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THE REPORT

June 2025

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THE GREAT AUSTRALIAN OUTDOORS ENTHUSIAST

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CHITAL**
leads to new challenge

**A HISTORY OF
SHOTGUN
TARGETS**

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to clays of today

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In the *field* or on the *range*, get on target with

SSAA Queensland

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Editorial

Being a part of a family of hunters putting food on our table, I've experienced firsthand the love of nature and animals and have a concern for the wellbeing of both. As hunters we spend a great deal of time on the land, quietly observing flora and fauna in all seasons and witnessing the effects of natural disasters, including drought and floods.

In Queensland, torrential rains and flooding have destroyed environments and killed wildlife and stock. The excess water in those areas will in time produce fertile grounds, which will mean extra food sources for unwanted feral pests such as pigs, increasing their numbers – and problems for farmers and our native wildlife.

Recently, we attended the National Feral Pig Conference. The agricultural devastation pigs cause is in the millions for Australia and the risk of the diseases they could spread to the cattle and pork industries could cost billions. In coming issues, *The Report* will endeavour to cover many of the topics discussed at the conference, including feral pigs' harmful effects on sea turtles, the diseases pigs carry and potentially spread, ways to reduce pig numbers and the challenges all those affected by pigs face in controlling numbers. It must be a multi-pronged approach. Australia would benefit best if there was a coordinated effort.

Hunters are true conservationists, holding vital positions in our fragile ecosystem, from conducting game management activities, containing and reporting on diseased animals, removing feral pests, and aiding in the regrowth of native vegetation, among many others.

When you are out hunting, take stock in all that is around you and consider the ways you can impact our country's unique environment. Ethically, there are many valid reasons to hunt so, be proud of your chosen pastime.

Jennifer Martens
Co-Managing Editor



A new magazine for the Australian Shooter and Great Australian Outdoors enthusiast

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Australian Shooters Alliance

Letters

Am I covered?

Does SSAA Queensland membership cover me for public liability if I attend a range in New South Wales? I am in the process of obtaining my firearms and pistol licences but live near the border so would be interested in shooting at competitions in both states.

Justin, via email

Editor's Reply: Yes, Justin, your SSAA Queensland membership covers you for public liability up to \$20,000,000 across Australia.

Hunting for the stomach

Interesting reading about how our conservation volunteers removed the unwanted goats on Havannah Island. I know they didn't remove them for the plate, but it reminded me of the first time I had goat curry at an Indian restaurant. After that, I had a very good reason to remove and utilise goats.

I must have been hungry when I read the [April Report] magazine because I was thinking about what to do with the pigs Neil brought down and then there was a recipe for kangaroo steak sandwiches near the back. As a school child I was taught in history how the British troopers, and the convicts they were tasked with controlling, starved while surrounded by hundreds of kangaroos. I still don't think we eat enough of our available and free roaming game

Peter, St George, Qld

Mental game of shooting

Hi guys,

I want to share a bit of my own story after reading Taylah Campbell May's piece in the February issue about 'The mental game of shooting'.

As a shooter who also tends to 'get in my head', I've noticed that everything going on in my life affects what happens at the range. By that I mean, when I am happy in my usual life I shoot well, and when I am having a tougher time, I shoot worse.

It's amazing how easy shooting can be when you're not thinking at all.

But of course, that's the tricky part. Learning how to quiet the noise and trust the process. I'm starting to realise that good shooting doesn't come from forcing myself to focus harder, but from making space to feel calm and present, both on and off the range.

Thanks for publishing stories like Taylah's - it's good to know I'm not the only one working through the mental side of the sport.

- Sam, Brisbane (but you'll find me near the 50m line most weekends)

Katter cares

Dear team,

I had the privilege of celebrating 50 years of Hastings Deering in Mt Isa, where Bob Katter was asked to attend. His dad opened the (SSAA Queensland Mt Isa) branch.

Genuine guy...really cares about people and what they think. Enormously popular.

Regards,

Steve D, via email

News

LET US KNOW YOUR THOUGHTS

We want to know your thoughts on shooting, hunting and the great Australian Outdoors so put pen to paper or hit the keyboard. Letters may appear in any of our electronic and printed media including our e-newsletter, websites and *The Report* magazine. Last names optional but please include your first name and town for publishing and SSAA Queensland membership number for verification purposes only.

Mail to: SSAA Queensland, Member Letters, PO Box 2443 North Ipswich, Qld 4305 or

Email: news@ssaaql.org.au

Plan your firearms' future - before the bell tolls

As sure as the return of future flooding rains and paddock-cracking droughts, the reality is our time will come. So, what are we going to do with our firearms?

For those sorting out your estate, removing the stress is a smart decision. By stating who your firearms should go to in your will assists both the executor, those tasked with carrying out the wishes of the will, and the police who must track the ownership transfer of the firearms.

Let the person or persons know that you have bequeathed firearms to them and make sure they have the right kind of licensing for those firearms. There are also various permit fee concessions available for deceased estate firearms transfers. Look up your police website for further details.

Our firearms will well out live us and we want to ensure that the firearms both remain in licenced hands and also do not end up on the scrap heap as twisted metal junk. Think of it as being a responsible firearms act from beyond the grave and continuing Australia's firearms history.

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TRAINING & PRACTICE

Two sides of the same coin?

By Liz Rymill

Back in the carpark of the local gun club, while cleaning and disassembling guns, I listen along to the banter among shooters.

“I hit 22 that round and a 24 the round before that,” says shotgunner A. “I cleaned a round last week, but I dropped four on the same station today, I don’t know what I’m doing wrong,” shotgunner B replies. “I shot a 23 in my first round at last Saturday’s competition and then came out and shot a 17...” shotgunner A reveals.

The back-and-forth dialogue usually ends with a common consensus: we must get out for more practice. But what, exactly, is practiced at practice? Is practice the same as training?

It’s easy to get these two concepts confused, but there are important differences not only in practical application, but also in the mental approach.

Training involves learning new skills; it involves trial, error, adaption, refinement, experimentation, consolidation and extension. Training is where you learn what you need to practice.

Practice is the application of skills learned in training in either a competition environment, a simulated competition environment (a shooting range with others also practicing for competition, typically practicing sequences found in competition), or in a space where skills can be repeated over and over to become learned skills, repeatable under pressure.

American Motorsports coach, Ken Hill, notes, “Separating these two concepts, and giving yourself permission to approach them differently, makes improving infinitely easier.”

Before moving on, there’s another important commonality to include here. In their purest forms, both practice and training ought to

Tim Brunero training with Liz Rymill at a skeet range.

include an element of play. To play is to be unbridled from restrictive, mechanical, monotonous repetition. It denotes an element of joy, curiosity, engagement, experimentation, humour and passion. Whether training or practicing, it is important to always incorporate a mindset of play.

For most, shooting sports are both hobby and passion. An escape from the rigours of work or external pressures. Some have goals and ambitions to achieve at local, zone, state, national or even international level but *all* shooters are unified in the intrinsic enjoyment of the sport and of hitting more targets.

No matter what the ultimate goal or personal level of competency, shooting sports should always light an inner spark of enjoyment. Furthermore, mindset as applied to training and practicing is equally important. The cloud in which both pursuits rest.

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TRAINING AND PRACTICE

Five-time world skeet shooting champion John Shima says, “Too often, good shooters believe a missed target is a sign of failure when it is really an opportunity for learning.” He continues, “From this perspective, the more missed targets during training the better – if the shooter learns from each miss and develops the self-discipline to avoid repeating the mistakes that caused the missed targets.”

Mindset can be trained and practiced and optimised for performance in competition, as identified in 1979 by W. Timothy Gallwey in his books *The Inner Game of Golf* and *The Inner Game of Tennis*, both of which – being hand-eye sports – correlate well to shooting sports. Gallwey writes, “Learning the inner skills that enable a player to decrease the mental obstacles that prevent him from playing his best.”

He surmises that competitors can achieve near technical perfection, but unless a mental program is also trained, practiced and defined, ultimate consistency and peak performance – as all desire – will remain elusive.

“Breakthroughs come from study of the mental aspects of the game – specifically, *how* to learn and overcome the self-interference of tension, self-doubt, fear of failure, anxiety and a limiting self-image,” writes Gallwey.

In 1972, American rifle shooter Lanny Bassham won a silver medal at the Munich Olympics for Team USA in the Small-Bore Rifle, Three Positions 50 metre event. While many considered his achievement an outstanding result, Bassham wasn’t convinced he had reached his best.

He knew he was capable of even higher scores at practice and at training, so he asked himself what key element was missing between his silver medal performance and the gold. Bassham spent the next four years defining, developing, training and practicing his mental program and went on to win the gold medal in Montreal in 1976.

Those who have not yet read or listened to Lanny Bassham’s extensive works on mental management are well advised to do so. Developing a mental program is developing a disciplined mind.

Sports psychologist and author Dr Jim Afremow emphasises this: “Great things are possible when you focus on what you want to have happen in the moment of truth, not what you are afraid might happen. The disciplined mind is what differentiates athletes with similar skills.”

It is a disciplined mind, therefore, that is needed in both training and practice. So next time you head out for a shot, “Think *on purpose* and shoot *on purpose*,” says Shima. “Deliberate practice emphasises the



Liz Rymill practices station eight at a skeet layout.

precept that the quality of each shot is more important than the number of shots fired.” Deliberate practice “begins with the end in mind.”

In his book *Talent is Overrated*, Geoff Colvin suggests five elements of deliberate practice. “Deliberate practice requires the activity be designed to improve performance of a specific process; the activity can be repeated regularly; the activity allows for measurable feedback; the activity requires 60-90 minutes of intense concentration per session; and the activity is monotonous and involves learning from mistakes.”

Keeping a diary of training and practice is also useful to measure what you’ve worked on, the results of that work, and future planning towards current goals.

The road to marksmanship mastery is never a straight, smooth, upward trajectory...but deliberate training and practice - especially with guidance from an experienced, qualified coach - will undoubtedly make it an enjoyable and rewarding one.

As author Robin Sharma concludes, “*Every expert was once a beginner; embrace the journey.*” 🍷

Hopping MAD OVER KANGAROO LEATHER

Addressing the kangaroo leather issue after another brand is targeted by animal activists for its use of the material.

By Dr Mike Redwood

Mike Redwood lives in the belief that the leather industry needs to become much more consumer oriented if it is to prosper in a fast-changing world. During the past few decades, he has held a number of senior posts in the industry, starting as a technician, subsequently in general management and finally focused on marketing and innovation. Today Mike has a portfolio of jobs. He has a BSc in Leather Science from Leeds University, a marketing PhD and an MBA both from the University of Bath in England. He is a strong supporter of Leather Naturally.

mike@internationalleathermaker.com
Follow Dr Mike Redwood on X: @michaelredwood
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A few days ago, many tanners were reflecting on a banner held up at the AGM of global athleisure brand Adidas which read ‘kangaroo leather is cruel’. This follows a trend in recent years of animal rights groups targeting Nike, Puma and even Prada over their use of kangaroo leather. The Australian Wild Game Industry Council (AWGIC) responded to the activists in a statement.

I have recently written about ethics and the difficulty of choosing the right hypothetical train station on the line to get off at, but this is totally different; it seems to be deliberately anti scientific thought. In fact, not using kangaroo skins is cruel on almost every front, will worsen climate change and further damage biodiversity. It certainly will not stop the deaths of any kangaroos.

Kangaroo leather first came into my career in the late

Photo by Tim Bannister

1970s when I worked for the UK Booth Group as CEO of Turney Brothers. Booths had a long history with kangaroos, having first set up an office in Sydney to export sheep and kangaroo skins at the very end of the 19th century. By the 1970s, it was a very marginal raw material.

Animal rights and managed culls

It was harder to fully research matters in the 1970s then, but we knew the four species were the red kangaroo, the antilopine kangaroo and two types of grey – the eastern grey and the western grey kangaroo. We got the impression that we could only safely process red but could not be sure that our supplies were secure enough to avoid the greys, so we decided to stop using them altogether. It was a sensible decision given our knowledge but, in reality, the culling and export was already being carefully managed; we merely lacked the right information.





The 1990s saw many concerted animal rights attacks on kangaroo leather and football boots became a natural target, since stars like David Beckham could be individually attacked and ‘shamed’. I increasingly find myself thinking that such campaigns pressurising individuals are immoral.

In the early 2000s, we sailed up Brisbane River and spent an eye-opening day at a koala sanctuary that also had a large kangaroo reserve. We spent much of our time in lectures and one-to-one meetings with their conservation staff. We learned that, before the arrival of westerners, kangaroos were not that numerous and lived only along the riverbanks. Drought, dingoes and hunting by Aboriginal peoples kept the population down. Then, new farming methods allowed them to proliferate, with the eastern grey kangaroo thriving on the pasture lands and water improvements for domestic livestock. Above a certain density, kangaroos overgraze the land and destroy its ability to support many varieties of birds, insects and reptiles.

We were told that a properly managed annual cull was required to avoid environmental damage, maintain a healthy population and protect habitats. A cull that kills humanely and brings the skins and the meat to market is best as it can provide some income to help fund the environmental services (via a license fee).

“Without a controlled cull, the animals will be treated as vermin and killed anyway, almost certainly inhumanely.”

Without a controlled cull, the animals will be treated as vermin and killed anyway, almost certainly inhumanely. If the culls continue, then the skins will go to landfill. Not one is killed for leather so, in that regard, kangaroo leather fits perfectly with other mainstream leather material in preventing brands from having to use materials mostly or totally based on petrochemical origins.

Clever but unethical

Attacking celebrities or embarrassing companies with stunts at their AGMs might make for clever publicity, although in a world where dishonest marketing is considered a primary tool of the worst types of capitalism, it is curious that supposedly ‘super ethical’ organisations consider them appropriate. There appears to be little interest in seeking out true facts. There is clearly no scientific sense in stopping these culls, any more than there is for some deer, mink and rats all round the world. The steady loss of apex predators over the centuries has left many countries requiring culls of one sort on the other to retain nature’s balance.

“There is clearly no scientific sense in stopping these culls, any more than there is for some deer, mink and rats all round the world.”

In any assessment, kangaroo leather is a marginal material, offering excellent properties because of its incredibly high tensile strength, making for exceptionally lightweight running and soccer footwear. Brands and individuals must not give in to pressure like this, as it opens the door to further irrationality and sends false signals to their customers about environmental matters. We have far too many legislators around the world trying to enact laws that are based on false beliefs about the science of the environment.

International Leather Maker (ILM) is a content driven, multi-platform media brand, which was founded by Maria Wallace and Martin Ricker in 2013. ILM has gone on to be the market leading B2B media channel covering the whole leather supply chain from farm to retail, with a strong focus on leather manufacturing of all types, and on a global scale. www.internationalleathermaker.com 🌐

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HISTORIC TIMELINE OF SHOTGUN TARGETS



The beginning: It's easy to see how hunting transitioned into a formalised competition. Passenger Pigeon shooting in Iowa depicted here.

FROM BIRDS OF THE PAST TO CLAYS OF TODAY

By Sam Talbot

LIVE BIRDS

EARLY 1800s

In the beginning, shotgun target shooting began with the most natural of targets - live birds. Game hunters were keen to test their skills competitively, and so they used what they had, pigeons. While other birds were used at times, pigeons were preferred since they were abundant, and usually erratic enough in flight to make the sport compelling.

This style of shooting developed in Britain and the United States in the early 1800s and was later adopted in Australia, but predominately in the latter half of the century. However, as interest grew, so did the controversy and other problems. Ethical concerns around cruelty, as well as cost, mess, and the sometimes unfairness of different bird flight paths led for calls to change. To be developed as a sport, it needed a target that was more consistent.



