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AUSTRALIAN Shooter

March 2021
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THE MAGAZINE FOR SPORTING SHOOTERS

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on the Sako S20



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Our March cover
The new Sako S20

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We run the numbers on Steiner's new Military Marine 8x30 binoculars, a product our reviewer Chris Redlich reckons are "well worth considering for such rugged-built and affordable binoculars".

New shooters are excited when they receive their first Permit to Acquire - and why shouldn't they be? But what to buy? Rod Pascoe looks at some of the things to consider when making that all-important initial purchase.

John McDougall says the Huglu HT-14 shotgun would service a Trap shooter well and also serve as an entrance-level gun for those starting off in the clay target games of DTL and other disciplines.



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President's Message

WITH LANCE MILLER

Up for the challenge and looking to the future

Welcome to my first column as new National President of the SSAA and let me say it's a challenge I'm looking forward to. I have plenty of ideas to bring to the Board about where we could take our organisation. First up I must thank outgoing President Geoff Jones for the outstanding work he has done and his efforts over more than six years. I never coveted Geoff's job but when the position became vacant it was an opportunity to evaluate an organisation which has been serving its members since 1948. We have undergone many changes in that time and the reality of how the world changes and how communities interact are new opportunities for us.

Hopefully my background will stand me in good stead for what lies ahead as I've run my own business in Coffs Harbour for 33 years, served on a national commercial Board from 1999 until 2017 with three years as Chairman and served on the NSW SSAA Board since 2011 where I'm currently president. My preferred activity in the firearms space is hunting and my preferred hunting is for sambar in the Victorian high country and, while pigs in the south-west plains of Queensland requires a different style, I'm happy in both environments.

Work and family can limit hunting time so access to a local range is important, especially in NSW where mandatory attendances are monitored. My branch is a benchrest range which is ideal for my other firearms passion - trying to tune a hunting-weight rifle to shoot as accurately as a competition one. So far the benchrest shooters are winning... but a man can dream.

The changes in how the world interacts, mentioned previously, have an impact on our very important ranges. Population growth, urban sprawl, community tolerance and the regulations to manage those issues are closing in on our ranges - range models are changing and we need to be managing that impact to protect our sport. SSAA National has introduced a new committee to look at range templates and how we can manage our ranges to remain operational and accessible into a long future.

I come from a farming background and, as new SSAA President, see one of my goals as trying to normalise the perception

of guns within the general community and this is where our ranges and competition shooters are such a great asset. Many of our volunteers - the range officers and people who look after our ranges - come from the competition side of SSAA.

A new shooter who's a SSAA member has the privilege of access to our ranges and experienced volunteers to assist that shooter with firearms safety while training them to be a more competent firearms user, something which further builds the safety of that shooter in the field. Safety, training, knowledge and ethics assist in making a respected firearms user.

As I settle into this role I have maybe half a dozen strategic visions I'd like to see happen within the SSAA, but let's take one step at a time. Our decision-making and planning from both state and national perspectives must be evidence-based and practical and the Board needs to be fully engaged and approve change. Initially there needs to be an overhaul of the national constitution which no longer meets the requirements of an organisation of our size and complexity. This will be a major undertaking but we've already formed a Constitutional Review Committee which has developed the pathway for reform.

We're also looking at the tricky topic of the three-month allowance for those who let their SSAA membership lapse. Police are now developing and implementing online real-time management of our memberships and licencing, so if you rely on SSAA as the genuine reason for your firearms licence, if your membership lapses police will know and in some states will act to remove your firearms. Your membership is important – **do not let it lapse.**

But that's it for starters - I'm delighted to be on board, privileged to be your President and I look forward to updating our Association's ever-expanding membership via *Australian Shooter* each month. Good luck to you hunters and may all our competition shooters be right on target.

Lance Miller
SSAA National President



SSAA - Protecting shooters since 1948

A real test of patience

I READ ROD Pascoe's excellent article Travelling with Firearms (*Shooter*, October 2020) with interest since there was a time (I no longer shoot) when I travelled to New Zealand for the Full Bore National Championships at Trentham. It's a wonderful experience and I recommend all Full Bore shooters visit Trentham at least once for the experience of shooting in very different conditions.

Rod commented that ABF officers are "attentive and professional and appreciate you have the correct paperwork". I'd be the first to agree but there's always an exception who lets the side down. Departing Brisbane on one occasion I encountered what can only be described as an overbearing Customs officer who made it clear from the start she was hostile to people in the shooting sports. Having inspected my rifle to ensure conformity with the export documents, she turned her attention to my accompanying bag and emptied the contents.

I was carrying the approved 5kg of ammunition - Lapua cases in another manufacturer's packet. "Why", I was asked "were Lapua cases in another manufacturer's packaging?" I explained that, at the time, Lapua cases were sold in plastic bags and I was using the packaging to comply with relevant legislation, with which I was familiar as a former Customs agent from many years past.

Next was my spotting scope and stand - "what was it used for?" I explained. "Why does it not have a serial number?" Sometimes it's hard to be nice when you're not in the habit of suffering fools. I could go on but space is limited.

Finally a warning. When you declare ball ammunition for export, include fired cases. Otherwise, if you bring fired cases (in original packaging) back to Australia and they're not declared for export, ABF can confiscate them.

Richard Kenny, via email

Bargain scope just the job

WITH REFERENCE TO John Dunn's Top Shots answer on the Beeman scope (*Shooter*, August 2020), on my travels some years back I picked up this scope from an airgun shop in Manchester. It was and still is complete with all original spacers for the mount to cater for various width rails. It gave great service on a BSA Meteor and assorted rimfires and was only retired when my eyes demanded more magnification. I paid £12 for it second-hand, so you'll know how long ago it was.

Mike Casey, via email



Insurance Q&A with Trevor Jenkin

Send questions to: communications@ssaa.org.au

Q What sort of information do you guys require when a member lodges a claim for a damaged firearm?

Sam R, via email

A When making a claim you need to provide a completed claim form which is available on our website (ssaaib.com.au) or you can contact the brokerage and we'll send you one. You also need a quote for the repair or

replacement of your firearm, proof you're the registered owner and a copy of your firearms licence.

Once we've confirmed your membership with SSAA, we forward the documents to the insurance company for their consideration and if the insurer requires additional information (police report, photos, witness statements etc) we'll advise you. One of our staff members will be managing your

claim to ensure it's being dealt with in an acceptable timeframe and if you do have to lodge a claim, contact your claims officer if you'd like an update on its progress. And as always, feel free to contact us on anything insurance-related on (08) 8332 0281 or visit ssaaib.com.au.

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

And not an eyelid was batted

ON A TRIP to Melbourne in 1955 my mother, with more than a little persuasion, took me to firearms dealer Evans & Balfour and for my 14th birthday bought me a second-hand Browning pump-action .22.

With my prize securely wrapped in brown paper and tucked under my arm we ventured forth to our next port of call - the Commonwealth Bank. The contents of my parcel were not lost on one of the junior tellers who produced, from under the counter, a small Browning automatic pistol which he twirled on his finger several times in true 'gun-slinger' fashion (banks in those days issued firearms to their tellers).

Towards the end of the 1950s a mate and I would take the Mudgee night train on Friday for a weekend's shooting up country. We'd board at Sydney's Central Station, placing our rifles on the luggage rack without question or glance from our fellow passengers. We disembarked at Rylstone in the pre-dawn light and made a precarious trek down the Cudgegong River to our regular camping spot, set up camp on the river bank then head out to hunt bunnies in the hills until dusk.

After a meal of dry biscuits, condensed soup and black tea we attempted to sleep in

the chilly conditions under an army blanket as sleeping bags were not commonplace in those days. I still recall a bus driver on the last leg of my journey home asking: "How'd the shooting go mate?"

Shannus O'Sullivan, Qld.

Confusion over calibre confusion

IN MY ARTICLE 'Calibre Confusion: Will The Real 38 Please Stand Up' (*Shooter*, September 2020), I referred to the military version of the .308 Winchester cartridge as being the 7.62X51mm NATO and also stated that 7.62mm referred to the bullet diameter and 51mm the case length.

This would have been a perfect point in the article to open up yet another can of worms regarding the lack of a single, standard convention of cartridge measurement and naming. In this case the firearm's *bore* diameter of 7.62mm rather than the *groove* diameter of the rifled barrel is used to describe the *calibre* of this round. As *Australian Shooter* reader Steve Walsh rightly points out, the groove diameter of the firearm and therefore true diameter of the bullet is actually 7.82mm or .308 of an inch. Steve also suggests I may have added to the confusion by omitting this fact.

Rod Pascoe

Hats off to Mr Jones

A HEARTFELT THANK you to Geoff Jones on his retirement and for the monumental work he's done on behalf of all 200,000+ SSAA members and the shooting sports in Australia. I joined SSAA Sydney in 1963, a year or two before the Illawarra branch came in to existence and grew into one of the largest fairly quickly.

Sadly, the time has come for me to retire from hunting and involvement at branch level to spend more time on family matters, so I take this opportunity to thank all the shooters in my life for the great times they've given me. Congratulations also to Lance Miller on a sterling job at SSAA (NSW) and now as SSAA National President - thanks are due from every member.

Alois Ambs, via email

• I WISH TO congratulate Geoff Jones on the fantastic job he's done as President and would also like to thank him for the effort, devotion and time he has put into our club. He's been the leader for a while and has made many significant advancements for us. Thank you Geoff for a job well done.

Greg Kent, via email

Get to know your SSAA insurance brokers

With the COVID-19 pandemic effectively wiping out all interstate travel last year, the account managers at SSAA Insurance Brokers were unable to get out and about as usual, so we thought we would introduce them here instead.

Megan Spiniello (SA, WA, Vic, Tas, NT)

Megan has been working in insurance for the past 15 years and brings enthusiasm, passion, empathy and trust to her job every day.

Since starting with SSAAIB, she has enjoyed learning more about firearms as a sport, the industry in general and participating in come-and-try days held by local clubs.

Megan enjoys working in insurance and loves getting to know her clients, finding out exactly what they require and providing them with the right solution, tailored exactly



to their needs. "Insurance is an interesting business as no two clients are the same," she said. "My job is to understand my clients, find out what makes them tick and assess their insurance risks. I then work on finding the right solution for them, which is always rewarding." This year, Megan is looking forward to getting out again and visiting clients all around Australia.

Ali Mulla (NSW, Qld, ACT)

Ali has been in insurance for more than a decade, during which time he has accrued a vast knowledge of the industry along with market trends which he gained through previous experience in the financial services sector. Like Megan, Ali has enjoyed learning about the firearms



industry and developing an understanding of exactly what his clients need.

"Through this understanding and experience, my personal qualities have helped me in this fast-paced role where we're always adapting, multi-tasking, working within a team environment and communicating with insurers and clients," he said.

Ali prides himself on providing exceptional customer service and is always available to help a client in need. He enjoys working at SSAAIB as it has given him the chance to expand his skill-set, learning more about the firearms industry and insurance as a whole. This year he's looking forward to things returning to some sort of normality and hopefully taking in a family holiday.

• To contact Megan or Ali, or for any insurance requirements, call (08) 8332 0281 or visit ssaaib.com.au.





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COVID leads to hunting spike in the US

The United States has taken a dreadful hit from the COVID-19 pandemic but it seems one of the few benefits from this awful thing has been an uplift in hunting activity. *The Washington Post* reported in early January that conservationists and wildlife officials who'd spent years trying to stave off the decline of hunting had finally seen a glimmer of hope in 2020.

Matt Dunfee from the Wildlife Management Institute, a not-for-profit group which focuses on restoring wildlife populations, had been working on the issue of declining hunters for 15 years. For decades the number of hunters had steadily dropped and that led to a loss of conservation funding at state wildlife agencies (hunting licence revenue was a key budget support). Unexpectedly, officials in almost every state have reported a moderate to sizeable spike in people taking out hunting licences in 2020.

Last year's surge in hunting coincided with a reported increase in interest of many other outdoor activities as a result of cinemas, sporting events and other entertainment options being shut down. Kayaks and bicycles were flying off the shelves and record numbers of hikers started trekking through state parks.

With thousands of new hunters taking out licences, Dunfee expressed his surprise that the usual stuff they did to encourage new people to go hunting has not been required. People didn't need their hands held per se and just figured things out on their own. To him, it suggested this was an



indicator that the latent desire existed and it just needed a little something to accelerate what they were doing.

Many states noticed a dramatic rise in residents undertaking hunter safety courses for the first time. It was reported that the demographics of those attending (young, female and first-time hunters) were the type that hunting advocates had been trying to recruit for years in order to slow the demographic decline. Gun sales also spiked but that could be due to both an increase in hunting and concerns over social unrest.

The state of Michigan reported a 67 per cent rise in new hunting licences compared to 2019, including a 15 per cent spike in female hunters and a moderate growth

in many younger age brackets. They also sold 46 per cent more apprentice licences, which are a discounted option to allow new hunters to give the pastime a try under the direction and supervision of a mentor.

The Michigan Department of Natural Resources expressed their excitement with the rise of new hunters as they'd been hoping for the above groups to become engaged with hunting for years and now they're seeing them sign up. They have 100,000 new customers and the department regards this as a real opportunity to work with them and keep them involved in hunting.

Nevada had a 30 per cent increase in hunting licences and put 50 per cent more people through hunter safety training courses. Maine sold a record number of deer permits and recorded a nine per cent rise in hunting with their fastest-growing demographic being young adults and women.

It's enlightening to see government departments enthusiastic about increasing numbers of hunters. Sadly, here in Australia we seem to be treated with contempt and continually fight a political/cultural war just to maintain our hunting traditions and food-gathering activities.

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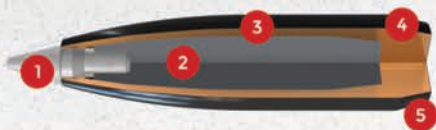


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The 7.62x39mm cartridge and rifle

The 7.62x39mm cartridge, also known as the 7.62 Soviet and .30 Russian Short, was designed in 1943 and put into service in 1944.

On July 15, 1943 the Technical Council of the People's Commissariat for Armaments in Russia met to discuss a new intermediate cartridge to be used in a range of military weapons which included a semi-automatic carbine, a light machine gun and a selective fire rifle.

A committee was formed for this task consisting of chief designer N.M. Elizarov and three assistants and they also collaborated with several of the top weapon designers of the time including Tokarev, Simonov and Fedorov. Initially 314 cartridge designs were considered but this number was soon slashed to just eight which were actually built and tested.

In December 1943 the first cartridge officially adopted had a case length of 41mm and was referred to as the 7.62x41 - it had bullet length of 22.8mm with a lead core and didn't have a boat-tail. The boat tail had been omitted as the designers were under the misconception it would only make a difference when the bullet became subsonic at long ranges.

Further testing showed this was wrong as a boat-tail resulted in improved accuracy, even at shorter distances, so they altered the design to include it. The bullet core was also changed to have the lead wrapped in low-carbon steel and it also used a steel and copper cartridge case (in the 1960s a 'lacquered' steel case was introduced).

Adopted for service in 1962, although developed by Elizarov's assistants in the 1950s, a special subsonic bullet was made for use in AK-47-type rifles fitted with silencers. The projectile was longer and heavier than standard, having the core made entirely of tool steel, and the lead core section had a larger diameter (7.94mm) which was meant to provide a tighter fit to the rifling grooves. It produced muzzle velocity of between 285 and 300 metres-per-second and was distinguished by having the tips painted black with a green band beneath.

The SKS semi-automatic carbine rifle chambered for the 7.62x39mm cartridge was designed by Sergei Simonov and manufactured at the Tula arsenal from 1945 to 1958 - and at the Izhevsk arsenal between 1953 and 1954 - with a total of 2.7 million made. It was simple in construction and highly reliable, having two unique features - it was fitted with a permanently attached

folding bayonet and had a hinged non-detachable magazine.

Because it couldn't be used on fully automatic mode - and firepower was limited by its 10-round magazine - it became obsolete when the AK-47, a gas-operated 7.62x39mm assault rifle designed by Mikhail Kalashnikov, was adopted by the Soviet Armed Forces in 1949. Thanks to its simple design, superb reliability under the harshest conditions and low production cost, the AK-47 became the most widely-used rifle in most of the world's military and para-military skirmishes after World War II.

The 7.62x39mm cartridge, being similar in performance to the ever-popular .30-30 Winchester cartridge, is also favoured for use in sporting firearms and most of the major manufacturers have produced rifles chambered for it. These include Stoner, Armalite, Remington, Colt, CZ-USA, Savage Arms, SIG Sauer and Ruger who initially produced their bolt-action M77 Mark II for the cartridge, followed by the Ruger Mini Thirty and, in 2017, began production of their American Rifle chambered for the 7.62x39mm.





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Clay Target Q&A

WITH RUSSELL MARK

Q I've been most interested in your comments about how high a shotgun should shoot in relation to each activity you use it for. My father always taught me to look dead flat along the barrel and that would be perfect but I notice you often don't support that theory. I mainly use my shotgun in the field but have recently fired a few rounds of Sporting Clays and loved it. Is such a flat-shooting gun adequate for both uses?

Peter Quinn, Vic.

A I guess the answer lies in your definition of adequate and it's a topic we've touched on in various ways over the years. As you might be aware, I'm a huge advocate of knowing where the point of impact and/or point of aim percentage is of your shotgun regardless of what you're using it for.

I stress you do this not only to prove how high or low above the aiming point your shotgun is shooting, but also to reinforce you're not missing the target left or right of your aiming point due to a variety of reasons, but often the amount of cast in the comb in the stock of your shotgun. I've discussed how to pattern your shotgun on numerous occasions so am assuming you know how to do this, therefore I'll make the assumption the cast is correct and it's only the height above and below the aiming point you're asking about.

The configuration your father has taught you to shoot with, if I understand correctly, has your eye dead flat along the rib/barrel of your shotgun, which should in theory have you shooting a shot pattern throwing

a distribution of pellets half above and half below your aiming point. This is known as a 50/50 percentage point of aim with a point of impact of zero millimetres at all distances until gravity starts to pull the shot towards earth.

Is this adequate? You'll still break targets with this configuration and, in a hunting scenario where you may have to shoot game that's dropping quickly, it may even be considered advantageous. But here's the problem: not all targets and game drop towards the earth as you're taking aim at them. On a Sporting Clays range you often have fast-rising targets which will require you take quick reflex shots and a shotgun shooting this flat (provided your head stays in a constant firm position on the stock) will require you to swing through the target line and fire the shot 'blind'. By this I mean the target will have to have disappeared from your sight picture in order for you to break it with the right amount of horizontal lead.



If you have to break the target by making it vanish when you pull the trigger, your shotgun is shooting too low - you're relying on luck. You can quickly alter this point of aim by simply not putting your head down as hard on the stock, therefore allowing you to 'see' some of the rib of the shotgun and of course this will make it shoot higher.

Would I advocate this technique? No way. You must develop a technique which allows you to be consistent in how you place your head and its firmness on the stock. No doubt there are target/hunting presentations where you'll want your head down on the stock very firmly, such as a target under your feet that's dropping, but these require small adjustments, not major.

A high number of the world's best Sporting Clay shooters have no clue where their shotguns shoot by their own admission. They find a configuration which works for them and let their experience on judging distance and lead then simply let the technical characteristics required to break each type of target they're faced with do the rest. I'm sure many great hunters do the same. In short there's no right or wrong answer but if you're setting up any shotgun on a pattern board regardless of what you intend to use it for, make sure it first of all throws a relatively straight shot pattern and my advice would be somewhere between 60 to 70 per cent of its pellets above its aiming point, as it's easier to shoot further under a target you can see rather than further over something which has disappeared under your barrel.



