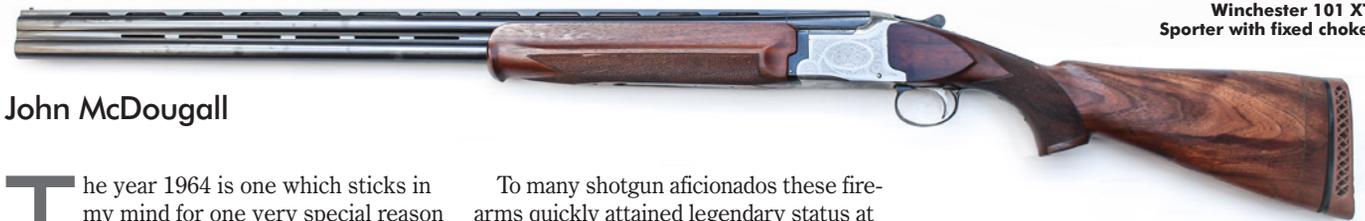


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Winchester 101 XTR
Sporter with fixed chokes.

John McDougall

The year 1964 is one which sticks in my mind for one very special reason - the release of the Winchester Model 101 shotgun range and my first over-and-under, a 101 field grade which came with a narrow tapered rib, mechanical triggers and a blued receiver with modified and full fixed chokes in the barrels.

The firm had been undergoing major changes as the Winchester Repeating Arms Company with their superposed and double-gun models now being manufactured at the Kodensha Shotgun Works in Japan, coincidentally where the similarly modelled Nikko shotguns were also made. Winchester reportedly had a significant investment in the Japanese concern and the guns made there were exceptional, beginning with the Winchester 101 basic models and graduating in later years to the Model 101 XTR with Winchokes.

The first Winchoke models came with a knurled collar and attracted a fair amount of criticism for the collar being a distraction at the muzzle as other manufacturers were producing fully internal fitting choke tubes. I used and reviewed several Winchester 101 XTR shotguns and in all honesty found such claims to be quite baseless. Following the 101s with their collared Winchokes came the 1001 XTR models in 1993 which were fitted with fully internal choke tubes - the WinPlus choke system. These were fitted not only to the superposed or over-and-under guns but additionally the Model 23 series of side-by-sides or double guns (the Model 21 had knurled collar Winchokes but the later Model 23 came with fully internal WinPlus choke tubes).

To many shotgun aficionados these firearms quickly attained legendary status at the time, the finish on them being far superior to the cheaper Model 96 Winchester shotguns being made in Spain. There was the top of the range Grand European 501 XTR in its presentation case followed by the Winchester Diamond Grade with those tell-tale shapes inletted into the stock behind the top tang and additionally the pistol grip cap. The Diamond Grade guns I had access to for photographic purposes were the 32" and 30"-barrelled Trap models with their Monte Carlo stocks. A friend of mine has the highly attractive Pigeon Grade Winchester 101 XTR with collared Winchokes which she continues to shoot in simulated field clay target events to this day.

Engraving on the early Winchester 101s was innovative while later Model 101 XTRs were finished to perfection, the 101 XTR Sporter being one of the first dedicated 'sporter' shotguns as the clay target discipline started gaining momentum and interest soared. Being borne out of the demise of the live pigeon shooting circuit when that sport was banned in many countries, Sporting Clays took off in a major way and Winchester was ready with the answers for that increased interest.

The company produced several Sporter models including the Diamond Grade and basic Sporter and a fellow shooter of many years has a complete set of Diamond Grade Model 101 XTRs along with a Model 23 side-by-side. These guns were beautifully made and are easily serviceable with gunsmith Peter Swartz of Bannockburn, Victoria still stocking parts for repairs to these legendary

firearms. Yes, the Model 101 series and 101 XTRs can truly lay claim to that 'legendary' status and testament to this is the fact some of these classic guns remain in regular use. The mechanical triggers in field models were largely preferred with other competition options - Skeet, Trap and Sporting - offering inertia-operated trigger systems.

In my opinion these older model Winchester shotguns in both superposed and double-gun configuration are highly prized to this day and while you can buy a new Turkish-made version for less than \$1000, a second-hand Winchester 101 or 101 XTR in good working order will still command between \$1500 and \$2500 with the Grand European being the jewel in that particular crown.

Those I know who still shoot their Winchester 101s are more than happy with the performance of their classic guns, whether on a regular outing at the local Sporting Clays range or shooting Trap at a DTL gun club. If you're ever lucky enough to be offered one of these magnificent shotguns I can highly recommend them as they were undeniably ahead of their time when introduced and are still huge favourites with Winchester followers despite the fact they haven't been made for almost 30 years. Considering many of them are still in service speaks volumes for the materials, design and innovative minds behind their introduction as the Winchester legend endures. ●



The XTR Waterfowl with 32" barrels was another superb offering in the Winchester 101 range.



A pistol grip diamond and barrel selector-cum-safety catch were standard on the Diamond Grade Trap gun despite the top barrel being fixed for full choke.



The Diamond Grade Trap gun had a fixed choke in the top barrel and interchangeable Winchokes below. Note collar on the end, berated at first but still very practical.



Despite a few scratches on the woodwork this Diamond Grade has weathered well over three decades.



The 101 XTR Waterfowl had 32" barrels and Winchokes in both.



The Diamond Grade Trap with 32" barrels, step rib and Monte Carlo stock is still a highly serviceable gun.

Specifications:

Maker: Winchester USA, made in Japan (no longer in production)

Models: Skeet, Sporting, Field and Trap

Price: Second-hand guns range from \$500-\$2500 depending on model, accessories and condition

Repairs: Peter Swartz, Bannockburn, Vic (03) 5281 1203

Rating: Top quality and excellent value depending on condition

Keeping tabs on field load accuracy

Dick Eussen

Storing and carrying ammo is important - carry bullets tip-up or the tips deform when rattling in the case on bush roads (note damaged flattened lead bullet tips).

Shooting range talkfests are awash with handloaders claiming reduced velocities are the most accurate and while this may be true for some power and bullet combinations, it's far from being gospel as backing-off recommended loading is no guarantee of better accuracy - and the opposite can occur. Over the years I've spent a great deal of time with many different calibres for rifles, handguns and shotguns, working up benchrest, target and hunting ammunition and one thing I learned is that when exceeding recommended maximum loads, bad things can happen.

Yet there are several indicators on hand that warn you when pressure is close enough and the general method of watching

for pressure signs is primer flattening which, being a fair indicator, can be wrong if the primer brand used has soft jackets.

A much better technique is to use a micrometer and measure the solid web section of the case, just slightly ahead of the extractor groove and behind the expansion ring for rimless cases and ahead of the rim on others. Another, some say surer process, is to use a chronograph and progress loads in small quantities until pressure signs become noticeable. Generally it's extracting a sticky case which indicates the first warning - the bolt may be little hard to lift and tight to pull back so it's time to back off. Fast!

A while ago a hunting mate of mine who lives in the high country of Victoria joined

me on a buffalo outing in the Top End. He'd loaded his .375 H&H cases and tested them in the coolness of his home ground and experienced no warning his loads were hot. When we pulled up to check his rifle for point of impact he discovered he'd missed the target and the case was sticky to eject. The next round jammed the action and the only way we could remove the case was to hammer the bolt handle back with a piece of timber. There appeared to be no damage to the rifle so I gave him a box of my own handloads and they worked fine.

More recently I hunted with a mate who stupidly left a box of bullets on the 4WD dash where they were fully exposed to the sun. On spotting them I told him this could increase powder pressure, seeing temperatures were hovering around 45C according to the outside gauge. Later in the day he had problems extracting his shells and blamed everything but the weather though he never left them on the dash again. In the days ahead we sweated a lot, shot a couple of dozen pigs and wild dogs and encountered no problems in extracting our handloads. My mate never said a word.

When reloading in a cool climate you must be aware that if hunting in extreme heat, pressures may expand when using handloads loaded to maximum pressures or beyond and that's one reason every handloader should stick religiously to data published by reputable powder and bullets manufacturers. The best manuals are by Hornady, Speer, Hodgdon, Alliant, Nosler and our own ADI Powders, yet many



Having good field loads is the trick to successful hunting, something Wayne knows well having taken these pigs with his .308 Win Remington slide-action rifle.

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Keeping tabs on field load accuracy



Having a well set-up reloading room is a good start to producing top-grade field loads for hunting and target shooting.

new reloaders are hooked on anything 'published' on the internet and while there are some decent websites from those mentioned, reloaders should be mindful that using loading data from dubious sources can lead to disaster.

Some reloading data published by people who only copy information from that circulated by powder and bullet manufacturers also needs to be taken with a pinch of salt. It's best to refer to several manuals and compile their data into one 'block' which provides a safe starting point for your rifle. Manuals do vary because of the different test rifles used so be aware of all starting and maximum recommendations.

It's best to start with five charged rounds, test them on the range and work up from there. I do this and take primed cases along with a powder scale and Hornady hand reloading press fitted with a seating die and using the tray of my ute, I can reload three or five rounds at will and test them on the spot - it doesn't get much easier than that. Using five-shot loads makes it simple to check cases for expansion and work out the average velocity and group spread, while moving up to the 'correct' load with each increased or decreased increment of powder charge, especially when using benchrest and purpose target loads. For hunting loads I stick with three-shot test loads for average velocity readings and case expansion.

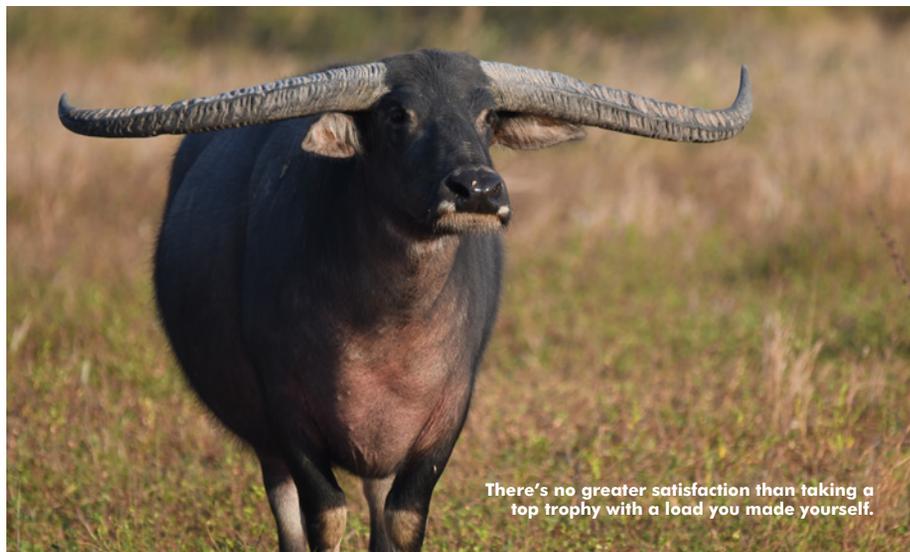
Okay, that's the fastidious method but for much of my general hunting loads in lightweight rifles I start with five rounds

loaded two grains below the average maximum recommendations in reloading manuals, fire and accuracy test them. If they show no sign of flattened primers or case expansion I go up half a grain until indications of expansions occur and back off a quarter grain. This is generally the load that performs best, it's simple and easy to check if you don't have range or bush-ready reloading gear or time to do it by the book.

Group sizes generally increase as the powder charge reaches maximum and case heads begin to expand without much noticeable increase in velocity as I've sometimes experienced. I'm not sure why that happens

but shot-to-shot spreads often become erratic when maximum powder charge recommendations are reached, so there's little to be gained by pushing ahead for extra velocity.

There are exceptions as I've seen groups tighten noticeably when reaching maximum velocity, but due to the extremities of our tropical weather I back off, because when the end of the dry season weather is in the high 40s, such rounds will jam the rifle or worse still cause a 'blow-up'. And finally, always ensure recommended primers and powder are used. ●



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Hunting rites and animal rights - one historic, one not so

David Hughes

This is Part Two of an article examining the philosophy of hunting and the views of its detractors. Readers may also refer to Part One which appeared in the September 2021 edition of this magazine.

Those of us who love to hunt are conscious of critics of our pastime with the anti-hunting brigade endlessly at work trying to undermine our legal rights as well as the morality of our traditional practices - our hunting rites. These represent a continuation of the hunter-gatherer instincts which have motivated humans since the dawn of our existence.

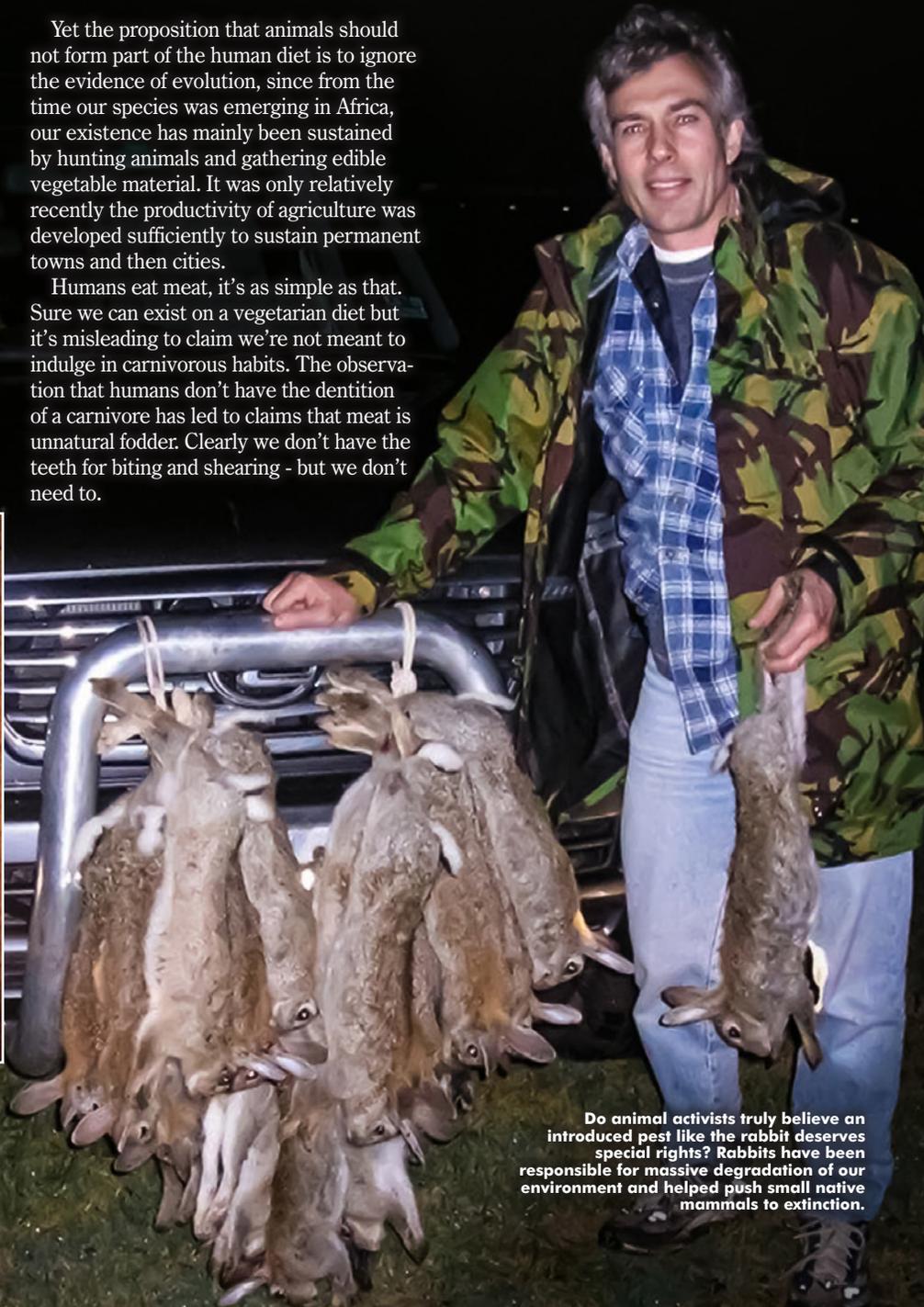
Among the most strident anti-hunting views come from the 'animal rights' movement, people who believe animals shouldn't be exploited or adversely interfered with in any way. According to this philosophy, animals should not be used by people whether for food, other products, sport or entertainment.

