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**Chiappa's portable powerhouse hits the mark**

# AUSTRALIAN Shooter

February 2020  
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the rise of  
the feral pig





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We uniquely consult with environmental experts, farmers, fishers and those charged with protecting Australia's landscape to take an in-depth look at issues affecting Australia's outdoors, along with showcasing beautiful destinations and providing travel tips, reviews and more.

### In the valley of the jolly green giants

Thomas Cook

Once upon a time... some 65 million years ago, a magical land in the south-west of Western Australia stood tall as a massive forest that gradually altered the world around it. Hiding its green to emerge victorious from a battle that raged for thousands of years, this ancient empire formed a collaborative relationship with the fledgling human species. Nowadays, adventurers with a green heart can enter this magical land to find on the shoulders of giants and explore the enchanted world hidden beneath their colossal green canopy.

Welcome to the Valley of the Giants. Here a Tree Top Walk in Walpole-Nornalup National Park provides a larger than life experience among towering tushes. Gaze a half a mile away and discover the depths of the forest of any awe and wonder as you walk through the trees.

The canopy reaches up to about 100m in height and includes the attractive red tingle (*Eucalyptus johnsonii*), yellow tingle (*E. globulus*), and hard (*E. albens*) tingle trees. This Walpole Nornalup Area has an annual rainfall of between 1000 to 1200mm, with well-drained ground that has low nutrient content over a hillside with only minor seasonal change. It's because of this that species have survived in the forest for tens of millions of years.

...a larger than life experience among towering timber



View from the tree top walk in the Valley of the Giants, showing the dense canopy of tingle trees.

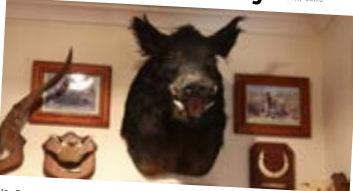
### Lure of chasing pesky porkers entices hunters

Born of the lure of chasing pesky porkers, the hunt for wild hares is a popular activity for many hunters in the south-west of Western Australia. The hunt is a challenging one, as the hares are fast and elusive. Hunters are often rewarded with a delicious meal of hare meat, which is a popular delicacy in the region.

The hunt is a popular activity for many hunters in the south-west of Western Australia. The hunt is a challenging one, as the hares are fast and elusive. Hunters are often rewarded with a delicious meal of hare meat, which is a popular delicacy in the region.

### A dangerous adversary that provides the perfect challenge

Sam Gano



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The damage they cause to crops and grain, paddocks and fields can be extensive

### An introduction to metal detecting

Paul Barker

As a hobby, metal detecting is a fun and rewarding activity. It allows you to explore the ground beneath your feet and discover hidden treasures. Whether you're looking for coins, jewelry, or even weapons, metal detecting can be a great way to spend your free time.

There are many different types of metal detectors available, each with its own set of features and capabilities. Some are designed for deep penetration, while others are more focused on finding specific types of metal.

From old coins to gold nuggets, the lure of metal detecting is uncovered



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### Cruising the Savannah Way

Dick Lissen

Experience new adventures by cruising the Savannah Way. This scenic route takes you through some of the most beautiful landscapes in Australia. From the rolling hills of the Blue Mountains to the vast plains of the Outback, the Savannah Way offers a diverse range of experiences.

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February 2020

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**Our February cover**  
National Retrieving Championships

## NEXT ISSUE



After reviewing the TSP X chassis on Page 83 of this edition, Daniel O'Dea next month takes a closer look at what you need to put together your own chassis build.

Chris Redlich got his hands on some Nosler Varmageddon projectiles and found their accuracy to be "every bit as good on varmints as it is on paper".

The CZ 527 MDT Varmint in .223 Remington is a rifle which blends the old with the new and, as Con Kapralos discovered, it's for the Australian domestic market only.





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# President's Message

WITH GEOFF JONES

## Bushfire tragedy means early warnings sadly rang true

I trust everyone had the most enjoyable holiday break possible though I'm sure many of our members and friends have been affected by the tragedies of the recent and ongoing bushfires. While I know our members will have contributed as well as they're able to in supporting the victims, where there's a personal involvement or friendly relationship, an individual contact to offer real, direct support, whether moral or financial, can often be the most effective way of achieving that support.

Of course the issues at hand are very complex and our drought-affected friends are still suffering, so please don't forget them either. Where possible try to engage with them and, when travelling, support small communities by buying fuel, groceries, general supplies and any other local products that can help those communities remain viable.

My President's Message last November was something of an unfortunate forecast but I'd remind our members and branches to be aware of and manage the physical risks that abound. As I wrote then:

*"... the severe drought in eastern Australia and early heatwave has created a worse than usual fire situation that's already claiming victims in terms of both life and property. It's often misunderstood or ignored that our shooting clubs and ranges are just as vulnerable as any other property simply because of their geographic locations."*

*"The fire risk is ongoing as there have been shooting ranges, some with no insurance, burnt out and destroyed in the past couple of months but our research exposes the greater risk to clubs. In recent years there have been a significant number of shooting clubs destroyed or severely damaged by cyclones, windstorms (tornadoes), fire and flood and the concern that we should all have is under-appreciating the value and vulnerability of our facilities."*

*"The fact that assets have been built up over a period of years, often with volunteer labour, donated materials or grant funding doesn't always reflect the replacement value of the property or clean-up cost after a disaster."*

*The dismissive suggestion that steel doesn't burn, blow down or wash away is just plain wrong.*

*"We have real collective value in our property and a responsibility to see that such assets are properly insured. This doesn't mean some arbitrary figure plucked from a Saturday afternoon chat but involves a genuine value assessment, proper risk evaluation and consultation with a trustworthy insurance agent. I strongly recommend your branch or club has a conversation with SSAA General Insurance Brokers to ensure your material goods are properly covered."*

*"That's why SSAA General Insurance Brokers exists to assist our branches and members in acquiring the right and best protection possible."*

Despite all the adversities, Australians in general and shooters in particular are remarkably resilient and will overcome tragedy as we have done many times in the past. The year ahead promises to be one of opportunities as well as the usual challenges and we have new research that will become available as well as fresh study projects being undertaken.

Our political lobbying is never-ending and will continue wherever it's needed. A number of SSAA state organisations are undertaking membership benefit initiatives as well as the provision of increased and improved shooting range facilities. Another fantastic SSAA Shot Expo will be held in Sydney in June so look out for dates and make this a 'must do' in your calendar.

Keep yourself informed of all issues and upcoming events by subscribing (free) to the SSAA E-newsletter, checking in on the SSAA website or following the SSAA Facebook pages. Enjoy 2020 and be an active part of this great Association.

*G. E. Jones*

Geoff Jones  
SSAA National President



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## Worth a thousand words



I WRITE WITH regard to the photograph accompanying the letter from Stan Noble (*Australian Shooter*, October 2019). I doubt it would be possible to find a more graphic image to promote the positive outcomes flowing from the eradication of feral pests by sporting shooters.