One of the sport's Pioneers: Captain A H Bogardus from the cover of his book *Field, Cover, and Trap Shooting*.



One of the original sharpshooters: In 1984, Annie Oakley dazzled crowds by shattering glass balls mid-air and on horseback or by using a mirror.

GLASS BALLS

1860s

The first successful replacement for live birds came in the form of glass balls. Both the UK and the US explored this approach, but most of the credit goes to Charles Portluck of Boston in the 1860s. His system launched glass balls vertically into the air, which while a big step forward, turned out to be a little too easy to hit. Next, Captain A.H. Bogardus refined the design in the 1870s and figured out how to fling glass balls through the air in a 20m arc, much more closely resembling a bird.

The glass ball targets were roughly 7cm wide and often had a diamond-textured surface to encourage shattering. To add visual flair, they were sometimes filled with feathers, soot, or powder, making a satisfying puff when struck.

Glass-ball shooting also ushered in early formal competitions. Shooters stood 18 yards behind three concealed traps, which launched balls in random directions, very similar to Trap or Down the Line of today.



Glass ball trap up close. At the height of their popularity, more than 1 million glass balls were made in six months by the Bohemian Glass Works in New York City.



Miss M.V. Lannan in 1914, along with most others, had moved on from pigeons and glass balls to trap shooting.



A target ball trap showing how the glass was flung.

HISTORIC TIMELINE OF SHOTGUN TARGETS



Before clay came glass: early target balls were filled with feathers or powder for dramatic effect when hit.



Sometimes the unbroken glass targets were re-used as Christmas decorations.



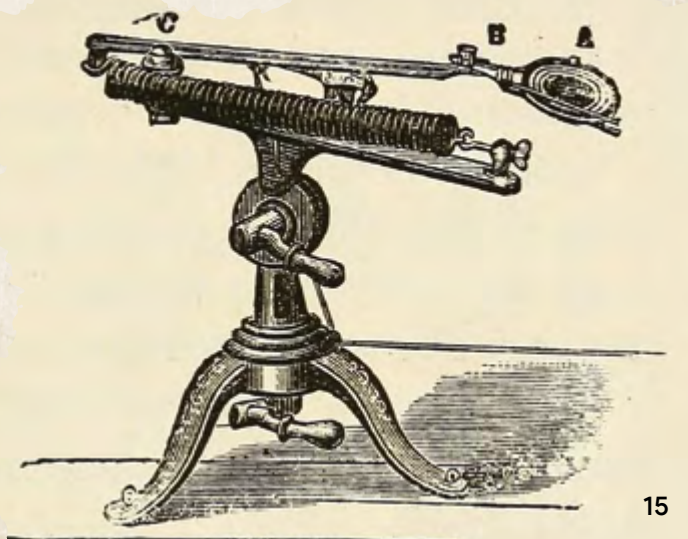
These fragments of a target ball were found during an excavation with the grounds of Victoria's Parliament House, which was constructed in 1849.



A range of Glass Targets, courtesy of the Australian Society for Historical Archaeology, Christine Williamson Heritage Consultants and Extent Heritage.

This was also the era which started introducing trick shooters like Doc Carver and Annie Oakley, who dazzled crowds with their spectacular displays of accuracy. Meanwhile, in Australia, live pigeon shooting started at this time, and in 1872, our oldest continuously operating gun club was started in Mount Gambier, South Australia.

The Blue Rock Trap, much improved over glass and pigeons, which are objectionable on lawns and parks.





'CLAY'

CLAY TARGETS

1880s

The next big step came when George Ligowsky of Cincinnati patented the first 'clay pigeon' in 1880. These targets were literally baked clay (hence the name) and were shaped like a saucer. They were about 108mm in diameter, and that's essentially what is still used today.

However, the terra cotta targets proved a bit too durable and often wouldn't break when hit, instead they would sometimes ring like a bell. By the late 1880s, a more brittle material became the norm; chalky limestone and coal-tar pitch, as well as pitch and lime. These targets were breakable, consistent and much cheaper than glass.

By the 1890s, 'clay pigeons' - which weren't actually clay - had become the standard. The safer, more practical, and more easily mass-produced targets meant live bird and glass-ball events started to disappear, and the new era of target shooting had arrived.



Destroyed and shattered clay targets piling up, thanks to traps consistently throwing the same pattern.



The iconic clay disc: 108mm of flying tradition still used in every shotgun discipline today.

STANDARDISATION & FORMALISATION

1900s

With 'clay' targets now firmly standardised, the rest of the sport also became more standardised. Rules were formalised, certain disciplines were becoming refined, and events took place around the world.

At the 1900 Paris Olympics, live birds were used, and more than 300 pigeons were killed, which resulted in public outcry. By the 1908 London Games, clay targets were used instead, and live birds were phased out of the Olympics permanently, making it the only time an animal was killed intentionally at the Olympics.

Soon after, the UK organisation, Inanimate Bird Shooting Association, renamed itself as Clay Bird Shooting Association and live bird shooting was banned there in 1921. To match the 108–110mm diameter target size, a weight of approximately 100 grams was also widely agreed upon.

By the 1920s, shotgun sports had fully transitioned to what we would recognise as modern clay targets. Trap and Skeet were also clearly defined disciplines and traps became more advanced, making the clay pigeon more bird-like than ever.

ZZ AND OTHER ALTERNATIVES

1960s

Even as clays dominated, more attempts at innovation were made. The ZZ target, also known as 'helice' (French for propellor), was developed to imitate a more bird-like and erratic flight. Launching from a special trap, ZZ targets have propellor blades on either side of a cap in the middle. The target zigs and zags unpredictably and shooters not only have to hit it but make sure the cap lands in a designated zone.

Skeet shooting joined the Olympics in 1968, and, around this time, Australia started winning, making its presence felt on the world stage. Our first Olympic shooting medal came in 1980, when Patricia Dench took bronze in the 25m pistol in Moscow. Since then, Australia has won multiple Olympic medals in shotgun disciplines.

HISTORIC TIMELINE OF SHOTGUN TARGETS

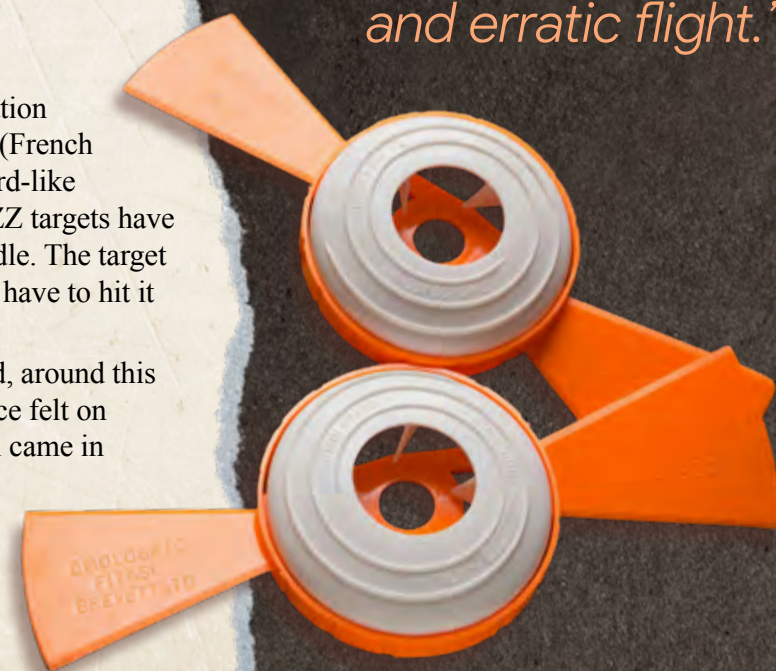
NEW DISCIPLINES, NEW TARGETS

1950s

While the original idea was still there – shoot a flying disc – many more disciplines were being created. Trap and Skeet continued to grow rapidly in popularity, and a new format called Sporting Clays started to make its mark. Designed to resemble hunting scenarios more closely, the new format would need a variety of targets to work.

Enter the midi (90mm) and mini (60–70mm) clay targets, which flew faster and offered smaller silhouettes. After those, came the battue, a thin, flat disc that swoops, as well as the rabbit, a thicker, rimmed clay that bounces and rolls along the ground. This allowed disciplines like Sporting Clays and later 5-Stand to flourish and offer shooters a unique challenge.

“The ZZ target, also known as ‘helice’ (French for propellor), was developed to imitate a more bird-like and erratic flight.”






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MODERN MATERIAL

1990s TO TODAY

While limestone and coal tar pitch became the norm for making clays, these materials started to raise some environmental concerns. In the 1990s, manufacturers began developing biodegradable clays using natural resins and binders. While not perfect, these clays break down faster and are now widely used at ranges worldwide.

These days, clay targets are quite affordable, costing much less than \$1 per clay.



Skeet shooting is still going strong more than 100 years later.

“So, after more than 100 years, the core design of clays has barely changed”

Visually, clay targets also got a small update. Fluorescent colours have become standard for visibility, and, in high-level events, ‘flash’ targets filled with powder make hits very clear to see, as well as spectacular for spectators.

So, after more than 100 years, the core design of clays has barely changed – just a lightweight saucer-shaped disc, flung through the air. Perhaps more impressive though, is that after more than 150 years, the command for releasing a clay remains the same – ‘Pull’! 🎯

CHASING CHITAL

a **chance encounter** leads to a **new challenge**

Plan A in the process of failing. Dave (left) and Paul (centre) moving in to glass the dam at the centre of this adventure; deer-less at this point of the story.

By Brendan Jones

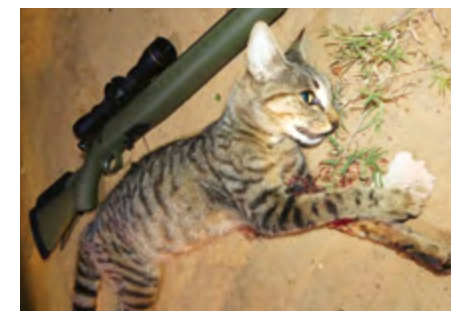
Prologue

Like many of our more successful hunts, this one was preceded with a less successful hunt. The prequel was a spur-of-the-moment Saturday evening undertaking, west of home (in Townsville), organised the morning of. After a long dry spell hunting-wise, which was dictated by a long, wet spell weather-wise, the goal was just to blow the cobwebs out, maintain a relationship with the property owners, give the dogs-in -training a run, and who knows, maybe even shoot a pig. The planets aligned, gear was hastily packed, and Paul and I found ourselves driving in the direction the sun would soon set.

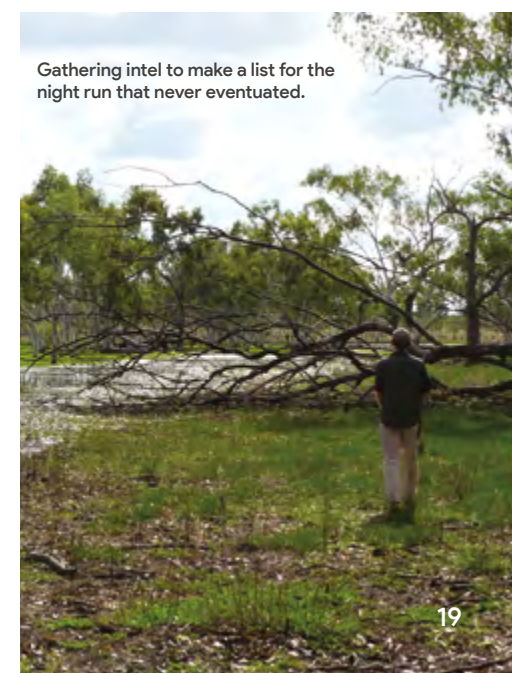
I will spare you further details of that hunt, apart from one 10-second window of time that was a paradigm shift in our hunting endeavours up to that point. As we drove along a

track that terminated in a dam in the late afternoon, something chestnut brown, with white spots, and pointy things on its head, effortlessly glided across the laneway. We could hardly believe our eyes as it floated over the four-strand barbwire fence and evaporated into the lush post-wet season scrub. Chital deer!

You see, chital deer weren’t known to be on this property. As such, we were woefully underprepared both logistically, with an un-scoped jungle carbine for bailed pigs and a 22LR for small game once it got dark, and mentally, with zero deer game plans. Getting access to chital deer-holding properties is a few orders of magnitude harder than ones that hold pigs. But in this case, the one we had been hunting for years, was now holding at least one deer.



The trip the previous week was an adventure all of its own, but that story, including this cat shot by Paul, is a tale for another time.



Gathering intel to make a list for the night run that never eventuated.

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A pivot in preparation

Needless to say, the week that proceeded that event unfolded very differently. Monday, we cleared next Saturday's schedules. Tuesday saw access locked in with the owner. Wednesday had Crunchie and Zola (dogs) relegated (unbeknownst to them) to the bench, and Dave (a human) called up to the run-on side. Thursday (public holiday) saw Paul, who had been vacillating all wet season over what scope to buy for his new Tikka stainless CTR in .308, and myself, mount and sight-in an old VX-2 3-9x40mm. Friday was spent watching the clock at work while sending an obscenely large numbers of texts about gear, eskies, camo, tactics, times, etc. Saturday couldn't come soon enough.

But before we knew it, we had all rendezvoused, packed and were away, a week to the day later, albeit a few hours earlier. This time with more guns of the appropriate variety, enough ice to down a 1910s passenger liner, and the dogs howling from the yard in disgust.

Discussion in the cabin was unsurprisingly chital-centric. All the possible scenarios and game plans were raised and then dissected at length, as the kilometres clicked by on the odometer. We finally settled on going straight to 'Deer Dam',

shooting enough deer to fill the multiple empty (bar ice) eskies we had brought and then hunt pigs all arvo and into the night. If that fool-proof plan failed, we would cover as much of the place as we could to gather good intel for the night session (when most pigs come out in summer up here), returning to Deer Dam on dusk to fill all the eskies we hadn't filled earlier.

"We finally settled on going straight to 'Deer Dam', shooting enough deer to fill the multiple empty (bar ice) eskies..."



One of the larger swamps on the property. Pig sign had us hopeful of success on a planned return that night.



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TSM OUTDOORS



SCAN ME



“Hopes of deer were rapidly fading like the light. We waited maybe half an hour. Sunset had come and gone. I was getting worried now.”

Plan A failure

A few hours later we stopped in at the station house for the obligatory check in. One of the sons told us it was “too wet and too green, you won’t get anything”. With that confidence-inspiring send-off, we headed straight to THE dam. Parking a few hundred meters back, where we had seen the deer, we assessed the wind and snuck in as close as we dared and glassed. Nothing. Plan A was a bust. The deer weren’t getting a relieving cool drink as we had hoped. We elected not to walk in to check for sign, as that would potentially scent the area up, and the intel of hoofprints around told it was only a week old. We backed out and saddled up in the BT-50 once more.

Enacting Plan B, we ran as many water points as we could, looking for sign, deciding where to hit later that night and where to cut away. No deer prints were found, but we gleaned a shortlist of spots worth another look once it was dark and had cooled down from the 35 degrees it was currently.

Based partly on experience, and partly luck, we looped back around the 50,000-acre property to Deer Dam with about half hour to sunset and another 20 minutes of twilight after that. When I saw Paul switch out his sweat-soaked shirt for camouflage, I realised we were getting serious. I had never seen him wear a camo top before - and never since. I complained jokingly that if I was ever to write this up there would be a lack of continuity in the photos; Paul just laughed.