Yet the proposition that animals should not form part of the human diet is to ignore the evidence of evolution, since from the time our species was emerging in Africa, our existence has mainly been sustained by hunting animals and gathering edible vegetable material. It was only relatively recently the productivity of agriculture was developed sufficiently to sustain permanent towns and then cities.

Humans eat meat, it's as simple as that. Sure we can exist on a vegetarian diet but it's misleading to claim we're not meant to indulge in carnivorous habits. The observation that humans don't have the dentition of a carnivore has led to claims that meat is unnatural fodder. Clearly we don't have the teeth for biting and shearing - but we don't need to.



Humans have been hunters for thousands of years as shown in this European rock art. The innate drive to hunt survives within those of us who listen to its call.



Do animal activists truly believe an introduced pest like the rabbit deserves special rights? Rabbits have been responsible for massive degradation of our environment and helped push small native mammals to extinction.

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Hunting rites and animal rights - one historic, one not so

The fossil record clearly shows ancient humans used stone tools to butcher animals and also evidences the use of fire to cook meat and render it more palatable. If humans had tools which gave them the ability to reliably kill animals - and to cut them up and cook them - the dentition of an omnivore worked just fine.

This was happening more than a million years ago when the early human, *Homo erectus*, stalked the wilds of Africa and into Asia. Evidence of the use of fire for cooking goes back that far, indeed anthropologists believe it was hunting, meat-eating and the use of tools and fire which distinguished humans from the apes with whom they shared a common ancestry. Modern man and meat-eating are inextricably linked.

During the most recent Ice Age in Europe, peaking about 25,000 years ago, much of northern Europe was covered in ice and in many locations our species, *Homo sapiens sapiens*, would have existed almost entirely on a meat diet since the summers were too short to provide any alternative and such climate-enforced dependence on hunting and a meat-based diet has continued into the modern era. The Inuit of Canada and Laplanders of Scandinavia - both living in the Arctic Circle - demonstrated well into modern times that an animal-based diet can provide the platform for a sustainable existence - it's unarguable that meat-eating is unnatural or 'wrong' in these instances.

Those of a Christian persuasion may recall the words of St James Bible (Genesis 1:23): *And God said, Let us make man ... and let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon the earth.*

While many may not interpret this literally, the underlying principle is clear - humans have rights which animals don't because humans make the rules. If humans say animals have rights it's because the human brain subjectively conceived of the concept. As ethical hunters we choose to conserve wild populations and to not inflict unnecessary suffering on our quarry. Animal-righters make a judgment call that animals deserve more.

But underneath these arguments is the reality that humans are an exception from the rest of nature. Humans alone have the combination of high intelligence, the ability to pass on knowledge inter-generationally to predictably control the environment in which they live and this control extends to using animals not just for food but a variety of other products. In a world inhabited by more than seven billion human beings,

wilderness areas are ever-shrinking and ecosystems under stress. We'd all agree animals and humans would preferably live in a world without such environmental degradation but the animal-righters' utopia of all creatures blissfully wandering around enjoying a carefree existence, unaffected by human intervention, is just impossible.

One of the fundamental building blocks for animal rights ideas is non-human animals are sentient beings and therefore somehow universally eligible for a benevolent protective umbrella (presumably enforced by the very humans who conceived the concept). Some definitions of animal rights which can be readily found online extend the concept of 'sentient' to mean animals have 'feelings', presumably equivalent to those felt by humans, and also some form of awareness of self.

There's a huge difference philosophically and physiologically between an animal feeling pain and an animal being self-aware and having human-like feelings. Many primitive animals clearly experience a nervous response to physical trauma which may be interpreted as 'pain'. Animals unarguably can distinguish between pain and the absence of it and anyone who has attached a live earthworm to a fishing hook knows this. But in the absence of a complex brain and any form of higher consciousness, it's a matter of conjecture what such animals are sensing.

It is also a completely subjective judgment whether animals have the right to a pain-free existence. After all, in the natural world all animals feed on other living things. If creatures aren't being killed by other animals which want to eat them they're killed painfully by parasites, starvation or a myriad of other environmental

challenges. Like it or not pain is the norm, not the exception. We as humans may choose not to inflict it unnecessarily on each other or on animals but the ability to make that choice arises from our peculiar exceptionalism in the animal kingdom.

There's a 100 per cent certainty animals in the wild will experience plenty of pain from something or another. Humans come along and have created in recent times the concept that animals have the right to a 'happy' life without experiencing pain. On any dispassionate analysis the concept of sentient animals having an ipso facto right to anything in particular is the product of the imagination of humans, especially in the minds of many affluent city dwellers whose daily existence is largely divorced from the realities of the natural world.

Academia has generated a massive body of literature exploring what's meant by 'consciousness'. Researchers talk about 'sensory consciousness' which means the ability to sense the environment and change behavioural states in response to stimuli and if it's this concept of 'sentient' the animal-righters use to justify attributing feelings and awareness to animals, the argument enters shaky ground.

Bacteria can sense nutrients in the environment and use this to orient themselves (a phenomenon called chemotaxis) while plants can sense light and modify their biochemistry to bend their growth towards it (phototropic response). These organisms are sentient with respect to their environment yet lack any form of nervous system and clearly have no prospect of



Thousands of Aussies enjoy catching and eating fish as well as other animals. Di was excited about this balfish she caught in Darwin Harbour.



Hunting rites are still practised and enjoyed right up to the present day. Here Zeke brings home some tender Tasmanian venison for the family.



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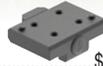
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Hunting rites and animal rights - one historic, one not so

having feelings or awareness. Any claim that possession of sensory consciousness creates special rights is somewhere between subjective and plain loopy. Perhaps only the cute and cuddly creatures which appeal to human emotions are permitted to be 'sentient' in the minds of the animal-righters?

Moreover, the presence in a non-human animal of higher-level functioning such as working memory, social learning, planning and problem solving still doesn't necessarily correlate with 'sapience' as sapience comprises a high level of cognition, intelligence and ability to perceive your self. Interestingly there are only a handful of animals capable of recognising their own image in a mirror, which puts into context the animal-righters' belief that animals have a conscious awareness comparable with our own.

It seems clear the building blocks of animal rights philosophy are mired in subjectivity and unbridled emotionalism and all around we see this subjectivity demonstrated in the way different groups of people regard animals. The Hindu religion bestows special rights on cattle while the Islamic and Jewish faiths deem some animals less worthy than others, most notably if they have curly tails and go 'oink'.

Likewise animal libbers will draw their own subjective lines in the sand regarding the rights to self-determination of pests like flies, tapeworms, rats and feral cats - not to mention domestic livestock and pets which have been deliberately bred by humans for pleasure or resource.

So all that we of the hunting fraternity can ask of our critics is to pause and question the basis of their own beliefs - before humans existed did animals have rights?

Hunters care deeply about the conservation of wild places and wild creatures, they're practical folk who view the world realistically. Hunting is not 'wrong'. Life's tapestry is rich and varied and holders of alternate views to those of the animal-righters should be at least given a fair hearing instead of being subjected to unthinking and often angry knee-jerk reactions. ●

Part 3 will appear in the April magazine



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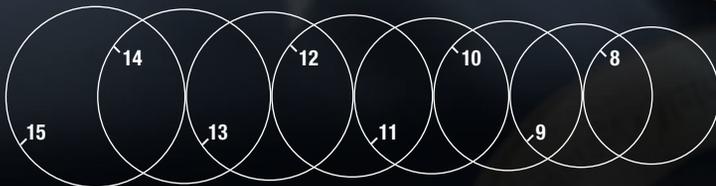


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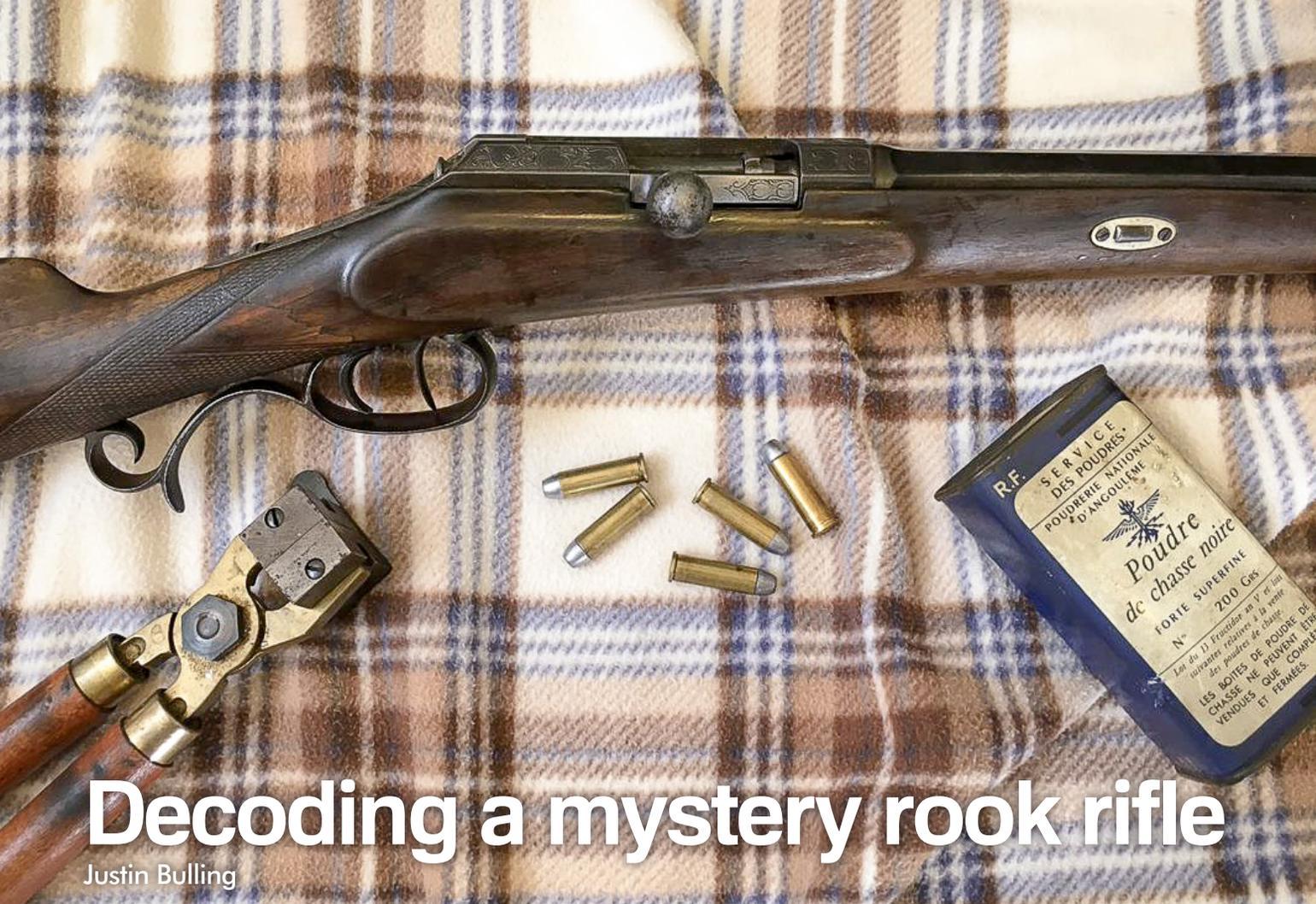
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Decoding a mystery rook rifle

Justin Bulling

While ago I opened the 'used gun' web page of my local firearms dealer and noticed an unusual listing. Described as a Mauser .38 there was a photo of a slim, vintage breech-loading rifle with engraved action, trigger-plate and guard, double-set triggers, a wedge retained forearm with schnabel tip, octagonal barrel and elegant cheekpiece giving a distinctly European appearance which was listed as 'for parts or repair'. It was obviously an early breech-loader but didn't look like any Mauser I was familiar with.

I drove to the shop to check it out and on inspection the metalwork was covered in a layer of red rust, the stock grimy with an obvious crack through the wrist and after removing the bolt, the bore was dark and dirty with only a hint of rifling visible. After paperwork formalities were completed I finally took the rifle home and began a close review looking for some maker's or cartridge identification marks which I was assumed were lurking under the rust and grime. On examination with a magnifying glass it was clear the gun had no external marks whatsoever.

The 26" octagonal barrel has dove-tail mounted front bead and rear notch sights with the notch on a plate that's

screw-adjustable for elevation. The fore-end retaining wedge is set within oval-shaped silver escutcheons, the wedge retained fore-end a feature which was common on muzzleloading rifles and shotguns. When combined with either removal of the tang screw or a 'hooked breech', subtraction of the wedge makes ejection of the barrel for cleaning and reassembly quick and easy.

When makers transitioned to breech-loading firearms in the late 1860s they often continued this feature until realising it was no longer necessary as the guns could be cleaned from the open breech and by the late 1870s it had largely disappeared. This immediately dates the rifle to that period. The action is only slightly larger than that of a rimfire bolt-action but there was something familiar about the shape of the receiver and bolt. Sure enough, an online search confirmed the 1871 Mauser single-shot military rifle was an action which, apart from its size and lack of flag safely and the screw which retains the bolt, is a match to mine.

Research revealed German gunsmiths were making sporting rifles in the late 1870s which were based on a miniature 1871 rifle action. It should be remembered the 1871 Mauser was the first model of



that marque and along with its rivals - the French Gras and American-designed but Russian-issued Berdan - was among the earliest bolt-action rifles firing self-contained brass cartridges. The muzzle of my rifle showed bore size of around 9mm and the chamber was similar, indicating this probably fired a straight wall cartridge. The svelte dimensions of the gun made it likely it was chambered for a small cartridge.

It was clear that in order to learn more about my rifle I'd have to study the proof marks which I knew would be visible with the stock removed, so I first removed the tang screw and carefully tapped the wedge to begin detachment. It presented a few challenges due to corrosion but I eventually



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Decoding a mystery rook rifle



Justin's mystery rook rifle.



Fore-end wedge and rear sight.

succeeded and was able to withdraw the barrelled action. The unusual sear arrangement with large leaf spring again matched the 1871 Mauser design.

I checked the proof marks and noted the 'U' with crown and 'B' with crown on both barrel and receiver which I know are German primary and definitive proof marks. There was also the number 118.35 which I knew was the 'gauge' of the bore (not groove) diameter in the weight of a lead ball as used for shotgun sizes. Charts show bore size in 0.01" increments and checking an online diagram revealed this equated to 0.340" diameter. I was aware black powder cartridge rifles commonly had grooves around 0.07-0.08" which would give a groove diameter of around 0.356" though I still couldn't discern what cartridge it would chamber.

Further inspection showed another mark which read '0,5gr NGPM/71' above '8gr BL.' My proof mark reference book showed the proof load used for guns requiring special loads with the top line reading 0.5 gram (7.7 grains) of a special powder with an 8 gram (123-grain) bullet but it didn't signify the actual cartridge or its length.

The next thing I did was find a .38 Special empty case and try it in the chamber. To my surprise it chambered and the cartridge base seemed to be a perfect fit as the bolt easily closed on it. When I turned to an empty .357 Magnum case it wouldn't fully chamber, implying maximum case length was somewhere between .38 Special (29mm) and .357 Magnum (33mm).

I used a Lee case trimmer to start taking a tiny bit at a time off the .357 case and repeated the process until it would fully chamber, the end result suggesting a chamber exactly 30mm long (I also did a Cerrosafe chamber cast to confirm the dimensions). My next step was to tidy up the metalwork both inside and out, putting a bronze brush with oil through the bore followed by some patches which removed dirt and fouling but not the rust.

I completely disassembled the trigger parts and after degreasing, boiled everything for an hour to convert the red rust. Using a carding brush on my drill press the external steel surfaces revealed their original blueing and engraving which was obviously factory produced either cast into the receiver or possibly impressed. The trigger components also were effectively cleansed and when reassembled the set trigger worked perfectly.