It seems to me the picture that comes to mind is one of 'here we have an example of protection of the weak and mild from the strong and violent that comes from the intervention of a third party'. Admittedly the photo depicts a powerful contrast - dead fox and live guinea fowl - but that makes it all the more effective.

I believe this image would send a strong message to those who have their doubts about the value of hunting and pest control. Even the most extreme Green or anti-gun

lobbyist would be hard pressed not to agree it shows a quasi-moral position which could not have occurred if a responsible firearm user hadn't intervened. Simply put, the photo potentially has great propaganda value to the shooting sports if intelligently presented to the general public.

**Jim Nash, via email**

## Rifle at the bank

I'D LIKE TO thank Paul Goodland for his letter which took me back in time (*Australian Shooter*, October 2019). I used to carry a 303 rifle over my shoulder, bolt and ammo in a bag, into a Commonwealth Bank branch in Manly on Saturday mornings to draw money so I could catch a bus to St Leonards's Railway Station then on to Hornsby to shoot at the range near Hornsby Hospital.

Most people who spoke to me on the trip wished me the best and were not in the least surprised at what I was doing. Now, 65 years later, I'm amazed at all the regulations required to shoot at a range anywhere (sometimes I wish we could turn back the clock). Thanks SSAA for a great magazine which is very much appreciated.

**Don Armitstead, via email**

## An alternative to steel shot

I WAS OVERSEAS for an extended spell last year and on returning to Australia was contacted by two fellow SSAA members planning ahead for the 2020 Victorian duck hunting season (providing we have one).

Both were preparing to trade in their 12-gauge shotguns for ones proofed for steel shot as they'd read an *Australian Shooter* article indicating only guns proofed for steel shot should be used to take ducks.

My gun is not proofed for steel shot as I use 2¾" 12-gauge commercial shot shells loaded with non-toxic Bismuth shot, which work just as well as steel with the advantage of having all ranges of shot size available and they don't destroy the better meat in the birds.

Just thought I'd mention this as the 2020 seasons approach as it may be of use to those with older shotguns who can avoid the expense of buying a new gun and continue to use their non-steel proofed firearms.

**Geoffrey Hossack, Vic**



## Insurance Q&A with Trevor Jenkin

Send questions to: [communications@ssaa.org.au](mailto:communications@ssaa.org.au)

**Q** I've read the back of my membership card but still have some questions. We've been doing a lot of ferreting on private land with permission of land holders and assume this would be covered along with shooting. If we take a non-member would that person have any coverage and do we have to notify the Association of our activities? I assume personal injury wouldn't be covered by this policy.

**Greg, via email**

**A** The scope of SSAA Liability cover for members is to cover all SSAA members for all lawful recreational shooting (you can't receive payment or

reward for your services) including bow hunting or target archery (except where cover is provided under membership of a shooting association). As ferreting does not involve shooting this would not be covered by the SSAA policy. SSAA Liability only covers the liability of members so a non-member would have no cover.

There's no need to notify the Association of recreational activities as the policy automatically covers you for lawful recreational shooting for the duration of your membership. SSAA members also receive personal accident insurance as a benefit of their membership that covers them while participating in lawful recreational shooting.

Liability insurance protects you against financial loss if your actions or negligence is found to cause a person to be injured or killed or a person's property to be damaged or destroyed. Legal negligence means you were acting in compliance with the law at the time of the incident.

Should you have any further queries or wish to discuss the above in detail, call us on 08 8332 0281 or online at [ssaib.com.au](http://ssaib.com.au)



## Veganism has a price to pay

WITH REGARD TO Matthew Godson's column on veganism in your September edition, as a retired organic producer, teacher of organic gardening and practicing organic gardener, I can state categorically you cannot produce fruit and vegetables without killing huge amounts of pests.

My killing season starts in early spring, spraying fruit trees to kill dormant eggs of black aphid, two-spotted mite, woolly aphid and more and citrus trees to kill scale insects.

Then it's caterpillars on brassicas, cabbages, cauliflowers etc. which are sprayed with Dipel. The butterfly or moth lays her eggs on the leaves to hatch into caterpillars which ingests the bacteria on the leaves, killing their digestive system. It can take two or three days for the caterpillar to die.

Slugs or snails are killed organically, codling moth by using a pheromone trap to attract males which can remain stuck in the trap for several days, alive and kicking. All these methods are recommended organic practices.

You cannot grow food without being cruel to wildlife. The spiel put about by vegans that you must produce food without killing anything is vain and based on ignorance. The only thing you can eat without killing pests is wild harvested food.

**Ken Harris, via email**

## A Century of Shotguns

JOHN DUNN MENTIONED at the end of his Top Shots answer (*Shooter*, September 2019) that sorting out the provenance of English shotguns was "new territory" to him, so I thought I'd offer some further information which may or may not be useful.

I've just read an article by Mike George entitled 'A Century of Shotguns' which describes 100 years of shotgun manufacturing in England through to about 2007. It's in *The Game Book*, a shooting anthology compiled by Chris Catlin. The essay (on P.117) makes reference to a middle range of shotguns mostly made in Birmingham, engraved with the names of "excellent provincial gunsmiths", "dealers" and "small town ironmongers".

This may go some way to explaining John's difficulty in finding any history on the Walker Turner Gun Co and the particular shotgun the question referred to. It's a wonderful book though I do feel I have to don a tweed jacket, plus fours and Kangol cap to read it! If John's interested I'd be happy to lend it to him.

**Louis Grosfeld, NSW**

## Mind the gap please

I WISH TO comment on Don Caswell's 'Handloading for hunting ammo' (*Shooter*, October 2019), a good article which reminded me of an experience I had with seating depth. Having changed to one of the modern and very pointed projectiles for my 270 Winchester hunting rifle, I wanted to reduce bullet jump by extending the projectile further from the case.

As stated in the article there are advantages in reducing the gap but long, pointy projectiles often increase the gap. Like Don, I found optimum bullet seating of these longer projectiles created a problem where the bullets were too long to fit in the magazine so a compromise was needed.

Don also referred to staying within the recommended loads in handloading guides, sound advice as I never saw the need for hot loads and with modern projectiles and increased gap from the wider diameter of the projectile to the barrel rifling, there's a pressure spike as the projectile hits the rifling and slows down before accelerating down the barrel. This is especially true with faster-burning powders.

Don's article suggested ways of checking for excessive pressure and as different rifles will tolerate different pressures, this is an important aspect of reloading which should be done on any changes to powder loads or projectiles.

**Douglas Riach, via email**

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## Increased deer hunting opportunities in Tasmania

**T**he Tasmanian Government recently announced changes to the way deer are managed in that state - a response to a Legislative Council inquiry into wild deer - and are introducing four main modifications which are hoped to better manage wild deer populations.