Plan B failing

We rinsed and repeated our earlier approach, with an identical result. Plan B was looking shaky. Dave elected to remain as ‘overwatch’ (his ADF background coming though). Paul and I went to the right and got down into the dry, sandy creek that looped out and around and fed the dam. We followed it to the point we could see behind the dam wall, which was broadside from our previous vantage. Nothing. Hopes of deer were rapidly fading like the light. We waited maybe half an hour. Sunset had come and gone. I was getting worried now. I radioed Dave and advised we were making a move in behind the 100m long dirt wall.

As we paralleled the wall on our left, there was nothing off in the surrounding scrub to our right or in front. We posted-up in a nice shrubby halfway along with five minutes of light left. “What were we doing?” I was thinking. “We have gone deer crazy.” I have never been a sit-in-one-spot-and-wait kind of hunter. My bread and butter, especially at this time of day, on

this property, is to cover as much ground in the ‘golden hour’ when pigs are starting to move. “This is not on brand. This is stupid. This is how the Americans hunt on YouTube sitting in one spot all day. This is...” My mental spiral into the depths of despair and self-loathing was cut short. My subconscious image-recognition algorithm flagged something 45° out to the front right. Binocular inspection revealed a quadruped a couple hundred meters away coming in. It wasn’t a cow, and it wasn’t a pig.

Fortune in the failing light

“Deer!” I hissed at Paul as loud as I dared. He silently chambered a 150gr soft point, and I quietly racked a round into the 39. Paul was struggling to locate the deer in the vegetation and failing light without binoculars - light which we could count in seconds now rather than minutes. I raised the bolt on Dave’s CZ I was carrying and laid it against a tree. If this was going to work, we needed to act fast.

I pointed out some trees another 30m ahead and told Paul to get low and move. I’m not sure if it was the camo, or the lack of light, but he was the embodiment of the phrase ‘ginger ninja’. I glassed the deer. He had water on his mind and the wind was good. I radioed Dave for a five-second update and invoked radio silence. I caught up to Paul, who was yet to see the mostly obscured transiting deer. I guided him onto a rest against a tree and gave him my predicted target window about 100m out where I believed the stag would break cover and cross the lower part of wall as it tapered off.

“When he comes out, you’re going to have to take him as he crests the wall. If he goes, over he’ll end up between us and Dave and no one will have a safe shot.” Paul understood before I was halfway through explaining. Paul crouched against the tree in position, aiming at nothing, as I observed. “Here he comes,” I said in what must have literally been the last 30 seconds of dying light that our eyes were racing to adjust to. The stag broke cover and confidently strode up onto the wall into Paul’s sight picture. BOOM! The new gun barked. The muzzle of the 20-inch barrel flared brightly in the dark, filling the air with the smell of cordite. Paul, having lost sight though recoil and muzzle flash asked, “Where is he?”. “He’s down, mate” I said, “he’s down”.

Paul and Dave on another long walk into a water point, with some foreboding clouds building in the distance, feeding no doubt on the humid mid-30-degree afternoon. The author was selflessly waiting in the air-conditioned car to be radioed for a bush Uber (while eating snacks and drinking soft drinks of course).



Paul (one of the only times caught in camo) reflects on a successful hunt with the star of the story, a nice chital stag. Note the fading light, which almost saved him, and the water to the left, the need for which betrayed him.





Paul and the author (right) pose with the last light deer, now in complete darkness.

Epilogue

We all gathered around the downed deer right there on top of the wall for an excited retelling of perspectives while we took photos, harvested meat and filled eskies. The head was stashed out of dingoes' reach so the meat ants could work in peace. It wasn't long into our night hunting endeavours when one of the threatening storms struck. The lightning strikes and flying branches didn't seem so bad from the driver's seat, but those on the tray begged to differ. The BOM radar showed it wasn't going to pass, so we pulled the pin and retreated eastwards for home. In between watching the lightshow during the drive, I mused, "I think that deer we saw last week was bigger than yours." Dave chimed in, "I reckon I could make out more with the handheld thermal further out before the gun went off." After a pause Paul asked, "What are you two doing next weekend...?"



Dave stashes the head up high to keep it out of the reach of dingoes and pigs. The plan was to leverage the symbiotic relationship between hunters and meat ants, a feast for one, and a (mostly) cleaned skull and rack for the other.

CLASSIC CARTRIDGES

The .30-06 Springfield By Steve Marchant

The Cambridge Dictionary defines classic as 'having a high quality or standard against which other things are judged'. More than a few cartridges match this definition, but it seemed most fitting to begin our Classic Cartridges series with that which is widely regarded as the standard by which all other big-game cartridges are measured – the .30-06 Springfield.

The .30-06 is currently chambered by nearly all rifle manufacturers and can be acquired in bolt action, lever action, pump action, semi-auto, double barrel and single shot configurations. It has even been chambered in a production handgun, the single shot Thompson Center Encore.

The history of the .30-06 began in 1892, when the United States adopted its small bore service rifle, replacing the .45-70 Government with the 30-40 Krag. After only 11 years in service, the rimmed 30-40 Krag was replaced by the rimless .30-03 cartridge, which employed a 220-grain, round-nosed, full-metal jacket bullet at a muzzle velocity of 2,300fps. Just as the .30-03 was

being standardised, all other world powers were adopting spitzer bullets for their military loadings, so the US immediately instituted a replacement program. Three years later, a modified version of the .30-03 incorporating a lighter spitzer bullet and shorter case neck was adopted. Hence the .30 Calibre, Model of 1906 (.30-06) came into being, and it had a long and celebrated military service.

From 1906 to 1957, the .30-06 was chambered in US infantry service rifles, automatic rifles and machine guns, as well as in machine guns that were mounted on jeeps, halftracks, armoured cars, tanks, amphibious vehicles, landing craft and in aircraft. Military .30-06 loadings consequently employed many different types of projectiles, including: 'ball' (full metal jacket); armour-piercing; incendiary; frangible; tracer, dummy (no powder or primer); guard/gallery (short range); explosive/observation; and blank cartridges.

During World War Two .30-06 arms and ammunition were supplied to various US allies, including Great Britain, Netherlands, France, China, Brazil, Australia and New Zealand. To keep their inventory of guns ready for possible future operations,



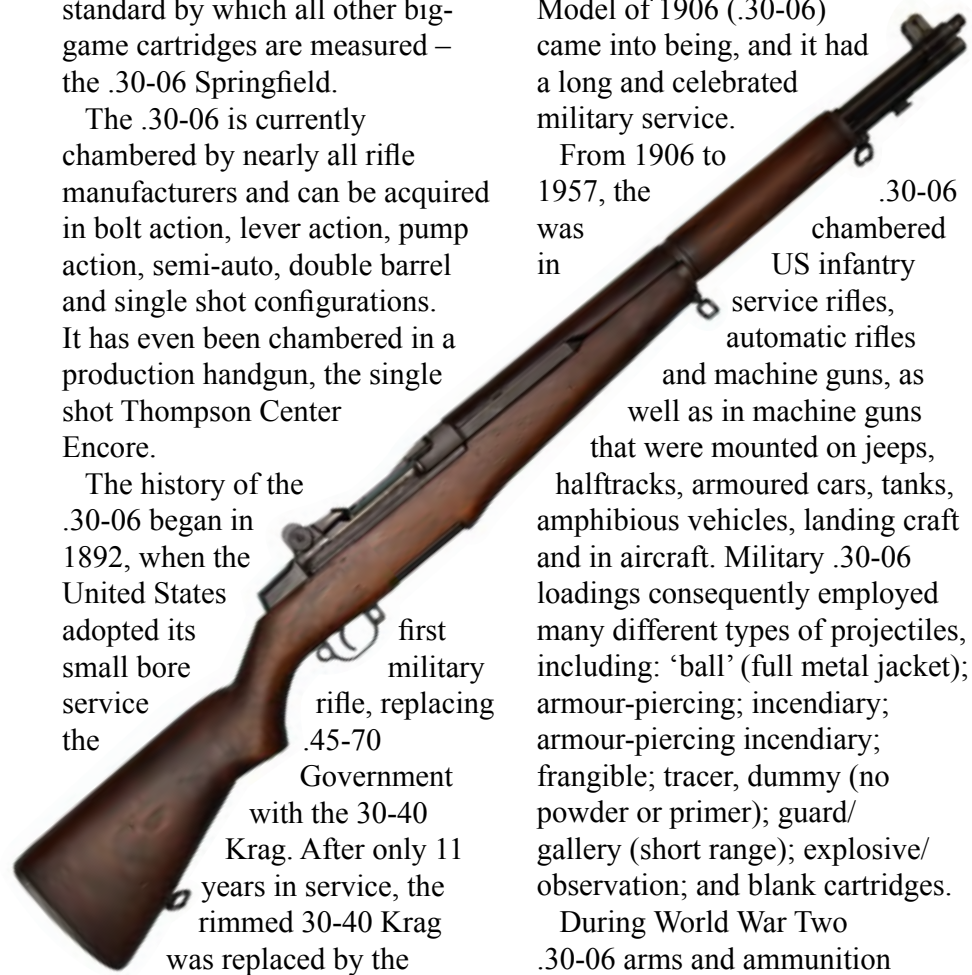
The .30-06 US M1 Rifle (Garand), described by General George S. Patton as "the greatest battle implement ever devised".

many of these countries undertook manufacture of .30-06 ammunition after the war.

In the US, vast quantities of surplus .30-06 ammunition were sold to the public in the 1950s and 1960s, further adding to the popularity of the calibre in that country.

For hunting and target purposes, the venerable .30 'ought-six' can handle bullets weighing from 100g to 250g. It is thus effective on species from small game through to larger deer, donkeys and camels, and is widely regarded as a minimum cartridge for use on Northern Territory buffalo. The best bullet weights for most medium- and big-game hunting with the .30-06 are 150g, 165g and 180g. These are the most common factory loadings and the bullets most often used by reloaders.

The .30-06 is easy to load for, is not hard on barrels, and produces relatively high velocities (up to 3,000fps plus) without excessive recoil. It has also been necked down and up by cartridge manufacturers to produce the .25-



The .30-06 is regarded as the standard by which all other big-game cartridges are measured.

CLASSIC CARTRIDGES

06 Remington, .270 Winchester, .280 Remington, .280 Ackley Improved, .338-06 A-Square and .35 Whelen, all of which are widely used throughout the world. The .270 Winchester, for instance, celebrates its centenary of production this year and is a globally popular cartridge in its own right.

With its long and storied history and its numerous, successful off-spring, it is little wonder that the .30-06 is considered to be the most flexible and useful big game cartridge in the world, and one of the greatest sporting and military cartridges ever. Indeed, after more than 100 years of manufacture, ammunition makers around the world have designed so many different loadings that the number of .30-06 cartridge variations is estimated to now exceed 10,000!



Browning M1919 machine gun.

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Cartridge	.30-40 Krag	.30-03	.30-06
Years in Service	1892 - 1903	1903 - 1911	1906 - 1957
Cartridge OAL (inches)	3.089	3.34	3.34
Case Length (inches)	2.31	2.54	2.494
Case Type	Rimmed	Rimless	Rimless
Rim Diameter (inches)	.540	.473	.473
Base Diameter (inches)	.457	.470	.470
Shoulder Diameter (inches)	.419	.441	.441
Neck Diameter (inches)	.338	.340	.340
Bullet Diameter (in)/Type	.308/FMJ RN	.308/FMJ RN	.308/FMJ Spitzer
Bullet Weight (grains)	220	220	150
Twist Rate (inches)	10	10	10
Muzzle Velocity (fps)	2,200	2,300	2,740
Muzzle Energy (ft/lbs)	2,365	2,585	2,500

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The **Varminter** line is loaded with the legendary Hornady 55gr V-MAX bullet. The Hornady V-MAX represents the pinnacle of what a specialised varmint bullet can achieve, offering straight-line trajectories, enhanced accuracy,



dramatic expansion, and explosive fragmentation at a wide range of distances and velocities. The design of its polymer tip is the secret behind the high ballistic coefficient and explosive terminal performance of the V-MAX bullet. With the most affordable .223 ballistic tip on the market, Red Earth Ammo’s Varminter round offers shooters incredible value without compromising quality.

Red Earth Ammo delivers sub-MOA accuracy. Tested with both the SCSA Taipan X and Howa M1500 rifles, both the Razorback and Varminter rounds achieved sub-MOA 5-shot groups.

Red Earth Ammo is packaged in cases of 500 rounds, striking the perfect balance of affordability and convenience. Unlike smaller 20-round boxes or massive 900-round tins, this size offers terrific value without requiring a huge upfront investment. Available this March, Red Earth Ammo is the ammunition Australian shooters have been waiting for: precision-crafted, purpose-built, and priced right. ☺



Boar Fighting Pads By Ken Payne

While hunting with different SSAA members, the subject of the size of a projectile for pigs has often come up; but even people who have shot a number of pigs haven’t known about or considered a pig’s ‘shoulder pads’.

Next time you get a good-sized boar, try pressing your knife straight into the shoulder. You will find lots of resistance; the reason is that boars have very dense cartilage that can be up to 30mm thick or more, which they use to protect themselves from sharp tusks while fighting other boars. This, as well

as the mud packed on their skin, which can be up to another 30mm thick on their shoulder, can slow down or stop bullets that are not well constructed or heavy enough to punch through these mediums. This is one of the reasons we recommend heavy projectiles, as many times we are also shooting running pigs in heavy cover and cannot always put the round in exactly the right spot every time.

One of the attached photos is of a boar showing the mud almost up to the middle joint of my finger; the second is the shoulder pad of a small 50kg boar. ☺



The thick, compacted mud on this boar is almost like armour.



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NORFOLK ISLAND

HOP, SKIP and AIM your way to a BETTER OVERSEAS HOLIDAY!

By Jennifer Martens

aching for an overseas holiday but dread the customary and exhausting day-long flights? Norfolk Island is only a quick two-hour trip from Sydney or Brisbane – and you don’t need a passport. And if you’re interested in a bit of friendly shooting competition, the Norfolk Island Clay Target Club and Norfolk Island Pistol Association (NIPA) offer annual events, with the Norfolk Island Travel Centre offering special shooting packages.

Unfortunately, the Clay Target shoot for 2025 has come and gone, occurring every February, but NIPA is hosting its 23rd Pistol Shooting International Championships from December 5-13, 2025. These annual shooting events on the Island serve as great ‘excuses’ to make this hidden treasure a destination,

but given the Island’s uniqueness and beauty, do you really need another reason?

Just a few more than 2000 people call Norfolk Island home. Residents have their own language and the island boasts out-of-this-world coastal views, unique birdlife, natural sanctuaries and, of course, stunning Norfolk Pines that tower towards the sky. That is just the tip of the iceberg. Visit Norfolk Island | Welcome to Paradise to see what awaits – be it shooting, golfing, fishing or history... there is something for everyone – with the difference being that ‘everyone’ is not there. As a small island, there is only so much room, which means you won’t be fighting crowds typically found when at other overseas destinations.

“the island boasts out-of-this-world coastal views, unique birdlife, natural sanctuaries...”

NORFOLK ISLAND

This year, the Norfolk Island Travel Centre is offering a unique pistol shooting package for just less than \$2000 per person that includes:

- Return airfare + airline taxes
- Return island airport transfers
- Seven nights twin-share accommodation
- Seven days car hire (per room)
- Six DIY Tours of Norfolk Island
- Entry to World of Norfolk Island exhibit.