The bolt was clearly not blued and left 'in the white'. After watching an online video on bolt disassembly of an 1871 Mauser, my bolt came apart in exactly the same way with a separate bolt head with protruding face and unusual left side extractor. I noted the dust shroud had fractured and was missing from the bolt but this wouldn't affect function or safety. The bolt parts were soaked in

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PQ35L		35 mm, F1.0	1.77 - 14.16, x8	12.52° x 10.03°	1700m			560g
PH50L	384 ×288, 12 μm, NETD < 35mK	50 mm, F1.0	4.22 - 33.76, x8	5.28° x 3.96°	2500m			630g
PH35L		35 mm, F1.0	2.96 - 23.68, x8	7.53° x 5.65°	1700m			560g

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Decoding a mystery rook rifle



Sear assembly.

a 10 per cent molasses solution for a week, after which they were corrosion free. Next I plugged the bore using a .38 case with plumbing tape around the rim and soaked the bore in another 10 per cent molasses mix.

On the eighth day I tipped the liquid out, removed the case and squirted water through it with a garden hose and after running several patches through the bore to dry it they were coming out like new, a light down the bore showing a clean barrel with lots of shallow pitting but strong rifling with the worst aspect a deeply pitted area about 100mm back from the muzzle. I decided it would be safe to shoot but would never be accurate and I managed to slug the bore which showed a groove diameter of around 0.357".

While continuing research on possible chamberings I looked at the dimensions of the British .360 No.5 Rook cartridge and discovered they're a match for the chamber profile of my rifle. Cartridges were loaded by Kynoch and sold in Europe as the 9.1x27R and were probably manufactured there too. The case length for this cartridge is 27mm but chambers in black powder rifles were intentionally cut slightly long to allow for the inevitable fouling so my 30mm chamber is logical.

It was now time to repair and restore the stock so the metalwork was removed and fracture line assessed, the stock repaired using a coarse wood screw and Acraglass gel, acetone then used to clean the entire stock before several coats of Tru-Oil were applied. With restoration complete I was keen to shoot the rifle but held little hope

of good accuracy. I moulded some 124-grain projectiles from pure lead plus two per cent tin using a Lee 358-125-RF mould and sized them to .358 treated by black powder lube in a lube sizer.

Loading seven grains of FFF black powder into standard .38 Special cases I made some over powder wads from a milk carton with a wad punch and finished with some felt wads impregnated with black powder lube. The rifle is well balanced with sights easy to negotiate and the set trigger makes shooting precise but at 25m a group of only around 5" was achieved, clearly not accurate enough for any meaningful use but great fun to shoot.

I enjoyed restoring this early classic sporting breech-loader and the lack of any maker's marks makes me think the rifle was likely created by a provincial German gunmaker from a commercial action. It's a shame it's not really a viable shooter but as I at least occasionally shoot every firearm I own, I'll most likely pass it to a collector or enthusiast who'll appreciate it. ●

Reference: Wirnsberger G. *The Standard Directory of Proof Marks*, Blacksmith Corporation.



Triggers and triggerguard engraving.



Separate bolt head with protruding face and left side extractor are the same as the original 1871 Mauser.



Proof and bore size marks.



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The Leica Calonox Sight is at the forefront of thermal imaging optics.



Leica turns up the heat on rivals

Con Kapralos

The technological advances being made in the field of night vision optics are astounding. Where originally such developments as infrared and thermal imaging were exclusively limited to the world's military and law enforcement agencies, they're now within reach of the everyday consumer so if you have a need to look into the darkness without the use of an illuminating light source, night vision is your answer.

While infrared night vision is highly affordable with some outstanding optics available, thermal imaging optics are taking off in a big way. As the name implies, thermal imaging takes heat generated from a source and converts it into an image without the need for additional illumination (as used in infrared tools).

Thermal imaging and associated hunting optics such as riflescopes and hand-held spotting scopes are becoming popular but for the hunting sportsman looking for the best money can buy, the new Leica Calonox Sight is an obvious choice. Primarily designed as a clip-on thermal imaging unit which can be installed in front of any conventional riflescope, it can also be used as a hand-held unit in its own right.

Importer Leica Sport Optics offered *Australian Shooter* the chance to review the Calonox Sight Thermal Imaging clip-on unit and did stipulate there's another dedicated unit - the Calonox View - which is solely a hand-held imaging device whereas the Calonox Sight is primarily a clip-on attachment though can be used in hand-held mode. The main difference is the View has an adjustable magnification range while the Sight has a fixed 1X magnification with adjustments

carried out by the riflescope itself when used as a clip-on attachment.

I expected a top-shelf unit in the Calonox Sight and wasn't disappointed. Leica continues its long and successful track record in digital image optimisation with its own image processing (Leica Image Optimisation - LIO) which improves quality with special algorithms yielding an image rich in detailed colour gradations, superb contrast and high-detail resolution.

External observations

The Calonox Sight from an external viewpoint is a fairly uncomplicated unit. Weighing 685 grams, its cylindrical one-piece construction is evident at 165mm in length, however the body has a slight convex shape with 62mm diameter at the front objective, 65mm mid-body and tapering down to 50mm at the ocular.

Up front the 42mm objective lens assembly is capped with a rubber cover held captive to the body of the unit. The objective lens, as with all lens elements in the Calonox, are top-grade glass sourced from specialist European manufacturers and precisely ground and polished to the requirements we've come to expect from

Leica. They looked crystal clear from the outside and coupled with the internal electronic circuitry puts them on another level. The middle of the body has three well-proportioned circular buttons which operate the unit (on/off) as well as carrying out a myriad of functions. Having said that, the operating system on the Calonox Sight is easy to use with these three buttons, especially when comparing it to other thermal imaging devices. On the underside of the unit directly opposite the operation buttons is a metallic plate which serves as a means to attach the Sight to a tripod.

At the ocular end Leica have put some thought into how the Sight will serve its function. A hard rubber eyepiece is installed which is primarily for hand-held use, while as a clip-on in front of a riflescope, the eyepiece is unscrewed and an adapter (corresponding to the ocular diameter of the riflescope to be used) is screwed to the end of the unit and secured in place by a locking ring. The riflescope used with the Calonox was Leica's new Amplus 6 in 2.5-15x56i, which warranted an adapter suited to the scope's 56mm objective. Leica Sports Optics Australia supplied a Rusan-made adapter model ARM52-65 (118g).

Calonox Sight fitted to a Leica Amplus riflescope using the supplied Rusan adapter for riflescopes with a 56mm objective lens.



Internally

As mentioned, the Sight is designed principally for use with a riflescope and equipped with a 1x magnification and, as arguably the world's most respected authority on camera manufacture, Leica has used this expertise in development of the Calonox Thermal Imaging optics. The terrific recognition range of the Sight is based on a high-end vanadium oxide (VOx) sensor with 384 x 288 pixels, 17um pixel size with excellent temperature resolution with four colour modes available - red-hot, white-hot, black-hot and rainbow.

Top-quality glass elements paired with the LIO processing software provide images which must be seen to be believed and coupled with a state-of-the-art OLED display boasting 1024x768 pixels, this gives superb observation and reliable identification when stalking or shooting from stationary positions. The operating menu is easily accessed through the three rubber buttons atop the unit and scrolling through is easy. Additionally, Bluetooth capability allows the Sight to be paired to your smartphone which facilitates menu changes without the need to press any buttons on the unit.

A permanently installed internal battery gives up to 11 hours of use on a single charge and can be recharged from either a 240-volt supply or portable power bank. Performance-wise the Sight with a defined target size of 1.7m x 0.5m can detect objects out to 2000m and recognise them precisely up to 350m, images downloadable to a Phase Alternate Line (PAL) video format.

Adapter attachment

Attaching the Calonox Sight to the riflescope is simplicity in itself. Leica recommend the Rusan array of adapters which are available to cover all scope objective diameters from 24mm right up to 72 mm and installation involves removing the rubber eyepiece and screwing the Rusan adapter on. Once this is done the adapter/thermal can be mounted to the scope's objective bell housing and, using the lever on the adapter, locked into position firmly. All that remains is for the operation mode to be changed from hand-held to rifle (scope).

The Rusan adapter simply screws on to the ocular body once the rubber eyepiece is removed.



The adapter positioned ready to be installed on the riflescope.

In the field

The Sight was put through its paces using an exceptional riflescope in the form of the Leica Amplus 6 2.5-15x56i - a high-end thermal clip-on demands a matching scope and the two complemented each other superbly. As a riflescope clip-on unit the images were top-notch, precisely what Leica set out to achieve and even when used as a hand-held unit, the image quality isn't matched by any other thermal optic I've encountered. I've reviewed many infrared and thermal optics and Leica's Calonox Sight beats them all.

Several shooting sessions at night were literally eye-opening. Any animal with a thermal footprint was easily observed and positive identification using the LIO image processing software was outstanding (Australian Leica Sport Optics agency claims the Calonox View is even better image-wise).

Overview

The Calonox Sight is pure quality as you'd expect from the one of the world's leading sport optics manufacturers and while not cheap at \$6500, for shooters who demand the best it has to be considered. Rusan adapters retail for around \$350. Find out more from your Leica Sports Optics retailer or visit www.au.leica-camera.com ●



A tripod is easily fitted to the base of the unit. The Calonox's pedigree is clearly evident.



The rubber eyepiece allows the Calonox Sight to be used as a hand-held unit, even with its 1x magnification.

Specifications:

Device: Calonox Thermal Imaging
Contents: Calonox Sight, Cordura case, charging cable, carry strap, quick-start guide, lens cleaning cloth, rubber eyecup, certificate
Sensor type: Vanadium Oxide (VOx)
Sensor size: 384x288 pixels
Pixel size: 17um
Screen type: OLED
Image repetition frequency: 50Hz
Lens focal length: 42mm
Optical basic magnification: 1x
Field of view: 15.5m x 11.7m /100m
Detection range/resolution: 2000m/2 pixels
Recognition range/resolution: 700m/6 pixels
Identification range/resolution: 350m/12 pixels
Video output: PAL
Cable socket: USB-C
Wireless connection: Bluetooth
Battery life: about 8-11 hours
Accessory thread: M52x0.75
Tripod thread: A 1/4 DIN 4503, M5 standard thread
Dimensions: 165x65 mm
Weight: 685g
RRP: \$6500 (Rusan adapter \$350 as supplied)



Never fired, only dropped once

John Maxwell

MAS 36 with bayonet fitted. For storage the bayonet is reversed and returned to a tube under the barrel.

Anyone who shoots old French military rifles will be familiar with that headline which implies that, at first sight of the enemy, the soldier promptly threw down his rifle and surrendered (or ran off) without firing a shot. In the case of French small arms that's neither accurate nor fair - French rifles were fired a lot during two World Wars and sundry colonial conflicts with a sizeable number of their operators dying in the process.

For many Australians, World War One started with Gallipoli on April 25, 1915 by which point France had been at war for almost nine months, fighting German forces to a standstill with help from the British Expeditionary Force. The bloodletting in these Battles of the Frontiers far exceeded what came later - 27,000 French killed on August 22, 1914 alone.

French soldiers died for many reasons, including a misguided doctrine of attacking in every circumstance but never for the want of heroism. Furthermore the Germans were good fighters - especially in 1940 when they defeated the much-vaunted French Army in 46 days - although German forces lost some 27,000

at the hands of French soldiers who stood and fought, rather than dropping their rifles and quitting.

When France entered WWI its armed forces were equipped with the Lebel Model 1886 rifle, significant as the first military longarm chambered for a smokeless powder cartridge - the 8x50R Lebel - notable for its bottleneck design, a production from use of existing tooling for its predecessor the 11x59 Gras. The 8x50R cartridge and Lebel rifle were virtually obsolete by the early 1900s and the French were even pondering a self-loading rifle. Yet come WWI the French went to war with the Lebel rifle and 8x50R cartridge, though with updated 198-grain projectile, each turned from solid bronze alloy on a lathe, a technique more often associated with modern craft bullet makers using CNC machinery.

The Lebel isn't classed as a great military rifle as with Mauser and Enfield but was rugged and popular with soldiers, not least for its 10-round capacity, albeit in a slow-to-load tubular magazine. Lebels were supplemented by the more compact Berthier, initially with magazine capacity of just three rounds (later increased to five).

As the trench war progressed, thoughts of a self-loading infantry rifle endured and after considering various designs, the French military adopted the RSC M1917. Production began in April 1917 with around 85,000 available, though wasn't a huge success as it was delicate and limited by the Lebel cartridge to a capacity of five.

After the war the French military started with a new cartridge and a light machinegun to replace the Chauchat, a dismal design. Inspired by the German 8x57, France adopted the 7.5x58 MAS, named after the principal government arsenal Manufacture d'Armes de Saint-Étienne. With the new round came a fresh LMG, the Chatellerault Model 1924/29 which remained in front-line service until the 1960s and in reserve service until early this century.

Also in French service were large numbers of war reparation German MG08 machineguns in 8x57 - it was discovered the German round would chamber in a French LMG but blown-up guns resulted. So it was back to the drawing board and what emerged in 1929 was the 7.5x54 MAS (or 7.5 French), a first-rate cartridge which compares favourably with WWII peers such

as the 303, 8x57 and 30.06. In standard loading it fired a 139-grain FMJ projectile around 2700 feet per second and dimensionally the cartridge is similar to the familiar 7.62x51 (7.62 NATO or 308 Winchester), just a bit longer.

What appealed to me was the 7.5 MAS fires .308 diameter projectiles which are abundant and makes handloading straightforward. Cartridge cases in 7.5 MAS aren't that common and the only source of reloadable brass appears to be Prvi Partizan of Serbia, which are available in Australia as are reloading dies by RCBS and Lee. Alternatively, suitable brass can be formed from 30.06 or, better still, 6.5x55 Swedish which is dimensionally closer to the original 7.5 MAS case.

With a newfound interest in French small arms I acquired a MAS-36, the rifle with which some French troops fought the German invasion of 1940. After adopting a new LMG and cartridge, French designers considered their infantry rifle with the ultimate plan to equip frontline troops with a self-loader (the US military was thinking along the same lines with the M1 Garand the result). Yet the French decided they also needed a bolt-action rifle for second line and colonial troops and reservists. As it turned out, development of the new bolt rifle proceeded faster than the self-loader, approved in 1936 and rushed into production with around 205,000 having been made by the time the Germans invaded in May 1940.

Production of the self-loader started in 1944 just as soon as the MAS factory was liberated and after various minor changes this was adopted as the MAS-49, which remained France's principal service rifle until adoption of the FAMAS in 1978. Production of the MAS-36 also resumed in 1944 and continued until 1952 with an output of some 1.1 million. Its modified derivative the FR-F2 rifle remains in French military service.



Some MAS 36 rifles featured a grenade launcher, hardly useful for the sporting shooter but an interesting novelty. Range is adjusted by turning the knurled wheel.



MAS 36 rifles feature a simple robust aperture sight, adjustable only for elevation.

MAS-36 rifles continue to pop up in former French colonies, most recently in the Syrian civil war though reportedly ammo is in short supply. Some certainly found their way to Australia though not in big numbers and those here are, like many other historical military rifles, rising in price. There may be a bit of anti-French prejudice but the MAS-36 actually has a lot going for it.

Military small arms expert Ian Skennerton noted it was certainly much better than most shooters considered, with a strong functional action and serviceable sights. Notably the MAS-36 has no safety catch and French military practice, from experience in WWI and colonial clashes, was for soldiers to close the action on an empty chamber then quickly cycle the bolt at the first sign of an enemy. The MAS-36 comes equipped with a long spike bayonet which resides in a tube beneath the barrel - just press the clip, withdraw, reverse and clip back into place.

With its slab-sided receiver and Enfield-like multi-piece stock the MAS-36 is scarcely elegant but is functional, the rear locking bolt with curious forward angled handle being fast and easy to operate. The magazine is loaded with stripper clips with a nominal capacity of five, though for some reason mine loads six. Sights are a broad front post and rear aperture, adjustable only for elevation and in theory all zeroing was performed in the factory or depot.



The MAS 36 bolt shown here with an SMLE bolt. For cleaning the MAS bolt can be disassembled by hand in seconds.

Never fired, only dropped once



The MAS 36 is compact though MAS made a rubber butt boot for more comfortable launching of rifle grenades. The sling is original French issue.

For second series (post-WWII) rifles, rear sight leaves were produced in 20 different versions with the aperture variously offset left, right, high and low. To zero, the armorer swapped out sight leaves according to fall of shot on a target matrix at 200m. The French military discouraged soldiers from any servicing of rifles beyond basic cleaning with barrel band and front sight protector assembly secured by special screws designed to resist fiddling. But the necessary tools aren't difficult to make and with a bit of filing I readily adapted some cordless screwdriver bits from Bunnings.