The first is implementation of five-year crop protection permits for antlerless (female) fallow deer which directly reduces administration for both primary producers and recreational hunters. The plan is to introduce five-year crop protection permit for antlerless deer on March 14 this year, the annual duration of the permits covering the whole year with the exception of November to March, the wild deer lactation period. Current crop protection permit arrangements for male deer (bucks and immature males) remain unchanged to continue the viability of wild fallow deer as a recreational hunting resource, which makes perfect sense as female deer are the main drivers of population increases.

The second change involves removal of quotas for antlerless deer taken under crop protection permits and under the recreational hunting licence, removing quotas allowing for greater harvest which will have a direct effect on the wild deer population.

The third is removal of tagging require-

ments for antlerless deer taken under crop protection permits and under a recreational hunting licence, as with the removal of quotas there's no further need for a tag system to ensure quotas of antlerless deer are met.



The final change, which brings increased hunting opportunities, is extension of the recreational hunting season for antlerless deer to include the whole year except for the November to March lactation period. It's planned to start the 2020 antlerless deer hunting season on March 14, making

the period in which you can take both antlerless deer using crop protection permits and recreational hunting licences the same.

Although there have been changes to quotas and tag requirements, holders of crop protection permits and recreational hunting licences will still be required to quantify their harvest and will have to provide annual take returns to enable long-term monitoring of deer numbers as well as monitoring the impact of deer management strategies after they've been implemented. Take return data will also complement the outcomes of the wild fallow deer census which has been undertaken.

On top of these changes the government is looking to provide new opportunities for regulated recreational deer hunting in reserves, by providing access to three additional areas of reserved land made available during the 2019 hunting season and further parcels to be opened this year.

Send questions to:  
[wildlife@ssaa.org.au](mailto:wildlife@ssaa.org.au)



## Field to Fork

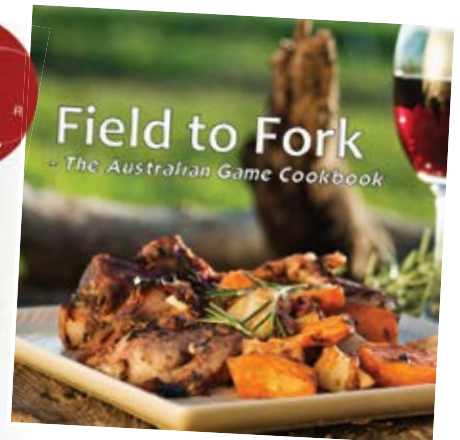
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## Do your homework before backing a long shot

There's no doubt about it, shooting at longer ranges (out to 1000m) whether it be at game or targets is becoming more popular world-wide. Maybe the information we receive from military sources in Syria and Afghanistan has led to this interest, as recently it was reported a hit at 2.2 miles was taken in Afghanistan by a sniper team of Canadian servicemen using a .50 BMG rifle.

The normal shooter doesn't own one of these specialist firearms but at the Pennsylvania 1000-yard Benchrest club in the US, Jim Richards produced a five-shot group measuring a mere 2.69 inches using a 6mm Dasher cartridge, which is based on the 6mm BR case and holds less powder than a 22-250 Remington cartridge, using a 105gr Berger projectile with muzzle velocity of about 3000 fps.

Previously it was thought only large calibre cartridges like the .270 Winchester, .308 Winchester, .338 Lapua or the like were best for long-range shooting, but with the advent of high BC (Ballistic Coefficient) projectiles becoming available in smaller calibres, a whole new era of long range shooting was born.

These longer, streamlined projectiles retain their velocity and energy better at greater distances thereby reaching the target sooner, thus reducing the time which

gravity and crosswinds have to affect the projectile. These smaller cartridges have the added advantage of lower recoil and muzzle blast and are therefore less likely to produce flinch in the shooter, making them far more pleasant to shoot. They also use much less powder than the large cartridges, making them less expensive to load and resulting in reduced barrel wear.



Targets for this type of shooting are usually paper or metallic, an added advantage for hunters being that long shots can be taken responsibly when you know - and are not guessing - where the projectile will hit at greater distance. It's probably best to start shooting with a target or steel gong at 100m and progress to 400 or 500m, adjusting the scope or hold-over, whichever suits. As the target distance increases it's a good

idea to have a friend using a spotting scope to call where the shot is landing so the telescopic sight or aiming point can be adjusted for the next shot.

When targeting game at long range, for accurate projectile placement it's essential the correct distance is known, so the use of a rangefinder is necessary as the average shooter has no chance of determining

the exact distance by sight alone.

There are quite a few electronic rangefinders available at reasonable prices or you may opt for a pair of binoculars with built-in rangefinder or be lucky enough to have a telescopic sight with built-in rangefinder, all of which are highly accurate and suitable for determining the exact distance to the target.

As crosswind is the other major factor affecting precise projectile placement at long range and the use and understanding of an electronic wind gauge will be helpful. Most hunters don't realise a projectile takes about 1.5 seconds to travel 1000m, so even a slight crosswind can push it laterally 40cm or more off target, leading to a complete miss. Usually there's less wind in the morning, so if only shooting at targets go to the range early for best results.



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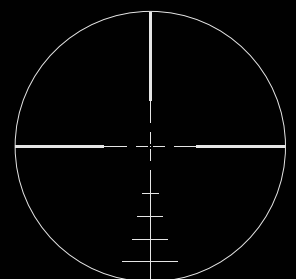
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## The subtle art of hiding in plain sight

**P**PE is the acronym used by most employers to refer to Personal Protective Equipment. It means all the things that might be worn to help prevent injury - helmets, boots, goggles, shirts, sun hats, the list goes on - and most PPE is supplied to workers by the employer, being considered part of their Duty of Care.

We're used to seeing individuals in outdoor situations wearing the bright orange or lime-yellow clothing which makes them stand out against the background colours where they work, but despite the reputed colour-blindness of many animals this will not do for hunters. The opposite effect to 'dazzle' clothes is most often seen in military applications where uniforms are made in disruptive patterns which help the wearer 'disappear' into the background. Yet some readers will recall illustrations of 19th century conflicts where the combatants wore brightly coloured uniforms that made them stand out brilliantly against the landscape.

Not so today and probably the 'ghillie suit' of snipers in many armed forces is the ultimate example of mobile natural camouflage. Did the ghillies of the Scottish highlands wear such gear? I'm not certain but it is effective in concealing your presence when carefully made with reference to the local environment.

Camouflage has been around for a long time, not only in military applications and it's not just humans who are interested in disguising their presence. Consider the markings which some animals carry - and how many of them there are - but none more so than lizards and various other reptiles which are capable of changing skin and scale colour to match their background.



Dressed for a rabbit hunt in the NSW highlands circa 1910. Photo held by Peter from the Whitehurst Collection.