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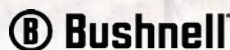
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Q I recently acquired an old Smith & Wesson Model 28-2 Highway Patrolman (serial number supplied). I know nothing about its history and would particularly like to know which year it was manufactured, if that's possible.
Andrew Thompson, via email

A Your Model 28 is an N or large-framed, six-shot, square butt, double-action revolver with a 6" barrel and chambered for the .357 Magnum cartridge. It's also found with a 4" barrel although some limited and special orders with other barrel lengths were made. The Highway Patrolman was introduced in 1954 and widely used by US police departments, hence the name. Production ceased in 1986.

Form the serial number you provided - 'S' followed by six digits - your Model 28 was made in 1969. The S prefix serial numbers applied to S&W post-war N-frame models made between 1946 and 1970, after which the serial numbers changed to an 'N' prefix. The 'dash 2' after the model number of your revolver refers to engineering changes which occurred in 1961 and involved changing the cylinder stop and eliminating the screw under the triggerguard. A later change in 1968 was made under the same 'dash 2' production modification, where the diamond shapes around the screw holes in the grips were deleted.

From one of the photos you supplied, the right side of the barrel is stamped Highway Patrolman which is a bit unusual in that in 1957, well before your 28 was made, S&W changed the convention of using model names and began using model numbers instead. Yet even to this day the name Highway Patrolman is still used, probably for nostalgic reasons as it was one of the classic S&W police handguns.

Rod Pascoe

Q I'm lucky enough to own a Ruger No.1 in .303 calibre. Recently I was given a supply of 150gr Hornady Interlocks which show the calibre as .312 instead of the .311 for most other brands of projectiles. I know I'd have to work up new safe loads with the .312 projectiles but will it damage my barrel by using these?

Alan Bates, Qld

A The Hornady .312" 150gr projectiles you have would be ideal to use in your Ruger No.1 .303 rifle. Military .303 rifles have been found to have barrels with bores which vary from .309" to .318" and a .312 projectile is the size recommended for use in them. My Hornady 7th Edition Reloading Handbook shows powder loads for the .303 British cartridge which would assist you.

Barry Wilmot

Q I read in an earlier edition that Geoff Smith uses cast bullets in centrefires. I have a Tikka T3 in 6.5x55 and have some cast bullets from Hawksbury River Bullet Co. I tried loading some with AR2208 starting at 32gr up to 35gr but couldn't hit the sandbox at the range. From what I've read I think I'm pushing them too fast. I was hoping you might be able to give some advice. Loving the magazine.

Brendan Dennis, via email

A You don't mention what weight of bullet you're using from HRBC so I checked their website and note they don't list a 0.264" bullet. My experience with Hi-Tek coated cast bullets has exclusively been in handguns, although I'm hoping to make a mould for some 0.312" rifle bullets soon.

I know several people who shoot these coated cast bullets in rifles successfully, these being in Big Game-type rifles mostly, keeping velocities around the 2000fps range. Your loadings of AR2208 are quite a bit lower than the usual range for the 6.5x55 cartridge quoted in the ADI handbook, meaning you're not running with a nearly-full case (I don't know if this would have any effect).

I think you should slug the bore of your rifle to find an exact diameter then have

the HRBC people size your bullets to suit, which should reduce any bore fouling and hopefully improve accuracy. Many cast bullet shooters use Trail Boss powder, beginning with a load which represents 70 per cent of a full case with the bullet seated. I'm not sure whether this would be OK with the 6.5 and would strongly suggest talking to the people at ADI before proceeding.

I've heard talk of people loading cast rifle bullets Hi-Tek coated up to 3000fps or more but haven't been able to verify this. You'd certainly need to use a hard alloy and the Northern Smelters 92-6-2 'Hardball' is one of the hardest I've used in handguns and it works well, as does Linotype alloy.

Geoff Smith

Q Are there any black powder shooters out there who could give advice on the type of paper used for paper-patching bullets, specifically in a Whitworth rifle? Research shows some use onion or airmail paper and vellum paper is also mentioned. Also, these papers mentioned are rag-type, not paper containing clay which is used in a lot of paper manufacturing, I think the reason being clay is harmful to the rifling of a barrel. So my question is: What are people using and where can it be obtained? Any help greatly appreciated.

Stephen Penno, SA

A A very interesting and complex subject as all the papers you mention are suitable, rag-type definitely preferred as clay is an abrasive and not something you want to introduce to your fine Whitworth barrel. I last bought a lifetime worth of paper 20 years ago and back then we ordered it through specialist calligraphy stores, so I contacted several extremely experienced devotees of paper patching and black powder to update my knowledge base. Ironically, most of them are down your way in South Australia.

They tell me they source their paper from Buffalo Arms in the US but be warned, they also report that visiting their online store is a wallet-draining experience as there are so many goodies you suddenly discover you need. If you'd like to speak to someone about advanced paper-patching I suggest you contact the crew at SSAA

Para branch in Adelaide, Dave McCarthy in particular was very helpful with this information.

Greg Riemer

Q I currently have peep sights fitted and find them robust and resistant to recoil of the 30/30 Marlin Winchester firing 150-grain rounds and was considering fitting a red-dot scope for more field of view and quicker targeting of game. I'm told it's also a good tool for fast-moving game.

Can you confirm the benefits if any and downside of a red-dot scope as my concern is about the scope and mounts handling recoil and hunting in thick scrub. Could you advise and recommend some makes and models which will deliver an improved shooting experience.

Bradley McGrath, WA

A You have a very handy scrub rifle in your Marlin 30/30. The original open sights were designed to make the rifle fast to use and while a peep sight provides a more accurate sighting option it doesn't do a great deal to improve speed, especially if it only has a small aperture. A larger aperture makes faster sighting easier and with practice can be used quite effectively as a 'ghost ring' with both eyes open to improve your field of view.

A red-dot sight is a good alternative for hunting as it provides an obvious aiming point that's easy to see and fast to acquire and like any optical sight has to be sighted-in to suit your needs. The size of the dot varies from 3-6 MOA depending on make and model and most will do their best work out to around 100m or a little beyond.

Some models are larger than others and may affect the way the rifle handles, especially if you have to lift your cheek off the buttstock to see the dot and in a high set-up that may also translate into snagging problems in thick scrub. Recoil shouldn't be an issue with good mounts which are properly attached. Leupold, Bushnell, Tasco, Nikko Stirling and Vortex all make red-dots so finding one to suit your needs and budget shouldn't be an issue - talk to your local firearms dealer.

During my aerial shooting days we used red-dots sights on L1A1 self-loading rifles. They were sighted-in at 40m for helicopter

work and used very effectively on a range of feral animals including pigs, goats, wild cattle and buffalo without any problems.

John Dunn

Q I've been a SSAA member for more than 25 years and would appreciate information on the gun shown here and its value. It was given to me about 40 years ago in a leg of mutton leather pouch, has hardly been used since and is still in good condition. Is it nitro proofed? I think it's better chambered for 2½" cartridges as when I used the modern 2¾" it was not easy to open the gun.

John Taliana, via email

A What a wonderful present John and great you've kept it all these years. It was made by Neumann et Cie (and Co) in the famous gun-making city of Liege in Belgium. This company made rifles, pistols and shotguns from about 1862 to 1957, making many guns for the US trade and were not all that highly valued though they were good working guns.

Yours, on the other hand, looks as though it was a special order or one on which they lavished lots of attention. The quality of wood and excellent chequering with a tear-drop behind the action and of course the deep, high-quality engraving of grapes and leaves over the fences and the fine rose and scroll on the action confirms this. You say the original owner was an architect in Malta and that he'd have been of a class who could afford a good gun. Perhaps this confirms it

was a special order for someone who appreciated nice guns.

I suspect it is a 2½" chambering from what you say. The multitude of proof and other marks on the underside you provided are not clear enough for me to identify precisely but again I believe it's Belgian proofed for smokeless powder and the barrels are fluid steel, not Damascus. It was probably made post-1920s because of its modern steel barrels and I'd guess it may have been made either side of the Second World War.

This means it should be fine to use with modern ammunition so long as you determine the correct length of shells for which it's chambered. Take it to a reputable gun dealer or gunsmith to determine this and do not fire any more 2¾" shells until you do as you run the risk of excessive pressures which may destroy your gun and seriously injure you or worse. There are shells available in Australia for guns chambered for 2½" imported from the UK and Europe in both hunting loads and clay target shells though you'll need to search around to find them.

As to value I'd think somewhere in the order of \$1000 if you can find a collector or enthusiast unconcerned about the gun not being chambered for 2¾" shells. I suggest keeping it and enjoying it for as long as you can as it's obviously part of your family history.

Paul Miller





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Slick S20

enhances Sako reputation

Con Kapralos

Sako of Finland are one of the world's most admired and respected firearms manufacturers, having produced longarms since the early 20th century. Their current catalogue lists the Model 85 and A7 together with the Finnfire II in rimfire chamberings as well as other specialist centrefire models such as the TRG series.

But Sako didn't just rest on their laurels and have delivered with the S20, a modular rifle based around a chassis system and available in two models - the Hunter and Precision. The S20 entered the European market in early 2020 and when a review opportunity finally arose, Beretta Australia offered *Australian Shooter* the dealer demonstrator unit which consists of the Hunter as an assembled entity along with modular components to construct the Precision version, all enclosed in a sizeable fitted Pelican travel case with additional accessories included.

Initial examination of the rifle yielded one

major conclusion - it's based around a fixed barrelled action and not a switch barrel design and while the modular concept is evident, changing from the Hunter to Precision set-up is no simple affair. On reading the user manual, I couldn't find any information on how to change configuration from Hunter to Precision and I reckon any new owners who wish to run the rifle in both guises would need instruction from Beretta Australia (through their dealer network) on how to swap.

S20 at a glance

The rifle showcased all the accessories Beretta Australia offer including the Hunter and Precision rifle stock and fore-end sets, scope rings of different specifications and a raft of other fixtures. The Hunter thumb-hole stock and matching fore-end was attached to the Sako barrelled action in .308 Winchester with 24" (610mm) Titanium cerakoted fluted barrel with threaded muzzle and protective cap.

While the S20 barrelled action is similar to the M85 it has one obvious difference, with integral scope mounting provisions milled into the top of the receiver. The test rifle (Hunter in .308 Winchester) had an overall length of 1140mm and weighed 3.8kg but the modularity means weight and length can be altered to suit user requirements.

Aluminium chassis

The heart of the S20 is a one-piece black anodised aluminium chassis to which all modular components and the barrelled action are attached. Each buttstock, fore-end and the barrelled action is held captive to the chassis using their own fastening screws and it's clear that swapping from Hunter to Precision format takes some time and must be done properly.

The chassis also incorporates a superb bedding platform with full 'V' bed system, ensuring a positive union between the action and chassis is maintained along its



Scalloped design of the Hunter buttstock with thumbhole and adjustable cheekpiece.



M-LOK slots in the fore-end accept a multitude of accessories to keep PRS competitors happy.

entire length. The recoil lug is a steel unit affixed into the chassis which mates up with a machined cross-slot on the underside of the front receiver ring.

Action

This is a completely new design from Sako and even though it has some traits from the M85 action, the S20 version is made from circular bar-stock steel and has a pleasant profile devoid of harsh angled flats with an enclosed ejection port evident. This arrangement is coupled with the magazine design and isn't conducive to top-loading the magazine, one of the best features of the M85.

The stainless steel three-lug bolt is fitted with the classic Sako-type extractor and plunger ejector. A red-dot 'cocked' indicator protrudes from beneath the rear of the polymer bolt shroud and alerts the user the rifle is ready to fire. The bolt handle is an interchangeable affair, the one supplied being of an oversize tactical nature.

Rearward of the bolt handle notch is the



Precision buttstock and fore-end option.

Slick S20 enhances Sako reputation

usual two-position Sako safety gleaned from the M85, which also incorporates the safety override tab, allowing the user to cycle the action while the safety is engaged. The bolt removal button is on the rear-left of the receiver and easy to operate. The underside of the action has the circular receiver ring profiles fore and aft of the magazine well cut-out. However there are three action screws, two either side of the trigger unit and another on the front receiver ring which attaches to an abutment on the chassis. The recoil lug encompasses a slot machined on the underside of the front receiver ring which mates up with a steel lug fixed to the aluminium chassis.

One major departure is the scope mounting system. Whereas the M75 and M85 used the dovetailed receiver top, being tailor-made for the excellent Sako Optilock scope mounting system, Sako designers decided to opt for a machined 1913-spec Picatinny rail atop the S20 receiver, making it compatible with all MIL-STD cross-slot rings, a move welcomed by many who felt the dovetailed receiver top on the M75/M85 limited their scope-mounting options. Users can now enjoy many scope ring preferences with the attachment points solid and integral to the receiver.

The action length is designed to serve all short, standard and Magnum cartridges, unlike the M85 which has scaled actions for different cartridge lengths. The S20 magazine clearly shows most cartridges will fit and function into one size, similar to what Tikka does with the T3X. The S20 is offered in .243 Winchester, 6.5 Creedmoor, 6.5 PRC, .270 Winchester, 7mm Remington Magnum, .308 Winchester (tested) .30-06 and .300 Winchester Magnum.

Table 1. Sako S20 Hunter in .308 Winchester – Accuracy Testing groups at 100m

Ammunition	Best	Worst	Average*
Sako TRG 168gr	10mm	20mm	15mm
Sellier & Bellot 150gr SPCE	18mm	26mm	22mm
Sako Super Hammerhead 150gr	16mm	24mm	21mm
Federal Power-shok 150gr Soft Point	20mm	32mm	25mm
Hornady Superformance 150gr SST	12mm	24mm	20mm

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

Barrel

Sako make some of the finest barrels around and the S20 is available with different lengths for specific markets and requirements. The barrel contains a series of flutes along its length, similar to the layout Sako use on their Finnlite M85 models, is cold hammer-forged and finished to extremely high standards, inside and out. It is threaded $\frac{5}{8}$ x 24 at the muzzle end and made to accept a muzzle brake, one of the many accessory possibilities Beretta Australia offer, the threaded portion covered with a knurled cap to protect the thread when no brake is used. The barrel has a tough Titanium cerakote finish, matching the action.

Trigger and magazine

The trigger is a fully adjustable unit with length-of-pull and pull-weight easily changed to suit the user and with a small Allen key the trigger blade can be moved backwards 3mm or forward 4mm. Pull-weight is adjustable from 2-4lb with the review rifle set around the 3lb mark and customers can also specify a single-stage or two-stage trigger when ordering the rifle.

The aluminium trigger blade is curved

and comfortable to use while the magazine options offer glass-reinforced composite polymer construction and are available as a standard 5-shot unit with a 10-shot also offered (3-shot standard and 7-shot on Magnum calibres). Design of the magazine holds loaded rounds in a staggered fashion and loading is easy, the magazine clipped into the well and held captive by a release lever, though when unloaded it did seem a bit 'rattly' compared to the M85 set-up.

Polymer magazines are common these days as they're easier to make and just as strong as pressed steel units. Here, the polymer magazine suits the flow and the larger capacity alternative (10-shot and 7-shot in Magnums) will be appreciated.

Stock and fore-end

To say stock choices are different is a huge understatement, the review rifle supplied with the Hunter buttstock and fore-end fitted along with the Precision components. All buttstocks and fore-ends are made from high strength polymer with an internal aluminium chassis in each of the components. This chassis creates a solid buttstock and fore-end and it has to be just that on a rifle designed for serious hunting or precision shooting applications. Sako couldn't



Review rifle with Hunter stock set installed (top) and Precision (below), 3-shot and 5-shot magazines, muzzle brake and monopod (for Precision stock) also shown.

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Slick S20 enhances Sako reputation



afford a polymer stock that would wobble or flex and the internal aluminium frame within the buttstock and fore-end is the key.

The Hunter buttstock has its thumbhole with adjustable cheekpiece and is also adjustable for length-of-pull with polymer spacers available. The Hunter fore-end is slim and there are standard QD sling swivel studs for sling attachment. The Precision buttstock and fore-end on the other hand is spot-on for precision rifle shooting and uses M-LOK compatibility slots in the fore-end for the addition of numerous accessories as well as fittings to the buttstock.

The buttstocks and fore-ends are finished in grey with black accents on the adjustable combs, recoil pad and fore-end tip on the Precision version. The polymer offers excellent grip with textured rubber panels inlaid around the pistol grip, ensuring a slip-free surface and I had no issue holding the rifle with the Hunter stock-set installed and being adjustable for comb height and length-of-pull was appreciated.

Swapping buttstocks and fore-ends I won't go into as there was no mention in the manual on how to disassemble the rifle and switch these, though I found some instructional videos online from Sako detailing the process. Removal of the buttstock was easy but the fore-end was more complex. The video instructions looked straightforward but I gather that changing the stock set isn't something you'd do in the field or at the range. Most owners will probably run only one stock set (Hunter or Precision) but there will be some who'll want both options for hunting and competition.

At the range

The rifle in Hunter format was range tested out to 300m with a variety of .308 Winchester ammunition supplied by Beretta Australia, as well as some of my favourite hunting ammo. The Steiner Ranger optic fitted was excellent for the task of shooting groups, its colour, clarity and contrast top-shelf. Being pressed for range time I opted to accuracy test out to 100m and once dialled in, shot some steel at 300m.

The cold hammer-forged barrel and action, combined with the chassis design and excellent stock set-up, yielded 3-shot group averages all under Minute of Angle at 100m. Five 3-shot groups were completed for each ammunition brand and the barrel cleaned between changes. The best groups were had with the Sako TRG but in reality the rifle shot all ammo extremely well and I'd be happy using any of the hunting ammunition in the field. Taking the rifle out to 300m, shooting steel was easy once the adjustments were made on the scope. I'd have preferred a tad more range work but no complaints here.

Overview

The S20 is a modern rifle made for modern times and demands. It certainly shifts the goalposts when it comes to design, creating a platform with the utmost in user adaptability, accuracy and aesthetics. It took a gunmaker like Sako to think outside the box and develop what is truly a magnificent and innovative concept and, with time, I'm sure the S20 will be refined and improved even more. With the Hunter model retailing around the

\$3000 mark it offers exceptional value and is undoubtedly a great rifle to shoot. More at berettaaustralia.com.au ●

SPECIFICATIONS

Rifle: Sako S20 (Hunter and Precision)

Action: Bolt-action

Trigger: Sako single-stage adjustable for length and pull-weight

Calibre: Tested .308 Winchester, also available in .243 Win, 6.5 CM, 6.5 PRC, .270 Win, 7mm Rem Mag, .30-06, .300 Win Mag

Capacity: Detachable box magazine, standard calibres 5-rounds (10-round option available); Magnum calibres 3-rounds (7-round option available)

Barrel: Medium profile, cold hammer-forged 610mm (24") threaded for accessories

Twist rate: One in 10"

Sights: Receiver top milled with 1913-spec Picatinny rail for scope ring attachment

Barrel finish: Titanium cerakote

Stock: Hunter or Precision option available. Glass reinforced polymer construction with internal chassis

Weight: 3.8kg (configuration dependent)

Length: 1140mm (configuration dependent)

Price: From around \$3000 (Hunter model)

sako s20

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Keep those guns in perfect working order

Steve Hurt

We've all read or heard them, claims made directly or more famously 'my mate says' - usually referring to some fantastic event or shooter's ability. Then we hear assertions from marketers about a wonderful new piece of kit and how you'll be so much better at shooting or hunting if only you were to have this special tool. Equally, at some point we've had our interest piqued in some product and looked to test the statements or perhaps we simply want to identify and resolve a problem we may already have.