Open to all pistol club and shooting association members (any association), events will include air pistol, sport pistol, standard pistol (men’s and ladies), centrefire, rapid fire and 50m pistol. Events are not just for men and women; juniors too are encouraged to attend!

Most shooting competitors bring their own firearms; however, some club guns are available. It is best to check with each club first and follow airline requirements if you do wish to travel with your own firearms.



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NORFOLK ISLAND

Shooting ranges don't get more picturesque than the Island's pistol and clay target shooting clubs overlooking Anson Bay. After a fun day of competition, you can either celebrate your success or drown your miseries with a cold beverage as you watch the sun set over the ocean. Either way, it's the perfect way to end the day.

The Norfolk Island Travel Centre has operated on the island since the 1970s and said it "has always been a big supporter of local sporting events"; partnering with the local shooting clubs "was just a natural relationship that was built out of nurtured local connections".

NIPA has about 15 resident members, with the Clay Target Association claiming 21 members. These annual shooting events are run by volunteers and draw anywhere between 30 to 90 competitors, with most bringing along family and/or friends, which helps to support the local economy.

The schedules for the shooting events are very busy, but the Norfolk Island Travel Centre liaises with locals to offer a range of self-drive tours that work around the competitions. Tours include historical, cultural, and outdoor adventures, plus numerous evening dinner and entertainment options to make the most of each day.

It is recommended all visitors book tours and entertainment before their trips, where possible, so not to miss out on all Norfolk Island has to offer: <https://www.norfolkisland.com.au/tours/all>

With so much to see and do, chances are seven days won't be enough to truly experience the Island's people, history, landscapes and culture. Take advantage of the unique shooting packages and then get planning for your return trip.

Travellers like to say a visit to the Island seems like they are stepping back in time, but the locals are quick to correct them and say visiting there is actually *'stepping in to a better time'*. 📍



Aerial view of the Norfolk Island Pistol Club's 15-bay range. The Clay Target Association is just a stone's throw away, sharing equally stunning views.

SCOPE IN FOCUS: SCHMIDT & BENDER 3-18X42 META *By Neil Schultz*

During the past few months, I've been thoroughly enjoying hunting with the recently released Schmidt & Bender 3-18x42 Meta rifle scope. The 3-18 Meta represents the absolute epitome of a top-shelf hunting rifle scope. Let's run through some of the features which make this optic a front runner in the field of hunting scopes.

Overview

The 3-18x42 Meta is a compact package at 680g and a mere 33cm in length. A 42mm diameter objective lens maintains that small-package impression and saves weight on a hunting rifle. That smallish diameter objective is ideal for those who use a thermal clip-on device for nocturnal hunting. Schmidt & Bender's unique BDC II-B turret allows users to have their own ballistic data calibrated into the turret, eliminating the need for mental arithmetic on long-range shots. To enable this, movable distance markers on the elevation turret can be set to the dial-up required for the user's rifle's ballistics. Parallax can be adjusted via the dial on the left of the scope,

from a mere 20m out to infinity. Eye relief is 90mm, perfect for high-recoiling hunting cartridges. Both elevation and windage turrets can be locked to prevent accidental adjusting in the field. Elevation and windage adjustment spans a range of 305 clicks, again ideal for long-range shooters. The 3-18 Meta comes fitted with removable flip-up lens covers that can be swiveled, great for preventing the ocular cover from hitting the peak of your hunting cap.

Through the lens

Although the magnification range is an incredible six times, the image remains crisp right to the edges, with no notable distortion even when wound up to 18x magnification. Base magnification of 3x gives a wide field of view (14.5m at 100m) for shots at running pigs or snap shots at close range. On the subject of running shots, the Meta's LP7 reticle is perfect for the task, with its bold outer crosshairs. The fine centre section of the crosshair allows for pinpoint aiming and, being a second focal plane design, remains fine at all magnification settings. The reticle also sports a centre dot that can be illuminated in red with



The BDC II-B turret, with its user adjustable dial-up markers, allows taking those long-range hunting shots quickly. The side parallax adjustment and illumination dials are on the left side.

11 levels of brightness via a dial on the end of the side focus wheel.

In the field

The first thing one notices when using the 3-18 Meta is the sharpness of the image. If you've never looked through a high-end optic, you'll be stunned by the clarity and depth of field of the Schmidt & Bender. One might imagine that a 42mm objective lens would reduce image brightness but that is not the case. The 3-18 Meta boasts 92 per cent light transmission from the objective, through the lens stack to the ocular lens. Due to the bright image in the Meta, I managed to successfully target pigs after sunset when they were almost impossible to discern with the naked eye. Wound back to 3x, the scope performed flawlessly with my thermal clip-on attached. Cranked up to 18x was perfect for hunting on the wide-open grazing paddocks in the New England high country. The 3-18 Meta leaves nothing to be desired in an all-round hunting scope but would be equally impressive for the discerning target shooter. 📍



Mounted on my .22-250 Improved rifle, the 3-18 Meta proved ideal for long-range fox control during lambing season. As an example of the clarity of image, I was able to identify a willie wagtail on the rails of the cattle yards on the next ridge.

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RANGE HD BINOCULARS

By Nick Rositano



Technology has changed drastically over the years with the introduction of range finding binoculars. Although most of the range finding binoculars on the market are quite pricey, they really do take the ease out of not only spotting game but giving you an instant range on whatever the target may be.

Leupold have been at the forefront of the optic industry for many years, with their introduction of the very first riflescope called the Plainsman. This came about as Marcus Leupold missed a buck because a riflescope he was using at the time had fogged up back in 1940. After years of research from Marcus Leupold, the Plainsman scope was introduced in 1947, changing the industry with the first truly fog-proof scope built in America. From here Leupold have been one of the most popular optic companies in the world. Leupold have combined both their optics with their range finders to create the BX-4 HD 10x42 range finding binoculars. With the click of a button, the BX-4 can instantly

range on a reflective target out to 2600 yards, trees up to 1600 yards and on a deer hide at 1100 yards, which is impressive.

“Leupold have combined both their optics with their range finders to create the BX-4 HD”

When I unboxed the Leupold BX-4 for the first time, I was instantly impressed; they come standard with a sporty and ergonomic binocular harness, which gives the user a ton of adjustment to ensure they are sitting correctly. The BX-4 feature a scratch and smudge resistant lens coating which is very reassuring, as many of us know just how easy it is to accidentally scratch the lens while out in the field. I have played around with a few of the other European range finding binoculars on the market and so I was eager to see how the BX-4 compared against them.



The Leupold BX-4 also feature (TBR/R) True Ballistic Range/Wind technology, which offers 25 selectable ballistic groups for your cartridge to help you dial in an exact range on your target. The BX-4 are backed by Leupold's guarantee of being waterproof and fog proof so there is no need to worry if you are caught out in harsh conditions, whether it be torrential rain or extreme cold. The Leupold BX-4 weigh 1105g (1.105kg), which is on the heavier side compared to other non-range finding binoculars; however, by the time you put a rangefinder and a standard pair of binoculars

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SEEK AND YOU WILL FIND

together, I'm sure the weight would be roughly the same. What I like about the range finding binoculars is not having to change between spotting with binoculars and ranging a distance through a rangefinder and the OLED display gives a clear and visible readout in any light conditions. This makes things a lot more efficient, as once a target is identified, with a click of a button, you get an instant range giving you the advantage of being able to quickly adjust your rifle to take a shot or giving you better insight about how you will stalk closer to your game. The BX-4 are backed by Leopold's lifetime optic guarantee, and they come with a two-year electronics guarantee.


The freezer was running low so I decided to head up to a mate's farm to see if I could top it up with some venison. On arrival, just before first light, I started glassing through the BX-4. To say I was impressed is an understatement, especially of the clarity and light transmission through the binoculars. And the things you can see through a good quality optic compared to your naked eye at dawn and dusk are

phenomenal. The glass on the Leupold BX-4 stacks up to that of other European optics; however, it saves you a decent amount of change in your wallet. With the CF (centre focus), the BX-4 are quick and easy to adjust to suit everyone's eyes. It wasn't long until a couple of does appeared some 300m away; the shot was ranged and taken at 226m and a doe stopped right in her tracks.

The 10x42 size binoculars are a perfect size, as they are neither too small or too big in my opinion. They sit snug in a bino harness, especially compared to larger-sized binoculars on the market, which are insanely bulky and heavy. Although

"To say I was impressed is an understatement, especially of the clarity and light transmission through the binoculars."

I used the Leupold BX-4 out in the field while hunting, they will suit anyone in the market, from wildlife watchers through to target shooters.

The Leupold BX-4 Range Finding binoculars sell for \$3529; however, shopping around may land you a pair for less. Leupold have held their title of producing world-class optics over the years and the BX-4 are no exception. Be sure to check them out if you are in the market for an excellent range finding binocular. 

The BX-4 feature scratch-and fog-proof lenses, no matter what the environment may be.



The stylish and ergonomic binocular harness is a bonus.



Out in the field glassing a potential target with the Leupold BX-4 range finding binoculars.






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'SPIDEY SENSING' AT STEWARTDALE

SSAA range aids researchers

By Professor Peter Murray (UniSQ)

We've all heard the expression 'the only good spider is a dead spider' or was that a dead snake? And we all have our 'favourite' spider story. A couple of mine were finding a 10cm wide tarantula that lived behind the bar door in a bush pub I visited with students in South America or another resident tarantula that lived in the women's bathroom in the same facility, both had lived there for years and no-one had ever died – from fright or bite. Or the 'twinkling lights' at night in the grass around my sister's house, which were actually thousands of spiders. As she was terrified of spiders, her nightly observations of the brilliant night sky stopped, until she realised she had been walking amongst these spiders for months and she had not died, nor had she been bitten.

So, yes, most of us have an instinctive dislike of spiders, even though we only knowingly interact with a few of the larger species. Walk around a garden with shrubs and trees in summer and you'll most

likely see orb-building spiders with their impressive webs; or if you're rummaging around 'stuff' in enclosed spaces, you're likely to find the tangled webs of red-back spiders.

The reality is that there are many species of spiders, and possibly more than 80 per cent are less than 5mm long, yes 0.5cm in size. And we have all been living with them all our lives. If you have seen spectacularly coloured spiders in the media, then you've probably been looking at a peacock spider, which belongs to a group of small spiders. So, other than having small colourful spiders and some relatively large, potentially dangerous spiders that include the funnel web spiders, why are spiders important?

If asked, I'm sure most people would know that spiders eat lots of insects, such as flies and mosquitoes, which are carriers of a wide range of diseases; a biological control of these disease carriers should be considered a positive value for spiders. The flipside is that spiders are important food sources for many of our Australian native animals. Think about birds flitting through leaf litter or other vegetation or skinks, frogs or all the small carnivorous mammals – spiders are on their menus!

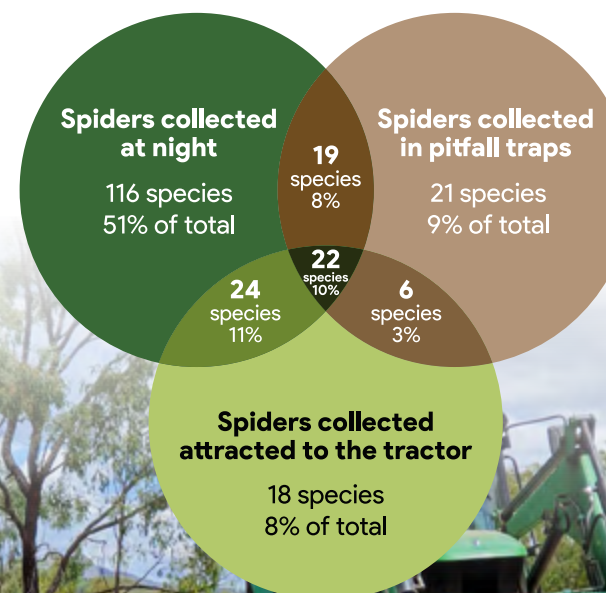
Spiders are important consumers and food sources, but we have limited knowledge about how to effectively capture this group of animals to learn which species are present and how many are in any particular area. The commonly used traditional methods include sweeping a 'butterfly net' through vegetation, leaving a container buried in the ground (a pitfall trap) for weeks to allow spiders (and other small animals) to fall into the container and then 'drown in preservative', or go out at night with a head torch and collect spiders by hand. None of these methods are particularly efficient or effective, and wandering around the bush at night in Australia looking for mostly tiny spiders has some serious safety implications – imagine doing this in other parts of the world!

So again, we know spiders are important and surveying them is problematic. I'm going to now explain how Stewartdale, SSAA Queensland's property near Ipswich, is relevant to spiders. A few years ago, a farmer interested in spiders noticed that every time he left his old diesel tractor in a paddock, idling for more than a few minutes during the day, it became covered with spiders. To shorten a much longer story,

this led to an experiment where we needed multiple, similar 30x30m, open woodland sites where we could leave pitfall traps, hand collect spiders at night, have access to an idling tractor and not have the study sites disturbed by members of the public. SSAA Queensland very generously allowed us (me, Robert Raven, a Queensland Museum spider expert; Andrew Maxwell, a UniSQ engineer and Rachael Harris, a postgraduate student) access at Stewartdale to study sites, use a tractor, a house and SSAA Queensland staff support to undertake this study.

What we discovered was that most shooters are interested in spiders, including SSAA Queensland General Manager and former SSAA President Bob Green, who was passionate about the research. At Stewartdale there is a particularly high diversity of spiders (226 species), including a few new species of spiders. The three methods we used caught about 10 per cent of the species, whereas 116 species were caught during night collection compared to 18 species that were caught while attracted to the idling tractor.

Story continued on page 41.



Rachael Harris and Robert Raven collect spiders on the SSAA Queensland Stewartdale Range. Robert has more than 40 years of experience as a professional arachnologist.

'SPIDEY SENSING' AT STEWARTDALE



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A Stewartdale peacock spider – actual size about 4mm long!

NATIONAL FIREARMS REGISTER WON'T HAVE TELEPATHIC POWERS

By Tim Bannister

The Report Co-Managing Editor and Australian Shooters Alliance Federal Government lobbyist

It may seem obvious to us, but it has become clear that those unfamiliar with firearms and much of the media have absolutely no understanding of what the National Firearms Register will and won't achieve.

After two men at the Melbourne Cricket Ground were found to be carrying unregistered handguns, *The Australian* newspaper published a story quoting the Coalition's Senator James Paterson laying the blame at Labor for being too slow in implementing the firearms 'registry'.

"No one should ever have to worry about firearms at any public event in Australia," he said. "We know that one of the firearms last night was unregistered and Australians know that the Albanese Government have never been on the front foot when it comes to community safety."

Despite admitting that one of the guns was unregistered, both in fact were; Senator Paterson and journalist Jessica Wang seem to fail to realise that a database of registered firearms will not have a list of unregistered firearms. It does not magically list unregistered firearms, and which criminals are in possession of them, let alone send an alert to the authorities that a couple of them are about to get drunk and rowdy at an Australian football game attended by 80,000 fans.

If only one of the alleged culprits had been given a prohibited firearms order, I hear the 'antis' cry. Oh, one of them was on the prohibited firearms list and the other was on bail. It is unclear whether the arrested

men were barracking for Collingwood or Carlton, but I have my suspicions.

So, what will the National Firearms Register actually do?

I have met with the Attorney-General's Department several times and they have continued to consult with SSAA Queensland's Australian Shooters Alliance (ASA). Its evolution, since first agreed to, after the Wieambilla terrorist, sovereign citizen and religiously inspired murders has been slow, but there is now more clarity on its capabilities.