Modern PPE is not only meant to have visual attributes. Most of this type of clothing is either tightly woven to help turn away solar radiation or the fabric is treated with various chemicals after being woven which help resist UV radiation and even provide some resistance to heat-seeking scanners.

Surprisingly, some clothing for hunters is also highly resistant to UV radiation from

sunlight and comes in many more disruptive patterns than you might think. Obviously, both these attributes are desirable in hunting clothes and the point of this column is the necessity to 'cover up' while hunting.

I recall times in my late teens when I'd go out across the paddocks with my single-shot .22 rifle clad only in shorts, T-shirt and a pair of canvas shoes we called sandshoes.

Thongs weren't common back then otherwise I'm sure we'd have worn them. A 'drive' for kangaroos during winter saw us in long trousers, jackets and usually a pair of boots but otherwise we hunted light and somehow survived.

Quality strong clothing is almost a necessity for hunters today and certainly helps prevent many of the cuts and scratches we suffered, to say nothing of sunburn. The disruptive patterns are so effective that in some jurisdictions a safety orange hat or broad orange stripe across the back of a jacket is mandatory so other hunters don't take you for a bush or worse, a prey animal. When you

shop for your next set of hunting jacket and trousers, remember your clothing is the first line of defence in the 'shelter' category of survival necessities and don't skimp on quality.





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**Q** I notice there are several different types of ribs on shotguns now. I like higher ribs because they feel comfortable but as a newcomer to the sport I'm lost as to whether I'm suited to one of these or not. I mainly hunt and occasionally shoot sporting clays for fun. Can you explain the options in ribs I should be considering?

**Bert Aldrin, Qld**

**A** High-rib shotguns have certainly made an impact on the market over the past decade or so. Pretty much every manufacturer offers a higher rib configuration and some have gone as far as discontinuing the original flat-rib shotgun. So let me explain the three basic rib options to help you understand what they're specifically suited for.

The most common type is still the basic flat rib which sits approximately 5mm above the barrel. Generally the stocks attached to these flat-rib shotguns have anywhere from 10-20mm drop in the comb from front to back. This configuration is perfect for smaller people with short necks as the stock, when mounted correctly, will be very high on the shoulder. One of the main criticisms of flat-rib shotguns is the heat haze caused when they warm up from constant use, and this can have a definite adverse effect in gaining a perfect sight picture on your target.

Next there's a mid-rib or step-rib. This

configuration often has a small inclination on the original rib a few centimetres down the barrel, raising the height of the rib another 5-10mm. This allows for a stock to be made with less drop in the comb or even a Monte Carlo-type stock which will allow the shooter to keep their head more erect and enable easier target acquisition with comfortable gun mount.

Finally, flavour of the month is the raised high-rib which can be anywhere from 15-30mm above the shotgun barrel. This type of rib is generally made in conjunction with a larger Monte Carlo stock with an indentation at the heel of the comb of anywhere from 25-50mm. For larger shooters, particularly those with longer necks, this design is ideal for keeping the gun mounted perfectly on your shoulder while holding your head erect, allowing you to use your eyes correctly.

Originally these raised ribs were used exclusively by Trap shooters but more and more Sporting Clay shooters have used them with varying amounts of success. The raised ribs on many models also have the added feature of having some adjustability, changing the point of impact of the shotgun without altering the stock dimensions.

As well as different heights there are also different widths, Trap shooters traditionally opting for broader ribs than hunters. Many shotguns have tapered ribs which start broad at the back and are honed gradually narrower towards the

front sight. Some firearms have the opposite, broad at the front and narrow at the back which gives the optical illusion of the same width of rib all along the barrel, the whole thing a matter of personal preference.

It's impossible to say what's perfect for you personally without seeing your body shape and how you actually mount the gun. My preference for competition would be a raised rib that can be easily adjusted up or down depending on what discipline you're shooting. A hunter walking the bush with these types of ribs can find it challenging as grass, tree branches and just about anything else tends to become tangled in the open space between the barrels and the rib.

If you've been lucky enough to have visited the SSAA SHOT Expo in recent years you'd have noticed more and more new gun designs appearing on display. These expos provide the perfect opportunity to get a feel for how each configuration suits your technique without actually firing the shotgun. When setting the firearm up for use on the range or in the field I would always do this with the aid of a pattern board.



Send questions to:  
[russell@goshooting.com.au](mailto:russell@goshooting.com.au)



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# Got a question - ask our TOP SHOTS ?

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

email: [edit@ssaa.org.au](mailto:edit@ssaa.org.au)

**Q** Wondering if you can help with any information on my old double-barrel shotgun. I was given this by a friend of a friend letting his licence go. The gun has 'I. Hollis and Sons' inscribed and also a number under the fore-end timber, it has Damascus barrels and is 12-gauge. Any info much appreciated as I hope to sell it.  
**Adam Rees, via email**



**A** Isaac Hollis and Sons was established in Birmingham in 1861 and made shotguns, rifles and pistols until they merged with London company Bentley and Playfair in 1900 (I believe they moved their manufacturing from Birmingham to London at that time).

They made a lot of firearms for the army and also sold into South Africa. They were a lower-tier manufacturer and made what were called trade firearms, in other words, good honest guns but nothing of the quality produced by famous names like Purdey and Holland & Holland. To be fair they produced some limited runs of reasonable-grade guns later in their time running up to their closure about 1936.

Thanks for the photos as they make it clear the firearm you're asking about is one of their basic hammer guns with Damascus twist barrels in fairly ordinary condition. There's no game scene engraving and appears to be a lot of rust on the action and barrels so I strongly recommend you don't fire modern shells in this gun as it's very unlikely to have been nitro proofed (ie, tested with modern shotgun shells at

the London Proof House) even though your photos show a couple of hard-to-discern markings on the underside of the barrels.

Damascus twist barrels were designed when lower pressure black powder was used exclusively in shotguns and are an amazing story in their own right but beyond the scope of this column. Your gun was probably made in the late 1800s and not very saleable in present condition, especially allowing for the fact it must never be fired with modern smokeless ammunition. I'm sorry to say I'm thinking \$50 or thereabouts rendered un-shootable as a wall hanger where that's legal.

**Paul Miller**

**Q** My grandfather served with the 2/12th Field Regiment, an artillery regiment in Borneo and New Guinea during WWII. He brought back a spent .50 calibre casing that's been in the family ever since. Many of your readers collect casings and study the various headstamps and I wondered if anyone could shed light on what this one means.

**Jason Fountain, Qld**



**A** This simple headstamp indicates that Frankford Arsenal made the cartridge in 1942. Introduced in 1923, the .50 Browning Machine Gun (BMG) cartridge was developed by the US Army following the success of the German 13mm TUF cartridge used to devastating effect on tanks and aircraft during WWI.