For some implements, like a knife, it's a simple task, easy to check, sharpen or affordably replace if necessary. For other devices this can be a more costly and complex task due to the number of variables involved in testing a rifle or scope for example. And therein lies the problem, because for a firearm to meet your personal expectations everything needs to work

- the scope, mounts, ammunition, rifle and the shooter.

Whether we like it or not it's human nature to interpret results we want to see and excuse those we don't, rather than evaluate what's really happening. So how can we be confident we've isolated and identified the performance of individual items in a complex system like a firearm, particularly with regard to accuracy? If we're not confident in our equipment the psychological effect on our shooting can be an awful accumulator, so the first thing we must do is reduce the variables and the place to start is by identifying the ones we can influence, correcting obvious shortcomings along the way.

Rifles: Do all features of the rifle behave flawlessly as they're supposed to? It's relatively easy to test the trigger and safety are operating as they should, consistently, on dummy rounds of course. But how do

we know if the barrel is in a serviceable condition? The answer is to beg, borrow or buy a borescope. Do it. There are plenty of comparative images on the internet to make a reasonable assessment of a barrel's condition and cleanliness - and pay particular attention to the throat and crown.

The next thing to check is how well the rifle is bedded as this is crucial for consistent and accurate shot placement. How can we check this? This one is not so obvious but the solution is relatively simple - Bearing Blue. The application of an ultra-thin coating of Bearing Blue to a barrelled action will indicate where the metalwork engages the stock.

Is it properly engaging the recoil lug? What about around the knox form? Does the back of the action fishtail? If the barrel is free floated is it fully free floated or does the stock flex enough to touch the metalwork occasionally? If so, properly bedding the forearm tip may improve accuracy and

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A runout gauge used on a dummy cartridge after chambering can tell a shooter how the cartridge is being presented to the bore.



Vernier calipers (digital) are commonly used by shooters for basic measurements. In this case it's cartridge overall length and assessing 'jump to the lands.'



A digital micrometer used to measure case neck dimensions to assess consistency and chamber clearance.

this is something to test for.

Ammunition: The complexities of reloading are beyond the scope of this article but quality ammunition is essential. It's often said the two most important components of a firearm are the barrel and the bullet and it's almost flippant to say using the correct ammunition is essential, as this means much more than just correct cartridge selection.

From an accuracy point of view it's also important to match the bullet to your barrel twist rate. We shouldn't assume that just

because it's a factory round from a reputable manufacturer it's a good match for your particular barrel. Most quality rifle makers these days will tell you what the barrel's twist rate is and, in the case of ammunition manufacturers, the barrel twist required for adequate bullet stability.

A bullet's weight alone doesn't tell us all we need to know. A short 180-grain 0.308" bullet may shoot well in a one-in-12" 308 Win barrel, whereas a long target-style 180-grain bullet may or may not, possibly requiring a faster twist barrel.

Checking this before buying ammunition or components will save you a lot of time, money, effort and aggravation and quality manufacturers supply this information to offer shooters a shortcut to making better choices.

Another ammunition issue to assess, particularly for the reloader, is cartridge runout. That is, the concentricity of the projectile in the case and case alignment with the bore. This assessment requires the use of a runout gauge but it doesn't end there. Reloaders are generally fastidious



Nothing tells you more about the condition of a barrel than a borescope.

Applying Bearing Blue will evaluate stock-to-metal fit and determine the quality of any bedding job.



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A solid rest like this homemade machine option and quality 'velociraptor' such as a MagnetoSpeed or LabRadar chronograph are tremendous assets.

when making ammunition but what happens once the cartridge is chambered?

Assemble a dummy cartridge (no primer or powder) as though it were an otherwise complete round and mark it so as not to confuse it later. Chamber and eject it as carefully as possible, measure it again and check for any changes in length and concentricity. It can be astonishing what this exercise sometimes reveals. Remove the ejector pin from your bolt if you can to reduce false readings as a poor revelation here means a trip to the gunsmith.

Scope and mounts: Quite simply, a good rifle cannot and will not compensate for a poor-quality scope and vice-versa. Both are complex pieces of equipment and the failure of either equates to a total system failure. There are no financial shortcut options here so as a rough rule of thumb, spend at least the same amount of money (even more

within reason) on the scope as was spent on the rifle. As always, buying the best you can afford usually reduces potential problems down the track.

When it comes to mounts, simple and solid is the way to go as they're the interface between two expensive pieces of kit - they must work and there are no shortcuts here either. Avoiding tricky mount windage adjustments or other complexities simply dissolve variables which hopefully don't need to be there. Read the manufacturer's recommendations for fitting, including torque settings and follow them - it's amazing how important this can be.

The 'nut behind the butt': The biggest variable of all. We've all had days when our performance in one regard or another is better or worse than anticipated. So how can we compensate for this when assessing equipment performance outcomes? There are two potential solutions here, the quickest and most obvious being to find another competent person to shoot exactly the same package in, as close as possible, the same conditions then compare results.

Yet this introduces more variables and is itself potentially problematic for data comparison. The best solution would be to remove the shooter from the equation as far as is possible to do so through the use of a solid machine rest.

Testing: As mentioned, some items are considered essential for consistent set-up establishment and assessment, borescopes, torque wrenches and Bearing Blue all fairly easy to acquire on a permanent or temporary basis. Vernier calipers and even micrometres along with runout gauges might also be considered essential equipment, while additional items such as pressure-testing gauges and a quality

chronograph like the top-end Oehler, MagnetoSpeed or LabRadar units are extremely helpful for live fire assessment, as is a solid rest.

Using a solid rest allows many things to be tested statically and dynamically that really can't be done any other way, one obvious example being a scope's tracking. Bipods and machine rests such as rail guns are two extreme ends of the scale for a solid rest. Unfortunately bipods introduce additional variables with live fire testing, particularly when using firm plastic feet on hard surfaces like concrete.

If a bipod is to be used, rubber feet or carpet under hard feet will reduce shock transfer to some extent and may improve accuracy. Solid competition-grade benchrests with sandbags can be a better solution and are often available at your local SSAA range.

But the ultimate solution is a machine rest which operates like a rail gun yet is flexible enough to accept different rifles, thus allowing the shooter to isolate issues by being able to shoot the package with or without the stock. A machine rest is a wonderful tool and usually a custom-made exercise. Larger clubs might consider this worthwhile or even a bunch of enterprising mates chipping in to defray costs is another possibility, it just depends on what you're trying to achieve.

Finally, when testing variables and outcomes it's essential to measure everything you can accurately. Equally important is keeping good records for quantitative and qualitative review, not to mention future reference. And remember, if you choose to evaluate a change in something, do so one variable at a time. ●



A solid, quality bipod is the minimum in stable rests required for assessing the accuracy or otherwise of any firearm package.



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Sporting guns are meant for hunting.

Yildiz

does the job on English outing

Mark van den Boogaart

In the big wide world of firearms and ammo there's no snobbery like shotgun snobbery - brand loyalty rules and there's a gun to suit every bank account and ego. Now I don't have a problem with expensive firearms, I own one or two myself, but also try hard to be objective, to consider things on their merit and make my own judgments.

A case in point is when I was given the chance to field review the Yildiz Pro Black shotgun on a trip to England, the evaluation part of a superb four-week holiday which included deer hunting, wing shooting and checking out new gear. I'd be spending a day wing shooting across various situations including working with dogs, driven shoots and some speculative walk-up shooting over cropped fields.

Just like attitudes towards shotguns, in England there's most certainly a class structure around shooting though happily this was a farm shoot - something akin to a weekend cricket match - yes there are some rules and traditions to follow but it's

far more relaxed. The gun I'd be using was a Yildiz Pro Black, a sporting over-and-under in 12-gauge, though there are other calibres available. The Turkish-built Pro Black is Yildiz's answer to the more fancied Italian shotguns.

The review gun was a leftie with a subtle cant in the stock and what I'd regard as an ambidextrous pistol grip. Overall the stock design and layout, combined with the adjustable comb, meant getting my eye in was pretty easy and I've no doubt with a little more time and adjustment the gun could be nicely tuned to the individual user.

Examining the stock in more detail there's lots of bang for your buck and the Yildiz Pro Black is available in five grades of timber, the review gun being Grade 4, a high-quality piece of wood at what I'd consider the high end of the scale. Balancing it was a well-matched fore-end which really brought it all together and enhanced the overall appeal. Initial impressions were the attention to detail on this gun is spot-on with clean, deep chequering

while timber-to-metal finish is first-rate. The recoil pad is good though something I'd consider changing as, while it wasn't sticky, it felt a little factory 'spongy' for my liking.

As the day's shoot was taking place in a lot of muddy fields I wasn't able to pull the action apart, but what I was able to see from removing the fore-end and barrels was a high level of eminence and attention to detail. The machining was clean, crisp and the fit at a component level was of good quality. In considering the layout I did like the length and throw of the top lever and thought its positioning complemented the trigger, safety and barrel selectors, the trigger itself being positive and I never felt any lag or delay. In truth, the trigger promoted quicker shooting. Finally, ejection was well timed and positive, creating the feel of a solid hunting gun.

The barrels of the test gun were 30" and came with a multi-choke option and 6mm vented rib, the sighting bead a fluorescent red plastic rod held in a steel cradle. Barrel length options mean shooters can have



A fine choice for hunting on the move.



Close-up of the Yildiz Pro Black action.



Open action shows some of the clean lines of the manufacturing process.

what they want straight out of the box or perhaps buy extra barrels to mix and match to suit individual needs. Personally, I'd have preferred 28s as I do like a more compact gun.

The reality is I'm far more of a hunter than a range shooter so any firearm review has to include some field time. With the Yildiz it was different as it was all field shooting and what that meant was after an initial familiarisation with the gun and listening to the shoot captain on the rules of the day, it was time to fill both pockets with suitable bird loads and be ready to put some birds on the ground.

As a hunting option it was a comfortable gun to carry over the length of a short English winter's day and was well suited to someone who likes to stay on the move and, when pheasants started flying and things turned serious, the Yildiz came to the shoulder cleanly and pointed well. It also swung well but as I was politely informed after my first attempt on a hen pheasant, I had to swing more if I wanted to

actually hit something! Suitably chastised I spent the day practising with the gun and after a couple of hours felt confident with everything, while the muted black action combined with the darker walnut finish certainly enhanced the overall aesthetic. During the day the gun helped me score my first partridge, actually only half a partridge as, after tailing one, my shooting partner Iain dropped it with a follow-up shot. Coincidentally, he was also using a Yildiz.

All in all I thoroughly enjoyed using and hunting with the Pro Black and, in considering this shotgun, it seems Yildiz have managed to produce something which breaks the current mould of a typical Turkish shotgun and delivered a highly competitive option for the mid-range market in Australia. With that in mind, if you want to measure something by how it functions, how it looks and you want value for money, give the Yildiz Pro Sport some of your time. ●

Specifications

Name: Yildiz Pro Black Grade 4 left-hand adjustable

Type: Over-and-under

Calibre: 12-gauge

Barrel: 30"/762mm

Chamber: 3"/76.2mm

Multi choke: 5

Length: 47.5"/1206.5mm

Weight: 7.5lb/ 3.4kg

Trigger: Single selective

Finish: Muted black

Stock: Grade 4 walnut

RRP: \$4895 but shop around



Romeo1 reflex sight - simple but effective

Dick Eussen

I treated myself and bought a SIG Romeo1 1x30mm miniature reflex sight and mounted it on my .357 Magnum Ruger 101 revolver which is fitted with a Weig-a-tinny mount. It makes installation of sights straightforward. Why the SIG sight you may ask when there are others out there at half the price? Because I'm a stickler for quality and have been burdened by inferior sights which promised much but failed within a year.

Granted, I burn off a lot of full-power rounds and Magnum handguns are hard on electronic sights due to recoil which shakes things to bits after several thousand rounds, but from all reports the SIG Romeo1 is doing better than most when it comes to durability. Mini-reflex sights are commonly called mini-red dots and are noted for their advantages over larger sights and scopes as they offer a compact, fast and versatile sighting platform coupled with performance.

The SIG Romeo1 is part of the new generation models which are smaller than

those from a few years back and offer lasting and more durable service. The lenses have also been enlarged with some having twice the lens area of their predecessors, top battery compartments and improved brightness. This sight is available in two models - a 3 MOA dot and 6 MOA dot - and in versions with multiple mounting options, one for direct attachment to the universal M1913 Picatinny and Weaver-style accessory rails or for direct mounting on an optic-ready handgun.

Mine is the 3 MOA model and includes an M1913 mount and KeyMod kit. The packages feature a Weaver-style mounting kit, lens cap, two-ended retractable screwdriver and cleaning cloth with Allen and torque keys supplied to fit battery cap, screws and adjustment controls. A detailed instruction booklet is also included. The 3 MOA dot is a good choice for carbines/rifles as it's close to the eye but many action pistol shooters prefer the 6 MOA dot as it places the larger dot at arm's length forward of the eye and provides a better action-sight picture.

A nice touch is a 'channel' in the rear which can be used as an 'iron' sight if the electronics fail and gives peace of mind to those who don't trust new-fangled electronics, though you may need a high-bridged front blade sight. The Romeo1 is suitable for a wide array of firearms - handguns, rifles and shotguns - and because eye relief is infinite can be mounted almost anywhere on guns with mating rails, though the closer the sight is to the bore axis, the more accurate it will be.

Key features

The Romeo1 has a moulded aspheric lens with high-performance coating for superior light transmission and zero distortion, and both the 3 and 6 MOA dot models have multiple intensity settings for rapid target acquisition which suits most natural and artificial lighting conditions. The TruHold lockless zero function uses adjustment springs designed to withstand the recoil of handguns and ensures the dot returns to zero after every shot.

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Romeo1 reflex sight

The sight is made from aircraft-grade CNC magnesium, is waterproof to one metre, fog proof and carries an unlimited SIG Sauer lifetime warranty which is fully transferable, though the electronic components are limited to five years. Go figure.

In use

After mounting the sight it was time for action at Mareeba Pistol Club range. The only operating controls are 'Up' and 'Down' buttons on the left, press either one for two seconds and the unit switches on and if it detects no activity will switch to MOTAC (Motion Activated Illumination), a power-saving mode which automatically switches itself off. Any movement will switch it back on and return it to the brightness previously used. It works and I tested it repeatedly by resting the gun, picking it up and bringing it up to battery and, in each case, no matter how fast I did it the dot was lit up and ready for use.

There are six illumination settings - four daytime and two for night use - and to increase light intensity it's a matter of lightly pressing the 'Up' button and 'Down' for the opposite. To turn it off simply press either button for two seconds and when switched on again it returns to the last setting used. I found the brightest setting ample under midday sun while the lower setting was ideal at night with field of view bright and clear. You're better off with a 6 MOA dot in bright sun, especially for 'action' shooting as it's much quicker to find than the smaller dot which often is partly obscured by bright sunlight making it harder to locate, especially in a hurry.

I used my Hyskore pistol rest to sight-in the Ruger and fired two shots offhand at 15m, placed the revolver in the secured rest, secured and adjusted the clamps on the grip until the dot was aligned on the target before shifting the dot with the windage and elevation adjustments to the bullet holes - job done. It's that easy to sight-in a red dot with this rest and saves a lot of ammo and time and it was spot-on with only a minor elevation adjustment needed at 25m, the distance I normally shoot.

This sight is simple to fine-tune as there are only two adjustments, one on top at the rear and one on the right side (the supplied screwdriver fits the screws). I fired 60 rounds of target ammo before switching to full power loads which jarred my strong hand after 20 rounds yet the sight never moved, nor did the dot. Since initial testing I've fired several hundred rounds with the Ruger and both sight and battery are as good as they were on day one. The SIG



The sight uses only two control buttons.



Should the battery fail the unit has a rear sight notch, though a high-bridged front sight would be handy.

Romeo1 cost me \$450 at my local dealer and is good value for a rugged and reliable sight which can be used for target shooting, plinking or hunting on shotguns, rifles and handguns of any calibre.

• *Australian & New Zealand Handgun 19* is on sale now. ●

Specifications

Magnification: 1X
Illumination settings: 5 daytime/2NV
Clear aperture: 30mm (diagonal)
Elevation adjustment range: +/- 50 MOA
Windage adjustment range: +/- 50 MOA
Weight: 8oz/23g



Top of the unit houses the elevation adjustment screw and battery cap.

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ONE rifle TWO scopes THREE 'identities'

Swapping scopes is not difficult if dedicated mounts are left on each one.

Pat Kerin

When money's tight, stretching every dollar as far as possible just makes sense. While some are fortunate to have a different rifle for every duty, others need their few firearms to perform multiple tasks to make up for lack of numbers in their gun safe. One of my rifles illustrates this philosophy perfectly as, while I use it mainly for target shooting in two completely different formats, I also have the ability to turn it into a hunting rifle with a quick change of scope.

One scope helps me shoot cast lead bullets at ranges up to 300 yards, then I simply adjust my zero using the turrets and can fire copper-jacketed bullets at considerably greater distances. If the need arises, I can replace that scope with another pre-zeroed for hunting ammo and I'm ready to go after just a few check shots. Three rifles for the price of one - how's that for versatility?

Multiple personalities

The choice of scope for a rifle really determines what purpose that rifle will be best

suited for. A high-powered target scope with adjustable parallax and technical reticle will enable precise shooting at long range, where a lower-powered, fixed magnification scope of around 8x will define a rifle as a spotlighting tool best suited for lowlight shooting at sensible hunting ranges of around 200m or so.

On the other hand, setting a 4x scope atop a .220 Swift heavy-barrel varmint rifle would seem a mismatch, as would mounting a heavy 5-25x56 30mm-tube scope on a .375 Holland & Holland big-game rifle. Matching scope choice to the firearm's purpose is an important element of setting up any rifle, but remember the choices are changeable and doing so can completely transform the capabilities of a rifle.

The rifle

This is a Howa 1500 Varmint chambered in one of the great general-purpose cartridges, the .308 Winchester. It's fashionable these days to scorn the .308 Win but the rounds which seek to take its place tend to have somewhat specialised applications, whereas the venerable .308 plods along doing just

about everything more than well enough to retain its place in the pantheon of great calibres.

Being a short-action, scope mounting options can be limited if two-piece mounts are used but, with a Picatinny rail, any issues in that regard are easily dealt with. I admit it's on the heavy side for a hunting rifle - but not by much. Before I sold my .270, which this .308 replaced, the weight difference between the two was just 1lb and that's not a deal-breaker for me as, given target shooting is the main application for this rifle, 1lb is no issue at all.

The scopes

These are firstly a Vortex Diamondback 4-12x and secondly an old, much-loved Tasco 3-9x which you'll need to pry from my "cold, dead hands" if you want it. The Vortex has target turrets which make adjustments quick, easy and repeatable. Because my primary use for this rifle is a 200m version of Metallic Silhouette shooting, my zero setting puts a 165-grain cast lead bullet on the dot at 50m. I wind up for 100, 150 and 200m so I'm aiming with

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STAINLESS XTA

The brand new SAUER 100 Stainless XTA combines outdoor durability, shooting ergonomics and elegance in one rifle. The features of this rifle include an infinitely adjustable comb, stainless steel weather resistance, soft touch coated polymer stock

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The Classic is the tasteful entry into the world of the S 100. The robust DURA-BEECH wooden stock and the matte burnished barrel surface give this rifle the appearance of a traditional tool.