MAS-36 rifles were produced in a number of variants, series ones (pre and during WWII) featuring milled parts such as floor-plate and open-topped foresight protector, the more commonly encountered post-WWII versions having stamped components and enclosed foresight protector. The

French military of the era had a fondness for rifle grenades for infantry close support and some later MAS-36 models such as the MAS-36 LG 48 and MAS-36-51 include grenade launchers. Perhaps the most collectable variant is the MAS-36 CR39 which has a shorter barrel and fold-up aluminium stock, these intended for parachute and alpine troops and which now attract a premium price.

So how do they shoot? Some MAS-36 rifles in Australia are in excellent and even unissued condition with typical reported grouping around 2MOA, sometimes much better with the right handloads. There's limited reloading information but what there is indicates 308 Winchester data is a good place to start. I began with 42 grains of 2206 (the old stuff) behind a 155 Nosler Custom Competition projectile producing a disheartening spread of about 1m, not

wholly unexpected as the bore is seriously corroded from a diet of old ammunition. Surplus 7.5 MAS ammo (the only stuff I've seen was made in Syria) is certainly corrosive, requiring prompt cleaning with water, so ignore or defer this at your peril.

Curiously, groups then started to tighten up. The Noslers still shot poorly but some surplus 144-grain FMJ projectiles, again in front of 42 grains of 2206, grouped around 15cm. Then came an eye-popping cluster around 50mm with four of the five in half that, this from a bore which appears as rough as 400-grit sandpaper. That may have been a fluke and further tests will tell though subsequent groups tightened considerably to around 6" (15cm), better but still unacceptable. My next project is to have the rifle rebarrelled which will hopefully return this old soldier to its pre-WWII glory. ●



The MAS 36 bore is a genuine .308 so handloading is straightforward with an abundance of .308 calibre projectiles to choose from.

The 7.5x54 French was a thoroughly modern cartridge, shown here (centre) with a 308 Winchester/7.62 NATO (left) and .303 British.





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Early load development with the PacNor barrel. A modified fore-end means no change to bags in the front rest when shooting different rifles.

A NEW TAKE on load development

Don Gilchrist

My career choice was good for a borderline obsessive compulsive and it was inevitable that in shooting I'd gravitate to the extreme accuracy end of the sport for recreation. Rimfire is part of benchrest but there's not much tinkering involved - and I like to tinker. Centrefire has two sub-disciplines, short-range out to 200m and long-range from 300-1000m. Twenty years ago short-range benchrest shooting piqued my interest which has continued and at our small SSAA club we have three rimfire competitions but only one centrefire a month. Any opportunities for testing must fit around the club program so load development is a slow process.

Six years ago I decided 6BR Norma was the cartridge I wanted to shoot for various reasons - ultra-accurate, light recoil, long barrel life, easy to tune and quality components off the shelf. The only factory target rifles in 6BR for sale in Australia are both Savage Model 12s, the F class and LRPV, the latter being the only one available at the time. In its original form it has a single-shot action and a heavy profile, 26" fluted

stainless one in 8" twist barrel.

Conventional wisdom in 100/200m benchrest shooting is flat-based (FB) bullets are best. 6PPC shooters use 60-70gr FB bullets in shortish barrels with a 12-14" twist. I was using a rifle intended for long range so I started with bullets and powders suited to its basic design. There's a saying among top 6BR shooters in the US along the lines of: 'Take a Lapua case straight out the box, use a CCI primer, load 30gr of Varget (ADI AR2208) and seat a 105gr Berger at the lands. In a good gun that will shoot in the .3s and if it won't it's not the load's fault.'

All that was available at the time were Berger 105gr Hybrids and at 100m I couldn't make them shoot better than mid .5" groups so I tried Berger 80gr FB Varmint bullets and groups shrank to the mid .4". But I wanted more so had a mate take a look with his borescope. He thought the crown was a bit average so shortened the barrel by 20mm and recrowned it which made a difference as aggregates came in at about .4" and I started being competitive.

All I could say about the process so far

was I had a bullet and a basic load - but that's just the start. I also felt the receiver, stock and Basix trigger were worth a better barrel but again fell into the trap of availability. On the 6BR website I'd read good reports of PacNor 6mm Supermatch barrels and tracked one down in SA but it had a one in 7" twist. I should have waited but am not known for patience and went ahead.

Because that's a very F-Class sort of barrel I left it at 28" and restarted the process of load development. The PacNor barrel seemed to like 80gr Bergers until they became unavailable, so I tried Berger 90gr boat-tail (BT) target. This bullet has a tangent ogive and only a short BT so I could still have plenty of bullet body in the case neck and seat the bullet right out to the lands.

To celebrate the new barrel I took 200 new Lapua cases of the same batch and went the classical load development route. Find the lands, transfer that length to my seating die, load with varying powder charges and start shooting. Seating them at the lands (ATL) seemed good and groups came down to the high .3". I bought a swag



Early 100m five-shot groups with 80g FB varmint. Targets 4 and 5 showed promise at 30.0 and 30.5gr of ADI Benchmark 2.

of the new Berger 80gr FB varmint bullets and was looking for a sweet spot at the upper end of the velocity curve when I started having bullet disintegration issues - sometimes nothing reached the paper, sometimes a hole like a half-peeled banana and a few that peppered the paper like a shotgun. Most irritating was (excluding blow-ups) some five-shot groups were really good ones in the low .3".

I was racking my brains and the best I could offer was varmint bullets are meant to have explosive expansion on target. Maybe a thinner jacket facilitates this but the extreme rate of spin was more than the jacket could handle. For competition purposes I was stuck with making 90gr target BTs my standard bullet, either that or go back to the drawing board with another barrel of 26" and slower twist. The classic way to start with a new gun, bullet or barrel involves finding out where the lands are, make that a starting point for a basic powder load before fine-tuning with small adjustments to powder load and seating depth.

The bullet you've chosen will, using conventional wisdom, determine what comes next. Pointy secant ogive bullets with long BTs at extended range are thought to go better seated jammed into the lands up to .025". These bullets are characterised by strange names: VLD (very low drag), ELD (extra-low drag), high BC (ballistic coefficient), Hybrids and so on. Long for their weight, they need fast-twist barrels to stabilise.

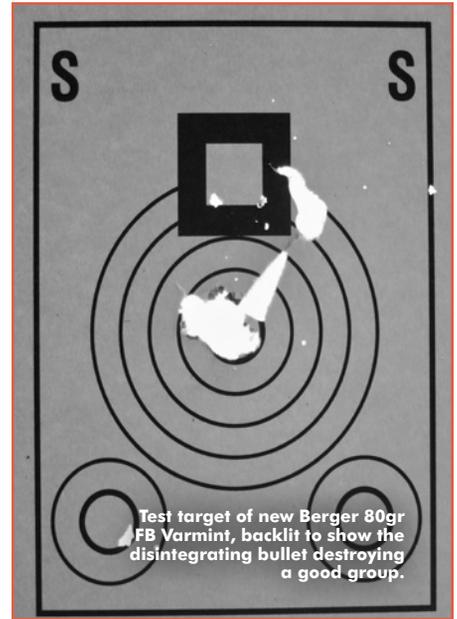


Both these rounds are seated at the lands and note length of boat-tails. Berger 90gr BT Target on the left (body length 10.8mm), right is the 95gr VLD Target (body length just 8.3mm).

Tangent ogive bullets have a reputation for being much less fiddly to tune and FB is better for short range so the starting point is ATL then, backing away, searching for a 'sweet spot'. The most common name in online debate is a Texan, Erik Cortina, whose primary concept is there are three states of the bullet related to the rifling before firing. 1 Jump: Where there's no

contact between bullet and rifling; 2 In the lands: Bullet is engaging part of the rifling; 3 Jammed: In this instance a standard prepared round, with routine neck tension, if extracted without firing will leave the bullet stuck in the barrel, dumping the powder charge all through your receiver, trigger and magazine in the process.

Cortina is an F-Class shooter with



Test target of new Berger 80gr FB Varmint, backlit to show the disintegrating bullet destroying a good group.

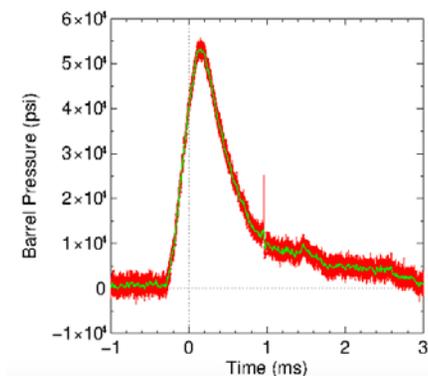
A new take on load development

impressive credentials and identifies what he calls the 'jam' length, deducts a margin of safety (.020") to avoid excessive pressure spikes then seats three rounds at each seating depth another .003" further back and measures the results. Experience tells him harmonic nodes of accuracy are about .006" of seating depth wide. In testing he'll shoot a series of unsatisfactory groups interspersed with at least two consecutive and substantially better groups, and this .006" seating depth band sets the boundaries of an accuracy node. He'll then choose the longest of those seating depths producing good groups and subtract .001" as his seating depth.

He uses lots of chronograph data to find the tightest SD and ES (standard deviation and extreme spread) which means there'll be minimal variation in the speed or timing of the bullet as it exits the muzzle. Cortina makes a special case for magazine-fed rifles as his 'jam' value becomes the longest round which will fit the magazine, subtract .020" (about 0.5mm) calling that the 'jam' length and proceed as before. He seems to assume there are lots of potential harmonic nodes in any barrel and it's just a matter of finding the most convenient. I neither want, nor am competent, to discuss the mathematics of barrel harmonic vibration but there are some basic facts about it which must be accepted.

Like a tuning fork struck by a hammer, a barrel will ring at a characteristic frequency but in the barrel's case the hammer is the violent combustion of powder. A tuning fork won't ring at a different frequency if you hit it harder as, like a barrel, its natural harmonic frequency is set by its physical properties: mass, density, tensile strength, shape and dimensions. It is what it is.

Viewing a plucked guitar string will show a series of locations on the string which don't seem to be moving much (true nodes) and the bits between the nodes where the string oscillates rapidly from side-to-side (anti-nodes). The barrel muzzle is special. Because one end of the barrel is anchored by the receiver and stock, the muzzle will always be near an anti-node where it's free to flick about.



Barrel profiles vibrate differently in frequency and amplitude.

Gravity determines vibration is biased toward the vertical plane which is why long-range accuracy shooters are always chasing 'tight vertical'. I think the best place to start is consider the rate of change of where the muzzle is at various times in its pattern of vibration as the barrel whips about at high frequency. As the muzzle approaches the upper extremity of the vibration envelope, it'll start to slow its rate of change until it comes to the point of maximum amplitude where, for a vanishing fraction of a second, it'll stop before it starts to swing down, increasing the rate of change which will reach a maximum as the muzzle passes through the axis of symmetry when the barrel is at rest.

As it continues down, its rate of change will slow as it heads to the lower point at the maximum amplitude of the lower half of the vibration cycle where rate of change will again come to a short stop before starting back up to the resting axis of symmetry and maximum rate of change, diminishing near the top of the anti-node and the whole cycle starts again. Let's consider where the last bit of the barrel axis is pointing when we'd logically prefer to have the bullet exit the muzzle. Here the business of uniformity of ignition and combustion of the powder charge (SD and ES) really matters.

Since the crown of the muzzle can't be at a true node of barrel vibration and it's not possible for any load to have SD and

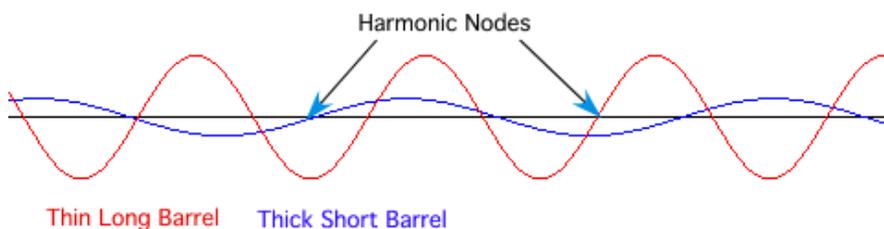
ES both of zero, the muzzle will do a better job of causing bullets to arrive on target at the same place if bullets leave the muzzle when rate of change of where the barrel's pointing is at its slowest. This best accommodates the inevitable variation in SD and ES. The time of the slowest change of the axis direction is at the extremities of amplitude of vibration.

Paradoxically, what the shooter calls his node is really at the muzzle anti-node. When I checked Cortina's 'jam' point on my 6BR I was surprised to find it was only .027" ahead of the same bullet ATL. By the time I deducted the .020" margin of safety, after only three deductions of .003" I was back near my micrometre setting for ATL. I'd envisioned many more .003" increments to be tested, searching for my node which had me wondering just how many nodes there are likely to be for any increment of seating depth, or for any measurable increment of powder charge when you consider almost all powder throwers are only accurate to +/- 0.1gr.

I don't suggest for a moment there's a simple sine-wave pattern to barrel vibration. There are multiple nodes at different frequencies as well as inertial rotation moments due to the bullet being spun by the rifling and expansion waves which begin in the pressure zone (recoil) behind the bullet which then move longitudinally forward, are reflected back and forth rapidly, affecting muzzle dimensions.

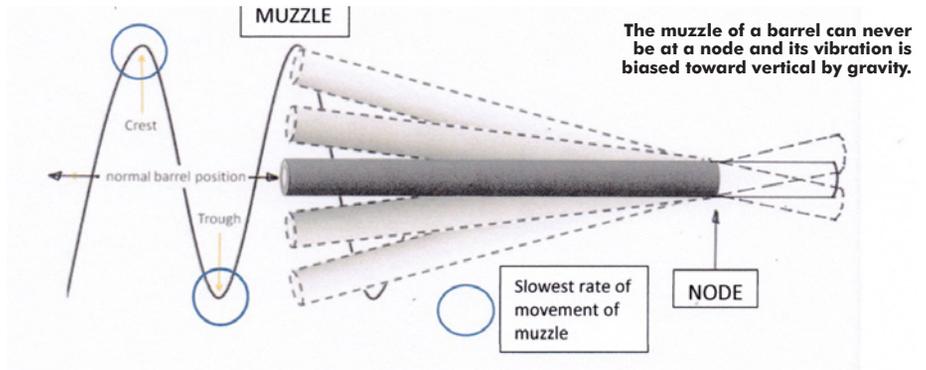
Barrel tuners are a way of changing the vibration pattern by varying weight and distribution, rather than using bullet velocity to time the exit of the bullet from the muzzle. But that's a big topic in its own right. Because frequency of barrel vibration is so high and complex there are likely to be a lot of nodes to choose from. Cortina, not a mathematical physicist, cleverly bypasses this complexity by: 1 Holding case, powder, primer, load, neck tension and bullet constant then not departing from it; 2 Starting from the longest round he's confident won't get stuck in the chamber; 3 Working back from that 'jam' point without trying all powders, primers and bullet combinations which just consume time and barrel life.

My first shoot using Cortina's ideas certainly provided some data. Conditions were excellent and of interest was the progressive change in fall of shot (FOS) using exactly the same load and point of aim (POA) - Cortina's ideas appear to measure



Typical pressure curve for a powerful centrefire cartridge. 3000fps muzzle velocity has a total 28" barrel time of 1.55 milliseconds (0.00155 sec).

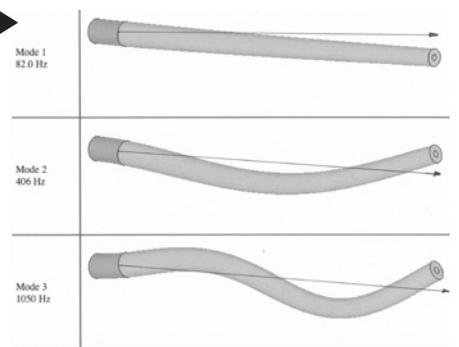
something about where the muzzle is pointing when the bullet leaves the barrel. I've delved into the physics of barrel vibration simply (but not simplistically) just enough to grasp some fundamentals. When I read technical articles in the scientific press it's obvious vibration of a barrel in the act of firing a high velocity centrefire cartridge is fantastically complex. But we only have 2500 shots to get it right and compete before the barrel's shot out and needs replaced. When asked by fans at a shoot "where are your bullets on the lands?" Cortina is dismissive. "Don't know, don't care!" He seats his bullets where the barrel shoots the smallest groups. The lands, he contends, are ephemeral as after 200 shots they're no longer where they were when the barrel was new. His ideas are based on the notion the best load delivers the bullet to the muzzle when barrel vibration is smoothly able to shoot small groups and erosion of a few micrograms of metal of the rifling won't change that. He claims the biggest folly is to 'chase the lands'. Every few hundred rounds he



Some of the many modes of vibration with different frequencies, simultaneously creating patterns of nulls and augmentations (arrows show barrel axis at rest).