In 1918 John Browning was tasked with developing a new powerful cartridge and

heavy machine gun to fire it. During WWII the cartridge was loaded with a range of projectiles including ball, armour-piercing, incendiary, tracer and combinations such as armour-piercing incendiary. As well as being the primary gun on US military aircraft and secondary arm on tanks, the .50 BMG was widely used on trucks, in fixed installations and on small naval craft such as patrol boats.

Military ammunition continues to be made today with a number of new projectile designs and is now in service with many NATO countries in a number of roles. The US military sees the role of the machine gun as a fast-firing light artillery piece capable of laying down suppressive fire against enemy personnel at ranges far beyond the limit of infantry rifle calibre machine guns.

Frankford Arsenal, a major producer for more than a century and one of more than a dozen military ammunition manufacturers, ceased making the .50 BMG cartridge in 1973 but not before testing many custom designs including the use of aluminium and steel for cartridge cases. The factory closed in 1977.

These days, commercial rifles are being made for this cartridge and sporting ammunition is produced by a number of manufacturers mainly for long-range target shooting. Wikipedia has a comprehensive history of the Frankford Arsenal.

**Rod Pascoe**

**Q** I have a 9.3x64 Brenneke rifle bought at auction that was made by someone whose name, looking something like 'W. Madsen' stamped somewhat obscurely underneath the barrel, was discovered by Tony Argent, a gunsmith who removed the barrel in order to fit a muzzle brake as the rifle kicked like a mule.

Tony, proprietor of Total Solutions Engineering who make barrels, told me it was the best floated barrel he'd ever seen. I bought the custom-made rifle from Australian Arms Auctions then tried to find out more about W. Madsen but to no avail. Can anyone tell me about this Australian riflemaker.

**John Hutton, via email**



**A** Thanks for your question John. Although the name 'Madsen' is indeed that of a Scandinavian firearms firm, I believe your rifle was likely built by W. Marden of Punchbowl, NSW. The 9.3x64 was apparently the largest of the cartridges designed by Wilhelm Brenneke (1864-1951) and was possibly conceived around 1910 according to Barnes' *Cartridges of the World*. It's quite a beast by all accounts. The RWS factory loading shoots a 285gr bullet at 2690fps for an energy of 4580 ft-lb using somewhere near 70gr of powder, so your need for a muzzle brake is unsurprising!

William Marden, known to all as Bill Snr who passed away some 35 years ago, was a legendary figure in rifle shooting nationally, especially with benchrest shooters, and I was able to track down his son Bill Jr who provided some further information.

He suggests that if your rifle has 'W. Marden' stamped about one-third of the way along the underside of the barrel, it's most likely a custom rifle he and his dad used to make on an FN action. It may also have 'WM' stamped in cursive letters just near the reinforce of the barrel.

Young Bill began working with his dad around 1969. Bill Snr had started doing gun work for Mick Smith in Sydney about 1950, was working as tool room foreman for another firm, and when he launched his gun business they were buying army surplus Lee Enfield rifles for 2/6- (25c) each and converting them to .303-X variants in .22, .243, .25 and .270 for sale through Mick's gunshop.

In the 1950s Bill Jr recalls taking off-cut .303 fore-ends to school in winter as firewood. In the early days the business was based in Maroubra before moving to Punchbowl in 1952, close to Bruce Hill who made Hillver mounts. Their first reloading press was called the Master, a massive O-frame job that could also be used for bullet swaging. In 1956 they launched their legendary Super Simplex reloading press which remains in production to this day (with improvements along the way).

Bill Snr died in 1985 and is credited with having helped to establish the Silverdale range. He also worked in cooperation with Harold Stevenson (as M&H) making model aircraft engines. Bill Jr left benchrest shooting about 20 years ago after the business suffered a downturn via the combined effects of the gun buyback and decline of the Australian dollar, and returned to his primary craft as a toolmaker, although his daughter Natasha continues to manage the Simplex reloading equipment side of the business. The cover of the June 1971 *Australian Shooters' Journal* features a photo of one of their rifles.

#### **Geoff Smith**

- Page 95: Family affair helps Simplex endure

**Q** I have a Remington Model 700 BDL rifle chambered for .308 and use factory ammo. Roughly how many shots can I fire before the barrel would be considered worn? How do you gauge barrel wear - ask a gunsmith or can you judge by eye - and should you 'run-in' the barrel on a new rifle?

Also, is it possible to overheat the barrel in the above-mentioned rifle. If I was to sit at the range and fire shot after shot every five seconds or so, the barrel would be too hot to touch. Would I damage it by continuing to fire?

#### **Justin Joksovic, via email**

**A** With factory ammunition the barrel in your .308 should be good for 5000-plus rounds and that's a lot of shooting. Provided the rifle shoots reasonably well from the start, you'll notice a change in accuracy levels when the bore is beginning to wear out. If you have any concerns prior to that, have a gunsmith check the barrel with a borescope which will reveal any initial problems and give you a heads-up on how good your cleaning practices are. A good cleaning regime is critical to the long-term accuracy of every rifle barrel.

Every centrefire rifle barrel deserves to be run-in over a period of time. Com-

bined with careful cleaning as the process progresses, this helps to smooth out the lands and grooves in the rifling and the accuracy of most rifles will improve if care is taken early.

Overheating a barrel achieves nothing in terms of accuracy or performance, all it does is waste lots of ammunition. Barrels which are hot and dirty react in different ways - some string their shots, others throw them all over the countryside - either way, about the only thing that's likely to be achieved is a rise in frustration levels. Single-shot hunters know the best shot they'll fire is the first one and the same rule of thumb applies to those who shoot repeating firearms.

When sighting-in or practising on the range take your time, even if it means waiting a minute or two between shots, as that's the only way you're likely to find out just what level of accuracy your rifle is capable of.

**John Dunn**

#### **Handgun clarification**

In our review of the Heckler & Koch P30LS pistol in Issue 18 of *Australian & New Zealand Handgun*, we included the following paragraph: 'Unlike many other polymer-framed guns the guide lugs on the frame are moulded from the same reinforced polymer rather than being a metal insert.'

This is incorrect. The pistol actually has hardened metal inserts moulded into the frame to guide the slide. We apologise for this error and are happy to reiterate the closing line of our review which stated: 'Overall then, this is a fine looking firearm which points and shoots well.'

In our opinion the Heckler & Koch P30LS is an excellent product, well worthy of your consideration. - Editor



## India in bid to host shooting at Birmingham Games

India could host the shooting and archery competitions for the 2022 Commonwealth Games a full four months before the competition kicks off in Birmingham - if a new proposal is endorsed. Last year, Birmingham announced shooting and archery wouldn't be part of the 2022 Games as they're both optional sports for the host city.

Beach volleyball, para table tennis and women's cricket were included instead as organisers focus on trying to attract a more diverse audience and a major reason for not selecting shooting was put down to lack of appropriate facilities near Birmingham.