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One rifle, two scopes, three identities

The zero-zero setting puts a 165-grain cast lead bullet dead-on at 50m. To swap for 155-grain jacketed bullets adjust both elevation and windage, but returning to 0-0 is simple with a target scope.



the centre crosshair point for simplicity.

When I shoot regulation (half) matches with chickens at 200m and pigs at 300m, I use the 2 MOA BDC (Bullet Drop Compensation) reticule to gain the extra 8 MOA I need to hit the pigs without winding right around the dial. The Tasco on the other hand is a simon-pure hunting scope with a history of reliable service, excellent optics and no frills at all with a duplex, or AHS-style, reticule and when hunting at sensible ranges for the calibre being used, the 'Aim Here Stupid' reticule works extremely well. There's nothing to adjust when shooting this type of scope, you just let the ballistics do all the work, put the crosshairs on the target and execute the shot.

Dedicated mounts

These are left on both scopes, so whenever a swap is required it's a simple matter of undoing four Allen head bolts and off one scope comes, the other scope replaces it in the same slots on the Picatinny rail, bolts are snugged up and the job's done.

While a paper target shooter would need to adjust out any small imperfection in zero after a swap like this, the error is too small to worry a medium-game shooter. Field shooting doesn't require a 10x score - a 9-ring shot on a goat or pig will drop the animal just the same. In any case, it should

be routine to check your zero before a hunting trip, so swapping the scope and adjusting the zero if need be should take a shot or two at most.

Ammo

The choice for .308 Winchester calibre rifles is good for those who use factory fodder and almost unlimited for hand-loaders, jacketed bullets ranging from 100 up to around 180 grains in common use, with a standard-for-calibre bullet weight of 150 grains.

The 155-grain Palma Match bullet gives excellent long-range performance and furthermore, bullets in this weight range still hit like a freight train on arrival, even at extended ranges. If you want to shoot more for less though, using cast-lead bullets is a surprisingly accurate proposition. I started out using a powder-coated bullet with no gas-check rebate on the base and initially all went well until the accuracy dropped right off and it was back to the drawing board.

Someone gave me a bit of lead-removing cloth to patch the barrel with and . . . wow! That was my first experience with 'leading' and was an educational one indeed. Once I had the bore clean again I started putting gas-checks on and using Lee Liquid Alox to lubricate the bullets and accuracy returned to the point where hitting metallic silhouette chickens at 200m is no problem.

Loads

For jacketed bullets, loads are easily found in the various reloading guides but for cast-lead bullets I sought advice from people who've been making and shooting them for decades and was soon on track, although accuracy was a little variable.

The load I was using was 14.5 grains of AR2205, a fast-burning powder which fills only a small percentage of the case volume. One of my advisors mentioned the 'secret ingredient' he uses - toilet paper - so I gave it a try, delaminated a piece of two-ply and cut it into four pieces, each 2" x 2" square, packed one down on top of the powder charge and off to the range I went.

Accuracy seemed better and more consistent yet the cloud of shredded, flash-fried toilet paper blowing back into my face was a bit off-putting until once again my advisor put me right: "Just use one square inch." Nowadays that's exactly what I'm using and one sheet of two-ply paper yields 32 one-inch squares of over-powder wadding and 14.5 grains of '05 behind a 165-grain bullet works well out to 100m. For ranges beyond that I use 18 grains which takes me out to 300 yards with good accuracy.

Versatility

This is key to having only a few rifles but being able to do many things with them. If you choose well you can use one powder for

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One rifle, two scopes, three identities



Using three different loads to shoot the four ranges in a 200m match - but 190-grain bullets for the rams ensure they go down.

multiple calibres, simplifying things further and saving money in the process. I have a .223 set up for target shooting, but my choice of scope means it can still function as a spotlighting rifle with the magnification wound down. Target scopes have super-fine, usually etched reticules all but invisible in lowlight conditions, so my choice of an illuminated reticule was deliberate - to keep it multi-purpose.

Swap-barrel rifles are another option which really open up possibilities undreamt of not so long ago but now fairly common. The Sako Quad series and CZ rimfires have been doing this since their 455-line hit the market and I'd be surprised if we don't see more centrefire rifles become available from mainstream manufacturers in the not too distant future, offering yet another level of versatility.

In a psychiatric sense MPD - or Multiple Personality Disorder - is something you'd rather avoid but in a shooting sense MPA (Multiple Personality Ability) is well worth pursuing. Doing more with less is not for everyone but for the shooter on a budget it's just plain smart. The easiest way to start is with the scope and what better excuse do you need to treat yourself to a new toy? ●

The advertisement features three Pardini handguns (SP, SP RF, and HP) displayed on a wooden stand. The SP and SP RF models are shown with their conversion kits installed. The HP model is shown without. The Pardini logo is prominently displayed in the top right corner. A circular graphic on the left contains the text "The best selling SP, SP RF & HP". At the bottom, it states "AUSTRALIA'S EXCLUSIVE PARDINI DISTRIBUTOR:" and ".22LR & .32S&W conversion kits available".

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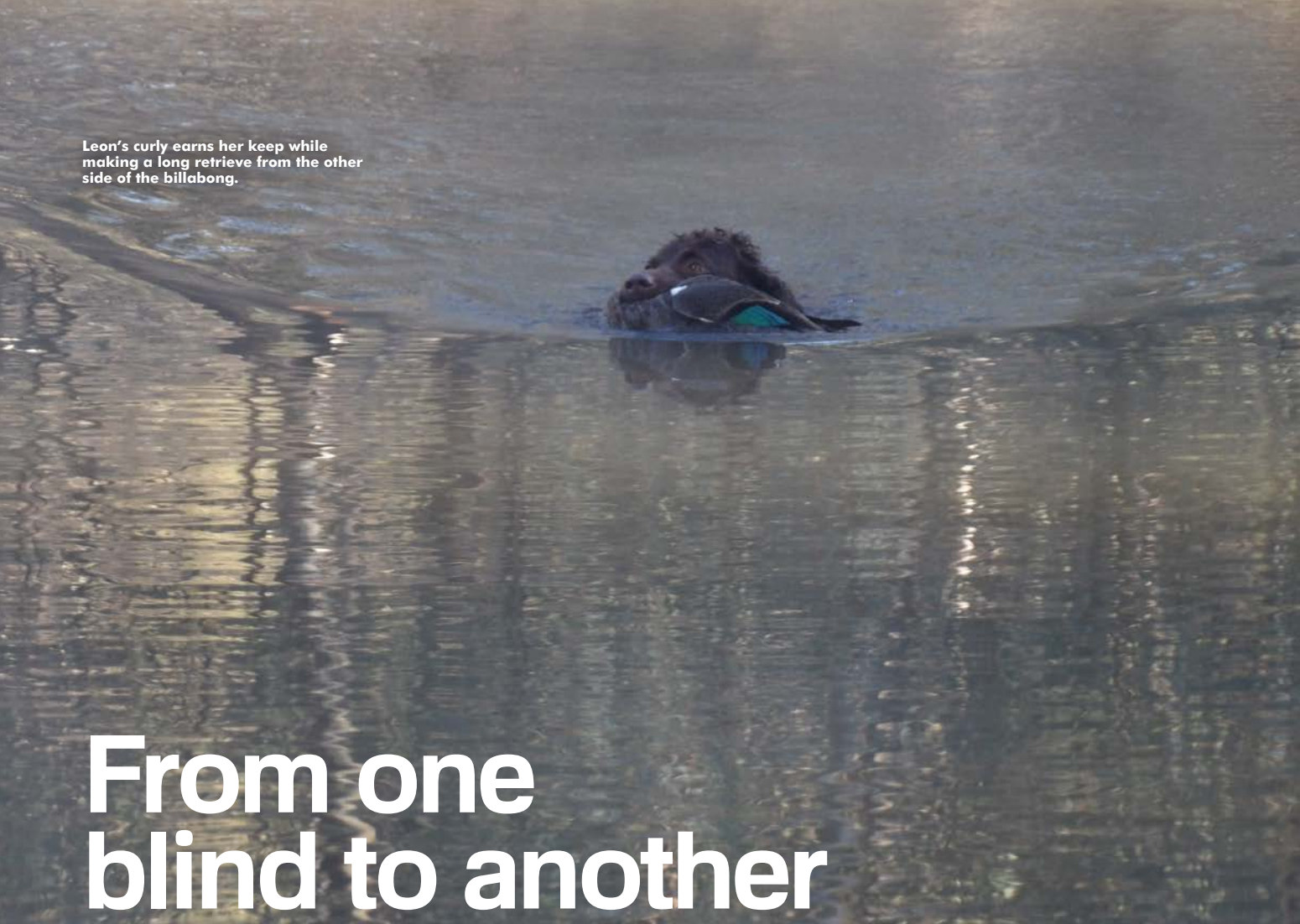
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Leon's curly earns her keep while making a long retrieve from the other side of the billabong.

From one blind to another

Leon Wright

Working on my decoys at the beginning of duck season can be a struggle, for as soon as I shake them out of their carry bag for inspection the stones start coming. My curly-coated retriever Missy loves duck hunting and as soon as she sees the decoys, she knows her favourite time of year has arrived.

To make certain she's allowed to come along she starts presenting me with stones. The dog is near hysterical and, with a crazily wagging tail, continually delivers them to cement her position in the team. Truth be known I wouldn't contemplate hunting without her or newcomer Cobber, this particular season being no exception as I shake my head and glance around the lounge room at stones scattered all over the carpet.

As I spread the decoys out on the back lawn Missy nudged me with another stone. "Yes I know it's duck season," I assured her, "and yes, you can come." To be honest I was just as excited as the dog, my wife just shaking her head as a long-suffering

duck hunting widow. "You're as bad as each other," she said, "no better than a couple of kids."

I've long shied away from the big swamps on opening morning, much preferring a quiet little backwater where I can spread a dozen or so decoys on the water and sit back in the blind with my dog, awaiting the arrival of ducks stirred up by other hunters operating on waterways both near and far. There was no rush to be in the blind early and seeing I'd put my decoys out the previous afternoon, all that was needed was a quick check to make sure everything was in order with both decoys and blind. Then I could sit back, enjoy a cup of tea and ponder the farce duck hunting was turning into. The last time the bag limit was ridiculously low was some years back when it was a mere two birds and a lot of hunters decided to give it a miss and wait for the seasons to improve.

Refusing to let the negatives of the situation take over, I reversed it to a positive by going out more often and when I'd taken my magnificent limit of two ducks, turned

my attention to the numerous foxes around. On this occasion I also had back-up hunting available in the form of sambar, as the deer were becoming a bugbear to my in-laws.

By now it was light enough to shoot so I slipped a couple of No.3 cartridges into my Beretta over-and-under and placed it in readiness for the ducks that were bound to come in once the shooting started. The spot I'd situated my blind was a J-shaped billabong about 1km long and 50m at its widest point. I wasn't alone as one of my brothers was in a blind at the other end of the lagoon while my other brother opted to walk the bank with his dog, flushing ducks and taking shots as he went.

Right on cue shots rang out from the far end of the billabong and I knew ducks would be soon on their way. Sure enough, a few minutes later several blackies came winging around the bend and in answer to either my gentle coaxing with the call or the sight of my decoys drifting alluringly in the gentle breeze, cupped their wings and came drifting in.

Missy was already on to them and sat

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Missy guards a bag of ducks.

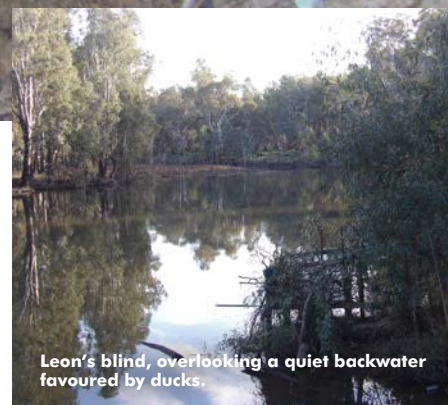
patiently awaiting my shot, her fixed gaze not leaving the incoming ducks, even though her ears twitched slightly upon hearing me take the safety off my Beretta 12-gauge. Telling myself to start at the back of the flock I picked my target, followed through and touched the trigger, all the while keeping the swing going. As the shotgun recoiled into my shoulder I saw the targeted duck fold up and flop among the decoys. I was pretty confident I could have followed through and scored another but, as you're only allowed to take one bird at a time in Victoria, I broke my gun and caught the ejected shell.

Previously I used to leave the duck on the water for a while before sending the dog out, believing it helped teach a bit of restraint, but now you can't take another bird until retrieving the downed one and, with more ducks coming along the lagoon, I sent Missy out. No sooner had she grabbed it than a pair of teal came zipping round the bend. One of my brothers must have fired on them as they were really moving and

with Missy back in the blind with the duck, I quickly closed the gun and prepared to take the shot. I swung on to the back teal, followed through, fired and missed - not enough lead I chastised myself, increasing it a fraction more before trying again. This time I was pleased to see the teal fold up and drop.

It was a good 60m out but Missy had seen it hit the water and needed little encouragement to be on her way and, on my "fetch" command, was instantly in motion. For once everything was going like clockwork as Missy was back in the blind with the teal when more shooting broke out at my brother's end. Following gunfire from his end the ducks came flying along the lagoon and Missy's gentle whining heralded the arrival of a good 50 or more blackies.

It takes a bit of skilful work on the call to have a mob that big drop into a small number of decoys but my calling wasn't good enough and they kept on cruising, just out of gun range. A further 100m on they started cupping their wings in preparation



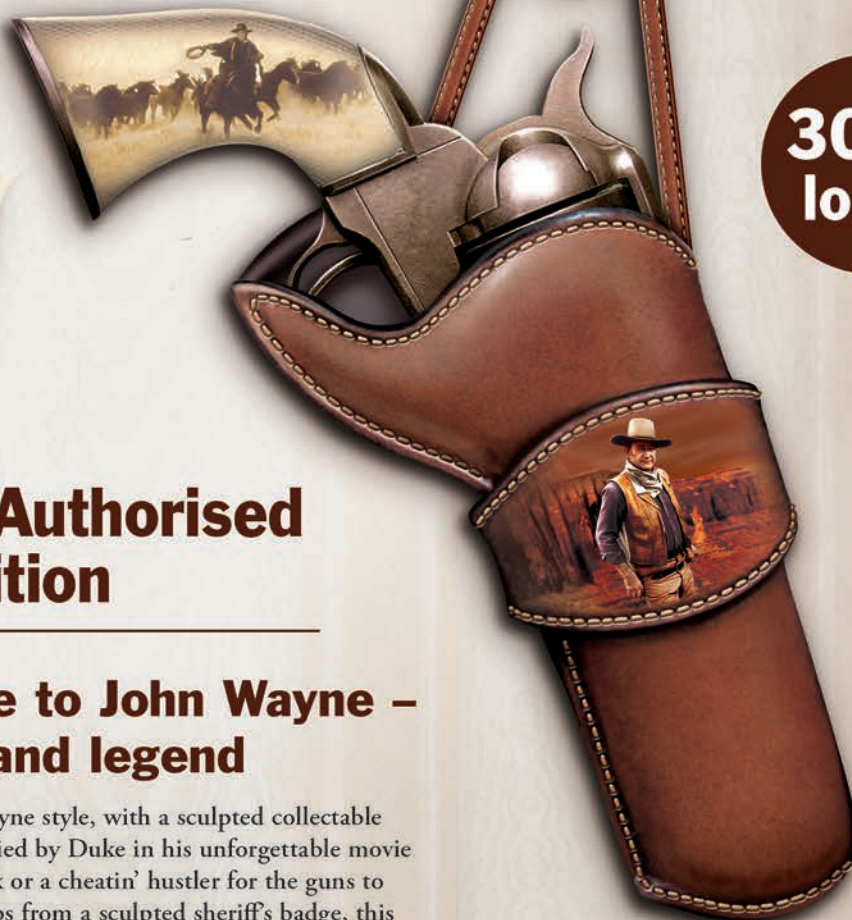
Leon's blind, overlooking a quiet backwater favoured by ducks.

to drop into some heavy cover consisting of a stand of dead redgum saplings, before my loud rendition of the 'come-back' call had them changing their minds as they lifted and came drifting back at a much slower pace, wings cupped and legs down.

As they were about to touch down they had a change of heart, probably spotted the dog, flared their wings and started to climb. Even at that range steel shot will bring a duck down and so it was, at the sound of my shot a fat blackie on the edge of the flight dropped among the decoys, presenting Missy with a simple retrieve.

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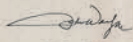
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From one blind to another

That was the end of the duck shoot but I wasn't deterred as I'd already lined up a few days sambar hunting and we soon had the blind set up in the top paddock of the in-laws' farm. An hour or so before dark my brother Greg and I made ourselves comfortable in the blind and it wasn't long before he whispered: "Do you see it?" "I'm on it," I replied and quietly loaded the Ruger .300 Magnum with a shiny 180-grain Federal round. At 50m it was no great challenge to put in a telling shot, though the big spiker still managed 100m before dropping.

After tracking it down in thick cover we decided to leave it until morning before retrieving all the meat. It was going to be a cold night so we'd little concern about the meat deteriorating before we returned. Next morning with all edible meat bagged, I spent time wandering about the vicinity and sure enough my hunch was right - more deer had come down during the night and fed unperturbed for a while by all the sign evident. I wasn't surprised as this paddock was way up the back of the property with little human visitation.

We were back the following evening and approached the paddock far more cautiously. As luck would have it there were six deer feeding - two stags and a mixture of hinds and yearlings - and by the time I had the .300 Magnum resting on shooting sticks, the big stag was well on his way though his subordinate was a bit slower, so that was the one I lined up in the Leupold scope.

Hit high in the neck, the stag dropped at the shot and there was no point reloading as the paddock quickly emptied. With the aid of the 4x4 we dragged him out and decided to leave it until morning before field dressing. Over the years I've found hunting is what you make it and while one door may shut after a short while, another one will open - you just have to look for it. ●



The deer hunting blind placed strategically to cover most game trails entering the paddock from the bush line.



This large spiker fell to Leon's Ruger M77 Mark II in .300 Winchester Magnum.



A mob of sambar take a communal bath.



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Beretta continues to impress with Silver Pigeon

John McDougall

As the former owner of a magnificent Beretta 680 which I customised more than 20 years ago, it's reassuring to know the company has maintained production of one of the most famous of their competition shotguns in the form of their latest 686 Silver Pigeon 1.

During the era of the Beretta 680 it was possibly the most popular model and represented the firm's step into the world competition arena with resounding success. The gun was well-balanced, strong and sturdy and weighted on the heavier side from earlier Beretta offerings. The latest option is every bit a winner with its stylish look, slim profile and Steelium Optima-Bore HP barrels, proofed to shoot modern-day steel shot loads, whether over traps or in the field.

The bonus of owning one of these beauties is the Beretta Forever Servicing program whereby you can take your gun to any major clay target event where Beretta gunsmiths will service it free of charge. This, coupled with 'free fitting' offered

through distributor Beretta Australia, is even more reason why the purchase of a Beretta shotgun is a move in the right direction. Modifications such as an adjustable comb can be fitted for a nominal fee.