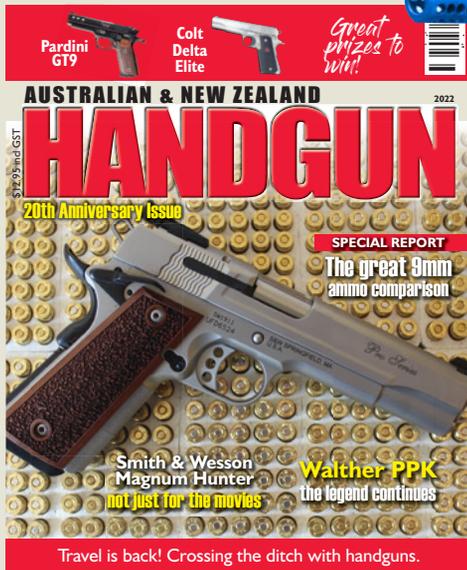
confirms his node with a couple of three-shot groups but may never change that seating depth for the life of the barrel.

At the end of the day all that matters is the centre-to-centre size of the group and all the thought bubbles and rationalisation before the event pale to nothing judged against the harsh reality of holes in a piece of paper. ●



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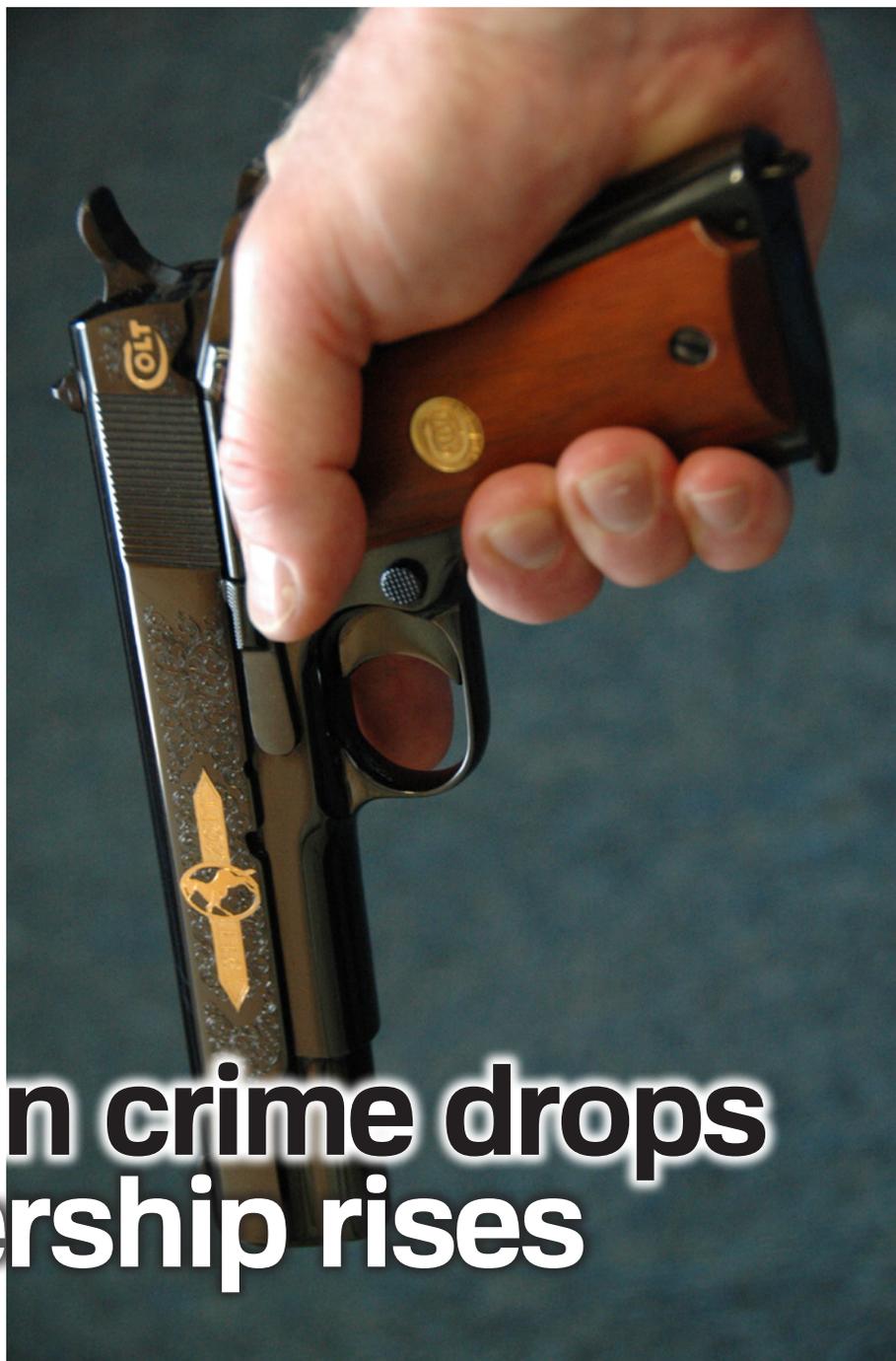
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NSW gun crime drops as ownership rises

John Maxwell

Gun numbers in New South Wales have risen to around one million while rates of injury and death caused by firearms has declined, according to a group of anti-gun academics in a new study of gun violence in Australia. Yes, that's really a group of public health specialists - among them Philip Alpers who runs the global website gunpolicy.org out of Sydney University - acknowledging gun crime is actually falling

even with more guns in the community.

Their report, published by the Medical Journal of Australia, says the overall firearm injury rate in NSW declined from 3.4 instances per 100,000 population in 2002 to 1.8 per 100,000 in 2016, with the greatest falls for injuries caused by firearm assaults and accidents. The rate of intentional self-harm by gun (suicide) remained steady at around 0.8 per 100,000 across the study period and for those not statistically

inclined, referring to instances of something per 100,000 population (it could be cancer, car accidents or employment in the IT sector) is a convention which allows better comparisons between different states and nations.

If anything, the study puts paid to scaremongering by Gun Control Australia which, in its widely publicised 2019 Report Card on NSW, breathlessly reported an "alarming proliferation" of guns, with

registered firearms totalling 1,007,786 - an increase of almost 90,000 in little more than two years. GCA president Sam Lee said at the time that was a direct result of politicians doing the bidding of the gun lobby which had made it all too easy to acquire a gun in NSW. "As gun numbers increase, community safety is being compromised," Ms Lee said.

Alas, the numbers disclosed in this latest study indicate otherwise. If it had been different the five study authors from the Sydney University School of Public Health and the Menzies Centre for Health Policy would surely have proclaimed so vociferously. Here's what they said: "Rates of injury and death caused by assaults with firearms declined during 2002-2016. Despite reports the number of guns in NSW had risen to almost one million by early 2019, the gun homicide rate in Australia is low (0.15 per 100,000 population in 2019) compared with that of the United States (4.4 per 100,000 in 2018)."

Although the US record of gun violence is bad and also well-publicised, it's not the worst in the world by a sizeable margin. Central and South American nations have gun violence rates many times that of the US, for example Brazil with 22.91 gun deaths per 100,000 population in 2017 (gunpolicy.org).

The Sydney University study is titled *Gun Violence in Australia 2002-2016: A Cohort Study*, though it only covers NSW, Australia's most populous state. This was still a quite useful exercise in collating detailed data on firearm-related deaths and injuries from a variety of sources including hospital admissions and the register of births, deaths and marriages.

The NSW Police Firearms Registry provided certain anonymous data including numbers of firearms licence holders by postcode. Overall 2390 people experienced firearm-related injuries in the study period: 849 (36 per cent) by assault, 797 (33 per cent) by intentional self-harm, 506 (21 per cent) by accident and 238 (10 per cent) undetermined. Less than half (44.8 per cent) of all firearms related injuries proved fatal.

Of the 849 injured in assaults, a quarter (211) died; of the 506 injured accidentally, 79 (33 per cent) died. Most significantly this was fatal for 705 (88.5 per cent) of the 797 injured through deliberate self-harm. Including victims of accidents (74) and where the intent isn't known (79) that makes a total of 1071 firearm-related deaths over the survey period.

The study authors make an effort to

assess firearm types used in different kinds of incident. For deliberate assault, 211 (24.9 per cent) were injured by longarms (rifles and shotguns) and 222 (26.1 per cent) by handguns but for almost half such cases the type of firearm was unspecified though authorities have a better idea of firearms used in suicide incidents - longarms 68 per cent, handguns 12 per cent and unspecified 20 per cent.

in injuries from assaults - from 1.5 to 0.6 per 100,000 - in other words firearm-related assaults better than halved over the survey period while the rate of firearm-related self-harm remained steady.

The authors noted a connection between self-harm and previous hospital admissions (49.4 per cent) including for mental health issues (11.9 per cent), saying there's a "strong" correlation between intentional

If anything, the study puts paid to scaremongering by Gun Control Australia ...

Firearms injury is overwhelmingly an issue for males, who comprised 92.2 per cent of victims and this is even more notable in incidents of self-harm, with males accounting for 95.2 per cent. Young people aged 19-29 (again mostly male) account for the largest group (358 or 42.2 per cent) injured in firearms assault and that overwhelmingly occurs in major cities (87 per cent) meaning in simple terms gun crime is a Sydney problem. Older people, again mostly males over 60, account for the highest proportion of suicides involving firearms at 331 or 41.5 per cent though that's more evenly spread over cities, inner regional and rural areas.

The study goes into some detail on the gunshot injuries for which victims were admitted to hospital (some of course never made it and went straight to the mortuary). Of the 683 assault victims admitted to hospital, the vast majority (93.6 per cent) were discharged alive with injury sites being head and neck, trunks and limbs. Only 160 victims of intentional self-harm made it to hospital with 42 per cent subsequently dying while undergoing treatment. In suicide attempts, 70.6 per cent arrived with gunshot wounds to the head and neck.

The study concludes the overall firearm-related injury rate declined from 3.4 per 100,000 population in 2002 to 1.8 per 100,000 in 2016. The decline was greatest

self-harm by firearm and licensed gun ownership. That appears to be based on overseas experience and an earlier Queensland study which found the rate of firearm suicide was 11 times higher for those with current firearms licences than for those who had never held a licence.

So what's to be done? The study makes no recommendation other than suggesting more research would be useful, for example to identify suicide risk factors to guide intervention. That's a worthy aspiration as any measure to reduce suicide is desirable. Furthermore, firearms were once the most common means of suicide but that began to change in the late 1980s and guns now account for just a small proportion of those who take their own lives. Australian Institute of Health and Welfare statistics for 2019 show 180 firearms suicides and 1964 by hanging which is now the most common means for both men and women to end their own lives.

- You can help. If your shooting mate seems a bit down, talk to them, ask him or her: Are you OK? If you feel you may be suffering from depression, call Lifeline 13 11 14, beyondblue 1300 22 4636 or Suicide Call Back Service 1300 659 467.

My Most Challenging Hunt



The old broken-horned bull
peers through the growth.



Doing it tough IN TOP END BULLFIGHT

Peter Schade

As I extract the aluminium travel case from the luggage compartment an elderly gent at the bus stop asks: "Can you play it mate?"

Through a grin I reply: "Yeah, I get a bit of sound out of it." I guess it does look a bit like a guitar case. The big red Greyhound bus had been my transport from Darwin to the step-off point in Katherine for a trip chasing Australia's largest game - water buffaloes and scrub bulls to be precise.

The same case also catches the eye of Mark, my guide for this adventure, and we're soon through with introductions and in the car heading to the property I'll be hunting for a look around. I have five days to track down one of each beast while keeping an eye out for anything else that might be a bonus, the area holding populations of the omnipresent pigs as well as donkeys.

The property manager has authorised us to remove any calf-killing wild dogs we happen to see, along with a young bull buffalo that's been regularly crossing over to a neighbouring mango farm and

generally being a nuisance. This sounds like a windfall until it becomes apparent I must forfeit a fee on him (we bumped into that very animal a few days later and left him to grow).

Bouncing around in our little 'safari truck' we quickly and surprisingly easily locate buffaloes in good numbers yet my obvious excitement is just as quickly restrained when ear tags are spotted in some, this property running a few for the market. Make no mistake, this hunt is being conducted on a parcel of land used for mixed industry and in no way truly 'free range'. Regardless, the property is vast and encompasses plenty of variety in its landscape, from creeks filtered clear through wide sandy banks to black soil floodplains, gibber-strewn savannah woodlands and rocky escarpments.

Well into day three and plenty of buffaloes have been located, inspected, photographed and left to their devices. One big guy causes a sudden halt to proceedings - along with a skipped heartbeat - until we realise a significant portion of his right

horn is missing which is disappointing given the left is particularly good. We spy a few donkeys wandering over a ridge in the distance as well as a mob of feral cattle and make a bid for them but they're soon on to us, while a good-sized bull displaying Brahman heritage expertly rounds up his horde and swiftly shepherds them to safety. We've taken a couple of pigs apparently doing it tough yet otherwise unremarkable.

By this stage some doubt is manifesting itself concerning bulls passed up and the remaining time available until, through the tops of the dry grass, there's ebony against the gold - a pair of sharp conical points materialising into horns followed by the dark head and bulk of a buffalo, his horns displaying a lunar form as he turns to face us. Through binoculars he looks good enough. Leaving Mark and the vehicle I begin stalking and drop early into a creek line which provides some cover to cut the distance to 200m. But then there's only open ground between us ... and he's watching.

Surely I need to be closer - that's what the experts would say, right? Just how

good is the .375 H&H? Will these nerves steady? So many questions while closing another 25m but the bull has seen enough and with a few bounds he's over a small rise and out of sight. I curse the approach under my breath and hear Mark back at the car do likewise.

Setting off after the bull I crest the rise to find him trotting in that trademark wobbly way in a wide sweep to my right, heading towards a small oasis where the creek transitions to a pool. He's clearly worked up now and if he spots me again there'll be no stopping him and I can't cut him off so, with some lead applied, the rifle speaks. He tips and is legs-up as the 'thwack' of the bullet's impact registers back to me. The result is impressive, his heavy fall surprising considering the 150m range - seems the old H&H still has what it takes.

I study the bull and absorb the moment as Mark heads back for the car. The bull is in good nick - stocky, broad and taut with that mass of neck. A good representative head - no record book entries here but the scimitar shape and sharp points impress and he'll certainly do for a first. It's dusk as we pull up at the skin shed so we'll boil up the skull tomorrow.

Day four starts hot but with a sense of renewed vigour after yesterday and we decide to focus on known water sources in the hope of finding a 'scrubber'. Little activity nor sign is located throughout the morning, so after our usual midday break



The mango farm young bull sizes things up.



A pair of buffaloes monitor proceedings.

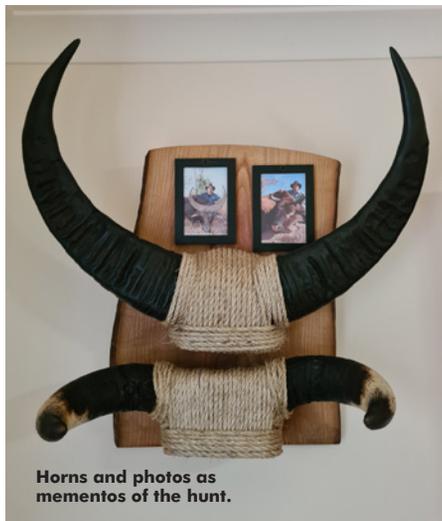
Doing it tough in Top End bullfight

Mark suggests heading into a far corner of the block to another creek. It'll be a fair drive but we're hopeful its seclusion provides some assumed security among the animals.