Bisley Shooting Complex in Surrey, venue for shooting during the Manchester 2002 Games, is 200km away by road, yet Birmingham organisers have included track cycling at the Lee Valley VeloPark in London - 220km away.

Now, after threatening to boycott the event, Commonwealth powerhouse India has tabled a proposal to host both shooting and archery, with results counting towards the official medal tally. India has offered to pay for the cost of hosting the two competitions, thought to be as much as \$38m, in a proposal backed by the International Sports Shooting Federation and the British Government.

Shooting has featured in every Commonwealth Games bar one since 1966 and at the 2018 Games on the Gold Coast, India's shooters accounted for a quarter of the nation's total medal haul. Sports Minister Kiren Rijiju said the country is very keen to have shooting included in the 2022 Games. "The Indian public takes a strong interest in shooting," he said.

Shooters, both athletes and spectators from around the Commonwealth, have been angered by the exclusion of our sport. Shotgunner and SSAA member Laetisha Scanlan, who won gold at both the 2014 Glasgow Games and 2018 on the Gold Coast, said she was shocked and surprised that shooting was being dropped given the sport was flourishing in England. British Shooting has also expressed its disappointment.

The proposal, which would see the shooting sports competed in either New Delhi or Chandigarh, is being considered by the Commonwealth Games Federation (CGF) and could be accepted by its executive board as early as this month then put to a full vote of the CGF's 71 member associations. ●



**Champion:** SSAA member Laetisha Scanlan won gold for Australia at the 2014 and 2018 Games.

## NT reclassification end date extended

The end date of a directive by the Northern Territory Police Firearms Policy and Recording Unit to reclassify certain rifles in the NT has been extended. In October last year a letter was sent to licensed firearms owners, telling them the Savage A22R .22 rifle along with centrefire rifles such as the Verney Carron Speedline were being reclassified and owners must "dispose" of those firearms within three months.

The .22 rifle is currently Class A but owners were informed it was being reclassified to Class C and told they'd either have to sell their rifle or, unrealistically, obtain an updated firearms licence within three months.

But after lobbying by the SSAA (NT) to Northern Territory Police and Police Minister Nicole Manison against the reclassification, the date has been extended to April 29, 2020.



Correspondence confirmed: "You now have a further three months from receipt of this letter in which to dispose of this firearm by (a) selling it to an appropriately licensed individual or organisation or (b) transferring the firearm to an appropriate licence to meet the new category requirements.

"Please ensure action is taken by April 29, 2020 otherwise your firearm may be compulsorily acquired. Should this occur you will be compensated at a pre-determined rate."

In letters to NT Police Commissioner Jamie Chalker and Minister Manison, SSAA (NT) said the declarations to reclassify the rifle were made without consultation with relevant stakeholders. SSAA (NT) also said the reclassification raises significant concerns for its members and asked for the declarations to be revoked.

The letters included seven main concerns to be considered as a matter of urgency, including: "At no time was our organisation, or anyone representing shooters, consulted or spoken to whatsoever about re-categorisation of these firearms. This matter took us by complete surprise and came without any apparent justification or reason."

SSAA (NT) said in addition to the extended end date there has been additional correspondence with new Firearms Policy and Recording Unit Acting Senior Sergeant, Renae McGarvie. ●



# Get some **BANG** for your buck

## Four go head-to-head in .308 Winchester



Senior correspondent John Dunn championed the Lithgow LA102 on its release.

**T**he legendary .308 Winchester calibre along with the .223 Remington are arguably the two most popular calibres for hunting pest and game species in Australia. Their availability in a wide range of makes and models and easily accessible factory ammunition covering a variety of bullet weights make them a natural choice for that first centrefire hunting rifle. But with so many choices it's hard to decide what make and model best suits your needs. **CON KAPRALOS** takes a look at four contenders.

### Rifle comparison

The .308 Winchester calibre was chosen for a four-rifle comparison. Even though retail prices for sporting rifles start around \$600, it was decided for comparison purposes to look at rifles around the \$1500 retail price point, give or take \$100. It was a tough decision as there are some excellent rifles around the \$1000 mark or less and some beauties from \$2000 and above, but \$1500 was decided as a figure most hunters would consider spending on a hunting rifle. Our four candidates are makes and models well known to

the Australian shooter and hunter - the Remington 700 SPS, Tikka T3x Hunter Stainless, Browning X Bolt Stainless Stalker and home-grown Lithgow LA102.

### Evaluation

From the outset this was not deemed a rifle review, merely a comparison of the four candidates side by side, taking into account technical aspects and how they compare. In no way is the SSAA recommending, grading or scoring the rifles as this is not the object of the exercise. Simply, we wish to inform readers how four popular hunting rifles can vary in their features. Each rifle was tested for accuracy at 100m, firing five 3-shot groups from four popular factory loads of differing bullet weights. An overview is given on the rifles' features with pros and cons to ponder if considering one of these four models.

### Tikka T3x Hunter Stainless

This is the only timber-stocked rifle in the comparison. It's the lightest of the four at just over 2.8kg but the stainless steel barrelled action mated with the walnut stock gives it some classic 'warmth' as befits a

general purpose or stalking rifle. The well-profiled American-style stock came to the shoulder nicely and the newly-designed T3x recoil pad certainly helped absorb recoil from the .308 Winchester chambering.

The silky-smooth action was evident and is something Tikka are renowned for with the previous T3 and now T3x models. The rifle shot exceptionally well with the lightest and heaviest bullet weights tested, the single stack polymer magazine standard on the Tikka and available in either three- or five-shot capacity.

Minus points? Not many. The lack of any decent bedding was a disappointment, the front of the action bearing directly on the steel recoil lug which was inletted into a mortise in the floor of the stock and the rear of the action bearing directly on the walnut. Some glass epoxy around the recoil lug would have been ideal as a minimum. Nevertheless, the barrel was free-floating along its entire length and even with standard bedding the rifle shot above expectations.

**Pros:** Lightest of the four compared; walnut stock for hunters who prefer this; stainless steel barrelled action

## Get some bang for your buck



Tikka T3x Hunter Stainless



Browning X Bolt



Remington 700 SPS

for ease of cleaning and maintenance; silky-smooth T3x bolt travel; king of after-market accessories and add-ons.

**Cons:** Factory-set trigger a little heavy but can easily be adjusted; bedding of action could have been improved (eg, glass epoxy around recoil lug); three-shot single stack magazine capacity (supplied) a bit limiting - a five-shot as standard would be better.

### Browning X Bolt Stainless Stalker

Just the ticket for hunters after a quality rifle with stainless barrelled action and quality synthetic stock. The 60-degree bolt lift together with tang-mounted safety and safety over-ride button on the bolt handle shank all work beautifully with user ergonomics in mind. The well profiled synthetic stock with Dura-Touch finish is appreciated in any environment and the superb Browning Inflex recoil pad soaks up any excess recoil. The flush-fitting rotary magazine holds four rounds and is very easy to load.