So with a revamped receiver with scroll engraving, the special Steelium Optima barrel, a Schnabel fore-end and B-fast adjustable comb option, what else does the Beretta 686 Silver Pigeon 1 have to offer? Let's look closer.

Barrels

These are bored and hammer-forged to the Steelium Optima-Bore profile on a mandrel and temperature treated for optimal performance as the name suggests. Over-bored to roughly 0.732" and increased in diameter from the days of the 680 which could support a barrel bore of 0.72", they also have lengthened forcing cones to improve pattern density.

With a deep blued colouring the barrels are without blemish, both side ribs along with the top rib ventilated and the top rib

tapered from 10mm at the breech to 8mm at the muzzle. The top rib is fitted with a white bead barrel sight at the muzzle and there's no mid-sight fitted.

Optima Choke High Performance internal choke tubes are fitted at the muzzle - five supplied with the gun - measuring 70mm and specifically designed for these barrels, a propeller-type choke spanner supplied for fast and positive installation, all packed into a handy plastic case for ease of storage and ready access. As the choke tubes are fully internal their constriction is identified by notches in the ends of the tubes, one representing full choke and five representing cylinder-no choke. Note this gun must always be fired with two choke tubes fitted otherwise damage can occur to the internal thread of each barrel.

At the receiver end the typical Beretta jointing method is employed via bifurcated lugs in the receiver and slots in the monobloc. There's extensive jewel polishing about the monobloc to retain lubricants and the ejectors are strongly constructed

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Beretta continues to impress with Silver Pigeon

The latest 686 Silver Pigeon 1 sporting shotgun from Beretta Australia.



A walnut Schnabel style fore-end was used with plenty of chequering, completed at around 18 lines/inch for excellent grip

and well-timed, ejecting fired cartridges well clear from the breech or gently raising unfired cartridges so they can be easily removed. The C.I.P. proof mark enables all sizes of steel shot loads of various velocities to be used with the gun and it's interesting to note the 686 Silver Pigeon 1 is also chambered for 76mm/3" cartridges to enable hunting, especially waterfowling with HP steel shot loads.

Receiver

The 686 Silver Pigeon 1 has a slimmer profile than its predecessor the 680 which provides better weight balance and feels really good to hold, mount and shoot. Engraved with floral scrolls and stamped with the Beretta Trident logo on either side of the receiver, engraving extends to the bottom of the receiver and additionally to the triggerguard, lending the gun pleasant appeal. Having a matte silver nitrate finish, the receiver is tastefully decorated with its light scroll engraving and complements the overall stylish lines.

I was excited to discover Beretta have incorporated a mechanical trigger system. This is a huge advance, moving away from an inertia operated set-up whereby the first barrel has to fire before the second can, unless you're dextrous enough to quickly

work the barrel selector. With a mechanically operated trigger system a second barrel can be fired regardless of whether the first barrel is fired and I believe this to be a telling attribute, especially if the gun's to be used for hunting. No opportunity will now be wasted. I was also pleased to note the shooter doesn't have to return the safety catch to the 'safe' position to be able to select barrels, obviously a peculiarity of the new mechanical trigger system.

Design of the top lever is excellent even though it feels a bit too close to the barrel selector-cum-safety catch. The lever works smoothly with minimal effort and locks sharply back into place when the barrels are closed. Beretta, unlike many other makers, don't apply an under bite and bottom slide mechanism to lock their barrels, relying instead on two trunions protruding from the receiver face which lock into recesses in the monobloc. This is a tried and proven method of locking guns which Beretta have incorporated as far back as I can remember and the trunions are replaceable should the gun need to be tightened, as are the lugs fitted to either side of the receiver walls to pivot the barrels.

The barrel selector-cum-safety catch is positive in operation and I like how Beretta place red colouring in the barrel selector

dots so as to readily identify which barrel is firing first. Design of the triggerfoot and triggerguard is perfect and while not adjustable, the triggerfoot is sufficiently raked and within comfortable reach from the pistol grip. An adjustable triggerfoot would be preferred but the present design is sufficient. The size of the triggerguard is generous for those who choose to wear thin leather gloves and not so large as to detract from the look of the gun's lines.

Stock and fore-end

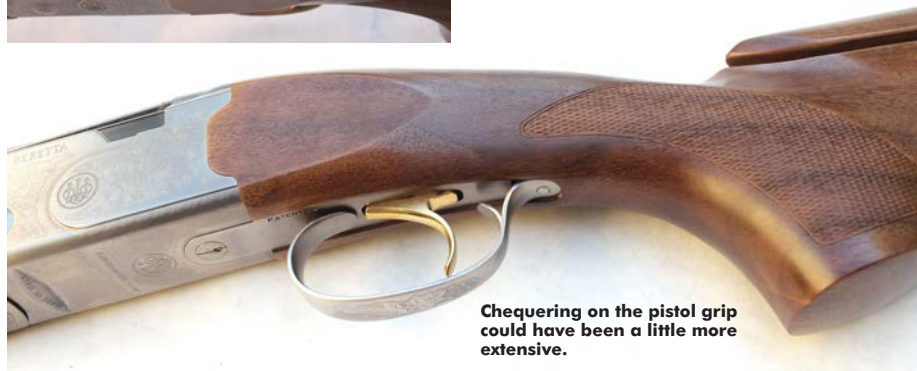
Made from walnut wood, the stock and fore-end match well in grain structure and colour, chequering generous on the fore-end but a little lacking about the pistol grip. Cut at around 18 lines per inch it provides good grip, though I reckon more could have been added to the pistol grip. In short, chequering on the test gun was barely sufficient.

The 686 Silver Pigeon 1 is available with or without an adjustable comb piece (the B-Fast adjustable system). The model on review had the system fitted to the stock which is exceptionally handy and something I'd highly recommend for first-time buyers. With Beretta's offer to fit the gun free of charge, the adjustable comb model will open up more fitting options, for example, if

Beretta's OCHP choke tubes are fully internal with notches marked into the ends for easy identification.



The top lever and tang demonstrates the wood-to-metal fit along with red dot in the barrel selector-cum-safety catch for easy identification of which barrel is firing first.



Chequering on the pistol grip could have been a little more extensive.



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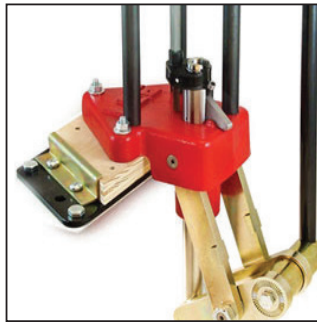
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Beretta continues to impress with Silver Pigeon

you shoot a flat gun in the field for hunting you can lower the stock, whereas you might like to shoot a slightly higher gun for competition clay targets. Shape and rake of the pistol grip is perfect for my use and if anything is a bit short as my trigger finger could easily make the distance and provide a comfortable grip on the trigger-foot. Another delightful addition is the MicroCore recoil pad, something appreciated especially if heavy HP steel shot loads are used for hunting waterfowl. Some steel shot loads travel as fast as 1700fps and without a recoil pad this could be uncomfortable after prolonged shooting.

In the field

I have to say this latest offering from Beretta impresses me no end. I had several guns to test the same day with two being at least twice the price of the 686 Silver Pigeon 1. To the gun's credit it broke every target those more expensive guns smashed with a couple of second barrel clay busters approaching 60m. Balance and swing is perfect while the coupling with Trust cartridges performed a treat.

I highly recommend the 686 Silver Pigeon 1 for anyone who wants to be into the groove of breaking clay targets and the Beretta Forever Servicing and three-year warranty are a great endorsement of the product. Priced at \$2859 for the adjustable B-Fast comb option, this gun represents excellent value and while the stock wood may be basic in character, that's to be expected for a gun below \$3000. More at berettaaustralila.com.au ●

John McDougall takes the Beretta 686 Silver Pigeon 1 for a test at his local gun club.



With the adjustable comb removed, Beretta's B-Fast system is revealed.

Specifications

Model: Beretta 686 Silver Pigeon 1 (B-Fast comb)

Maker: Beretta, Brescia, Italy

Distributor: Beretta Australia, Dandenong, Vic.

Overall length: 1210mm/47¾"

Overall weight: 3.65kg/8lb

Barrel length: 760mm/30"

Barrel weight: 1.45kg/3lb 3oz. Steelium Optima-Bore HP barrels

Bore and chamber: 12-gauge chambered for 76mm/3" cartridges

Proof: Proofed for High Performance steel shot loads 1320 BAR

Chokes: Optima Chokes High Performance (OCHP). Cylinder 0.732", Improved Cylinder 0.720", Modified 0.713", Improved Modified 0.705", Full 0.697"

Length of pull: 375mm/14¾"

Drop at comb: Adjustable

Drop at heel: Adjustable

Warranty: Three years plus Beretta Forever Servicing

RRP: \$2859 for B-Fast comb option with AMS fitted case, all accessories, tools and instruction booklet

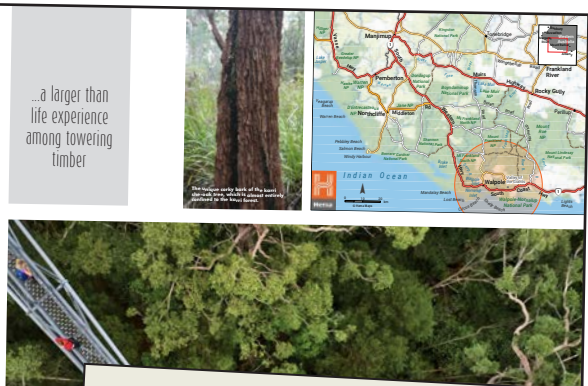
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An introduction to metal detecting

Paul Barker

As the sun sets on a quiet night, the sound of a metal detector is heard. The detectorist is searching for buried treasure, but what they find is often much more than just old coins and trinkets. In this article, Paul Barker introduces the world of metal detecting, from the basics of how it works to the excitement of the hunt.



Cruising the Savannah Way

Dick Loefer

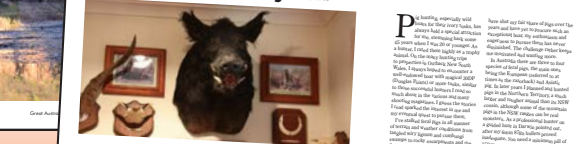
Exploring the Savannah Way is a journey of discovery. From the rolling hills of the Blue Mountains to the vast plains of the Outback, this route offers a unique perspective on Australia's natural beauty. Dick Loefer shares his experiences and tips for making the most of this incredible journey.

Once upon a time... some 45 million years ago, a magical land in the south-west of Western Australia stood tall an eucalyptus forest. It was a lush green landscape, a haven for a multitude of life. But as the eucalyptus forest grew, it also brought with it a new danger. The eucalyptus forest was a fire trap, and the fire that consumed it was a deadly one. This is the story of the eucalyptus forest, and the fire that shaped it.

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A dangerous adversary that provides the perfect challenge

Kim Dunn



The damage they cause to crops and fields can be extensive

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In benchrest testing, recording what you're doing is essential.

Bullet integrity

- don't take it for granted

Don Gilchrist

One of the good things about shooting in a small regional club is the many opportunities for testing guns, optics and particularly projectiles and loads for centrefire rifles. My rural club in far north Queensland is excellent in that respect but does come with baggage. Before the SSAA came along it had been an army range as far back as anyone could remember but stuck on the western side of the Great Dividing Range, its site was not ideal for precision shooting.

There was a steep ridge behind the butts for ricochets but the downside is shooting over a deep gully with hills behind the benches and to the right and a valley to the left, meaning the wind can be diabolically tricky. Usually the breeze only varies in the horizontal plane at a shooting range but in the mountains, our topography creates a vertical component which is hard to read.

This means it doesn't pay to put absolute faith in the results of any single testing session, so I find it helpful to do a little bit of testing on the side, before or after competition, to check results from a previous outing. I was checking the effects of seating depth for a load which had shown some promise in my Savage 6BR benchrest

rifle. One of my gun developments was to install a Pac-Nor Supermatch barrel and I wanted an 8" twist but, as so often away from big cities, you take what's available or go without and I settled for a 7" twist tube.

My 6BR has always shown a preference for flat base (FB) bullets but Berger, the only maker of 80gr FBs I found initially, often had availability issues. The story I heard was the company started by Walt Berger had been bought by a big European ammunition manufacturer and, somewhere in transition, supply to Australia was substantially interrupted and Bergers just disappeared from the market and no one had a clue when they'd be back.

I played around with other projectiles including a sample from Copperhead, a local brand which confirmed the preference for hard-to-find 80gr FB bullets. Eventually Bergers resurfaced but now with fresh packaging and I put a random sample of old and new Bergers over my digital scales to check weight consistency. The old ones had a range of 0.4gr, new 0.2gr and Australian Copperheads at 0.2gr which I thought was encouraging. But it did confirm there were differences in the Bergers' manufacture, so I decided to run the Stoney Point gauge over the new ones to find the lands for

those before I reloaded new Bergers with a known load that worked, seated them at the lands and started shooting.

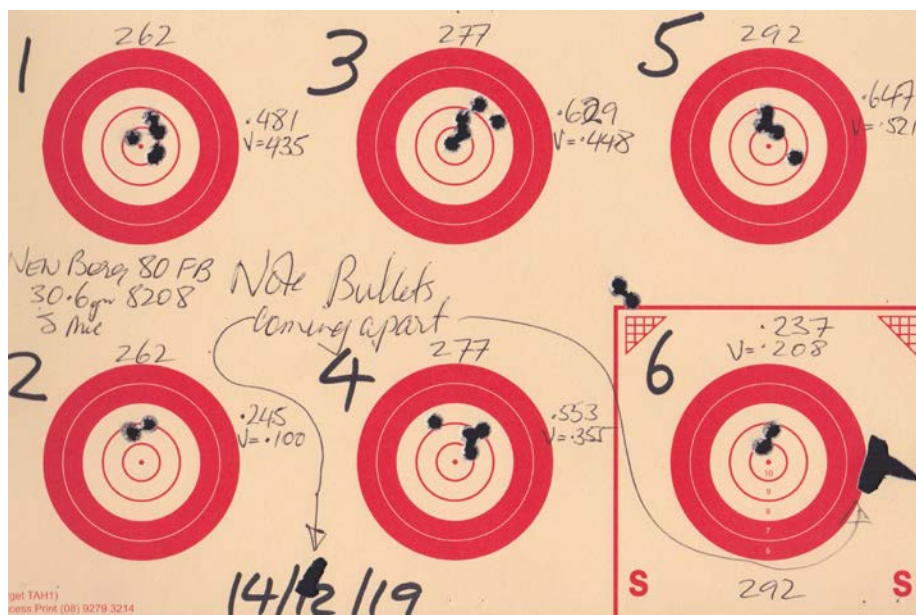
We only have one centrefire benchrest competition a month so results of contest and testing always come slowly. I decided to see if higher velocities might mitigate our swirly wind as I was shooting against 6PPCs travelling at 3400fps. Previously I had some encouragement at 30.6gr of Benchmark 8208 which is a tad over ADI recommended maximum loads, but the 6BR is a soft shoot and I wasn't experiencing any of the classic signs of overpressure like loose or flattened primers, difficult bolt lift and case extraction.

I was playing with seating depth in a fairly coarse way and some of my five-shot groups were going great and I reckoned I might be on to something. After a while I thought: "Steady on, this is too good." Those one-hole groupings I thought I was shooting were still looking like one-shot holes. I don't do much analysis at the range, preferring to do it at home for quiet concentration and thought (I like to measure vertical dispersion as well as group size as a bit of a check on the wind).

It wasn't until I put the target on a black background I noticed some irregular



The 108gr Hornady ELD (left) is the sort of bullet the gun was designed to shoot but the 80gr FB is what goes best in the competitions Don likes to shoot.



perforations well away from the point of aim that I hadn't noticed against the white background of the target backing. When you're shooting a 0.4MOA rifle and using a 45x scope you don't tend to look far away from the POA to see the fall of shot.

The only comprehensive conclusion I could come to was some projectiles were coming apart between the muzzle and the paper. Some partially, which was leaving the large, irregular perforations and some totally, so my apparent one-shot hole groups were in fact exactly that. Even when I did manage five shots on target, the grouping wasn't great and some may have been due to minor jacket distortion affecting flight.

I've since sourced some from the manufacturer Copperhead, which has dies for 6mm 80gr FB bullets, but before I could shoot any of them at this troublesome load along came COVID-19 and all shooting was off until further notice. It was interesting to note that jacket thickness was in the local guy's specifications, but which Berger

do not mention. I guess the point of this is to alert, or reinforce to handloaders, that bullet integrity is something you can't take for granted, particularly in higher velocities with faster twist rates.

I realise I'm taking my barrel and its twist somewhat beyond what it was designed to do as a Savage 6BR in 26" barrel with 7" twist was really intended to shoot 105-115gr projectiles over 300-600m. Nevertheless, some of the numbers are interesting: 80gr x 3100fps (7" twist) = 5314 revs/second; 80gr x 3100fps (8" twist) = 4650 revs/second; 115gr x 2480fps (7" twist) = 4251 revs/second and 6PPC 68gr x 3400fps (14" twist) = 2194 revs/second.

I don't have the maths to calculate the forces which various rates of rotation place on the tensile strength of the jacket, but from my experience 5314 revs/second seems to be sufficient to tear a J4 jacket apart in flight at loads close to ADI recommendations and this can be important to hunters and paper shooters alike. ●

The numbers above the roundels are the micrometer settings for Don's Redding Competition seating die. 262, a jump of 0.015". 277, at the lands. 292, a jam of 0.015". The odd-shaped perforations are obvious, Don didn't know how many shots are in roundels 2 and 6 but is sure it wasn't 5. The two shots on the corner of the sighter square are just to confirm the general fall of shot before the start.



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Warne's 'return to zero' claim is confirmed on paper.

QD scope rings

- when confidence is a must

Chris Redlich

A solid mount is essential for any hard-hitting centrefire rifle and the most expensive riflescope around isn't worth a cent if not mounted in good rings. Warne mounts need no introduction to the Australian shooting fraternity as they've been available here for decades and the company's history was covered extensively by Daniel O'Dea in the December 2019 issue of *Australian Shooter*.

For review, I received two pairs of Maxima QD (quick detachable) one-inch and 30mm scope rings from TSA Outdoors for mounting to my Brno 601 custom rifle in .284 Win. Made in the US, Warne Maxima QD scope rings are a tried and tested design which have proved themselves over time on countless hunting rifles around the world.

The vertical split rings is a unique concept which increases contact with the surface of the scope tube and positively centres your scope to the dovetail base of the receiver and for those who use alignment bars, including myself, this format removes the need for them. Special alignment tools and lapping are not required as, once the screws are tightened to the recommended torque pressure, the rings will not twist the scope tube or cant the reticle which can be detrimental to

consistent accuracy. A relatively simple concept, Maxima QD rings are ideal for the hunter who likes to place the scope to match rings to rifle and be able to remove and replace for whatever reason then refit the scope without affecting zero. This suits me as my Brno chambered in the .284 Win cartridge can be used as a dual-purpose rifle, mainly hunting and occasional long-range target shooting. Warne Maxima are so sure of their strategy they guarantee a 'return to zero' when a scope is removed and reattached to the rifle and claim their QD rings are simply the strongest, most durable available.