A few facts first. It is touted to cost more than \$160 million dollars. Much of the money will be spent on fixing up the eight state and territories inaccurate firearms databases, which in some cases are still paper

based and stored in filing cabinets. About \$30 million of the budget will be given to the Australian Criminal Intelligence Commission (ACIC) to develop what they call the Australian Firearms Information Network (AFIN) to build the register. It is expected to be operating by mid-2028.

At the early stages it was unclear as to whether the federal government was building a ninth firearms database made up of all the data of the eight states and territories or whether it was a connection system that linked the various databases.

The Attorney-General says it will be a connection system or register. It is not a free-standing registry.

Perhaps the most productive outcome of this register is that it will finally force the states and territories to clean up and rebuild their databases into accurate recording systems. The databases have stored inaccurate information of shooters through no fault of

their own for decades. Often the shooters have been blamed by the authorities and accused of not acting in accordance with the law and at worst had their licence threatened to be cancelled. Licensed shooters can tell many stories of the police at inspection time claiming that they have no record of them either disposing of a firearm or even purchasing some, let alone having the correct firearm identification details. The police of all states have always been in denial about the shabby state of their databases.

At a federal meeting of senior police from across Australia, one state declared to the meeting, "Our firearms database is 100 per cent accurate!" The silence around the table was deafening. It didn't help that one small dealership of that state had recently reported being inspected and accused of missing 50 firearms only for the database records to be revealed as badly corrupted. The small dealership didn't even have a storage room large enough for 50 firearms.

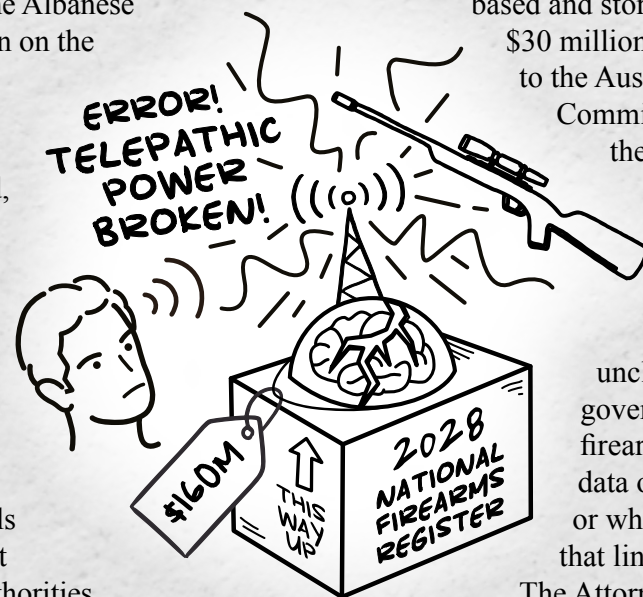
The other thing the register will do is stop the deliberate and indeliberate disappearance of firearms when sold or transferred interstate. Some, as I said, were deliberate slight-of-hand by dodgy firearms dealers, one instance being a New South Welshman who is now serving time at His Majesty's pleasure. He was found to have sold handguns to serious and organised crime figures. He claimed to have sold them interstate and they just fell off the NSW radar until one handgun was left at a Sydney crime scene.

In another instance a SSAA target shooter who moved from Western Australia to South Australia had a world of pain convincing the authorities that

she had registered her firearms in her new state and conversely that they no longer were registered in her old state. It took almost a year to rectify. In Victoria it was rumoured that the firearms database had a field with the initials 'NFI' – a field to indicate the storage address of the firearms and who they were being held by was currently unknown. We have also been officially told that the current pool of databases had 30 per cent more firearms than are actually in the nation. That's a lot of dead wood in the system.

Will the register stop another Wieambilla? Probably not. Could it aid public safety? Possibly, but the fact remains much of police work is done after the fact and is not preventative. Registered firearms, thankfully, are rarely used in crimes, nor are they carried out by licensed shooters. Informed shooters know that there is little public safety benefit in a firearm's database tracking air rifles, 22s, under and overs and everyday hunting rifles, but the reality remains firearm registration is not going away. It also won't harvest any new information on firearms or the owner, just the current information the state is meant to hold.

We may disagree with the belief that a firearms database magically solves firearm misuse, particularly by criminals using illegal firearms, or is a wise outlay of public tax dollars, but, if we are going to have firearms databases, at least make them accurate so they cause less grief for firearm owners than they have in the past! And while they are at it, please work out the very best way of keeping our private information safe and in the right hands. It's all about public safety, right? 🕸



'SPIDEY SENSING' AT STEWARDALE CONTINUED...

During the study we caught nearly 2,300 mostly small spiders, hence my comment about there being lots of spiders, everywhere. You can read the published paper by Googling Vibration as a New Survey Method for Spiders (mdpi.com/2076-2615/14/16/2307).

This research would not have been possible without the tremendous assistance of SSAA Queensland, and it is an excellent example of the very broad support this organisation has for conservation of a group of animals typically disliked and misunderstood, which are incredibly important in the broadest sense for environmental health.

Equally, it demonstrates that the large amount of land required around shooting ranges, and managed by SSAA, has real conservation value even though it can be close to high-density urban areas.

As a final note, we are continuing this research on our Toowoomba university campus where we are trying to mimic the vibration that attracts a wide range of spiders to a device much smaller than a tractor and thus ideally use vibration to control spider behaviour (for surveys and possibly insect pest management). 🕸



A Metallic green ant mimic spider found at SSAA Stewartdale range.



Aiming true in the heart of IPSWICH

By Sam Talbot

One of SSAA Queensland's eight state shooting complexes is the bustling hub of pistol shooters at Ipswich City Pistol Club (ICPC). The club caters for pistol shooting enthusiasts of all experience levels and, as a wholly owned business of SSAA Queensland, it has built a reputation for safety, support and the shared enjoyment of shooting.

Despite being an indoor range, ICPC caters to a wide range of pistol competitions. Regular events include modified NRA matches, combined services matches, and a variety of rimfire and centrefire competitions. Whether you're shooting from 10 metres or 20, strong hand or freestyle, there's a new challenge for shooters to test their accuracy, consistency, and control. With so much variety, ICPC makes it easy for shooters to reach their minimum yearly handgun shooting requirements.

The club has a friendly and inclusive atmosphere, making it a great place for newcomers to learn the ropes. For those wanting to enter the sport and get their licence, ICPC offers Queensland Weapons Act Safety Courses, run by trained instructors.

ICPC is primarily for members of the club, and SSAA members, but unlicensed visitors wishing to try pistol shooting and invited visitors are also welcome. The club encourages those considering a Category H licence to get involved in competitions early and often - not only to meet legal obligations, but to find the type of shooting they like best.



Aiming true in the heart of IPSWICH

Range fees are competitive, and membership options including for juniors, are available for different needs and levels of commitment. Unlicensed visitors can purchase various packages which include pistol hire, ammunition, and targets. These packages are available in .22, 9mm and .357 mag.

A busy calendar, clear and well-enforced range rules, and an exceptional culture make ICPC one of the most accessible and well-run pistol clubs in the region. Whether you're pursuing national championships or just discovering shooting for the first time, ICPC offers a space where excellence and enjoyment go hand in hand.

To learn more or book an attendance head to icpc.ssaqld.org.au or call them on 3812 1184. For safety courses call the State Office on 3281 3447. 📞



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As an association which caters to its members' enjoyment of the shooting sports, Public Liability is a must. SSAA Queensland's \$20,000,000 Public Liability coverage protects the Association's Branches, Affiliate Tier 1 Clubs and its individual members from costs incurred in the event someone holds any of these entities responsible for personal injury to a third party or property damage to a third party.

SSAA Queensland takes safety seriously – on the range and in the field. While the shooting sports are extremely safe, accidents do happen and that is why Public Liability cover is vital. However, in recent years, obtaining Public Liability Protection for shooters has become exponentially expensive. The Association looked far and wide to find a public liability insurer to meet its needs – or rather its 80,000 members' needs. However, its high standards, specific requirements and insurers' exorbitant costs meant SSAA Queensland had to take matters into its own hands; as such, in 2023 it established Deporte Mutual Public Liability Protection - a Discretionary Mutual Fund (DMF), with Steadfast. It is the only shooting association in Australia to have taken full control of the matter of Public Liability.

A DMF is a self-managed fund that sees SSAA Queensland collect membership fees and manage and distribute funds when members make a reasonable claim. This initiative ensures its members are protected from the uncertainty and changing costs of public liability protection, now and well into the future.

Deporte Mutual is managed by a board of directors and it operates solely for its Queensland members. It does not have any third-party shareholders, and it does not pay dividends. This is important because it means any surplus goes back to the benefit of its members – again, a measure demonstrating the importance of members to the Association.

All approved financial members of SSAA Queensland are covered by Deporte Mutual to participate in recreational (unpaid) shooting throughout Australia on approved ranges and hunting in the field up to \$20,000,000 per 'situation', including:

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- Historical activities
- Hunting and conservation activities.

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- Recreational activities such as volunteer hunting or fishing (where permission has been given).

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Heiser's Essential Guide to Shooting Vintage Rifles in Australia

By Paul Heiser - Book Review by Sam Talbot

“Far too many vintage firearms languish unused because their ammunition is not easily available or long discontinued; you may not be able to obtain suitable projectiles for it, or reloading dies cannot be sourced,” says Heiser, and he's set to change that. In his book *Essential Guide to Shooting Vintage Rifles in Australia*, Heiser aims to inspire shooters to step beyond their comfort zones and experience the “fun, folly, and occasional frustration” of reloading and firing vintage rifles.

Heiser takes readers on a journey through history, beginning in the 1600s with matchlocks and tracing the evolution of firearm technology. Throughout the book, he skillfully blends historical context with practical advice, offering guidance that not only keeps enthusiasts safe but also saves them valuable time and money. His extensive knowledge makes it clear where precision is crucial and where some corners can be cut, such as when two seemingly different components are actually interchangeable.

Shooting vintage rifles requires more than just the firearm itself. Heiser highlights the often-overlooked accessories essential for safe and effective operation - the kind of things you only realise you need when your barrel is suddenly jammed.

From my own experience of muzzleloading, I know that half of the discipline revolves around cleaning and preventing rust. With barrels that are often decades or even centuries old, proper maintenance is crucial. Heiser provides in-depth explanations of different cleaning techniques and tools, ensuring readers can preserve their vintage firearms. The book also covers whether certain aged barrels are even safe to use, considering steel from three centuries ago is not the same as modern steel.

While undeniably rewarding, shooting vintage rifles is not a simple hobby. As enthusiasts explore more exotic firearms and loading techniques, complications inevitably arise. In an era where older forums and websites risk slowly disappearing, having reliable guidance is invaluable.

That said, this book is not intended to be a comprehensive reference manual. It does not include

precise measurements, weights, or load data. Instead, Heiser provides recommendations for high-quality reference guides and stresses the importance of consulting reputable reloading manuals. He makes it clear, “never invent your own loads”.

This book is best read from start to finish, with chapters that can be revisited later to reinforce specific areas of knowledge.

Given the age of the equipment involved, much of the knowledge in this field is passed down through informal ‘campfire advice’. Heiser helps separate enduring wisdom from outdated practices, such as how advancements have changed the approach to annealing cases. He also shares his own hard-earned insights, revealing lessons learned through years of experience.

For those looking to dive deeper into the world of vintage firearms, Heiser recommends engaging with the Historical Arms Collectors Branch, established by SSAA Queensland in 2000. He also emphasises the wealth of knowledge available at local SSAA clubs, where experienced members can offer guidance and help breathe new life into obscure or ancient firearms.

Whether you're a seasoned shooter or a newcomer intrigued by the world of vintage firearms, *Essential Guide to Shooting Vintage Rifles in Australia* is an engaging and informative read. Heiser's passion for the subject shines through, making this book an invaluable resource for anyone looking to keep historic rifles in action for years to come.

The Essential Guide to Shooting Vintage Rifles in Australia can be ordered by emailing paulheiserbook@gmail.com. If buying for someone as a gift, Paul would be happy to include a dedication. The price, including tracked postage, is \$36 within Australia. It is also available online in digital and hardcopy formats from Amazon, Kobo and Barnes and Noble. 📖

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For your chance to win a copy of Paul's book, enter via our website:

ssaaqlld.org.au/category/competitions
Competition closes June 30, 2025.

This book is great for any vintage shooter or collector's reference library.



THIRD TIME'S

A CHARM

PATTERN 1914 NO. 1 .22 RF TRAINER

By Paul Heiser

The rifle that is the basis of this article has been in its lifetime three distinct variants of the Lee Enfield series of rifles. It commenced its service life as a Magazine Lee Enfield Rifle Mk I, colloquially known as the 'Long Tom' and was manufactured in 1897 at Enfield. This was the standard British infantry rifle that was approved for service on 11 November 1895. It would have originally been fitted with a cleaning rod. Cleaning rods were deemed obsolete as from 7 August 1899. Whether this individual rifle saw service in the Second Anglo Boer War of 1899 to 1902 is a matter of conjecture.

This rifle's next incarnation was that of a Short Magazine Mk II Cond (converted) - a conversion that was approved in early 1903, the purpose of which was to shorten the rifle so that it looked similar to the newly approved Short Magazine Lee Enfield (SMLE) Mk I. This change was carried out at Enfield during 1904. Considerable work was done to the receiver and bolt so that it could accommodate an SMLE safety catch, and

the bolt had its dust cover lugs ground off and a charger guide was brazed to the existing bolt head. The forewood had extensive modifications so that an SMLE nose cap could be fitted, and the original butt was replaced with an SMLE butt. The original barrel was removed and a new SMLE barrel was fitted. Some, but not all, conversions had their magazine cut-offs removed. I am not sure if these conversions were intended for the regular army or for the reserves. This conversion goes beyond the usual modifications to service rifles and would have incurred significant expense.

We now arrive at the rifle's third and final incarnation: the .22 Pattern 1914 Short Rifle No.1. This pattern was approved on 24 May 1915, and this may have been an instance of the approval being formalised after the implementation of the new pattern.

The rapid expansion of the British Army from August 1914 put incredible demands on it. By European standards, the British Army was small and relied on volunteers who formed a

professional cadre backed up by volunteer reservists. In August 1914, the army suddenly found itself with large numbers of men volunteering for service who had probably never fired a .22 rimfire rifle, let alone a centrefire bolt action rifle.

The conversion from .303 to .22RF consisted of closing off the original firing pin hole in the face of the bolt head, the extractor being re-profiled, drilling a new offset hole for a floating firing pin, the



A generic shot showing the receiver and slot for removed magazine cut-off.



The original forewood has been shortened and modified to take an SMLE nose cap.

The Patt 1914 No.1 Full Length rifle.

original firing pin being shortened, the charger guide being removed and, if present, the magazine cut-off being removed.

Rather than fit a new .22RF barrel, the original .303 barrel was bored out and a .22 sleeve was silver soldered into the barrel. This saved time and expense of producing a new barrel. The sleeve was a permanent fitting rather than being removable like the earlier Morris Tubes, which were used as sub-calibre inserts. This conversion was carried out exclusively by the commercial gun trade - AG Parker and Co and Westley Richards, both of Birmingham. Records indicate that 427 rifles, being both Short Magazine Mk II Cond and Short Magazine Mk II Cond*, were converted to this pattern.

The markings on this rifle are a good guide to its service history.