This was the only rifle of the four which had additional work done on the bedding in the form of glass epoxy around the front and rear action screws and recoil lug. This is appreciated on any factory production rifle and something the owner need not think about. The glass bedding and free-floated barrel also made the Browning X Bolt share the spoils with the Lithgow LA102 in regard to accuracy, with all four test ammunition loads averaging around

1-MOA or less. A very nice rifle which has had some thinking put into it by the Browning design team.

**Pros:** Excellent stalking/general purpose rifle for hunters who like stainless steel metalwork and quality synthetic stocks; great ergonomics on stock with non-slip coating from factory; neat flush-fitting detachable magazine, easy to load thanks to rotary design; tang-mounted safety; nice trigger, easily adjustable; action epoxy bedded into the stock; superb Browning Inflex recoil pad.

**Cons:** Four-shot magazine capacity and no after-market options; scope base arrangement (four screw holes per base) - limited options when sourcing hardware.

### Remington 700 SPS

This is another lightweight rifle thanks in no small part to the hollow polymer stock. Quality of the barrelled action is excellent and the traditional floorplate magazine will be preferred by many hunters over a detachable box version. At the range the Remington 700 SPS cycled all the test ammunition well, with only a few instances where the steel follower would bind inside the steel magazine box. With use this should free up and pose no problems.

The rifle shot as expected, the polymer stock and lack of bedding for the barrelled action, not to mention the barrel touching the polymer stock along its entire length, giving noticeable shot stringing with the

heavier 155 and 180gr loads. However average groups in the 30mm range for the 135 and 150gr hunting loads still make the Remington 700 SPS a very serviceable rifle for fans of the 'big green'.

**Pros:** Excellent trigger in the X-Pro; superb fit and finish of barrelled action; four-shot floorplate magazine will be preferred by many hunters; huge range of after-market accessories; excellent recoil pad.

**Cons:** Polymer stock a big let-down; polymer triggerguard - floorplate surround; recoil pad fitting - sat proud of the stock surface.



Remington 700 SPS Range

### Lithgow LA102

This is what's termed a 'crossover' concept as the rifle can be used for both hunting and target shooting. The rifle here is the author's own and normally sports a Hawke Vantage 4-12x50 scope,





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## Get some bang for your buck

weighing around 4.2kg, and even at this weight still carries well in the field. Overall fit and finish is excellent, the glass-filled polymer stock super-rigid and providing an excellent bedding platform for the barrelled action with aluminium pillars built into the stock.

The free-floated match grade barrel shot some superb groups with all hunting

ammo tested and the titanium Cerakote finish mated with the matte black colour of the glass-filled polymer stock gives it a 'business-like' appearance. The three-shot polymer magazine worked well but this is a minus point as Lithgow don't offer a five or 10-shot magazine as a factory-available accessory. After-market options do exist in the Lucky 13 and Waters Rifleman and

these are top-quality magazines.

**Pros:** Integral Picatinny rail fitted to receiver; superb fit and finish of barrelled action; super-tough glass-filled polymer stock; twin sling-swivel studs on underside of fore-end; threaded muzzle for accessories; trigger fully adjustable.

**Cons:** Polymer three-shot magazine is limiting - no five or 10-shot options

### Rifle comparison - .308 Winchester - sporter (hunting) rifles

| Rifle model                     | LA102 Polymer Cerakote Titanium   | T3X Hunter Stainless  | X-Bolt Stainless Hunter  | Model 700 SPS  |
|---------------------------------|---|---|--|--|
| Rifle make                      | Lithgow Arms  | Tikka   | Browning   | Remington  |
| Action                          | Bolt - push feed  | Bolt - push feed  | Bolt - push feed   | Bolt - push feed   |
| Overall length                  | 1067-1087mm   | 1080mm  | 1065mm   | 1102mm   |
| Overall weight                  | 3.653kg   | 2.872kg   | 2.909kg  | 2.96kg**   |
| RRP (retail)                    | \$1450  | \$1450  | \$1650 ^   | \$1425   |
| Distributor                     | Outdoor Sporting Agencies   | Beretta Australia   | Winchester Australia   | Raytrade   |
| Receiver material               | High tensile steel  | Stainless steel   | Stainless steel  | Stainless steel  |
| Receiver finish                 | Cerakote titanium H Series  | Stainless steel   | Stainless steel - matte  | Matte blued  |
| Bolt configuration              | Three-lug forward locking bolt (push-feed)  | Two-lug forward locking bolt (push-feed)  | Three-lug forward locking bolt (push-feed)   | Two-lug forward locking bolt (push feed)   |
| Scope mounting                  | Integral Picatinny rail on receiver top   | Dovetail milled into receiver top to accept T3X specific scope rings. Dovetail top drilled and tapped to accept Picatinny or Weaver style bases | Browning X-Bolt System - four holes drilled and tapped per base - one each (fore and aft) of ejection port on receiver top | Receiver top drilled and tapped - 2 holes (fore and aft of ejection port)  |
| Safety                          | Bolt mounted 3-position Model 70 rotating wing-style, thumb-operated with indicator | 2-position, thumb-operated, rearward of bolt handle notch on right-hand side  | 2-position thumb operated sliding safety mounted on rear tang. Safety override button on bolt handle shank                 | 2-position, thumb-operated, rearward of bolt handle notch on right-hand side   |
| Trigger                         | Three-lever style adjustable for weight, sear engagement and overtravel             | Single stage, fully adjustable  | Single stage, fully adjustable   | X-Mark Pro adjustable trigger  |
| Triggerguard                    | Integral with stock (polymer)   | Polymer - comprises of triggerguard and magazine well assembly  | Aluminium  | Polymer - comprises of triggerguard and magazine floorplate assembly   |
| Magazine configuration          | Detachable box magazine, polymer triggerguard and magazine                          | Detachable box magazine, polymer, single stack 3-shot capacity  | Detachable rotary box magazine, polymer, 4-shot capacity   | Internal box magazine - steel magazine well, steel follower and spring, aluminium floorplate on triggerguard 4-shot capacity |
| Magazine weight (if detachable) | 53g   | 43g   | 62g  | N/A  |
| Barrel material                 | Proprietary military grade steel  | Stainless steel   | Stainless steel  | Carbon steel   |
| Barrel finish                   | Cerakote Titanium H Series  | Stainless steel   | Stainless steel - matte  | Matte blued  |
| Barrel length                   | 560mm   | 560mm   | 560mm  | 610mm  |
| Weight - barrelled action       | 2.527kg   | 1.898kg   | 1.888kg  | 2.06kg   |
| Stock material                  | Glass fibre reinforced polymer  | Walnut  | Polymer with dura-touch armour coating   | Polymer - matte black colour   |
| Stock profile                   | Tactical  | American sporter style  | American sporter style   | American sporter style   |
| Stock weight                    | 1.061kg   | 0.887kg   | 0.872kg  | 0.754kg  |
| Chequering                      | Embossed panels around grip/fore-end  | Laser cut chequering around pistol grip and fore-end  | Embossed panels around grip/fore-end   | Embossed rubber panels around grip/fore-end  |
| Length of pull                  | 337-357mm   | 358mm   | 350mm  | 335mm  |
| Recoil pad                      | Sorbothane 1"   | Sorbothane 1"   | Sorbothane 1"  | Sorbothane 1"  |
| QD sling swivel studs           | Yes - three (two on fore-end, one on buttstock)                                     | Yes - two (one on fore-end, one on buttstock)   | Yes - two (one on fore-end, one on buttstock)  | Yes - two (one on fore-end, one on buttstock)  |
| Glass bedding compound          | No  | No  | Yes - around front recoil lug and inletted surfaces surrounding front and rear action screws                               | No   |
| Free-floating barrel            | Yes   | Yes   | Yes  | No   |