Winding around a bend, there on the edge of the track stands the scrub bull we've been searching for, his head held high and attentive. Looking every bit Toro Bravo, his Spanish fighting cousin, he displays that prominent hump complex of shoulder and neck muscling and distinctive low-slung hindquarters. His russet hide transitions darker through the shoulders, the bald scaly eye patches characteristic of these 'cleanskins' in stark disparity to the black muzzle, completing the menacing picture as he stares down this sudden disturbance.

Reaching for the door handle, Mark makes the call to stay put, adding: "I reckon I know where he's headed." I'm not so sure and would prefer to go after him on foot but reluctantly do as instructed and we carry on along a sweeping section of track. But it's not long before it's my turn to instruct: "Stop! There he is." I've spotted the bull's form among a tiny stand of saplings at the base of a large eucalypt, a lonely and shadowed patch of dark emerald contrasting the sparse low shrub recently burnt. I'm out the door of the little ute as it slides to a dusty halt.

The dappled light of his chosen refuge makes distinguishing the bull's form particularly difficult, my only option to inch closer still, as close as needed to verify his shoulder. The gravity of walking into a situation like this is not lost on me or Mark, who turns and heads back to the vehicle for another rifle. The bull and I are getting intimate now, maybe 50m separates us and he hasn't moved a muscle during my approach but I know I must never underestimate the cunning of these wild beasts.



A slight change of approach angle and with some light now gathering on him I corroborate his position, quickly raising my rifle to fire at his right shoulder. As he turns, I shoulder my rifle and send a heavy projectile on its way, this was right on the money, smashing the humerus and dropping him on his side as the support normally provided by his left foreleg doesn't come. He goes down heavy on a horn, beaten but not yet knowing it.

Mark is at my side now, offering his hand in congratulations on a second bull. ●



Cutting-edge recycling



from bunny trap to bunny skinner

The spring from a trap like this has enough material for two small bunny knives.

Senior correspondent John Dunn

Over the years all sorts of people have made all sorts of knives from whatever materials they could lay their hands on. Among hunters I know I've seen knives made from power hacksaw blades, circular saws, old files, chainsaw bars and car springs and was never sure why that should be. For those looking in the right places there's plenty of good quality knife steel readily available but for some reason there's always been a tendency to use materials which had a previous existence. In an age where recycling has become something of a buzzword, I think that's an admirable trait.

Quite recently my youngest grandson innocently planted a seed in the back of

my tiny mind about making a knife from a rabbit trap spring - not much metal to work with I thought but enough for a small knife for a small hand, perhaps a Christmas present. I asked a few questions of people who might be helpful and in a short time had enough old traps to strike out in the scrap metal business or perhaps make a complete set of cutlery.

The trap I chose to make Mikah's knife was an old Bunyip, its plate buckled and tongue long gone, similar to a rusty relic he brought home from the creek, the main difference being its spring was intact. The knife it spawned is a fine little unit and I'm sure the young fella will be more than pleased when he finally lays his hands on it.

It's a half-tang knife with 75cm blade, fitted with a red gum/red deer antler composite handle. The finger guard, pommel and pin that holds it all together are brass.

Having completed one knife I decided to have another go and since then have made half-dozen or so, some of which have already gone to new homes. While rabbit traps are rabbit traps to most people they're not all the same, something which becomes obvious when you start cutting them up for their springs. Some like the Lanes Ace have a V-shaped spring that's good for two knives while heavier ones like the Bunyip and Platypus have their springs rivetted to the steel frame of the trap and are only good for one. Not surprisingly the thickness of

From bunny trap to bunny skinner

the springs also varies. Whatever the differences neither spring type yields an excess of steel to work with and, accordingly, the first knives I made were all of half-tang design. Since then I've discovered a full-tang knife with a short blade and handle is possible if that's what you want - but short is the operative word. The process begins with the spring sections going into the forge to be heated and hammered flat on the anvil. Once they've cooled out they go back into the forge to normalise the steel before being set aside to air-cool, a process which makes the metal easy to work with.

The knife is marked out on the steel and ground to shape on the belt grinder (having a size-for-size drawing or cardboard template to work with is a good idea). The next step is to grind the bevels on the blade, the hardest part of knifemaking for me because if it's not right the finished product won't be either. If you watch the YouTube gurus you'd be forgiven for thinking it's easy but take it from me, it's not.

It takes practice to get this right and I've ground quite a few metres of mild steel strap into dust trying to acquire a consistent level of skill. I still have problems so recently made myself a grinding jig and while there are knifemakers who don't regard such devices as kosher, for a mug like me a jig makes life so much easier.

With the bevels roughed out and ricasso established, I surface grind the blank on both sides to remove all rust and as many corrosion pits as possible. The pits which are too deep I leave behind as witness marks, evidence of the transition from past to present, from rabbit trap to rabbit knife, then square up the shoulders of the tang with a smooth file and make a finger guard.



Creating a finger guard calls for a slot for the tang to pass through. It's easy to cut on a milling machine but can also be made by drilling a series of in-line holes and removing the webs between them with a small file. Knifemaking files and other tools are available from suppliers such as Artisan Supplies (artisansales@gameco.com.au) but a set of needle files from Bunnings is cheaper and will do the job just as well, albeit with a little more time required.

The finger guard slot must be a close fit to the tang and I've seen several experienced makers file the slot as close as possible then tap-fit the guard into place. Whichever way you go the guard must sit square against the shoulders of the tang with a light, tight fit preferred.

Knife handles can be made from all sorts of materials, in one piece or as composites of several different types but regardless of what you prefer, a slot in the handle to accommodate the tang will be required and there are a number of ways to go about it. Some makers drill a large central hole then file a slot to accept the tang, others drill



in-line holes as for the finger guard then mill out the webs between using the flutes of the drill. Alternatively, the webs can be burnt out by heating the tang and pushing it down into the handle.

When the handle is fitted snug against the finger guard I like to clamp everything up tight between the point of the blade and pommel of the handle then drill a hole for the handle pin. With the pin in place I rough out the contours of the handle and finger guard almost to finished size then go back to the bevels and finish grinding them with a worn belt, taking care not to overheat and burn the steel. When only about 1mm is left along the edge of the blade, I hand-sand the bevels to at least 600 grit, making sure all scratches are removed from one grit before going down to something finer. Final sanding must be done with a sanding block or bar to ensure surfaces are kept as flat as possible.

The polished blade goes into the forge and is heated to bright orange before oil quenching. For high carbon steels an almost universal rule of thumb for checking the heat is right is to test the steel with a magnet - if the magnet won't stick it only needs a few more seconds before quenching. With trap steel my results using this method routinely provide a hardness of around Rockwell 60 as tested with files purpose-made for such work. The method isn't as precise as working with an electric kiln but does provide an acceptable result.

After hardening the blade is polished again, tempered for at least an hour in an electric oven set at 250 degrees C then allowed to cool out (some makers advocate double tempering). The tempered blade is given its final polish and wrapped in masking tape to avoid any scratches. The various parts are epoxy glued together and clamped with any excess glue around the ricasso and finger guard carefully wiped away with a piece of Acetone-damp paper towel, then everything set aside for 24 hours to allow the glue to fully harden.

Finishing the handle isn't difficult but takes time, especially if done by hand with files and abrasive paper - a belt grinder speeds up the process but it's easy to grind too much away in one place or another, so proceeding slowly is a good idea. When final-finishing handles, a dust mask is essential to avoid breathing the fine dust that sanding produces and a sanding block is crucial to ensure softer handle materials are sanded at the same rate and to the same level as harder components like the brass finger guard.

Particular care needs to be taken around the curve of the finger guard to ensure it blends smoothly into the flow and curves



Component parts for a full-tang bunny knife. The slotted brass plate (bottom left) will become the finger guard, the squared notch behind the ricasso locates the guard where it will be secured with a brass pin and epoxy glue.

of the handle. The finger guard is finished with at least 600 grit wet and dry paper, the face of the guard on either side of the blade can be dressed up with paper backed by a paddle pop stick then both blade and brass work can be buffed on a cloth wheel.

When everything is finished the handle needs to be sealed, especially if it's wood and a 50/50 mix of bees wax and linseed oil is a good wood sealer which also works well on antler. The new knife can now be sharpened and somewhere down the line a sharp knife will need a sheath but that's a story for another time.

Making a knife from a rabbit trap spring gives that part of the trap another lease on



Bunny knives made from trap springs.



A half-tang design (top) allows a longer working blade.

life that's different to its original purpose yet still connected to the cause. The result won't be a big knife, nor does it have to be, as you don't need big knives to dress bunnies for the table. ●



Half a spring has enough material for a small full-tang knife, the wooden scales are river red gum.



Tex-Mex

ammo about to make its mark

Not too many Australian shooters will be familiar with Aguila ammunition but as Senior Correspondent **Rod Pascoe** predicts, all this is about to change.

While the name may not be well known here, Aguila claims to be one of the world's largest producers of rimfire ammunition and has been churning out its wares since 1961. Aguila is represented in Australia by Melbourne-based Raytrade who supplied *Australian Shooter* with a few samples to review.

Aguila is manufactured by Industrias Tecnos in Cuernavaca, Mexico and in 2011 they partnered with industrial giant Texas Armament & Technology (TxAT) as exclusive US and international distributor of their products. In 2016 Aguila launched its first US branding and marketing campaign and, with TxAT, began production at a second manufacturing plant in Texas.

Aguila is Spanish for eagle - hence the brand's distinctive logo - and has made it to Australian shores with all-new packaging

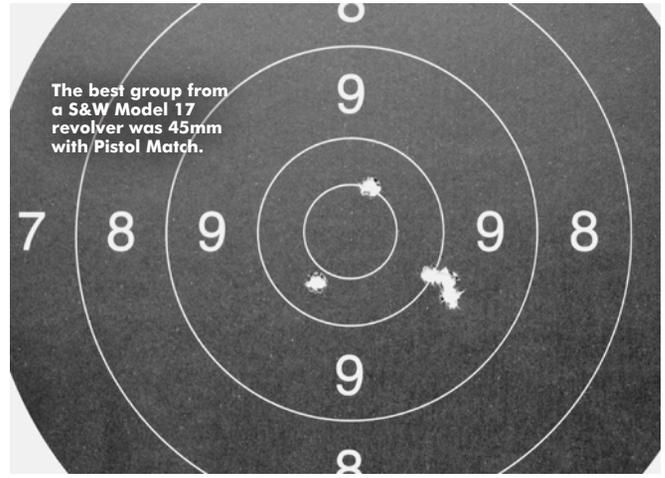
and offering a wide array of 20-odd rimfire cartridges for target shooting and hunting as well as a range of 'special products'. Apart from the rimfire range, Raytrade will be releasing centrefire handgun, rifle and shotshell ammunition later this year as supply ramps up after delays to international shipping caused by the pandemic.

The subjects of this review are three of Aguila's .22 Long Rifle (LR) target specialists - Rifle Match, Pistol Match and Target Competition - and unlike their earlier rimfire offerings these products carry the 'Aguila Prime' badge on the box. Advertising material states "Aguila Prime technology is engineered and tested to Olympic shooting standards" and up until about 2016 the boxes were marked Eley Prime, the change I suspect being ditching the Eley priming formulation for one of its own.

Each example of review ammunition has a brass case topped with a 40gn solid lead round-nose projectile and there are no other distinguishing features that would tell the three types apart. Rifle Match and Target Competition rounds each have an advertised muzzle velocity of 1080fps and Pistol Match 925fps, with all three described as 'standard velocity'.

I planned to use all three ammunition types in five firearms including a pistol, revolver, a lever-action and two bolt-action rifles, the latter fired from a rest at 50m and 25m for the handguns. Sometimes the label doesn't necessarily match the type of firearm for which it's best suited and often ammunition labelled 'pistol' can perform exceptionally well in a rifle and vice-versa.

As it turned out the Pistol Competition ammo worked best in the pistol and revolver followed by Rifle then Target



The best group from a S&W Model 17 revolver was 45mm with Pistol Match.



A group of 51mm using a Marlin 39A lever-action was shot with Rifle Match ammo.

Blustery conditions upset this group from an Anschutz target rifle with Rifle Match ammo.

ammo, group sizes being 34mm, 52mm and 56mm respectively when fired from a Hammerli Model 208. In the Smith & Wesson Model 17 revolver the groups grew a little to 45mm, 70mm and 70mm respectively and in both cases there was a big jump in group size from the Pistol ammo to the others although only a small or no difference between the Rifle and Target rounds.

In a CZ 452 Varmint rifle topped with a scope and fired from a rest at 50m a group of 15mm was the best outcome using the Rifle Match product, 18mm with Pistol Match and 20mm with Target Competition. In a Marlin 39A lever-action with open sights a group of 51mm was achieved with the Rifle Match ammo (including one unfortunate flyer) and 60mm with both the Pistol and Target products. On a blustery day a third rifle was introduced to the mix and

while you'd expect an Anschutz 2013 BR to shoot the best groups of all, sadly conditions on the day didn't allow. Groups with all three Aguila competition types were only marginally better than those fired from the CZ Varminter in calm conditions, with the Rifle Competition ammo giving the best result with a 13mm group (the Anschutz also liked the Pistol Match and its group was only 2mm larger in the same windy conditions). All ammo functioned faultlessly in every firearm and most importantly all rounds fed, fired, extracted and ejected without a hitch in the self-loading pistol and lever-action rifle.

Summary

Pricing is expected to be between \$12 and \$15 for a 50 pack (less in bulk) and as a general rule most .22LR ammunition pricing is proportional to its quality or, more

to the point, its quality control - the better the quality control the better the shot-to-shot consistency and therefore precision. The Aguila samples used in this review fit a price range which would suggest they sit somewhere in the middle of the quality scale and would be ideal and economical for most rifle and pistol club applications.

In these tests the Pistol Match did perform better in the pistol and revolver than did the Rifle Match while all three rifles preferred the Rifle Match fodder. The Target Competition didn't feel outstanding in any of the firearms but shouldn't be dismissed from your load development routine. The Aguila range of .22LR Competition ammunition is something I'll include next time I undertake load development for a new firearm and I'll also try it in my current firearms when my ammo supplies are exhausted. ●

The Winchester Model 94 at work on feral pigs in Queensland Channel Country in 1978.



Still the same more than 50 years on

Chas Harding

We sat side-by-side the young bloke and I, quietly talking about guns and shooting as we waited in the dawn light, the steady wind and rain our only companions on the lake apart from the dog and bobbing decoys. Garbed in the latest wind and rain-proof technology he looked across at my old waxed cotton coat. "Why not shout yourself a new coat - that one's had it," he said.

For sure the old Barbour looked bedraggled, patched and stitched in numerous places, frayed and torn in a few more, discoloured and with an odour all of its own from multiple re-proofings with a variety of oils and greases yet it remains my favourite hunting coat. The reason? It still turned away wind and water and worked as was intended. "I just might one day," I told him, "they're still making them exactly the same way they did more than 50 years ago."

As we sat waiting for the birds we hoped would show, I had time to reflect

on that statement and think of things in shooting which had passed the test of time. I was amazed at how through these rapidly changing times and technology, elements of the game had remained markedly unaltered. Very few items associated with other sporting pursuits could make that claim and only the red Sherrin and baggy green cap sprang to mind. My most immediate thoughts were of cartridges and calibres - .22 Long Rifle, 12-gauge, .30-06 and .375 H&H - unchanged for close to or more than 100 years yet all going strong and unbeatable.

The .22LR and 12-gauge are arguably the most used cartridges around the globe and still in use in the world's premier sporting event, the Olympic Games. The .30-06, patriarch of two World Wars and the hunting fields and target ranges, is revered by all who've associated with it, being the universal 'go-to' centrefire round for any situation and unchanged since 1906. In the



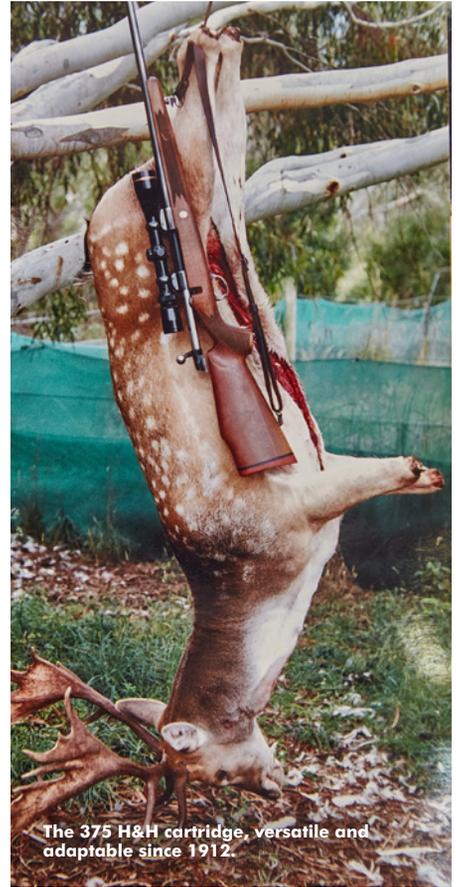
The .375 H&H, .30-06, .22LR and 12-gauge remain on top and unbeatable.