The original markings on the right side of the butt socket and the conversion on the left, sometime between late 1914 to 1915, are shown below:

Original

A G Parker
& Co. LTD
VR
Enfield 1897
LE 1
22 PATT
14 No 1

First conversion markings

ENFIELD
1904
COND II

Of the more than 317,100 Lee Enfield Mk 1s manufactured, fewer than 0.13 per cent of them would end their service days as a Pattern 1914 No. 1 .22 RF Trainer. ☺

THIRD TIME'S A CHARM



The bolt face has been modified by replacing centrefire firing pin with an offset rimfire firing pin.



This image shows the original .303 extractor modified for .22 rimfire.



The Patt 1914 No. 1 rear sight.

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BATTLING FERAL CATS

The Tiwi Islands' conservation initiative

By Joanne Heathcote

World-wide, free-ranging cats are considered one of the most damaging invasive species, causing impacts through predation, disease transmission and competition. In Australia feral cats inhabit almost all of our continent and are an ecological catastrophe for our environment. Predation by cats is a recognised threat to more than 200 nationally threatened species. Since their arrival in this country, cats have played a role in the extinction

of more than 30 of our native species, and they continue to drive many of them towards extinction. It has been estimated that collectively feral cats in Australia kill over six million mammals, reptiles, and birds every 24 hours and are the single greatest threat to Australia's unique smaller native mammals.

Australia's offshore islands provide important refugia for species as the threats present on the mainland are often absent or less intense on islands. Some of Australia's islands now provide the only refuges for certain species that have been extirpated from their mainland ranges. Nestled just 20 kilometres north of Darwin, the Tiwi Islands encompass Australia's second and fifth largest islands, Melville (5,786 km²) and Bathurst (1,639 km²). The Tiwi Islands are considered an important faunal refuge for many threatened and declining top-end species such as the brush-tailed rabbit-rat, northern phascogale, black-footed tree-rat, and the endemic Butlers dunnart. While populations of these species remain high compared to the mainland, population declines

have been detected on Melville Island during the last 20 years, and predation from feral cats is implicated as the primary driver of these declines.

There has been an unbroken history of occupation and ownership of the Tiwi Islands by Tiwi people, and Tiwi Traditional Owners have identified feral cats as a key threat to their islands' biodiversity. Fortunately, hope is on the horizon. Thanks to the backing of a two-year Australian Government Saving Native Species Grant, Tiwi Rangers and Traditional Owners, along with support from Terrain Ecology and researchers from Charles Darwin University have launched a vital conservation initiative and have taken up the challenge of undertaking cat control to protect Tiwi wildlife. The aim of this project is to understand what feral cat control methods are most effective on Tiwi. Three different cat control methods are being trialled across three priority areas on Melville Island where known populations of threatened wildlife are persisting. A combination of both traditional and innovative

methods is being used. Among the tools in their arsenal are advanced Felixer Grooming Traps, which are innovative devices that deliver a poison gel to the fur of feral cats which the cat later ingests when grooming itself. Through a combination of targeted laser and built-in camera using artificial intelligence (AI) recognition, these autonomous devices are able to identify and cull feral cats while avoiding non-target species (Google The Felixer). The team are also using .223 rifles fitted with the latest thermal scope technology as well as cage traps lured with cat urine. The team hopes to understand what methods are most effective across the wet and dry seasons as well as cost-effectiveness or 'catch per unit effort'. This information, alongside known cat density measurements, will be used to model future cat management scenarios required to suppress cat numbers in parts of the Tiwi Islands.

From June to September 2024, the project successfully removed 38 feral cats. One particularly

eye-opening dissection involved a 6.4kg male cat with an entire black-footed tree-rat in its stomach — a stark testament to the predatory prowess of these invasive felines. Alarming, preliminary findings indicate that savanna gliders (formerly called sugar gliders) are particularly at risk, showing up in one of every four culled cats. Other mammals found in the stomachs of cats include the delicate mouse, pale field-rat, and northern brown bandicoot, alongside various reptiles, birds, frogs, and insects.

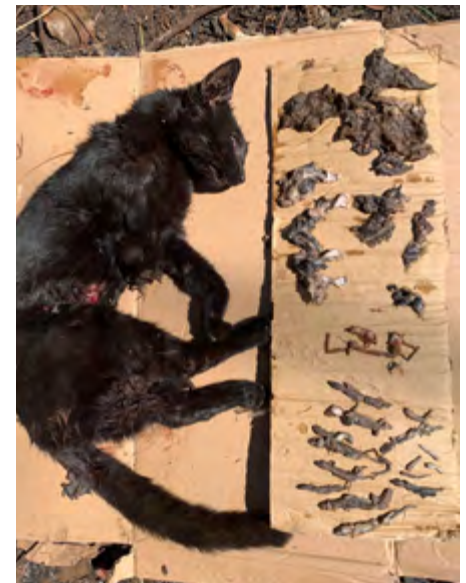
How can hunters help protect Australia's wildlife?

As responsible outdoor enthusiasts and hunters, we also have a role to play in native wildlife conservation. By staying vigilant for feral cats during hunting expeditions and removing them whenever possible, we can make a significant contribution. Every feral cat eliminated translates to potential survival for countless native species. 🐾

BATTLING FERAL CATS



One cat had a whole black-footed tree-rat (Djintamoonga) in its stomach.



This cat had a recently killed and chewed savanna glider (Rijinga) along with many dragons and skinks and a large insect in its stomach.

Photos courtesy Georgie Neave (CDU).



A whole family of Savannah gliders in a pregnant female feral cat.

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HEAR HERE!

Earmuff protection for everyone

Shooters of any skill level know the importance of good hearing protection, especially products that keep out the sound of a firearm but still allow them to converse with fellow shooters and, more importantly, hear the commands of a Range Officer.

Those in the shooting industry have listened to shooters needs, offering a wide variety of hearing protection options, ranging in price from less than \$100 to nearly \$500. *The Report* has collated a number of products for you to consider.

ENTRY-LEVEL \$

Miroku Defender Earmuffs

Tailored for shooting sports enthusiasts looking for exceptional value, Miroku's Defender Earmuffs are the ideal choice.

These passive noise-cancelling earmuffs provide a budget-friendly solution without compromising comfort.

Featuring gel cushion ear cups, they ensure a snug fit and all-day wearability.

With IPX4 water resistance, they withstand the elements, making them perfect for outdoor shooting or other activities. Boasting a noise reduction rating of 24dB, they efficiently block out gunfire noise, safeguarding your hearing. Lightweight and foldable for easy storage, these earmuffs are the perfect companion for shooters looking for protection at an unbeatable price.

Features:

- Passive noise cancelling earmuffs
- Gel cushion ear cups
- IPX4 water resistant
- Noise reduction rating: 24dB
- Foldable
- Cup replacements available
- Weight: 308g

RRP: \$69.95

Winchester Hearpro Dakota Active Black Earmuffs

Winchester Hearpro Dakota Active Black Earmuffs provide you with the ultimate protection against excessive levels of noise. They are adjustable, making them easy to fit and their quality foam pads, and thin cups make them very comfortable to wear. A jack, volume control by potentiometer and Active system, enable sound suppression and amplification when required.

Features:

- Adjustable
- Volume control by potentiometer
- Active system: protection/amplification
- Jack
- Foam pads
- Thin cups
- Weight: 279g inc batteries
- Power: AAA batteries

RRP: \$99.95

Spika Electronic Earmuffs

Stay protected and on-target with the Spika Electronic Earmuffs, designed for ultimate ear safety in shooters' environments. These earmuffs provide reliable protection against harmful sounds while also amplifying low-level noises, ensuring you stay aware of your surroundings. Sounds below 85dB are amplified through built-in speakers, while hazardous noises over 85dB are suppressed in just 0.01 seconds, keeping your hearing safe while you're shooting.

Featuring low-profile ear cups, the Electronic Earmuffs fit securely without interfering with your aim, making them an excellent choice for bench shooters. They come with two AAA batteries and an automatic shut-off feature after four hours, ensuring reliable use in the field. An AUX input connection is included for plugging in your audio devices, providing convenience for listening to music or communication during use.

These earmuffs are designed to deliver dependable hearing protection while keeping you connected to your environment. Whether you're on the range or in the field,

trust the Spika Electronic Earmuffs for a blend of safety, comfort, and enhanced awareness.

Features:

- Built-in speakers amplify sounds below 85dB
- Sounds more than 85dB re suppressed in just 0.01 seconds
- Low-profile cups to minimise interference when shooting
- AUX plugin (supplied) for audio devices
- Weight: 270g
- Power: 2 AAA batteries (supplied) and automatic Shut Off after four hours

RRP: \$119.95

MID-RANGE \$\$

Walkers Razor Slim Electronic Muffs

The Razor Slim Electronic Muff is the perfect hearing protection solution for the avid shooter, hunter or outdoor enthusiast. Designed to provide superior hearing protection, the Razor Slim Electronic Muff features a noise reduction rating of 23dB, ensuring that you can enjoy your favourite outdoor activities while protecting your hearing.

Unlike traditional bulky earmuffs, the Razor Slim Electronic Muff features a low-profile design that sits snugly against your head. Its slim construction allows for effortless manoeuvrability, whether you're in a shooting range or out in the field. The cushioned ear cups provide exceptional comfort, even during long hours of wear, ensuring you can focus on your activities without distraction.

Say goodbye to muffled sounds and distorted frequencies. The built-in high-definition speakers of the Razor Slim Electronic Muff deliver clear, amplified audio directly to your ears. Whether you're at the range, communicating with your hunting partner, or at the job site, you can enjoy crisp, natural sound quality without compromising your safety.



Features:

- Advanced sound-activated compression technology, effectively reducing harmful noises like gunshots and loud machinery to safe levels, while still allowing you to hear important ambient sounds
- Crisp, clear speakers
- Noise reduction rating (NRR) of 23dB, providing exceptional protection in even the loudest environments
- Weight: 435g
- Power: 2 AAA batteries

RRP: \$139.95



Ridgeline Defender Pro Earmuffs

Ultimate performance Ridgeline Defender Pro Earmuffs

Engineered with shooting sports enthusiasts and professionals in mind, our Defender Pro Earmuffs deliver unmatched hearing protection. These electronic noise-cancelling earmuffs boast gel cushion ear cups for supreme comfort during long sessions on the range. IPX2 water resistance ensures durability in unpredictable weather.

With Bluetooth connectivity and 100 hours of working time, you stay connected without interruption. The foldable design and zippered case enhance portability and protection. Offering an impressive noise reduction rating of 22dB, these earmuffs excel in protecting your hearing during shooting activities. Elevate your shooting experience with the unmatched comfort and precision of Defender Pro Earmuffs.

Features:

- Electronic noise cancelling earmuffs
- Gel cushion ear cups
- IPX2 Water Resistant
- Bluetooth connectivity
- 100hrs Working time
- Noise reduction rating: 22dB
- Foldable with zippered case
- Weight: 300g
- Power supply: 2 AAA Batteries (not included)

RRP \$149.95

HEAR HERE!

TOP-RANGE \$\$\$



Ultrix Bionic Fuse Bluetooth Earmuffs

Ultrix Bionic Fuse Bluetooth Earmuffs are a premium hearing protection solution tailored for modern shooters who demand cutting-edge technology and optimal comfort. Designed to enhance safety and connectivity on the range or in the field, these earmuffs effectively

blend hearing protection with the convenience of wireless audio streaming.

The Bionic Fuse muffs are equipped with Bluetooth connectivity, enabling users to connect seamlessly with their smartphones or devices. This feature allows for hands-free calls, music streaming, and audio alerts, all while maintaining essential ear protection. Easy-to-access controls on the ear cups allow for swift volume adjustments and Bluetooth operation.

The Ultrix Bionic Fuse muffs are available in two appealing colours: a sleek grey for a professional, modern appearance and a flat dark earth (FDE) finish that suits tactical and outdoor settings. This stylish versatility makes the Bionic Fuse ideal for diverse environments and users who prioritise performance and aesthetics.

Features:

- Wireless audio streaming
- Bluetooth connectivity
- Cushioned ear cups
- Adjustable padded headband, great for use with helmets or long arms
- Advanced noise-cancelling technology, with Noise Reduction Rating (NRR) of 25dB. This ensures reliable ear protection against high-decibel gunfire
- Situation awareness is maintained through built-in omnidirectional microphones, amplifying ambient sounds, such as conversations or range commands, creating a balance of protection and awareness.
- Power: USB -C lithium battery
- Weight: 800g

\$295 (approx.)



Sordin Supreme Pro-X

The legend continues

More than 30 years after its introduction, Sordin is more renowned than ever for outstanding robustness and excellent ambient sound reproduction. Its superior-quality reputation is due to a unique set of benefits: safe hearing protection, ambient sound enhancement, extensive communications opportunities and reliability.

A genuine robustness is sensed by anyone balancing it in their hands, with a slim cup design offering you full freedom of movement while providing excellent hearing protection. There is a tight feeling over the ears, without compromising comfort.

Sordin's excellent sound reproduction is based on the SordinHEAR2™ audio system. Sordin hearing protectors let you alter and optimise your hearing experience quickly when needed.

Like most electronic hearing protectors, Sordin Supreme uses digital technology to compress noise to a safe level while allowing harmless sounds to pass through the cups. However, Sordin uses smart algorithms to make optimal use of the opportunities provided by advanced ambient audio technology.

Utilised in Supreme Pro-X, the SordinHEAR2™ audio system takes Supreme's sound reproduction to the next level. With four unique audio profiles, each designed to create a customised sound image depending on the situation. The software-based audio profiles – Hunting, Shooting, Focus and Comms – are easily available for the user at any time, using the external keypad.

Features:

- Robust build
- Slim cup
- Algorithms compress noise to a safe level
- Four audio profiles for varying situations
- Easy adjustments using external keypad
- SordinHEAR2™ audio system
- Weight: Approx 400g
- Power: AA batteries

Starting from **\$489** online. Shop around. Available from Beretta Australia and all good dealers.

Note: All prices are approximate. Contact your nearest dealer or shop online. 📞



KNIFE STEELS

Not one type fits all

By Rod Hoare

Following on from the April magazine's article on different blade grinds, this article will take a closer look into the most common steels used for knives sold within Australia, including edge retention, toughness, ease of sharpening, and corrosion resistance (explained below). While this article focusses on common different steel types used in knives, the biggest variable in the performance of these is the heat treatment of the steel. If the heat treatment is not executed to get the best out of the steel, then the knife may not perform as expected. This article is written from the perspective that the entire heat treatment process has been done optimally for each steel.



Aimee Conte forging a knife.

Meanings

Edge retention refers to a knife’s ability to maintain its sharpness during use. However, it can be complicated, as an edge can dull from various reasons, including wear, micro-chipping, deformation, or corrosion. Most edge retention tests focus on wear resistance, which measures how long it takes abrasives to dull your edge while cutting. Wear resistance is derived from hardness and carbides (hard particles formed between carbon), plus other elements like vanadium or tungsten

Toughness is the resistance to chipping or breaking. Tough steel can withstand impacts without significant chipping or the tip breaking off. Generally, steels with higher hardness and wear resistance tend to have lower toughness. This is one of the fundamental tradeoffs in steel. Steels that have good edge retention and toughness are ideal for general-purpose knives. On the other hand, steels with high toughness are well-suited for knives that will likely encounter hard impacts, such as large chopping knives or camp knives. In turn, steels with high hardness are great for repetitive slicing tasks such as in a professional kitchen.