They also claim superior strength and clamping benefits due to CNC-machined sintered steel. The base of my rings includes a recoil lug which mates perfectly to a recess on the rear left dovetail of the Brno 601 action, these rings also interchangeable with CZ 550 19mm dovetail receivers. Two pairs of T15 torx-style cap screws supplied ensure the scope is securely fastened in the rings.

Installation

Although one of the simplest mounting systems available for quick removal and refitting of your chosen riflescope, special care needs to be taken during initial

instalment and adhering closely to the supplied instructions is vital.

1: Remove all four screws from both pairs of rings. Place the scope in the ring halves and nip the screws up to a loose fit. Marry the rings to the dovetail, locating the recoil lug of the rear rings to the recess in the receiver. Tighten the two bottom screws of the rear rings to the recommended maximum or finger tight with the supplied torx key in the absence of a torque wrench.

2: Roughly checking for eye relief, move the front rings along the receiver dovetail to a desired position which won't interfere with the objective bell of the scope. This is especially critical when mounting scopes in low rings. Once the desired position is achieved, tighten the two base screws of the front rings the same way as the rear rings.

3: The QD levers can be firmed thumb or forefinger tight to confirm a solid mount to the receiver dovetail but are not to be over-tightened. This will be the final position of the rings-to-rifle fit.

4: Lastly, make any final adjustments for correct scope eye relief or reticle cant by sliding back and forth or rotating in the rings. Tighten the top two screws on each set of rings to the desired torx reading, once again the same as the base screws.



Place the scope in the rings and locate to the receiver dovetail.



Ensure correct eye relief prior to tightening of all ring screws.



Tighten all screws after adjusting the cant alignment and thumb-tighten QD levers securely to the receiver.

Note the QD lever can be adjusted by pulling it out and moving incrementally to a desired position that won't interfere with bolt cycling or top loading of the magazine. Warne Maxima QD rings installation instructions warns not to use thread locker material on their screws and to adhere to specified torque settings for dry threads only. With both scopes ready to shoot I was eager to test Warne's Maxima 'return to zero' claim.

Range test

In order to simulate my use of the QD rings in practical terms, I first mounted the Swarovski Optik Z5 in the supplied one-inch rings to my .284 Win, this scope and rifle combination being the platform which will almost always be my desired positioning for field use. I also prepared the ZeroTech Trace target-style scope in the supplied 30mm rings. After sighting-in both scope combinations and beginning the 'return to zero' test with the Swarovski Z5, I fired a three-shot group using 150-grain Nosler Ballistic Tips at the lower left-hand target and, as expected,

produced an outstanding sub-MOA result. Then replicating the process of removing my Swarovski Optik Z5 field scope and attaching the ZeroTech Trace for target use, another tight group was produced maintaining my previous 'zero' with this scope, then I immediately reverted to my preferred hunting set-up by reattaching the Swarovski Z5.

The Quick Detachable (QD) aspect proved accurate through all scope interchanges as the process of removing and reattaching my scope was successfully carried out in less than two minutes with minimal fuss. As I'd hoped, a final three-shot (plus flyer) 'return to zero' sub-MOA group on the centre right confirmed Warne's bold claim with the first and last group printing the same on both targets.

While the field test reinforced the 'return to zero' on my rifle, I'd recommend where possible to check-sight prior to any hunt. Nevertheless, it's good to know that if for whatever reason your rifle and scope *doesn't* return exactly to zero, it won't be far off and zero can be achieved with minor

click adjustment. Good results on paper at ranges out to 900m left me in no doubt that Warne Maxima QD rings provide a rock-solid platform for target shooting and boost confidence when taking that important one-shot kill at a long-range trophy.

Conclusion

Warne Maxima QD rings are also available with bases for mounting to receivers without dovetails and come in a selection of finishes including stainless and various height configurations including low, medium (tested) and high. For the added flexibility QD rings provide and backed by a 'return to zero' claim, you can rest assured the international travelling hunter or weekend target shooter can rely on them to deliver shot-for-shot consistency. Retailing for around \$150 at time of writing, they're superb value for a precision-machined quick detachable mounting system.

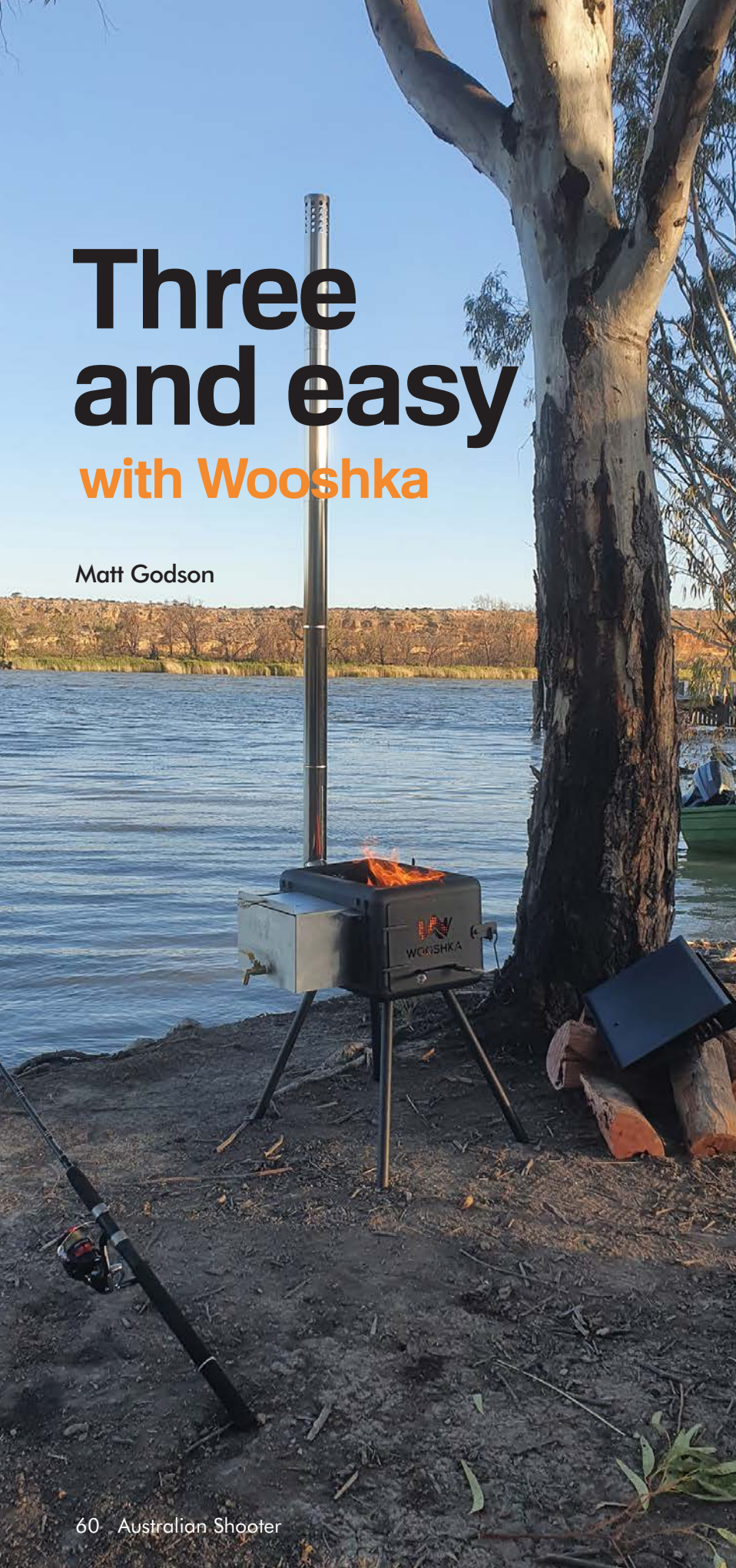
For more information on rings-to-receiver availability and fitment options visit warne-scopemounts.com or Australian supplier for local dealers at tsaoutdoors.com.au ●



Warne Maxima QD rings offer added confidence in the field.

Three and easy with Wooshka

Matt Godson



The Wooshka is at home by the river or at the beach.

The Australian-designed Wooshka outdoor stove is a three-in-one system which can be used to heat or cook your dinner, generate a hot water supply and even provide warmth for yourself and others. It's not the easiest portable cooker/heater to lug around but, in saying that, its heavily-constructed design is built to last so the weight really equates to strength and durability.

It's simple to set up and put away with all the bits and pieces that come with the Original Wooshka packed into its central firebox which allows for the legs, chimney and cooking plates to be easily stored inside the travel bag for easy transport. When you buy an Original Wooshka you receive the Wooshka firebox, flue kit with spark arrestor, a grill and flat plate and lightweight travel bag.

The firebox is solidly built, strong and durable and has a multi-point mounting system which enables the use of a vast selection of accessories at any given time. For example, if you buy the water boiler as an additional accessory, you can maintain a supply of hot water when a blaze is roaring inside the firebox or just on simmer as the fire dies down. It's perfect for cleaning dishes, making a hot drink or even a face and body freshen-up while out bush.

The firebox has removeable legs which are easy to connect and disconnect using specially-made locking keys. The feet on the legs themselves have holes to allow you to peg the Wooshka to the ground and provide extra anchorage if needed, a great idea especially for those times when you load the unit up with accessories or feel the need for more security and safety. When dealing with flaming hot items it's best

to think safety-first and prevent mishaps which could easily ruin a weekend away.

And speaking of safety, the flue comes with a spark arrestor to minimise the risk of sparks being thrown out to nearby areas, as the last thing you need is burning embers landing on the tent or another potential flammable source, sparking a fire. Some camping areas mandate the use of spark arrestors, in which case the Wooshka is the perfect woodfire cooking option.

The grill plates which come with the Original Wooshka provide two options when it comes to wood fire cooking, with the grill plate allowing you to cook your favourite cut of meat over the open flames, giving it that mouth-watering flame-grilled flavour. When connected to one of the side mounting points, the plate provides an indirect cooking option for slow cooking meals or simply keeping food warm.

The flat plate allows you to cook the traditional way where a good old-fashioned meal of sausages can be left to sizzle away fast or slow depending on the amount of fire you have below. Have the flame burning intensely and you can also perfectly sear and cook a steak to your liking.

Other accessories which may be of interest include a wok/camp oven adaptor which allows you to cook with a camp

oven or wok over the firebox and there's also a rotisserie kit that lets you spit-roast meat over the flames. A utensil and accessory stand will keep everything in order and near at hand while a heavy-duty travel bag wraps it all together a lot longer than the lighter weight option supplied with the Original Wooshka. The outdoor cover will provide dust and weather protection if you want to keep the unit set up at home.

I tested the Wooshka at two locations, once beside the mighty Murray River and the other on the Coorong National Park's ocean beach. Each time I enjoyed woodfire cooking without suffering smoke in my eyes which tends to happen when cooking over a ground camp fire. I also appreciated the warmth generated by the firebox while sipping a glass of red as the sun disappeared from view, while hot water from the boiler was used to clean the dishes and allowed a relaxing wash before settling in for the night.

The unit is ideally suited to those who



like to mix it up and not rely solely on gas cooking and don't mind experimenting with good old traditional wood fire cooking with a modern twist. The Original Wooshka retails for \$339 and is available at Bunnings or online at www.wooshka.net.au ●

NIOA and Winchester

join forces



Australian-owned firearms supplier and manufacturer NIOA has teamed up with Winchester to form the world's largest small arms ammunition enterprise. The two companies have signed a long-term supply contract with the Australian Defence Force, shoring up the ADF as it moves forward.

The partnership assures the supply of munitions for existing small calibre weapons used by Australian soldiers, as well as new systems which will be introduced. Queensland-based NIOA has been supplying the ADF with ammunition for a number of years under its Commonwealth Major Munitions Contract.

NIOA Chief Executive Officer Robert Nioa said the contract with Winchester was big for the business. "As one of the

world's most recognised brands and a leading manufacturer of small arms munitions, NIOA looks forward to working with Winchester," he said. "The ADF requires an assured supply of munitions which are interoperable with Australia's key allies."

Winchester President Brett Flaughter said the two companies are on the same page for Australia's future. "We're proud to see the beginning of this arrangement with NIOA," Mr Flaughter said. "Our two teams share similar values including quality, reliability and innovation, ensuring our servicemen and women always have the best equipment."

NIOA is investing more than \$130m over the next five years in domestic munitions and explosives manufacturing. ●



Spirited expansion with Sig Sauer Whiskey3

Daniel O'Dea

It's not uncommon these days to see firearms manufacturers branch out into a whole suite of products, often related to but perhaps outside their traditional core focus. From a business perspective this entirely makes good sense as, given the right option, it allows the company to diversify their offerings by leveraging that established brand identity.

No finer example of this can be found than with Sig Sauer, a company famously known for quality firearms and with a heritage dating back more than 200 years in both rifle and pistol production, as they now find themselves with an extensive array of products across multiple facets of the industry. Not only are they still making firearms but lending their name to the sale of ammunition, optics, rangefinders, apparel, holsters, targets, cleaning gear, hearing and eye protection - the list goes on.

Of course key to the success of such diversification is to only present products which live up to the company's good reputation and high benchmarks, things which helped establish their own good name for starters. With this in mind and with Sig Sauer a relatively new player in the optics field, my interest was piqued when I was sent their Whiskey3 riflescope for review.

You may be surprised to hear Sig Sauer have a full selection of riflescopes at all ends of the optics spectrum, both by features and price point, the Whiskey3 their entry level offering with the sample provided in the 4-12x50 power bracket. For review purposes this represents a good

starting point as while there seems to be a trend these days to overpower rifle optics, in practical terms for most hunting applications a 3-9x or 4-12x will give you all the magnification you need.

This 4-12x50 is reasonably compact with overall length of just 317.5mm, the body having a standard 1" (25.4mm) main tube making it compatible with all regular 1" rings and mounts. The objective lens is 50mm and the housing runs out to 59mm at the outer diameter, the ocular lens 44mm in diameter and about 90mm long, its Euro-styling featuring a rubberised eyepiece with +/- 2 dioptre adjustment.

Forward of the ocular housing is a rubberised power change ring with an imbedded fibre optic tube serving as a marker for adjustment, power setting graduations from 4x to 12x being gradually spaced and expressed in heavy bold white print, something I'd suggest truly makes adjustment easy in lowlight, dare I say even for those with failing eyesight. Visually the bulk of the ocular housing balances well with the larger 50mm objective.

Turrets for both elevation and windage are located mid-tube in a traditional format, screw-off turret caps revealing finger-adjustable target-style turrets with clear markings in Minute of Angle (MOA). The turrets are spring-loaded and can be lifted and returned to zero once sighting-in is complete, adjustments both audible and tactile with a firm click at each 0.25 MOA increment. There's 12 MOA for each full turret rotation with a total of 60 MOA

both for windage and elevation, meaning there's about 1.5m total adjustment top to bottom and left to right at 90m (100yds). In this area alone (turrets and adjustment) the scope is well featured and it seems long gone are the days of friction-adjusted turrets you had to move with a coin.



Firm, audible adjustments come at 1 click per ¼ MOA (0.25" at 100 yards).

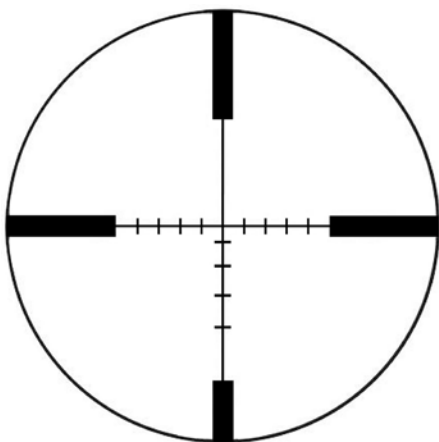
It constantly surprises me just how crisp and clear the view through even entry level scopes is these days and the Whiskey3 is no exception, Sig Sauer marketing declaring: "Low dispersion glass provides industry leading optical clarity for any situation." In practical terms I'd say it's as bright as any scope I've tested in a similar price range. The '3' in Whiskey3 relates to the scope featuring a 3x optical zoom in the second focal plane and having the reticle in the second focal plane means it maintains the same appearance (size) with any increase and decrease in magnification (power change).

Eye relief is a generous 91mm at the high-end setting which should be long

enough to prevent Weatherby eyebrow on even the hardest-kicking Magnum, and the 50mm objective sucks in plenty of light at dusk, dawn and other lowlight conditions such as at spotlighting. The large diameter objective lens intern delivers an ample exit pupil, with 4x into 50mm giving 12.5mm at the lower power setting and 12x into 50mm giving a 4.16mm exit pupil at the high end. For reference, the human eye can only dilate to about 7mm.

The scope also offers good field of view with 2.5m at 12x to a wide 7.6m at 4x both measured at 90m, parallax also set for 90m (100yds). As for other vitals the scope weighs-in 1 gram shy of half a kilo at 499g, is nitrogen-filled to prevent fogging and carries a waterproof rating of IPX7, which I understand means you can drop it in a shallow creek for up to 30 minutes and it should be fine (just don't go deep-sea diving with it).

For testing I mounted the Sig Sauer Whiskey3 in a set of Warne Maxima 1" Horizontal rings on a Mossberg MVP LR Thunder Ranch rifle I also had for review. The scope mounted well and was a good match for the Mossberg which was chambered in .308 Win/7.62 NATO. Locked down in my Caldwell Lead Sled, boresighting was a breeze and I had it zeroed quick-smart with limited rounds fired. During testing, when any adjustments were made the Whiskey3 tracked perfectly as well as holding zero between sessions, the rifle-mount-scope combination achieving groupings as tight as 0.5 MOA, testament to all components used.



The Sig Sauer Whiskey3 scope as tested came with the Quadplex Bullet Drop Compensator reticle.

The Whiskey3 category has several reticle options including illuminated versions and the scope supplied came with the handy Quadplex Bullet Drop Compensator (BDC-1) option which, as the name suggests, has a conventional plex



Bold print and markings along with a fibre optic power ring indicator and tritium dash for dioptre adjustment, ensure direct and easily visible modifications.

design with four thicker bars at the peripheries and thinner bars in the centre to form the cross-hairs. But in this case there's the addition of four subtensions below the main cross bar for hold over and four subtensions either side for windage.

Try as I might I couldn't find any information on the exact values (in MOA) of these markings but as a second focal plane scope the values would change across the power range in any case. Likewise, as with all such BDC reticles, the subtension value in scale is dependent on calibre/load trajectory. All that aside, once you've worked out the Data On Previous Engagements (DOPE) for your particular rifle and calibre, such a reticle can become invaluable in assisting with correct holdover.

The Whiskey3 presents as a rugged, well-featured and well-priced scope and it would appear Sig Sauer are so confident in their product they offer an unlimited lifetime guarantee - if anything goes wrong they'll repair or replace it free of charge. Furthermore, this guarantee is fully transferable with no warranty card or receipt required to claim. So in resale terms, if you decide to sell the scope you can tell any would-be buyer it's still covered by the manufacturer's guarantee.

I would note however, this unlimited lifetime warranty doesn't extend to electronic or tritium components (where fitted) which are covered for five years. This is somewhat understandable, especially with tritium constituents as this,



The Euro-style ocular housing has a large, easy-grip change ring and rubberised focus (dioptre) adjustment ring.



The 50mm objective lens allows for great light transition and a large exit pupil while the housing has neat scallops in the bezel and is threaded inside for a filter or flash kill.

after all, is a radioactive isotope (used to make things glow) which has a half-life of around 12 years, so can't last forever.