The Browning B25 over-and-under from the 1920s is available unchanged.



Browning and those four hallowed words.



The .375 H&H cartridge, versatile and adaptable since 1912.

big game world the .375 H&H, introduced to the shooting public in 1912, has no peer and holds a special place for me and those of like mind. As a boy in the 1960s I read Robert Ruark and Ernest Hemingway and dreamt of Africa and Alaska.

My H&H-chambered rifle came home to the gun safe in the mid-'80s and while it hasn't seen service overseas, that rifle and cartridge have been tried and tested on pigs in Queensland Channel Country, on camels at the edge of the Simpson Desert and deer throughout Australia (hopefully it may yet see some action on the NT big

stuff). One-shot kills always without fuss have been the norm when I've done my job correctly and the sound of that long, tapered shell clicking into the chamber smacks of hunting history to me. At more than 100 years old it's the all-round versatile big game cartridge.

Thoughts then turned to shotguns and specifically a gun made more than 80 years ago that's still available in the same form. The Browning B25 over-and-under made its debut in the late 1920s, its strength, durability, handling and availability to the general public (albeit with some savings

required) endearing it to thousands of hunters and shooters worldwide.

With the barrel engraved with the hallowed 'Fabrique Nationale Herstal Belgique' Made in Belgium Browning patent - it has graced the podium at all premier shooting events down the years and in the hunting arena, anywhere there are game birds the B25 has stood the test through countless thousands of cartridges. With a certain aura or mystique around its handling qualities, it still accompanies the majority of shooters to their pegs or stands and is made exactly the same at



The Winchester 92 and Browning B25 with almost 100 years longevity for each.

Still the same more than 50 years on

the Browning Custom Shop in Herstal, Belgium. Unbelievable.

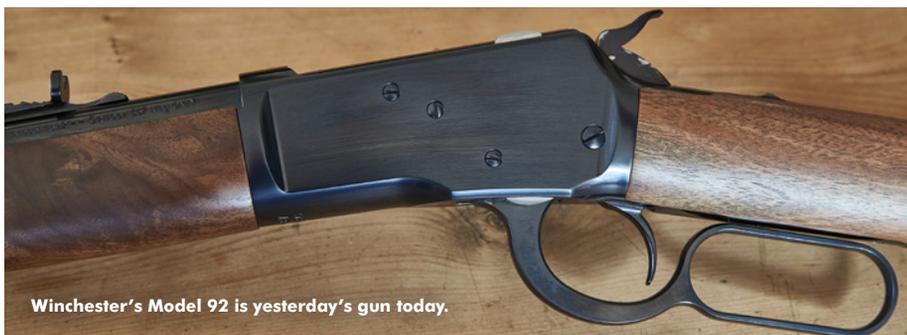
And 'unbelievable' isn't a strong enough word to describe the rifles of today which were also the rifles of yesterday. The name Winchester undoubtedly resonates and their Model 92 and 94 Lever Actions are the stuff of legend. While now made under licence by Miroku for Winchester the design, manufacture and parts remain virtually unchanged (tang safety added).

From the last frontier days of America through wars and hunting fields, snow to desert, shooting matches old and new, the charismatic firearm is unbeatable for many purposes and I couldn't move on without mentioning a rifle which came to being in the 1960s and is still available unchanged apart from its trigger design. The essential bolt-action for the hunter and benchrest guru that is the Remington Model 700 is still made by the Big Green more than 60 years on.

In the handgun arena one name stands above all and it was said in the '60s that name was the fifth most recognised word in the English-speaking world right behind Coca-Cola. You guessed it, Colt, that esteemed manufacturer of pistols and revolvers of Hartford, Connecticut. *Colt - The World's Right Arm* was and is the slogan and one pistol still made at the factory, the Colt 1911 Government Model, has to be the ultimate classic. Through wars, offensive and defensive actions and target matches its reliability, ergonomic perfection and ease of use, accuracy and hitting power in .45 calibre has no equal. Unaffected also since 1958 is a pistol made by that other iconic US manufacturer, Smith & Wesson, whose Model 41 self-loading handgun in .22LR still endures.

So what is it that has sustained all these firearms and cartridges, some for more than 100 years, in a rapidly evolving world where virtually nothing stays the same? I believe it's a combination of perfect engineering which is totally reliable, repeatable and functional, of ergonomics and ease of handling, of artistically blending old school steel and walnut, of solid quality workmanship and aura. Just like my old Barbour oilskin coat they work beautifully while plastics, laminates and alloys are nowhere to be seen.

In an instant my reverie was interrupted by the whistle of wings heralding the arrival of a small mob of black ducks which flashed over the hide, their pale head stripes now visible in the strengthening light as they wheeled to turn back into the wind and decoys. We rose together and I picked out a bird on my side and fired just as he flared from our movement.

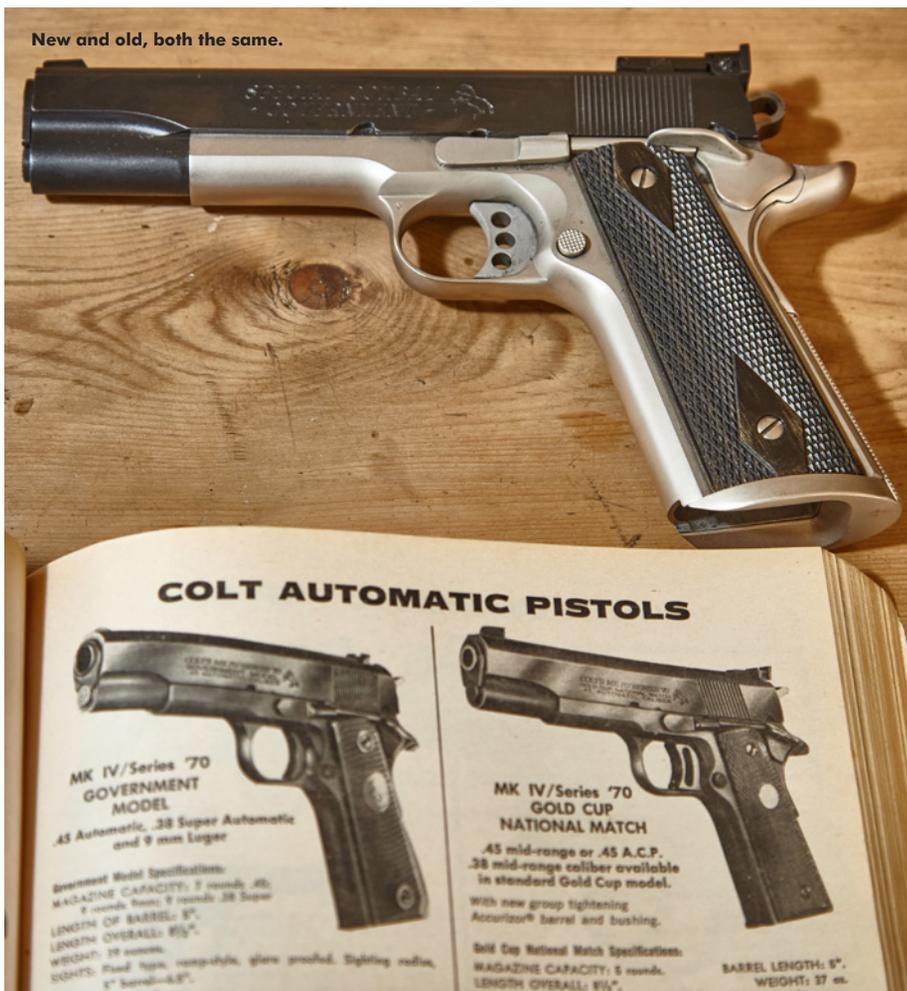


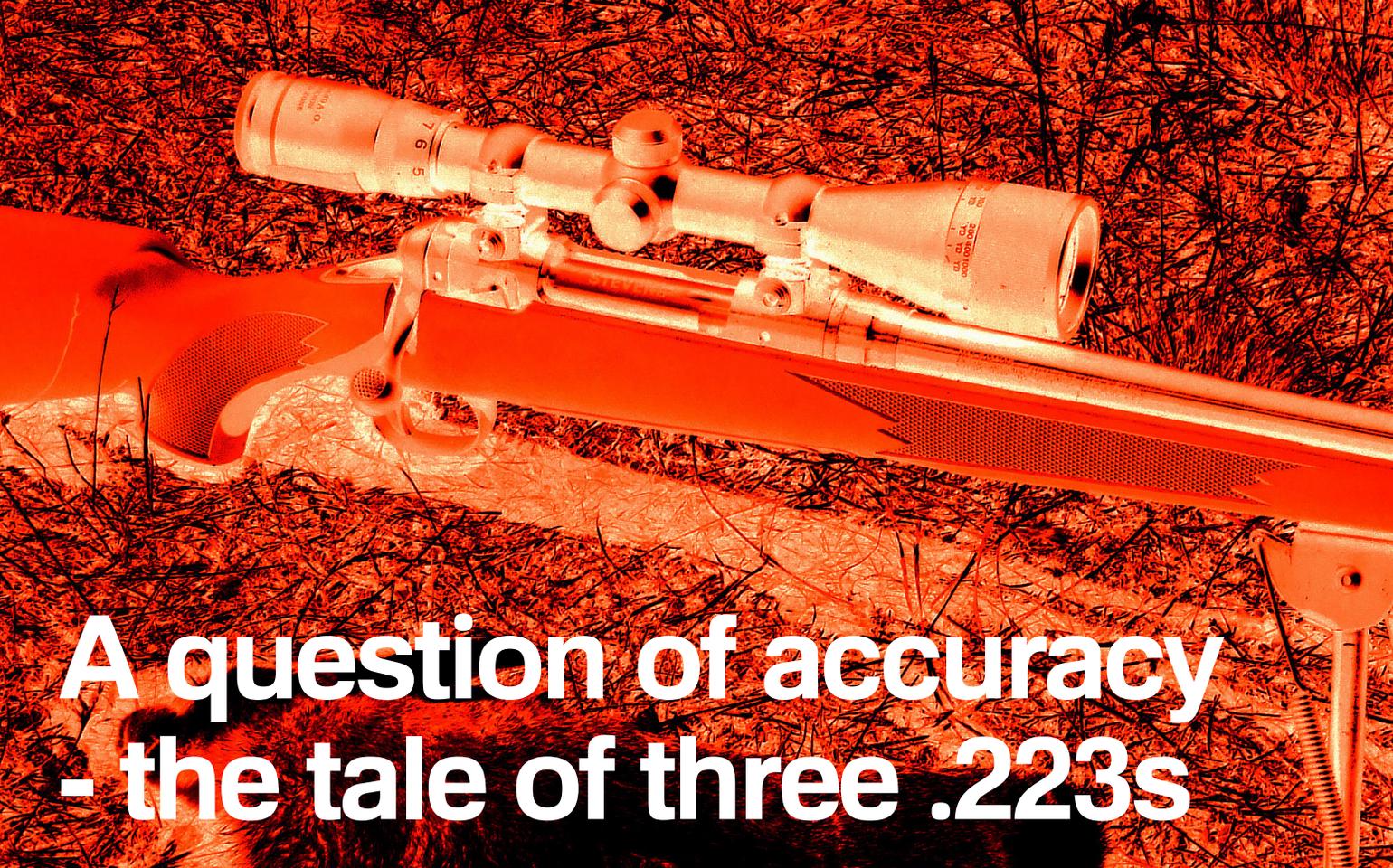
As he folded I was conscious of the tinny, clackety sound of the young bloke working his new lever-action beside me. My second shot was a lucky one, success due more to the open chokes of the over-and-under gun than skill and while the dog went to work for the two birds, I replaced the shells in my gun, the solid clunk of the action closing being a marked contrast to the sound of the lever-action.

We sat side-by-side the young bloke and I, quiet in post-action reflection as our minds replayed the event and I looked across at him, taking in his trendy new

shotgun. "Why don't you shout yourself a different shotgun - that one's too hard for duck hunting," I said. With his thoughts possibly reinforced by the lack of dog action on his side of the hide after three shots, he said: "I think I might. I reckon I'll save up for one like yours. What do you think?"

I looked down at the Browning I've used since 1996 when myself and thousands of others were deemed unsuitable to carry a self-loading shotgun. "I reckon that would be a great idea," I replied, "they're still making them exactly the same way they did more than 50 years ago." ●





A question of accuracy - the tale of three .223s

John Hill

If a shooter intends buying a really accurate rifle they usually end up with something heavy-barrelled and weighing 6kg or more, while the addition of a high-magnification scope increases the weight (and price) further. Yet weight's an advantage when it comes to accuracy and a heavy-barrelled rifle will perform well when fired from a shooting bench with support of a few sandbags - such a rifle should have the potential for groups of ½ MOA at 100m on a regular basis. You only have to visit a SSAA rifle range on a general practice day to realise heavy-barrelled rifles in various calibres are a popular choice.

I've owned a few heavies which over time have found new owners. Heavy rifles and increasing age are a poor combination and my rifles are now much lighter. For most of my life I've been a small-game hunter more than a dedicated target shooter, so why carry a rifle weighing twice as much as something far more practical in the field? A small-game hunter is better off with an accurate, lightweight rifle more suited to hunting on foot, as carrying a backpack and half-a-dozen rabbits is enough without a heavy rifle adding to the burden.

During the past 10 years I've bought three light-barrelled rifles chambered for the popular .223 Remington cartridge - a

Stevens 200, Tikka T3 Lite and Savage Weather Warrior - light-barrelled, synthetic stocked hunting rifles with the Savage weighing about half a kilo more than the others. Even at 4kg (8.75lb) total weight the Savage can still be considered a relatively light rifle, though as far as I'm concerned it's heavy enough. Other light-weights in my gun safe are a Martini at 3kg (6.6lb), Brno .22 Hornet at 3.2kg (7lb) and a few others of similar weight.

In this modern era, mass production manufacturing techniques have been perfected to such an extent even relatively cheap firearms shoot well. Rifles like the Stevens 200 (the cheapest bolt-action centrefire that could be bought at the time) shot just as accurately as those twice the price. With the proper handloads the old Stevens regularly shot sub-MOA and has put in many a 5-shot group that would please the most fastidious of shooters. The Stevens may have been a budget-price rifle but no-one could question its accuracy.

One of the reasons for buying the Stevens is I was after something different, though there were a few negative aspects with this rifle - awkward magazine loading, flexing in the fore-end and a creepy and unbelievably heavy trigger. Yet the rifle shot well after some of these issues were

addressed, especially the trigger.

Much the same can be said about the blued synthetic Tikka T3 Lite and while it cost a few hundred dollars more than the Stevens it shot just as well and is also a sub-MOA rifle. Yet the Tikka had a couple of aspects I didn't like, the plastic magazine for one and the synthetic stock lacked 'grip' around the pistol grip and fore-end. The Tikka was also reluctant to chamber single rounds, otherwise it was an accurate and well-made rifle (don't confuse it with the later-model T3X).

Which brings me to my latest acquisition, the Savage Weather Warrior, a stainless synthetic with Accustock and Accutripper. Most shooters would be familiar with the Accutripper by now but the Accustock may need some clarification. The Savage Accustock contains an aluminium bedding insert moulded into the stock and is designed to bed the action in a positive manner while leaving the barrel fully floating. This aluminium insert extends up into the fore-end making it ridged, whereas some synthetic stocks are inclined to be too flexible up front. I like my rifles well-bedded with fully floating barrels as that formula's as good as any when it comes to consistent accuracy - gone are the days when rifle barrels were carefully bedded

A question of accuracy - the tale of three .223s

into the stock. The stock on the Savage also has moulded chequering around the pistol grip and fore-end which offers surprisingly good grip. Furthermore, the rifle's removable steel magazine appears to be far more robust than one made of plastic. Unfortunately the Savage cost almost as much as the other two combined, the rifle

being stainless and fitted with an Accustock obviously pushing the price up significantly.