Corrosion on knife steels typically manifests as rust, patina, and staining. While corrosion is primarily a cosmetic issue, it can dull your edge, cause pitting, and compromise the structural integrity of your knife. Stainless steels are more resistant to corrosion, but it’s important to note that while they don’t stain as much, most of them will still rust under certain conditions. Being stainless is not a binary property; some stainless steels are more resistant to corrosion than others.

Ease of sharpening refers to the difficulty of removing material with a sharpening stone. Wear resistance, whether high or low, plays the most significant role in determining ease of sharpening. Other factors that influence ease of sharpening include the thickness of your edge, the initial dullness of the knife, the nature of the heat treatment, and the sharpening tool used.

There are three main types of steels used in making knives, carbon steel, tool steel and stainless steel, let’s look at these closer.

CARBON STEEL

Carbon steel includes the ever-popular 1084, 1095, 80crv2, 52100, V-Toku2 and 5160 to name a few. Carbon steels are popular for forging and, in general, have lower edge retention and higher toughness with poor corrosion resistance (keep them oiled), a number of makers are now coating high carbon steels e.g., Cerakote, to help prevent corrosion and minimise maintenance for the user.

TOOL STEEL

Tool steel includes the popular D2, CruWear, A2, 3V and M4. Most tool steels have good corrosion resistance and can have extremely high edge retention or toughness. Two standouts are CPM-CruWear and CPM-M4, which are very well-balanced steels within this category.

Carbon Steel Ratings

Steel	Toughness	Edge Retention	Corrosion Resistance
8670	10	1.5	0
5160	9.5	1.5	0.5
52100	8.5	2	0.5
CruForgeV	7.5	2.5	0
1084	8	1.5	0
80CrV2	8	1.5	0
L6	8	1.5	0.5
ApexUltra	5.5	4	0.5
26C3	6	2	0
V-Toku2	5.5	2	0
1.2442	4.5	2.5	0
O1	4.5	2	0.5
1.2519	4	2.5	0.5
Blue Super	2.5	3.5	0
1.2562	2.5	3.5	0
1095	4.5	1.5	0

Tool Steel Ratings

Steel	Toughness	Edge Retention	Corrosion Resistance
10V	5	8.5	4
15V	3.5	10	4
3V	9	4.5	5.5
A2	6.5	2.5	3
CPM-CruWear	8	5	5.5
CPM-M4	6.5	6	4
D2	3.5	5	4.5
K390	5.5	7.5	4
M2	5	4	4
Maxamet	2	11	4.5
Rex 121	1	12	3.5
Rex 45/HAP40	4.5	6	4
V4E/4V	7	5	4
Vanadis 8	6	7.5	4
ZDP-189	2	8	5
Z-Max	3.5	10	4
Z-Tuff	10	2.5	5.5

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Utility hunter with 80crrv2 blade made by Francois Mazieres in the NT.



STAINLESS STEEL

Stainless steel includes Nitro-V, N690, AEB-L, S30V, S35VN and the relatively new (in terms of knife steels) to market MagnaCut. Some of these steels have exceptional corrosion resistance with high edge retention or toughness; the standout in this category is MagnaCut, which offers great overall edge retention and toughness along with very high corrosion resistance, hence the reason you are seeing this steel becoming more prevalent for both factory and handmade knives. If you were looking for a knife that is around salt water constantly, LC200N is perfect for corrosion resistance, but the trade-off is its edge retention is low, but, with great toughness.

Stainless Steel Ratings

Steel	Toughness	Edge Retention	Corrosion Resistance
1.4116	2.5	2.5	8
14C28N	9	3	8.5
154CM	3.5	4.5	7
420HC	9	2.5	8
440A	3.5	3.5	8.5
440C	3.5	4.5	7.5
AEB-L	9	3	7
AUS-8/8Cr13MoV	6	3	7
BD1N	3.5	3.5	8.5
CPM-154	5	4.5	7
Elmax	4	5.5	8
LC200N	8.5	3	10
M390/20CV/204P	3.5	6.5	9
M398	2.5	9	8
MagnaCut	7	5	9.5
N690	3.5	4.5	8
Nitro-V	7.5	3	7
S110V	3	8	9
S125V	2.5	9.5	7.5
S30V	4	6	7.5
S35VN	5	5	7.5
S45VN	4	5.5	8
S60V	3.5	7	7
S90V	3.5	9	7.5
Super Gold 2	4	5	7.5
Vanax	5	5.5	10
VG10	4	4.5	7.5
XHP	5	5.5	6.5

Ease of sharpening means the difficulty in abrading away steel. This is generally the reverse of the edge retention rating. So, the higher the edge retention, the more difficult it will be to sharpen. Using the previously mentioned edge retention ratings, REX 121 would be the most difficult to sharpen and 1084/1095 the easiest. There are a couple of other factors that can affect sharpening ease; this could be the type of sharpening stone or method used versus the steel you are sharpening, for example using an aluminium oxide stone on a high vanadium blade (eg: S30V) makes it more difficult, as the oxides are softer than the carbide. Diamond and CBN stones make sharpening these steels easier.

The cost of knife steels plays an important part in the overall price of a knife. This varies greatly depending on production methods, alloying elements, and manufacturing complexity, combined with import costs and availability. Most well-known and high-performing steels are made in USA or Europe, while there are some less expensive steels coming from China that are being used more often in some cheaper factory knives (e.g., 8cr14MoV). High wear-resistant steels, often requiring powder metallurgy manufacturing, are far more expensive to buy and process. The cost of working the steel for knife makers is often higher than the steel itself. Folding knives for example, use a small amount of steel compared to fixed blades, but offering this in a high wear-resistant steel means abrasives are used up quickly; careful grinding is needed to avoid overheating, finishing and polishing take more time, as well as a more complex and stringent heat-treating protocol being used, etc.

Buyer aware. If a knife has a non-specific or generic label like ‘surgical stainless’, ‘stainless’, ‘high carbon’, ‘damascus’, etc...be aware! These labels mean nothing

and indicate a manufacturer’s or maker’s attempt to appear to offer a quality steel, but more often isn’t. If purchasing online and there is no information about the steel used in the description, step back and ask, why? Quality materials are often listed prominently, while a lack of information is a common way to avoid discussing the subject.

Steels not included in the above ratings are damascus (pattern welded steel), San-Mai and other specialist steels; this is because they are forged using more than one steel type and performance should be based on the main steel used, which can be looked at on the previous tables. For example, a damascus blade made from 1084 and 15n20 should have the performance of 1084. A San-Mai blade using M390 as its core steel would have the performance of M390.

In conclusion

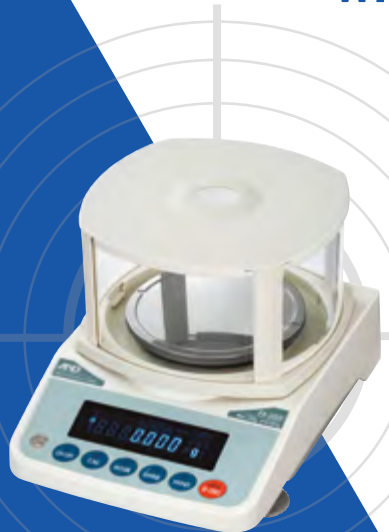
Steel ratings are not about ranking steels in terms of what is better than another but understanding the different balances such as toughness versus edge retention. Other factors that can be added are corrosion resistance, hardness and cost. There is

no single category that means that a steel is more ‘premium’ or ‘better’ than another. Heat treatment and edge geometry (blade grind) can mean more for knife performance than the specific steel used in the knife. The ideal scenario is when the steel, heat treatment, and geometry are selected for the knife and its intended use. So, when you find a knife that isn’t up to your expectations, question everything and ask yourself, is it the steel, heat treatment or geometry that isn’t correct for that purpose?

All of this information, combined with the blade grind article in the April issue of *The Report*, is a further reason that dealing with a custom artisan knifemaker within Australia is beneficial; you can talk direct with the maker and come to an understanding of what is required for your knife, and be confident that it should perform as intended, along with buying an Australian-made product. 🇦🇺

This article was compiled with the help of Dr Larrin Thomas from Knife Steel Nerds in the USA, along with Nordic Edge in Sydney, who supply knife steel for Australian makers. If you would like to delve deeper into knife steel, your best option is checking out www.knifesteelnerds.com, but be warned, it’s a very big rabbit hole to go down.


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Member profile

Kasey Dwyer



Kasey's first stag – a memory not likely to be forgotten.

By Taylah Campbell May

Kasey Dwyer joined the SSAA community in 2019 at the age of 14. He was introduced to the world of shooting through his family. Like many juniors, his dad had been shooting since he was young, so firearms were naturally a part of Kasey's life. Prior to starting his shooting career, Kasey played soccer but thought that it was time for a change and that's when he settled on trying his hand at

shooting.

Kasey was lucky enough to be welcomed into a diverse shooting community at the SSAA Townsville Branch. This diversity allowed for him to explore all the different disciplines on offer until he found the right fit, which was Field Rifle and Rifle Metallic Silhouettes (RMS). These disciplines resonated the most with him, as he was looking for something that was loosely related to hunting and

would help him further in that pursuit in the future.

Kasey enjoys shooting for various reasons; much like any other shooter, he enjoys the personal challenges that come with the sport, the constant drive to be better than the last time as well as the social aspects. Whether it is competing at a state, national or club championship, a little bit of healthy rivalry along with fun and friendly banter makes shooting a

highly appealing sporting atmosphere. In addition, Kasey finds it relaxing to be able to just 'zone out' to the point of it being just him and the target. Participating in a sport that he can do alongside his dad adds to the appeal of shooting.

As life has gotten busier, Kasey has managed to find time to shoot twice a month, which commonly consists of Rimfire and Centrefire Field Rifle and Rimfire RMS; he also manages to fit in some hunting time. Throughout his shooting career there have been many major achievements, including being crowned U15 Junior State Champion the first year he competed in local competitions. July of 2022 saw him named U18 Junior State Champion at the SSAA Captains Mountain Shooting Complex after a very close fight. Kasey says that this was his biggest accomplishment in his shooting career so far.

While target shooting is a passion of Kasey's, he also enjoys hunting and says, "It is very rewarding to be able to put food on the table after having learnt the skills to confidently and competently make an ethical kill while hunting". He was able to take his first stag in October of 2022, which is another major accomplishment of his.

While talking with Kasey, I asked him his best advice for new shooters. He had lots of encouraging tips to offer. Firstly, 'slow is fast'. By that he means, learn the fundamentals of your discipline slowly and you'll find that your personal technique will come together quickly. In addition, he says to trust your fundamentals and your rifle; don't go chasing a single bad shot, go back to the basics. Similarly, be comfortable when shooting because if you aren't comfortable then you will put that energy into your shot, and that has the potential to be the make or break shot. Most importantly, have fun and enjoy the experience. 🎯



Kasey at range Focussing on fundamentals from the start will aid in faster skill progression.



The smile on Kasey's face says it all... a proud moment indeed!



Kasey field shooting



LITHIUM-ION BATTERY WARNING

Make sure you're in charge

By Jennifer Martens

Lithium-ion batteries have many advantages over traditional lead acid batteries, including a long life cycle and being lighter than traditional batteries. However, they also have more serious problems if not stored, used and handled properly, including overheating and the potential for catching fire or exploding.

In 2022, Gareth Jones, a hunter from South Norfolk, Essex, posted a video of his experience with lithium-ion batteries while on a night hunt for rabbits using night vision and his .17 HMR, exposing a new complication with these batteries relating specifically to shooters.

A seasoned hunter, Gareth regularly carried his ammunition in a pouch across his chest for easy access, along with rechargeable lithium batteries for his night vision equipment. On this particular hunt, he suddenly heard a “loud crack” and immediately thought a cartridge had gone off in his rifle’s chamber, even though he knew his hand was nowhere near the trigger.

Taking the magazine out, he pulled back the bolt only to find the cartridge and bullet intact. The shock of the situation delayed his realisation of the impact he had felt due to a cartridge burning and puncturing the case in his chest pocket. Thankfully the bullet was not propelled.

Taking stock of the situation, Gareth realised that the cartridges he was carrying “must have created a circuit” for the batteries, which resulted in a cartridge completely disintegrating in the pouch and causing a small “impact” on his stomach, which he could still feel 12 hours later.

Gareth points out that he had been carrying Tracer rechargeable batteries in his pouch along with his .17HMR ammunition for years without incident; however, on this occasion

he was carrying a few inferior rechargeable batteries that his father had purchased quite cheaply from the internet.

On its website, Battery World says lithium-ion cells “may have exposed metal positive and negative terminals that can short-circuit when they come into contact with metal objects, such as keys or loose change in a pocket” and, obviously, Gareth’s situation means you can add ammunition to that list. Battery World goes on to say, “Once shorted, loose cells can overheat and experience thermal runaway, igniting the cell’s internal materials and forcibly expelling burning contents, resulting in fires, explosions, serious injuries and even death.”

Gareth’s potentially dangerous experience means he will now carry his batteries and his ammunition separately. Ideally, these batteries should be stored in their protective cases provided at purchase.

While lithium-ion batteries have risks, if handled, stored and used properly, they offer many advantages to users. To be safe, be sure to read lithium-ion precautions: batteryworldonline.com/pages/lithium-ion-loose-cell-warning ⚠

Sighting test results BIG GAME RIFLE

By Mark Hibbert

Big Game Rifle is a rifle shooting discipline that aims to foster the collection, preservation and use of vintage and modern classic large-calibre, big-game rifles. The matches aim to simulate field-shooting conditions to improve the shooter’s firearm skills in the pursuit of large and dangerous game.

The Discipline started in the early 1980s in Victoria, and by the mid-1990s most states and territories were holding matches. My personal involvement started in 2007, when I happened to be at Brisbane’s SSAA Belmont range and saw a competition in progress. It looked like fun, so I went over and had a chat with some of the competitors. I found out that calibres from .33 upwards with at least 2900ftlbs of muzzle energy qualified for Group

1 events, and my .338 Win Mag fitted into that category quite nicely. It wasn’t long before I also learned about the rifles needed for Group 2 (.40 calibre & 3900ftlbs of muzzle energy), and Group 3, (.50 calibre and 5300ftlbs of muzzle energy), and I soon made plans to get some of the bigger calibres.

Talking to some of the discipline stalwarts, I heard their stories of dangerous game hunts and before long I was also dreaming of hunting buffalo. Dreams eventually became realities, and I took an Australian water buffalo of 100 points in Arnhem land in 2019 with my .416 Rigby.

Then, in August 2024, I hunted the Buby Valley Conservancy with the legendary PH John Sharp and took a 39-inch 14- to 15-year-old Dagga Boy with my .505 Gibbs.

On both these hunts I felt confident in my ability to shoot under the pressure of a charge. This is an important consideration in dangerous game hunting, even though most hunts do not involve a charge. My hunts did not involve a charge, but nevertheless, the confidence is important. I credit this confidence to the discipline and rifle familiarity that comes from the regimentation of shooting under simulated field conditions in SSAA Big Game Rifle matches since 2008. While the primary purpose behind my competition involvement was to gain this familiarity and confidence, I am also competitive by nature, and

after two fifth places in the 2010 and 2011 Big Game Rifle National Championships, I decided I needed to try for a higher placing.

While the rules are the same for everyone, I noticed all the serious contenders were shooting with open sights, while I shot with my hunting scope set on 4X and suffered a 0.75 points per shot penalty. It didn’t take me long to realise that I could not overcome the penalty and thus I started shooting with open sights in 2012. That year I came third in the Nationals, and since then I have won the SSAA Big Game Rifle Nationals three times, (2014, 2017 and 2018).