In a market seemingly awash with numerous new participants it can be quite daunting when it comes to selecting an optic for your rifle but I have to say, the Sig Sauer Whiskey3 features, price and warranty certainly make it worth a look. Sig Sauer products are imported and distributed by Outdoor Sporting Agencies. Visit www.osaaustralia.com.au

Specifications

Focal plane: Second

Reticle: Quadplex BDC-1

Adjustable increments: 1/4 MOA

Weight: 499 grams

Main tube diameter: 1"

Travel per rotation: 12 MOA

Parallax setting: 90m

Field of view low (at 100yds): 2.5m

Field of view high (at 100yds): 7.6m

Eye relief high: 91mm

Exit pupil low: 12.5mm

Exit pupil high: 4.6mm

Dioptre adjustment range: +/-2

Objective lens diameter: 50mm

Internal gas purge: Nitrogen

RRP: \$575 but shop around



In praise of classic cartridges

Brad's classic cartridges: .22 Hornet, .223 Remington, .243 Winchester, .270 Winchester, .30-06 Springfield, .375 H&H and .416 Rigby.

Brad Allen

In the late 1960s when I started shooting with my father there were precious few centrefire cartridges and rifles for the budding hunter to choose from. Everyone had a 12-gauge shotgun and .22 rifle, but the centrefire rifles available were limited. Derivatives of the faithful .303 such as the 22-303, .243-303 and .270-303 were popular with the .303 and .25-303 possibly most prevalent. All performed adequately on their respective intended game but the main limiting factor was the weak rear-locking SMLE action by comparison to the great Mauser 98.

Good-quality US and European sporting rifles were available in a modest selection of cartridges, the .222 Remington being extremely popular but they were always a bit more expensive than the SMLEs. However, to obtain a calibre not based on the .303 case it was necessary to go to the limited variety of imported hunting rifles

available like Parker-Hale, Brno, Anschütz, Remington and Winchester or, if you could afford it, Sako.

I've owned a vast array of rifles and calibres but the few which really left their mark were all classic cartridges, some old and some not so old. Countless new-fad cartridges with fancy names have been offered with promises of super performance and magic accuracy and while they mostly do work fine, in reality they rarely offer any real advantage over the classics. In my view it's often a case of trying to re-invent the wheel.

Sales figures indicate many hunters and shooters ultimately come to the same conclusion, sticking with the tried and proven performance of the classics. New cartridges come and go while the classics live on and below are a few of my favourite hunting cartridges, all of which I've had the pleasure of using with much success.

.22 Hornet

My first centrefire was the diminutive .22 Hornet in an Anschütz rifle. This is a rimmed cartridge dating back to 1930, firing a 45gr soft or hollow-point bullet at around 2600fps with a mild report, virtually no recoil and good accuracy in the three Hornet rifles I've owned (Anschütz, Brno and CBC).

This little round can kill out of all proportion to its size and I've used the Hornet to take a veritable truckload of small game from hares and foxes right up to pigs and goats. For years many gun writers predicted the demise of the Hornet but that has failed to eventuate, with increased rifle sales and ever-rising popularity worldwide. It's a wonderful cartridge which greatly outperforms the ever-popular .22 Rimfire Magnum.

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Brad with fallow buck taken with his old Ruger .270 and 130gr Woodleigh handloads.

.223 Remington

Some may disagree when I say the .223 is a modern classic but I believe the history of this cartridge supports my view. After starting life in the AR-15/M16 assault rifle family it was released to the shooting public in the 1970s and has gone from strength to strength, outperforming and greatly outselling its main rival, the venerable .222 Remington.

With an extensive array of factory ammunition available from light, frangible 50gr varmint bullets to medium weight controlled expansion hunting bullets in 60gr+ weights suitable for game up to fallow deer size, and heavier long-range rounds right up to the 70gr+ weight range, the .223 can do it all. This has only been facilitated in recent times with rifle makers offering shorter twist barrels to accommodate longer and heavier bullets.

I've owned rifles with barrel twists from one-in-12" (Brno 601) right up to my current favourite .223, a Ruger American with one-in-8" twist which shoots mid-weight 60gr+ bullets wonderfully well, so it's no surprise the .223 Remington is probably the most popular centrefire cartridge in Australia.

.243 Winchester

My first real medium game rifle was a Sako Forester .243. My handloaded 87gr

Hornady projectiles were a compromise for all the game I hunted and handled everything from hares to red deer and, at more than 3000fps, shot quite flat over normal hunting ranges. The .243 has mild recoil and is pleasant to shoot even in light rifles, with more than enough power for our small and medium game, an attribute which has made the .243 the perfect choice for smaller-statured hunters like juniors and ladies, who may not be able to tolerate the recoil of a larger calibre.

The .243 has always given a good account of itself when used within its limitations and has it all - accuracy, low recoil, a fine selection of available ammunition and bullet weights, with enough power to take most Australian varmints and medium game. A great performer which has punched above its weight since its release in 1955, the .243 Winchester is another classic cartridge.

.270 Winchester

Probably my all-time favourite medium game hunting cartridge, this one has been around since 1925 and with bullet weights from 90gr right up to 170gr, suitable loads can be found for everything from foxes to sambar or larger game (note .270 is the legal minimum for sambar in Victoria). With relatively mild recoil it can be comfortably managed in today's lighter mountain rifles with a well-shaped stock

without kicking your head off - and has the required horsepower to take the largest of Australian game.

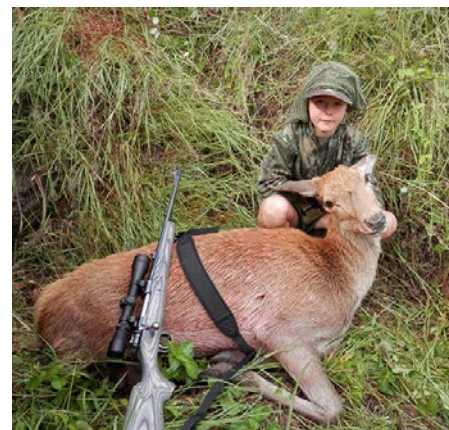
My son accounted for an Arnhem Land buffalo bull with his Winchester 70 in .270 a few years back using Barnes TTSX bullets and, some time ago, I stepped down to the .270 after using a 7mm Rem Mag for many years as my 'deer rifle' and hardly noticed a difference in trajectory or killing power when used at normal hunting ranges under 300 yards. The .270 Win has been around for 95 years already and going by its current following will be here for the same again.

.30-06 Springfield

This one was introduced to the world in 1906 but I only recently encountered it when my youngest son told me he wanted a 30-06 for his first hunting rifle. Using handloaded 180gr Barnes TSX projectiles, the first head of game he took with his new Steyr was a bull buffalo in Arnhem Land. Recoil is manageable and he's shot everything from foxes to buffaloes with that load, as well as a trio of fallow deer from the same mob.

Again the array of projectiles available for the 30-06 is astounding, from light varmint bullets right up to 240gr round-nose suitable for the largest game. As much as I love my .270 Win, after my son's successes with the cartridge I ventured into 30-06 territory and bought a handsome Ruger No.1 single-shot which does kick a little more than my Ruger .270 but is still a fine rifle to hunt with.

The 30-06 is a firm favourite for plains game in African hunting camps and for samba in the Victorian Alps. Truth is, if I'd been introduced to the 30-06 earlier in life it may have become my favourite medium game hunting cartridge and if I could have only one centrefire hunting rifle it would undoubtedly be a 30-06.



Morgan with red deer hind taken with a Parker-Hale .243 and 100gr Remington Core Lokt ammo.



Morgan with his Steyr 30-06 and buffalo bull.

.375 H&H

This has been around since 1912 and is an inherently accurate round, a medium-bore cartridge able to handle everything from medium game right up to the mighty African elephant with 300gr solids and well-placed shots. In a well-stocked rifle of adequate weight, recoil is manageable, being more like a big push, though it's a bit 'over-gunned' for most Aussie game except buffaloes, scrub bulls, camels and bantengs. The .375 H&H is a great all-round performer which has stood the test of time, a true classic as, after more than 100 years, it continues to grow in popularity.

.416 Rigby

Even though the .375 H&H can handle everything on the planet, since 1911 the revered .416 Rigby has been just a bit more of a good thing. Shooting 400gr bullets at around 2400fps it's no pussy cat but, in a suitably weighted rifle with a straight stock

and wide comb like my current CZ 550 Safari, its recoil is similar to the .375 with just a slightly 'bigger' push.

One of my professional hunters in Africa used a .416 Rigby when hunting dangerous game, stating it could be relied upon to stop a charge from any of the big five and that was good enough for me - when I had the chance to buy a .416 I snapped it up. I've only used it on buffaloes but it hits hard and they go down quick. I have tried larger calibres like the .458 Lott and they do hit harder, but at both ends.

So there you have it, not a definitive list but they're my favourites. Today the diversity of cartridges and calibres on offer to the Australian shooter/hunter is mind-boggling and there are any number that will do a credible job for your intended purpose. One thing for certain is you'll ultimately end up with your own list of favourites as you enjoy the hunt and enjoy your sport. ●



Brad's favourite rifles in his classic cartridges - Ruger American .223, Parker-Hale .243, Ruger .270, Ruger No.1 30-06 and CZ .416 Rigby.

A photograph of a scrub bull in a grassy field with trees in the background. The bull is brown and appears to be in motion, possibly running or charging, with a cloud of dust or grass kicked up behind it. The background shows a line of trees under a clear blue sky.

Adrenalin-charged game

expect the unexpected

Sam Garro

An agitated scrub bull senses an intruder.

Provided a suitable calibre rifle and properly constructed bullet is used for the intended game hunted, a well-placed shot to the vitals should in most situations result in a fairly quick if not instantaneous and humane kill. But at times, despite our expectations, game can prove surprisingly resistant or difficult to fell, leaving the hunter bewildered or questioning their ability.

When game is wounded, experiences stress, perceives danger or is in a protective state, the animal's self-preservation or defensive mechanisms are activated, the hormone adrenalin kicks in and makes the heart and lungs work faster to pump more oxygen to the major muscles. The senses are heightened and the body receives a

surge of additional strength or energy.

In particular, where bigger and hardier game species are involved such as wild boars, stags or antelopes, scrub cattle, water buffaloes or African plains game, even when a well-placed shot is executed to an already adrenalin-charged animal it can take more than a follow-up effort before the beast succumbs. This was the case when a large-bodied kudu shot through the heart travelled a good mile before dropping.

Adrenalin triggers

Examples which can result in adrenalin flowing through the body of an animal include the sight or scent of a hunter carried on the wind, sensing or escaping danger, suddenly being disturbed or

spooked from a resting place, poor shot placement, injured or excited boars, stags or bulls fighting for dominance or during the rut - and protecting their young.

During a pig-culling exercise on a property in NSW to save a farmer's rice crop from the destructive marauders, several groups of pigs were successfully felled through our combined efforts. One evening just before dark, as we drove to the corner of a rice paddock where the pigs had been seen to leave, the dulled sound of our vehicle coming to a rolling stop with the motor turned off was enough to send the porkers inside into a frenzied exit.

The last to emerge was a large boar to my rear at some 20 paces which I detected in my peripheral vision and a hurried shot



An NT battle-scarred boar felled by Sam as it rapidly exited reeds at close range.

at the bolting dark form with the 6mm Rem saw it melt away into the adjoining scrub and quickly fading light. The bullet hit home with a thud yet despite searching the area with torches the boar was nowhere to be found. A couple of days later the property manager, checking livestock in a lightly scrub back-paddock, came across the carcass a kilometre or so away as the crow flies from where the animal had been shot.

Close encounters

Hunters' tales of run-ins with adrenalin-charged game are extensive, varying from seemingly placid and shy deer to known dangerous species such as North American black bears, Cape or water buffaloes, feral pigs and scrub cattle where the animal has

reacted in an unexpected and defensive manner, resulting in injury to the hunter.

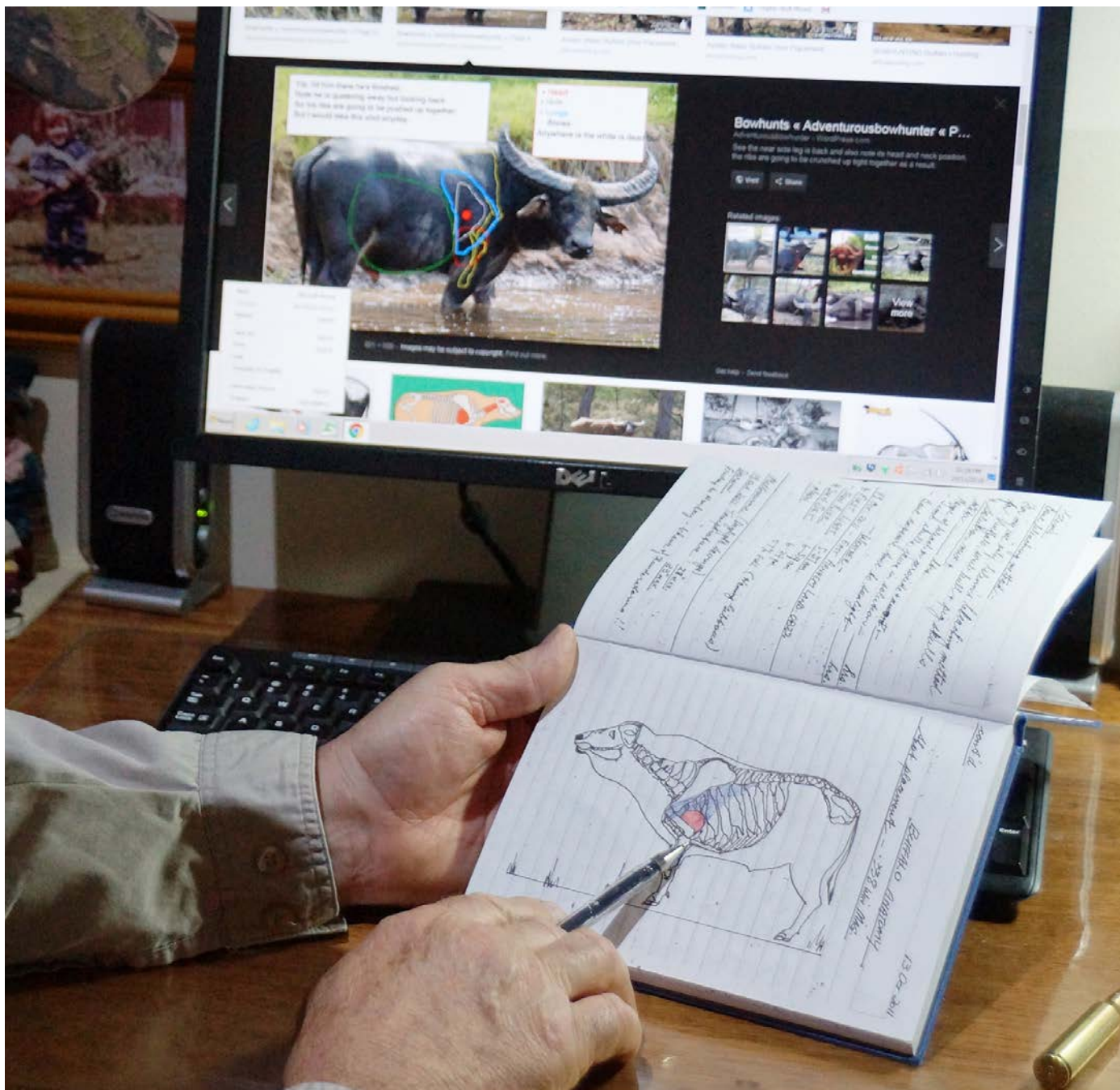
A prime example in recent years is where an outfitter with a couple of buffalo-hunting clients in the Top End were quietly stalking the bush when they unwittingly spooked a resting bull buffalo in tall grass. The buffalo at some 30m rose to its feet and faced them with head lowered and despite their every effort to slowly backtrack out of the danger zone, one of the hunters inadvertently stumbled on a termite mound, triggering the charge. The outfitter courageously stood between his clients and the bull in an effort to deliver a brain shot but unfortunately hit the jaw instead which only agitated the animal further. He copped the full brunt of the charge and sustained some

serious injuries before both clients were able to safely shoot and kill the bull.

Preferred approach

To optimise one-shot kills and avoid an adrenalin-fuelled animal departing, possibly never to be found, patience should be exercised for a clear shot to the vitals when the animal is standing or browsing unperturbed or when it's in a calm manner. Every effort and available means should be used to impact a steadied shot whether lying prone with a bipod attached to the rifle, using a tree limb, branch, log or shooting stick.

Taking your shot to the heart/lung area as the game presents in a quartering position is the most favoured and may be the only chance you'll ever have and, whether you're



Studying the anatomy of buffaloes for proper shot placement.

an experienced hunter or not, expect the unexpected and be prepared to react quickly with a follow-up shot if necessary.

Improving the odds

To effect proper bullet placement it also greatly assists to understand the anatomy of the game hunted and where its vitals lie, then hone your shooting and accuracy skills by aiming at field targets from various angles, distances and cover.

W.D.M. 'Karamojo' Bell, the famed African game hunter of the early 1900s,

more than any other went to great lengths to determine exactly where the brain was positioned in the skull of the largest land mammal, the elephant. He sought to ensure a single shot to the brain with a solid bullet was the most effective as this would avoid or minimise any animal suffering or adrenalin build-up that might effect its departure or charge in a state of rage.

While a brain shot was Bell's preferred method on the pachyderm, unless a hunter is absolutely proficient, brain shots on large game such as buffaloes or scrub bulls due

to their small fist-size brain should not be attempted nor is not recommended, as slight movement of the animal's head at the crucial moment can result in an off shot and prove dangerous.

Using enough gun

A suitable and adequately powered firearm and appropriately constructed bullet relative to the game hunted should be used to ensure the animal is quickly and humanely harvested - especially when it comes to large game - and that extra punch or power



A buffalo in attack mode.

is required to overcome or better deal with an adrenalin-charged animal. Author and big game hunter Robert Ruark during his African adventures was an advocate and certainly an authority on using 'enough gun', having widely pursued all manner of game including the Big Five.

Provided the firearm can be safely and easily handled, a greater powered item is in order. For example, normally a 270 Win, 308 Win or 30-06 Springfield calibre is considered adequate for deer but many a hunter when chasing sambar has preferred anything from .35 Whelen, 9.3x62R, 300WM to 375 H&H and 458WM. It may seem overkill but I've seen hunters' photos of monstrous sambar deer the size of a cow and the latter calibres weren't out of order. In thick forested areas it can be quite a task locating a shot deer if not dropped on the spot and it wanders off.

Persist in locating game

In the end, if confident your shot placement to a vital spot was good, reflected at times by the reaction of the animal losing its footing, flinching or such movement on



A large-bodied scrub bull charged with adrenalin can be a challenge to down with heavy-calibre rifles.

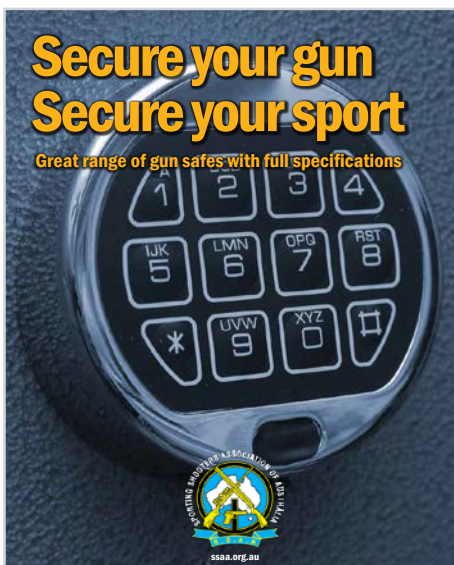
bullet impact, that animal can still take off seemingly unaffected. The adrenalin is able to carry it anywhere from a few metres to a few hundred metres and more before actually dropping.