While all my .223s have regularly grouped sub-MOA the .223 Remington cartridge also deserves credit. Firing a 55-grain bullet at 3300fps almost guarantees good accuracy at medium ranges out to 200m. Bullets, once they leave the muzzle

of a rifle, are subjected to both wind and gravity and the faster they travel the less time exterior forces have to influence their flight path to the target. While the .223 is by no means a super-fast cartridge it's a good compromise between cost (ammunition and barrel life) and performance.

The .223 has proved to be an accurate and useful cartridge and during the past 30 years or so has become a popular choice and will remain so, one reason being it covers both small and medium-game hunting reasonably well. Any cartridge smaller than the .223 is inclined to be a bit inadequate on medium-size game.

Real accuracy doesn't just happen, it's a combination of things. Careful bedding, a fully floating precision-made barrel, a light creep-free trigger, quality optics, compatible ammunition, a sturdy shooting bench with sandbags, good weather along with the shooter's keen eye and steady hand. As the best of rifles are unlikely to shoot well with budget priced ammunition, most target shooters handload using the best components.

That's my approach to handloading and possibly one of the reasons my light-barrelled rifles shoot so well. Each one of them has put in the odd half-minute group but that doesn't mean they're genuine half-minute rifles. The difference between a good lightweight hunting rifle and purpose-built target one is the target rifle's capable of shooting smaller groups more often, though it's unfair to compare as they're designed for different purposes.

There's one particular load which has shot well in all three of my .223s yet in theory it shouldn't. It's loaded with the



The Stevens was a budget-priced rifle which shot a lot better than its cost indicated - but it desperately needed a trigger job.



The Tikka was a quality rifle but the stock lacked grip where needed.



The Savage is a good rifle but heavy for an old bloke to carry around the bush.

A question of accuracy - the tale of three .223s

Hornady 40-grain boat-tailed V-Max, a short bullet which leaves the muzzle at 3400fps and the unusual aspect is this bullet has around a 4mm 'jump' to the rifling lands. Because the bullet is short and boat-tailed it actually leaves the case neck before entering the rifling, yet despite these unfavourable conditions the 40-grain V-Max shoots better than you'd expect.

Other bullets also shot sub-MOA in my .223 rifles - the 52-grain Sierra, 52-grain Speer, 53-grain V-Max and 55-grain Nosler all putting in good performances. It's only by firing at least four 5-shot groups and averaging the results these quality bullets can be graded in order of excellence. When comparing the accuracy of different bullets by group shooting, many groups should be fired and the shooter must be competent and not pull any shots.

Some competitions, namely benchrest, can be won or lost by the thickness of a hair and hefty, super-accurate rifles must be used for this discipline. Benchrest rifles are often custom-built with no expense spared in their preparation, yet when it comes to accuracy, most light-barrelled sporting rifles are good value for money compared to what a benchrest rifle can cost. Many sporters are capable of shooting ½ MOA but to improve on this, extraordinary amounts of money must be spent on the rifle, scope and reloading equipment.

While the rifles mentioned cover a wide price bracket from cheap to moderately expensive, they all shot sub-MOA out at the target - and that's where it matters. The three .223s I bought proved to be outstandingly accurate rifles though one (the cheapest) needed lots of help in the trigger



The moulded chequering on the Weather Warrior's stock offers good grip.

department. Based on their accuracy alone I'd no trouble finding new owners for the first two.

So I ended up with the Savage Weather Warrior and it seems to fulfil what I like in a small-game hunting firearm. It's a good, practical rifle and being a stainless synthetic makes it the ideal combination for hunting in the wet. It's also heavier than the others which makes it that bit steadier when shooting off a bench. A knowledgeable shooter from the distant past once said: "Only accurate rifles are interesting." I'd have to agree but might add: "Some rifles are more interesting than others." I find my level of interest in the stainless Weather Warrior far exceeds what I had in the Stevens as while both shot accurately, one has a touch more class. ●



Floating barrels need sufficient clearance. The Savage is shown with a double layer of thin cardboard under its barrel.



Red hot dot

ZeroTech optic one to savour

Daniel O'Dea

Although a relatively new entry as a brand name in the Australian optics market, the principals behind ZeroTech have a long history of providing shooters with good quality, well supported and affordable riflescopes. With more than 50 years' experience in the industry, they've delivered literally thousands of rifle optics over that time to Aussie shooters and the introduction of the ZeroTech bracket came with the prime ambition of providing rifle optics with unique features and benefits tailored to our market, understanding the harsh and diverse conditions.

Among the ZeroTech Thrive options is a compact red dot sight. With zero magnification and parallax-free sighting, red dot optics have become ever more popular while pretty much making the primary use of iron sights obsolete for military and

tactical operators - and the benefits of such platforms have also been readily adopted by recreational sports target shooters and hunters. With the ability to shoot with both eyes open providing a full field of view, unlimited eye relief and quick target acquisition, these sights prove their worth in a variety of applications.

The ZeroTech Thrive Red Dot arrived smartly packaged in a padded boxed containing the sight, battery, rubberised lens covers, Neoprene soft cover, lens cleaning cloth and T15 Torx key. It features a 25mm objective lens displaying a 3 MOA red dot which, for those new to the game, simply means the visible red dot covers an area of 3" at 100yds or 76mm at 90m when viewed through the lens.

A single CR2032 battery supplies the power source providing 11 brightness settings across its span, battery life stated

as up to 5000 hours which would depend what setting the unit is used on. The mount interface is compatible with either Weaver or Picatinny-type rails or bases and is held in place by a single cross-bolt with a T15 Torx drive as per the key provided. Lenses have an anti-reflective coating with a yellow-to-orange tinge when viewed on an angle.

Dimensionally the sight is reasonably compact, measuring 65mm x 45mm x 48mm and weighing 145 grams with battery installed. Both windage and elevation turrets offer 100 MOA of adjustment top to bottom and turret values for alterations are made in 1 MOA per click increments, meaning the value for each click is the equivalent of 1" at 100 yards. The turrets are capped by neat little screw-on covers which double as an adjustment tool by incorporating a square-blade drive head on

top. To tweak the turrets you screw the caps off, flip one over and use it to make the required incremental changes.

A 12-position rotatory dial marked 0-11 (0 being off and 1-11 the brightness levels) is on the left of the optics body and a large screw cap on this dial covers the battery compartment and can be unscrewed using a coin for battery replacement. I was reviewing a Chiappa 1886 Wildlands in 45-70 at the time and thought this hard-kicking hand cannon would provide a good test base for the Thrive Red Dot. Fitting was as simple as sitting it on the rifle's Weaver-type rail and tightening up the cross-bolt (recommended torque for this bolt is 25in-lb).

One of the benefits of a red dot optic like the ZeroTech Thrive is with unlimited eye relief it doesn't matter that the design of a firearm requires fitment forward of the action. With top ejecting lever-action firearms such as the 1886, Winchester 1892 or 1894 a conventional scope can't be mounted unless it's one with long eye relief. With a red dot it doesn't matter how far forward the optic is mounted as once sighted in you're good to go, perfect for any firearm format which would otherwise make fitment of an optical sight difficult due to action design.

In the case of the Chiappa, which is no lightweight, it was great to be able to add an optic without the addition of any undue extra heft. I carried the big 45-70 around the hills on my property hoping to bump a pig or two but to no avail, yet previous experience with red dot sights convinced me they're great on hard-hitting scrub rifles when the action comes fast and furious at close range.

When gullies and hillsides are choked with blackberry or thistle and targets are fleeting, placing a red dot on your subject with both eyes open and a full field of view can become somewhat instinctive with practice and the same is true when out west in the lignum or chasing pigs on a bike or quad. But what if a longer shot's required? In some respects a lot of shooters these days, being used to magnified optics, don't seem to have much confidence as to just how far you can shoot with a zero-magnification red dot sight, in the same way they might have little confidence in using iron sights at distance.

I often surprise myself when shooting older rifles with peep or blade and post iron sights, in that despite finding it hard to focus with my middle-aged eyes, once the basics are applied I have little issue swinging the 300mm plates on my 200m chain rack. In the US several years ago working with an



Sitting compact on any Picatinny or Weaver-type rail.



Rubberised bikini-type lens covers and neoprene pull-over sight cover.



Left-hand profile.



Right-hand profile.

AR-15 fitted with a zero-magnification red dot optic, once I'd worked out the Data on Previous Engagements (DOPE) I'd no problem making hits on torso-sized targets out to 600m. The lesson with red dot optics is you mustn't feel completely handicapped in the field should a longer shot be required. As with any sighting method, so long as you can clearly see your intended target, have a safe backdrop and understand your rifle's ballistics and ability you should be fine.

Although the local pig population escaped undiminished I still gave the 45-70 quite a workout on the range with Barnes VOR-TX 45-70 300gr hollow-points and several boxes of PMC 350gr flat-nose soft-point factory ammo, along with a generous amount of reloads of both 400gr Speer flat-nose and 300gr Sierra hollow-points. The thumping recoil energy produced had no effect on the Thrive which held tight on its mount and retained its zero. When I'd finished with the Chiappa I removed the

Thrive and fitted it to a Remington 7615 and again, on a fast-handling rifle the Thrive Red Dot worked well, transitioning from target-to-target on the range and ringing steel easily out to 200m.

In summary the ZeroTech Thrive Red Dot presents as a well-featured compact red dot optic for those in the market and is also competitively priced at around \$249. Lastly, if you still had any apprehensions the ZeroTech Thrive comes with their definitive lifetime 'AAA' warranty boasting: 'Any owner, Any problem, Always covered'. That's hard to beat. ●

National

SSAA Muzzleloading and Black Powder Cartridge National Championships

April 15-18, 2022

SSAA Para, Rifle Range Road, Greenwith, SA

Program: See National website for full event details.
Contact: Frank Verdini 0431 975 425.

Qld

SSAA (Qld) 2022 Long Range Precision State Championships

May 27-29, 2022

Captains Mountain Complex, Qld

Program: See National website for full event details.
Contact: luna@ssaaqld.org.au

Queensland NRA Pistol Metallic Silhouette Postal Shoots 2022

All (SSAA) Qld 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@ssaaqld.org.au

Tas

SSAA (Tas) Lever Action Silhouette State Championships

March 12-14, 2022

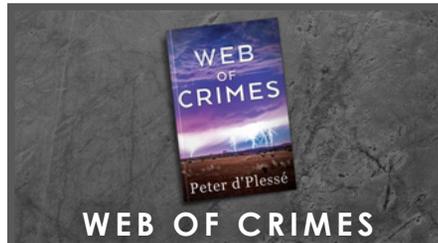
Westbury Shooting Club, Westbury, Tasmania

Program: See National website for full event details.
Contact: Ian Collins 0417 531 184.

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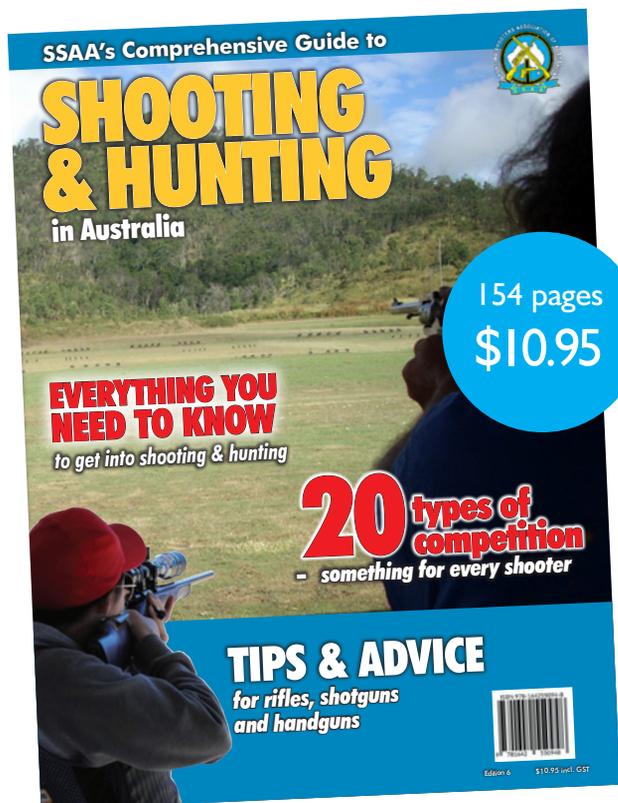
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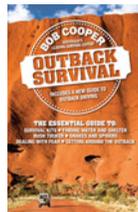
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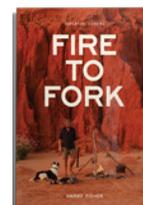
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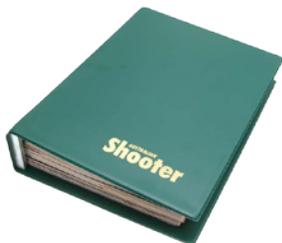


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Competitions close February 28, 2022

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Russel Bailey, WA

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Xavier Okelly, Vic

Junior Prize – Kids Valley Jacket
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Handgun 19

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Bronze art and golden memories

It's funny how something from the past occasionally comes back to haunt you unexpectedly - especially when the memories it stirs are good ones.

Back in the days when sambar hunting was still a developing obsession for me, we used to spend a lot of time in Victoria hunting the Buckland Valley or down around Licola and numerous places in between. Sometimes we'd drive for 10 or 12 hours over the weekend and on looking back I must admit a lot of it was wasted time. Our success rate was low but bit by bit we learned about sambar and began to hunt more successfully.

When we could we'd go away for a week at a time and on one such trip attended a hunters' dinner and with me on that trip was Dennis Bullivant, then living in Bundeena just out of Sydney. At the dinner we were introduced to Lu Cervi, a very successful hound hunter who even then was a recognised character among a cast of others who were the mainstay of deer hunting in Victoria at the time. It was a long night and out of it came an invitation to have a hunt over the hounds the following day in what was the beginning of a friendship which endures to this day, though Lu no longer runs a hound team and we haven't hunted together for years.

Much the same applies to Dennis. For many years he lived around Cooma on the eastern side of the Snowy Mountains while I lived around Tumut in the west. Age, distance and different priorities changed a lot of things for both of us but we've always

stayed in touch and last September he contacted me with an offer I couldn't refuse. He was leaving the area and moving up to the NSW north coast and consequently was downsizing and wanted to know if I was interested in having a couple of his original bronze artworks as keepsakes. He wanted them to go to someone who'd appreciate them - someone who shared and understood the spirit of the hunt they evoked



- and it was his way of saying thanks for the friendship we've shared over the years, a wonderful gesture which I really appreciate.

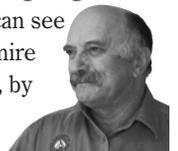
For those who remember the Malek Award which used to be presented to SCI members who'd successfully hunted all the big game species in the South Pacific, Dennis is the man who sculpted and cast the bronze animals around the base of that award. His work has always been of a very high standard and of the two bronzes which came to me, one is a buffalo bull I've

admired for years, the other a sambar stag at bay to three small hounds and a composite piece I never thought Dennis would part with.

The sambar bronze is important to both of us for a variety of reasons. It was inspired by the hound hunting we enjoyed with Lu Cervi and his crew of sometimes roughnecks, all genuine people who lived for and loved to hunt as much as the best of us. Personally I never took a deer off the hounds but have shared in the successes of others and helped cart a lot of venison out of the bush. Just as importantly I've known the camaraderie and sense of purpose a hound team must nurture to succeed.

We never took more than one deer a day and earned every one of them. At times we were cold, wet and exhausted, discomforts tempered by the knowledge we were hunting the premier game animal in some of the best mountain country in Australia. It was all hard-won experience I wouldn't have missed for the world.

The bronze is also a nod to hunting friendships which have stood the test of time, based as they are on the bedrock of shared experience, mutual respect and an appreciation for the hunt which goes way beyond what our critics consistently try to trivialise as a need to kill. Most importantly it's a tribute to the skill and artistry of a craftsman blessed with the ability to take an idea and turn it into something tangible, an object even non-believers can see and feel, appreciate and admire for its inherent beauty. It is, by any measure, hunting art.



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