I felt that the need to use open sights to be competitive was keeping some potential competitors away from the sport, simply because they did not want to change their hunting rifle sights, and nearly everyone hunts big game with a scoped rifle. I decided we needed a fairer scope penalty, and, as a rule book change was coming, I planned to do a series of sighting tests to gather some definitive data. In the past, penalties had been basically a 0.75 points per shot penalty for scope powers up to and including 4X. ‘Scopes’ include aimpoint sights with 1X magnification. It is also the same penalty for each event and each distance and for higher scope powers the penalty is one point per shot. I felt this was wrong as, intuitively, a six-point penalty for eight shots at 25m did not seem fair.



Mark with an Australian water buffalo of 100 points in Arnhem land in 2019 that he took with his .416 Rigby.

Mark with a 39-inch Dagga Boy.



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Equipment

The thought of expending a large number of shots with my .338 Win Mag at about \$2.50 per shot (reloaded) was soon expelled from my mind, and I decided to use a heavy-barrelled Weatherby Vanguard in .223 Remington for the tests. I had it fitted with a post type front sight, and as it had Weaver mounts, a receiver mounted Weaver aperture sight would fit on easily, as did my Aimpoint Micro and my Leupold VX 6 2–12 power scope, so I could use the same rifle for open sights, aimpoint and scope powers up to 10X.

Testing Procedure

Deciding on a procedure that would provide a good level of accuracy took some time and a lot of careful consideration. The Big Game Rifle Discipline has five very common courses of fire:

- 1. Slow fire from the sitting or kneeling position at 100m.
- 2. Slow fire standing unsupported at 100m.
- 3. Slow fire standing unsupported at 50m.
- 4. Rapid fire (two shots in 10 seconds) standing unsupported at 50m.
- 5. Rapid fire standing unsupported at 25m.

These are used in the majority of events, so I decided to shoot each of these in the testing process. I then decided on seven different sight settings:

- 1. Open sights.
- 2. Aimpoint.
- 3. Scope on 2X.
- 4. Scope on 4X.
- 5. Scope on 6X.
- 6. Scope on 8X.
- 7. Scope on 10X.

These, combined with the courses of fire, resulted in 35 different tests. The SSAA 13M target was used exclusively for these tests, which is a very uniform target. Finally, deciding on the number of shots was perhaps the most important issue. A single set of 10 shots per test (or 350 shots in total) would yield results but had the potential to be skewed by a pulled shot, which may then not happen on the next target. In the end I settled on 100 shots and 350 targets, resulting in 10 shots on each target. The use of 10 targets gives less chance of losing a shot due to coincident impact positions and results in a test series that would involve a total of 3,500 shots. The number of shots would provide a data sample big

enough that all the confounding factors should average out and yield a set of data that would give a reasonably reliable indication of the difference in scores that could be expected due to using the various sighting systems that were tested. I enlisted the help of Graeme Wright, who is the current Big Game Rifle National Champion and a multiple-time winner of this discipline, who shared the shooting chore with me, otherwise it may have taken a lot longer than it did, which was nearly five years, although two of those were subject to range restrictions due to COVID-19.

Results Analysis

The analysis of the results was reasonably complex, because I decided not to just look at scores. Average scores do not give sufficient information about group sizes because they are integer numbers and they are target specific. A score will tell you nothing about whether the shot just touched the score line or whether it was just outside the next highest score line, and, on the 13M target, those two positions will be 25mm apart. On a target with wider spacing between scoring lines the difference would be even more significant, so a better method was needed.

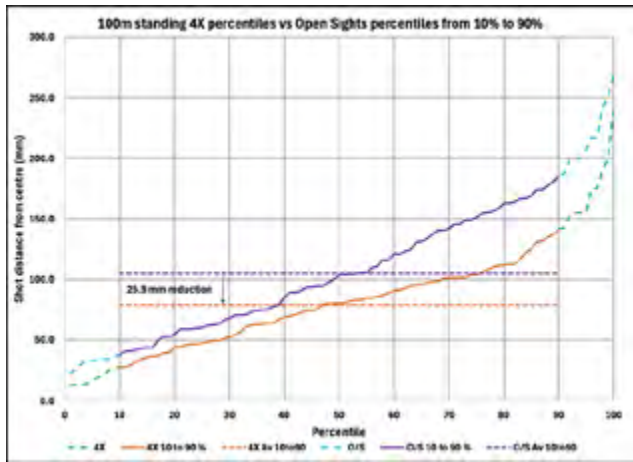
To overcome these problems, I decided I would draw a horizontal (X axis) line and a vertical (Y axis) line through the middle of each target and measure the distance of each shot centre from the X axis and the Y axis. Thus, making two measurements for each shot (a total of 7,000 measurements), which would then yield the X and Y coordinates of each shot centre. Once these were measured, the data was entered into a spreadsheet and spreadsheet formulae could then be used to determine the radius to each shot centre as well as scores, shot angles and other useful information.

The final step required was to order the data for each of the 35 tests into a series of radius points starting with the one closest to the centre and ending with the one farthest from the centre. When plotted on a graph, this produces a curve that can be referred to as a percentile curve. Each curve on the X axis starts from one (for the first shot, that is closest to the centre), and ends



on 100 (for the 100th shot, that which is farthest from the centre). Moving vertically up from any number on the X axis, for example 50, to the intersection with the curve and then reading across to the Y axis, you will read a distance 'D' from the centre. This implies that for 50 per cent of the shots in that sequence (also known as the 50th percentile) the distance to the centre is equal to that distance 'D' or less. Thus, we can compare the results for any one of the 35 test sequences with any other and see the difference, accurate to approximately 1mm. This can then be further processed to yield average differences in the distance to the target centre, which can then be converted to scores, but which are not target specific. The data can then be used with any regular target for distances from 25m to 100m and will yield a points-per-shot result or a fraction of a point-per-shot result, which provides some definitive data for determining a fair set of scope penalties. It then only remains to eliminate the impact of the extremes on the outcome. This is achieved by eliminating the top and bottom 10 per cent of data, and calculating the averages based on the 80 per cent of the data that lies between the 10th and 90th percentiles.

The example obtained for a 4X scope compared with open sights for 100m standing is shown below. Considering the 10th to 90th percentiles of data, for standing unsupported slow fire at 100m, the 4X scope reduced the distance to shot centre by an average of 25.9mm.



This analysis work also took some time, and it wasn't until July 2024 that the results analysis had been completed. Charts covering all 35 sequences are provided in the appendices, which can be found the SSAA Queensland website here: <https://ssaaqld.org.au/discipline/big-game-rifle/>

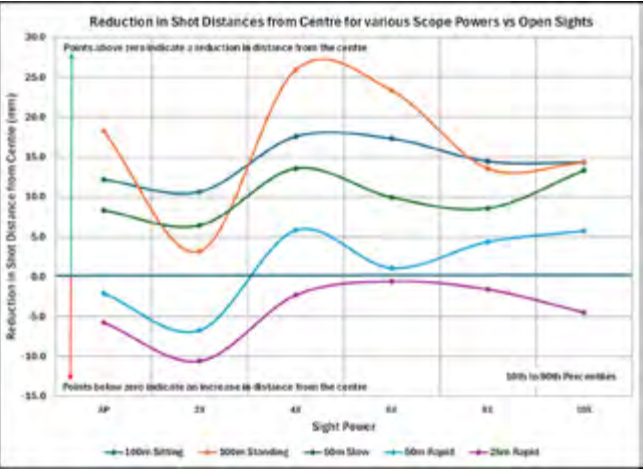
Conclusions

From the results I drew the following conclusions.

- 1. The combination of magnification and a single sighting plane results in a meaningful improvement in the average distance to shot centre (i.e. a reduction in distance).
- 2. However, it is also related to how steady the shooter's position is. For a very steady position, such as from a bench, the shooter has plenty of time to line up the sights and centralise on the middle of the target, and, under these conditions, it is possible to shoot similar scores on the 13M target with open sights as it is with a scope of any power. Group sizes with the scope set on 10X are definitely smaller than those shot with open sights; in fact, given the accuracy of the rifle and load used, with the scope set on 10X, the group is usually entirely within the X ring. However, the group shot with open sights was mostly within the 10 ring, yielding a very similar score. Thus, I concluded that a scope sight actually makes a bigger difference for rapid fire and less steady positions than it would for the slow fire from the sitting position, for example.
- 3. Coupled with that, the difference a scope makes is reduced with shortening of the distance, such that at 25m in rapid fire events it is actually a disadvantage to have a scope.
- 4. Furthermore, it was very clear from the results obtained that one particular scope setting almost always resulted in better scores than any other, and that is when the scope is set on 4X. The only time that was not true was for rapid fire at 25m when the 6X setting was best, although this was still inferior to open sights.
- 5. A 2X scope is not much use for competition; in fact, an aimpoint is always better.
- 6. Higher powers than 6X produce inferior results to 4X, demonstrating the fallacy inherent in the 2016 edition of the Big Game Rifle scope penalty rules, where scope powers greater than 4X attracted a higher penalty. In fact, my view is that the penalty should be set based on the best scope power, and the competitors should be allowed to vary the scope setting during the competition, as their preferences dictate.
- 7. In most cases 10X is better than 8X, but is always less effective than 4X, again except for 25m rapid fire events.

SIGHTING TEST RESULTS

These trends are clearly apparent from the below graph, which visually summarises all the results in one chart.



The same data placed in a table can be used to highlight the differences in the distance of the average shot centre from the centre of the target, which can then be used to calculate adjustments to scores, as shown below.

Reduction in Distance to Centre for Various Scope Powers 10th to 90th Percentile

	100m Sitting	100m Standing	50m Slow	50m Rapid	25m Rapid
AP	12.2	18.2	8.3	-2.1	-5.7
2X	10.6	3.2	6.4	-6.7	-10.6
4X	17.6	25.9	13.6	5.8	-2.3
6X	17.3	23.3	9.9	1.1	-0.6
8X	14.5	13.6	8.6	4.4	-1.6
10X	14.3	14.3	13.3	5.7	-4.5

For the 13M target, the procedure is to simply divide each average difference by 25mm and that will produce a fractional score per shot. This will enable an approximate equalisation of results obtained with scope-sighted rifles or with open-sighted rifles to be calculated for each event, as shown below.

Courses of fire for Big Game Rifle Core events

	Number of shots in each event						
Position/ Shots	Group 1	Group 2	Group 3	Stalker Double	Stopper Double	Special Snap	Charging Animal
100m sitting	4	2	0	2	0	0	0
100m standing	4	2	2	2	0	0	0
75m rapid	0	0	0	0	0	0	2
50m slow	4	2	0	2	2	0	0
50m rapid	2	2	2	2	4	0	2
25m rapid	6	6	4	6	4	8	2
Total shots	20	14	8	14	10	8	6

This finally yields what I believe to be fair corrections to equalise results obtained from scope-sighted rifles set on 4X, with open sighted rifles:

	Score Corrections						
Position/ Shots	Group 1	Group 2	Group 3	Stalker Double	Stopper Double	Special Snap	Charging Animal
100m sitting	2.8	1.4	0.0	1.4	0.0	0.0	0.0
100m standing	4.1	2.1	2.1	2.1	0.0	0.0	0.0
75m rapid	0.0	0.0	0.0	0.0	0.0	0.0	1.3
50m slow	2.2	1.1	0.0	1.1	1.1	0.0	0.0
50m rapid	0.5	0.5	0.5	0.5	0.9	0.0	0.5
25m rapid	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total correction	9.6	5.0	2.5	5.0	2.0	0.0	1.7
Rounded	10	5	3	5	2	0	2

Recommendation

From this data analysis I formulated the following preference recommendations:

- 1. For close-range rapid-fire events, my preference will be to use open sights.
- 2. For all the other events, where scope sights are allowed, a 4X scope is preferable.

It is my hope that this article provides Big Game Rifle competitors with a better understanding of the impact of different sighting equipment on competition scores, and that it will lead to a set of rules that does not overly penalise the competitor with a scope-sighted rifle.

For the full report, see: ssaaqld.org.au/discipline/big-game-rifle

KANGAROO

MEAT

it *should* be what's for dinner

By Jennifer Martens

Nutritionally, kangaroo tops the list of lean red meats. It is high in protein, zinc, iron, and several B-group vitamins. It is low in saturated fat (less than two per cent), but it is a good source of conjugated linoleic acid (CLA), which is a healthy, naturally occurring fat acid found primarily in the meat and dairy products of ruminants. CLA also has anticarcinogenic properties and has been shown to reduce obesity and heart disease in humans. Kangaroo meat is also a good source of omega-3s and it is hormone and antibiotic free.

The environmental benefits of harvesting kangaroos are many:

- 1. they are abundant, with more than 25 million in the Outback (which is due to the removal of the dingo and the proliferation of water sources such as dams and wells)
- 2. they have been harvested for more than 50,000 years and, without predation, number control would only come from starvation and disease
- 3. kangaroos are professionally harvested (not farmed) and the industry is strictly monitored by wildlife agencies in each state
- 4. harvesting reduces the total pressure on Australia's fragile plants and soils.

Other environmental benefits come from comparing kangaroo with cattle. It is a well-known fact that cows contribute to a large portion of the world's greenhouse

gas emissions. Kangaroos, on the other hand, do not produce methane. Instead, the bacteria in their stomachs that aid digestion produces acetate (the hydrogen by-product of fermentation), which is used to provide further energy. Researchers are even looking into how to transfer these good bacteria to cows to reduce or eliminate their methane production.

Macro Group Australia's website says, *“Kangaroo is one of the most sustainable, lean and delicious meats that Australia produces. Kangaroo is a 100 per cent natural lean meat that is sustainably and ethically sourced from the open ranges of Australia. Kangaroos are free-ranging animals, they range over extensive pastoral areas of Australia, graze on natural vegetation and are harvested in their own environment. Therefore, kangaroo meat is not exposed antibiotics or growth hormones.”*

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Eat WILD:



Kangaroo FILLET, SPICED VEGETABLES & YOGURT SAUCE

Prep: 15 min Time: 30 min Serves: 4

Ingredients

- ¼ cup olive oil
- ½ teaspoon ground cumin
- 1 teaspoon sweet smoked paprika
- 1 red onion, cut into thin wedges
- 1 bunch baby carrots, trimmed and halved
- 1 bunch baby beetroot, trimmed and quartered
- ½ cup canned brown lentils
- 500g pack K-ROO kangaroo fillet
- Salt flakes and freshly ground black pepper
- 2 tablespoons lemon juice
- 1/3 cup fresh parsley leaves
- ¼ cup Greek yogurt
- 1 clove garlic, crushed

Recipe courtesy of K-roo.com.au

How to cook it

1. Preheat oven to 200°C (180°C fan-forced).
2. Combine 2 tablespoons olive oil, cumin, paprika, onion, carrots and beetroot in a large mixing bowl.
3. Mix ingredients until well coated.
4. Place on 2 baking trays lined with baking paper.
5. Roast in preheated oven for 30 minutes, or until beetroot is tender.
6. Season kangaroo fillet with salt and pepper.
7. Heat remaining oil in non-stick frying pan over medium-high heat.
8. Cook kangaroo fillets for 4-5 minutes on each side, or to your liking.
9. Rest fillets for 10 minutes under foil before slicing.
10. Remove vegetables from oven.
11. Add lentils, 1 tablespoon lemon juice and parsley to the warm vegetables.
12. Toss together until combined.
13. Stir yogurt, remaining lemon juice, salt and pepper together for dressing.
14. Serve sliced fillet with roasted vegetables and yogurt dressing.

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