In these cases, especially where larger game animals such as deer are involved and terrain is thickly vegetated or difficult to tackle, it's a good idea to wait a while as this will allow the animal to expire without

being further agitated by the immediate sight or sound of a tracking hunter which may push it further from reach. Be prepared to track the game and persist, following the blood trail and related signs as far as they'll take you. If unable to locate, return to the area early next day as Mother Nature sometimes assists with crows or birds of prey circling in the sky over a carcass or injured animal. ●

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The three old guns showing Lionel's DIY work.

Lionel Swift

What follows is the tale of an old muzzleloading 14g Manton shotgun made in England about the 1850s, a then-new Lithgow single-shot .22 rifle from 1948 and a delightful hammerless English boxlock built in the early 1900s by George Creighton. It also tells how the muzzleloader was loaded and how and why I acquired it at 16 years of age. These were the first of many guns bought, sold and acquired and I still have them.

Lithgow Model 1A

At the age of 14, I was given a Lithgow Model A single shot .22 by my parents. I was accompanied by a neighbour to shoot rabbits, riding our bikes about 14 miles from Melbourne starting at 4am to be there around daylight and I became proficient enough to bring home a number of rabbits, selling the head-shot ones to the local 'ham and beef' shop (delicatessen) for almost as much on a Saturday morning as my apprentice electrician's wage for the week, which in 1950 was \$3.20! This was done walking rocky and grassy paddocks, shooting any

rabbit found sitting in a 'seat' or 'squat' - usually under a tussock or Scotch thistle. Often the 'seated' rabbit would take off and we tried shooting them 'on the run', hitting them occasionally.

At the same time I joined the local indoor range for target practice, part of the VMRCU (Victorian Miniature Rifle Clubs Union) using the club's accurate .22 Martini-actioned BSA target rifles equipped with peep sights. The club met on Tuesdays at 7pm and shot until about 10.30 on railway land at Ascot Vale station, the nearest houses about 10m away though there were never any noise complaints as only low velocity ammunition was used, barely heard outside the building.

The-then 80-year-old Manton

At the rifle club I met a member, Jack Millar, who was to become an acclaimed barrel and rifle shooter and he offered me an old muzzleloading shotgun. The Manton is light, being single-barrelled and could be taken on a bike along with the Lithgow .22, Jack pointing out the Manton was 14g although 12g wads could readily be used.

The extremely thin barrel at the muzzle was of no concern as all these old guns were cylinder bore, black powder was low pressure and the pressure was at its lowest point near the muzzle. He said it would still last me a lifetime even if fired regularly and he was right, though I've not used it for some years. I had it declared a 'non-firearm' and its registration cancelled on the legal grounds it's a genuine 19th century firearm - and muzzle loading - and it's now displayed permanently in our lounge. The police at the time didn't want it deregistered and offered to place it on a 'convenient list' in the event it was stolen.

Using the Manton

In my original use I walked with the .22 in hand, ready to head-shoot any rabbit in a squat and had the Manton slung over my back. When I had enough rabbits on my belt I'd sling the .22 and carry the Manton, kicking out any 'squatting' rabbit, hoping to shoot it on the run. The gun was loaded with hammer on 'half cock' as a safety. Rabbits jumping out a squat usually ran in a straight line from me, allowing me to shoot



Shrouded hammer (replaced), 'fence', nipple and silver washer between barrel and breech plug.

a bit more confidently than I had previously with the .22 and I eventually learned to shoot 'crossers'.

The fact that both rifle and muzzleloader were single-shot firearms assisted me in learning both safety and skill. I once lost the cast iron hammer while hunting and Jack Millar gave me one from his collection which I only needed to cut and weld to a piece of flat mild steel fashioned to shape, then a hole was drilled and squared to attach it to the lock. Incidentally, the hammer on a muzzleloader is shrouded and a small raised 'fence' is fashioned between the nipple and hammer to protect eyes from cap and powder particles. Welding cast iron to mild steel is best done using a stainless-steel electrode and the lost screw was replaced after re-tapping the original oddly-threaded hole. The replacement is undetectable I'm pleased to say.

Loading a cap lock muzzleloader

The first step is to deposit the correct load of powder down the barrel with the hammer down on the nipple with no cap under the hammer. The powder comes from a horn, brass powder flask or an original Curtis and Harvey powder tin.



Curtis and Harvey black powder tins, left circa 1953, right circa 1948.



Cap locks - left circa 1990, right circa 1950.

In my early days I used a 12g shotgun cartridge case cut to hold the required load and kept it and the powder can on a light lanyard, eventually buying an old second-hand powder flask which is faster to use. Next, a felt wad is inserted into the muzzle and pushed down firmly on the powder then the rod withdrawn and 'thrown' down the barrel at least five or more times, compressing the black powder firmly.

The third step is to tip the measured amount of shot - usually 1½oz (28g) or 1¼oz (36g) - down the barrel and is not compressed (a leather shot pouch with its choice of 1½oz and 1¼oz makes it much easier). The penultimate step is to place a light cardboard wad into the muzzle and push it, not ram it, gently on top of the shot. Finally, the hammer is raised to half-cock or full-cock and the cap pushed gently but firmly on to the nipple, where it will be secure because of the taper. The muzzleloader is now ready to fire and while those steps seem tedious and time-consuming, practice will make your proficient although never enough for a 'second' at the same target.



Leather shot pouch, powder measure made from 12g case and brass powder flask imprinted with hunting scenes.

George Creighton boxlock

Now to the third gun, a side-by-side boxlock owned by my uncle and loaned to me whenever I wished, after I'd acquired some skill with the muzzleloader and could better afford 12g cartridges. Uncle had bought the gun, made by George Creighton from George Rosier, an English-born gunmaker/dealer in Bourke Street and elsewhere in Melbourne pre-1920 and gave it to me when he retired from shooting.

One young man, three old guns



Original vitreous enamel badge of VMRCU.

I used the S/S on ducks, rabbits and quail for some years, leaving the muzzleloader forlorn in the gun cabinet. It's lightweight with a straight stock (no pistol grip) just like most muzzleloaders, which is a feature I still admire on S/S guns. Eventually my three sons came of shooting age and they too started on the Lithgow and Manton before having their own modern guns.

One interesting aspect of this 12g side-by-side is it has 2½" chambers but neither Uncle nor I had known this as it was only labelled '1½oz' and since this was also a common shot weight of so many 2¾" cartridges, we assumed it was 2¾" chambered. Three generations fired heavy 2¾" cartridges for many years, including 'heavy-weights' of the day ICI (ICIL Specials). The gun kicked a bit with those but survived and fortunately so did we.

It was only in the 1980s I discovered it had only 2½" chambers, after it became somewhat loose in the action and was taken to Dick Sharp (then in a small lane off Little Collins St) for rejoining and has used only 2½" cartridges since. I also belatedly

learned the barrels were Damascus, made from strips of iron and steel wound round a mandrel then welded and bored. This was a common technique during the flintlock, caplock, and early breech-loading eras of shotguns, proofed for black powder pressures but gradually discarded in favour of solid steel barrels for the much higher pressure smokeless powder.

Damascus barrels are usually readily identified by the diagonal patterns formed during manufacture and to this day are prized by many for their delightful appearance, although this one was so finely made that the pattern of the incredibly thin strips - and the gun being blued instead of the more common browning - hid the fact from us until the blueing had worn and the gun, as mentioned, was repaired.

But some manufacturers made such high-quality Damascus barrels they were able to be proofed for smokeless powder. This old George Creighton S/S was one such and remarkably survived both the over-length cartridges and smokeless powder for thousands of rounds, although the stock



Left: George Creighton horn buttplate and silver nameplate inlet beneath. Right: Metal buttplate of the Manton.

had cracked and been repaired by me with handmade pieces of mild steel each side of the wrist, those final anecdotes perhaps proving the old sayings 'ignorance is bliss' and 'luck's a fortune.'

High-Scorer still a high achiever

timeline of another Aussie success story

Stuart Kearney



Inventor Heinz Straub
wearing High-Scorer glasses.

Numerous Australian inventions have gone global yet, in many instances, relatively few people are aware of them. In Adelaide, a plethora of Defence initiatives were designed, developed and traded, mainly to the US, and Sportco's South Australian legacy continues through Kimber firearms in Alabama.

And it's not only military and firearm-related industries which have enjoyed global success, as I was fortunate enough to have been involved in the research and development of many ophthalmic products such as contact lenses, artificial corneas and orbits (artificial eyes). A contact lens designed and developed in Adelaide in the early 1980s became the most copied design in the world, while irrigation sensors using the hydrogel contact lens material were further developed into sensors for the wine industry to monitor fermentation and have a worldwide patent.

In 1970, business entrepreneur Heinz Straub developed and patented what he believed was the world's finest sports vision system - the High-Scorers 'Hi-Lo'

adjustable shooting spectacle frame and a series of interchangeable coloured lenses. 'Try a pair of High-Scorers today - you'll see a different world and a world of difference' was the sales pitch at the time.

Although used for many sporting applications, most frames are sold to the shooting fraternity and Straub Optical currently exports to the US, China, Iran, Germany, Malta, Spain, England, Ireland, Singapore and Japan, supplying the 'world's finest vision system' to some of the world's best competitors.

High-Scorer frames are supplied with non-prescription (plano) tinted polycarbonate lenses or with tinted CR-39 prescription lenses, which brings me to my next point. Sporting skills are directly related to our vision and the correction of visual defects, as a significant amount of data for movement comes through vision. Therefore poor vision translates directly to poor data to the brain which in turn is signalling the body to move.

Just because your vision is good enough to drive a car, watch television or read emails doesn't necessarily mean it's

anywhere near good enough to ensure it meets the requirements of shooting to the best of your ability. If your vision isn't clear or your eyes are not moving in unison - or close to it - your perception of depth and distance is compromised. These errors can be overcome and provide greater accuracy in judging distances and the timing of objects in flight, something essential for shotgun shooters.

Vision and your ability

Heinz determined that one-hundredth of a second can make a real difference in competitive shooting. For Trap and Skeet shooters, fast spotting of targets and superb eye-to-trigger coordination are vital for a high score, and he believed consistent results by a shooter are achieved by using glasses with an interchangeable colour vision-enhancing lens/filter system to cater to changing light and background conditions. The global popularity of the High-Scorer sports vision system attests to his 'vision'.

It's the finer aspects of eyesight which can give you that vital edge needed in sports and having your eyesight checked

High-Scorer still a high achiever - timeline of another Aussie success story

regularly by a healthcare professional, visual defects corrected and using a system of enhancing lenses and filters can improve your sporting performance.

Uncorrected visual defects can result in such things as the front post of iron sights looking tilted or fine crosshairs on a target scope appearing as if one hair is dark and in focus and the other blurry or grey. Pistol shooters using iron sights generally require their prescription adjusted so the front and rear sights are in focus, while shotgun shooters use distance prescriptions, as the targets are further away and the bead is used to keep track of the gun in peripheral vision while the shooter focuses on the target. Using telescopic sights requires a similar prescription to iron-sight shooting - the scope must be set up to the correct prescription and you should never change glasses without adjusting the scope to suit.

High-Scorers are engineered for maximum performance and feature a unique interchangeable lens system for varying light and environmental conditions. Frames are made using a lightweight spring monel (high-strength nickel-copper alloy), black coated, ECR80 (extreme corrosion resistant) black anti-reflexion finish and include sweat bars to prevent the frame touching your face.

With their innovative design and performance, a number of High-Scorer models collected Australian Design Awards in 1978 and 1981 and the glasses were finalists for the Prince Philip Prize for Australian Design in 1979.

Colour choice is a personal decision as everyone has a different perception of taste, smell, distance, depth etc, hence

colour becomes individual and dependent on light and environmental conditions, but the important element is to use a tint with the least density to allow as much light as possible into the eyes. More than 40 years on, the High-Scorer sports vision system is still going strong, a credit to the late Heinz Straub. Straub Optical can be contacted via email at highscorers@bigpond.com ●

High-Scorer lens recommendations

Bright yellow: Highlights targets in dull, overcast, foggy or rainy conditions

Pale yellow: Particularly suited to late afternoon

Vermillion: For orange/red/fluorescent clay targets and better in-depth perception when rifle or pistol shooting

Orange: For highlighting targets, use at dawn/dusk and hunting in scrub or brush

Orange/yellow: Half the density of orange and for similar use

Orange/red: 50 per cent darker than orange and particularly well suited for hunting in bright daylight in scrub or brush

Purple: Dampens green backgrounds and highlights orange or black targets

Rose: Red/pink tinge gives additional contrast for highlighting red and black clays

Gold: Recommended for sunny conditions and has good contrast

Bronze: Excellent contrast properties and used on clays in simulated field and game

Blue: Ideal for indoor shooting and for defusing fluorescent light



Sign up a
JUNIOR

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

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National

Handgun Metallic Silhouette National Postal Shoot

March 1 - May 31, 2021
Various locations
Big Bore, Small Bore and Field Pistol.
IHMAS rules. Contact: Russell Mowles
0418 819 945.

Field Rifle, 3P, Scoped Air Rifle and NRA Any Sight National Championships

March 31-April 5, 2021
SSAA Majura Range,
Hector McIntosh Grove, ACT
See National website for event details.
Contact: Josephine King 0424 292 115
or Matt Rogaloff 0410 895 815.

Benchrest Group National Championships

April 1-5, 2021
Jarrahdale Sporting Shooters, WA
See National website for event details.
Contact: Trevor 0417 085 528 or
email benchrestwa@iinet.net.au

SSAA WA Benchrest National Championships

April 2-5, 2021
Jarrahdale, WA
See National website for event details.
Contact: Trevor 0417 085 528
benchrestwa@iinet.net.au or
Dave 0400 205 892 benchrest@jarrahdaleshooters.org.au

SSAA Rifle Metallic Silhouette National Championships

April 1-7, 2021
Eagle Park Range, Little River, Victoria
See National website for event details.
Contact: Mark Butler 0409 135 740.

SSAA Gallery Rifle National Championships

July 17-28, 2021
SSAA Para, Rifle Range Rd,
Greenwith, SA
See National website for event details.
Contact: Don Robinson 0428 986 070
or Dave McCarthy 0414 880 333.

Benchrest Score National Championships

September 3-7, 2021
Dairyville Range, Coffs Harbour, WA
See National website for event details.
Contact: Ray Munro 0408 649 126 or
email: r.munro@internode.on.net

Qld

SSAA (Qld) Gallery Rifle State Championships

April 17-18, 2021
Hervey Range Shooting Complex, Qld
See National website for event details.
Contact: Don Robinson 0428 986 070
or Dave Mitchell 0476 058 893.

Qld IRB and Rimfire Benchrest Group National Championships

September 30-October 4, 2021
Springsure Sporting Shooters, Qld
See National website for event details.
Contact: Gavin Marshal 0438 759 162.

WA

SSAA WA Target Pistol State Championships

April 10-11, 2021
Port Bouvard Pistol Club,
Dawesville, WA
See National website for event details.
Contact: Gary Paterson 0437 387 452.

SSAA WA Rifle Metallic Silhouette State Championships

May 15-16, 2021
Wanneroo Shooting Complex, WA
See National website for event details.
Contact: Paul Dunn Paul@compac.com.au or 0407 428 175.

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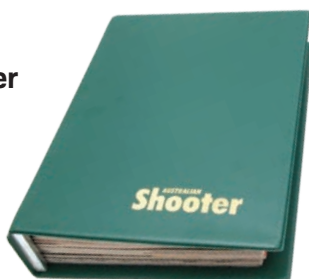
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SSAA member James of NSW was a happy man when he landed the \$2000 voucher on offer from Captain Safe in our November magazine. James put the prize towards a new gun safe which he had installed at his home in January.

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A 'blast' from the past



The rifle built circa 1972.

Back in the late 1960s and early '70s when all the interests in my life burned a lot brighter than they do now, I belonged to a group who used to build and shoot their own muzzle-loading rifles. At the time, factory made reproductions were way beyond my means and I was chronically short of cash, so with a copy of Ned Roberts' *The Muzzle-Loading Caplock Rifle* as a reference, I decided building my own was the only way I could afford to play the game.

We'd buy .310 Cadet barrels from Mick Smith's Sports Store in Sydney and to convert them to muzzleloading, all we had to do was cut off the barrel shank, tap a thread into the breech then fit a steel plug. A drum fitted with a hand-made nipple was then screwed into the side of the barrel to facilitate percussion ignition.

Mick also had boxes of old percussion lock we'd scrounge through and the local timber suppliers used to order planks of silky oak and coachwood for stocks. We made ramrods from brazing rods and hand-shaped whatever furniture was needed from strip brass. Cherries for cutting both round ball and conical bullet moulds were usually turned up as foreign orders on nightshift and brass for blocks was seldom difficult to find if you looked in the right places.

We made our own powder horns and flasks together with simple thimble-style powder chargers, all of them parts of a retrospective voyage of discovery where everything we did was old news but new and interesting anyway. None of the rifles we produced would ever have won a beauty contest but they shot well enough, didn't blow up when we touched them off and we had lots of fun with them.



The Lyn Caldwell lock - and maker's name on the barrel.

All of the above and more came back recently when a friend turned up with a .50 calibre flintlock rifle I built around 1972 or '73. Its barrel was made by the Lithgow Small Arms factory, one from an occasional batch they produced for the Lithgow Muzzle-Loading Club, the first such club in of its kind in Australia. As it arrived the barrel was in the round and way too long so I chopped it off, crowned the muzzle, tapped the breech and fitted a breech plug. Not having access to a milling machine, I indexed it longitudinally on a lathe and filed it octagonal - quite a job as I recall and not one I'd ever care to repeat.

The lock was handmade by the late Lyn Caldwell, a Lithgow stalwart who, with a twinkle in his eye, would occasionally opine that no matter how sophisticated they might become, new-fangled breech-loading rifles would never really catch on, unlike flintlock firearms which had been around for hundreds of years.

The stock was shaped from a blank of coachwood, the barrel channel chisel-cut, the lock hand fitted as was a minimum

of brass furniture. The trigger assembly was borrowed from an old shotgun and if a single word was required to describe the rifle it would have to be 'makeshift' - but for all that it looked the part and, as I recall, shot pretty well with a patched round ball.

Even so, I was a little unsure about how I'd see the rifle in the present tense, especially through the eyes of someone who's been fortunate enough to handle and shoot a lot more firearms than most other people and I'm pleased to say it didn't look as shabby as I thought it might. Apart from the sights being set a little too low on the barrel, it even fitted me reasonably well when I put it to my shoulder, something I remember doing with a touch of pride and satisfaction all those years ago. Handling it took me back almost 50 years to a time when our lives and the world we lived in were much simpler than they are now.

From there to where we are today has been quite a journey and while I no longer build muzzleloading rifles, I'm glad I did when I had the chance.





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- Theft.

NOT COVERED.

Theft where the equipment was not stored in an approved gun safe as required by State or Territory authority, other than when the equipment is in use or away from the Insured's premises. Where the Insured or any person or entity to whom the equipment has been entrusted fails to comply with any law relating to either storage, use or handling of the equipment.

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