### Accuracy testing - 100 metres (average of five 3-shot groups)

|                            |      |      |      |      |
|----------------------------|------|------|------|------|
| Remington Core Lokt 150gr  | 22mm | 54mm | 28mm | 34mm |
| OSA Buffalo River 135gr HP | 25mm | 26mm | 30mm | 36mm |
| Sako Hammerhead 180gr SP   | 29mm | 29mm | 29mm | 52mm |
| Browning BXV 155gr         | 18mm | 46mm | 20mm | 56mm |

\*\* - Overall weight is with Weaver scope bases attached.

^ Browning X Bolt Stainless Stalker - price at time of testing.





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| <b>HEEL</b>        | 56mm               |                   |                            |



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| Alpine Country              | Morwell     | VIC | O'Reillys Firearms           | Thornbury    | VIC | The Outpost                | Park Avenue   | QLD |
| Bairnsdale Firearms         | Bairnsdale  | VIC | Presto's Hunting & Shooting  | Mildura      | VIC | The Barn                   | Oakey         | QLD |
| Blueys Bait & Tackle        | Wodonga     | VIC | Quinns Sports Power          | Hamilton     | VIC | Coolalinga Guns & Ammo     | Coolalinga    | NT  |
| Clayton Firearms            | Clayton     | VIC | R F Scott & Co               | Wendouree    | VIC | Abela's Gunshop            | Campbelltown  | NSW |
| GFD Guns & Ammo             | Kyabram     | VIC | Smiths Outdoors              | Bendigo East | VIC | Elks Hunting & Fishing     | Albury        | NSW |
| Gunco Superstore            | St Albans   | VIC | Swan Hill Fishing & Shooting | Swan Hill    | VIC | Grafton Firearms           | South Grafton | NSW |
| H. Rehfish & Co             | Ballarat    | VIC | Wild Outdoors                | North Shore  | VIC | Gunpro                     | Dubbo         | NSW |
| Holts Gun Shop              | Colac       | VIC | New Norfolk Gunshop          | New Norfolk  | TAS | Horsley Park Gunshop       | Horsley Park  | NSW |
| Howard & Schuback Sports    | Sale        | VIC | Southern Range Sports        | Kingston     | TAS | Riverina Hunting & Fishing | Griffith      | NSW |
| In Season Hunting & Fishing | Warragul    | VIC | The Sports Hut               | Invermay     | TAS | Safari Firearms            | Bexley        | NSW |
| J & A Shooting Supplies     | Horsham     | VIC | Fisher Firearms Wholesale    | Norwood      | SA  | Suffolk Outdoor Sports     | Lismore       | NSW |
| Melbourne Gun Works         | Tullamarine | VIC | The Adelaide Gun Shop        | Adelaide     | SA  | Target Solutions           | Nedlands      | WA  |
| Miall's Gun Shop            | Frankston   | VIC | Cleaver Firearms             | Margate      | QLD | Roy Alexander & Sons       | Maylands      | WA  |
|                             |             |     | Firearms Warehouse           | Bundall      | QLD | South West Firearms        | Busselton     | WA  |

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## Get some bang for your buck



Lithgow LA102

offered; weight at 3.6kg at the higher end of the range for a hunting rifle.

### Conclusion

For the hunter contemplating a new rifle in .308 Winchester the choice is naturally governed by the amount you wish to spend. But make no bones about it, there are some

excellent makes and models below the \$1000 price point and \$2000 buys some very fine rifles indeed. The comparison of four makes and models around the \$1500 mark with four well-known brands laid out side-by-side produced no surprises.

Any of the four will make an excellent hunting rifle in .308 Winchester with solid

back-up from four reputable and renowned distributors in Beretta Australia, Raytrade, Outdoor Sporting Agencies and Winchester Australia. More information on the makes and models here is available at [berettaaustralia.com.au](http://berettaaustralia.com.au), [raytrade.com.au](http://raytrade.com.au), [osaaustralia.com.au](http://osaaustralia.com.au) and [winchesteraustralia.com.au](http://winchesteraustralia.com.au) ●

# Fond farewell to our production stalwart

Mike Barr

**O**n a January morning in 1986 as Judy Ward made coffee for the other three staff on her first day with the SSAA, she couldn't have imagined it was the start of a 34-year commitment to the Association. Things were different back then. There was no National Office as such but the *Australian Shooters' Journal* - later to become *Australian Shooter* - shared office space in Adelaide with the *Australian Stock Journal*.

Judy's initial role, apart from secretarial duties, was to type-up all the mostly handwritten trading post ads sent in by members and any correspondence from editor Rod Marvel on a noisy Adler electric typewriter. It was the only piece of electronic equipment we had. From the outset Judy's typing prowess was evident both in speed and accuracy and those skills would become invaluable.

The computer age hit the office in 1988 and the world was on the cusp of Photoshop and layout programs like Pagemaker. At that point Judy became the Journal's official typesetter using an early version of Microsoft Word with no graphic interface, just white text on a black screen.

Now a vital part of the process, in 1989 Judy appeared in the magazine credits as

'Production' and her career can be traced via those credits down the years - in 1992 she became 'Assistant Production Editor'.

By 1995, with desktop publishing in full swing, Judy became 'Typesetting and Advertising Production', giant leaps from those electric typewriter days, and her role as 'Production Coordinator' continued from 1999 until her retirement last Christmas.

In her final year with the SSAA, Judy was so involved in the production process she almost single-handedly turned out issues of *Shooter* and *Australian Hunter* while resources were being used to produce other magazines in our growing stable of publications, and it was fitting she finished as 'Production Coordinator and Graphic Designer'.

Said Judy: "It has been a real pleasure working for the SSAA. Over the years I built a great rapport with many advertisers and thoroughly enjoyed my interaction with them. In particular thank you to CEO Tim Bannister who's been a terrific boss and art director Mike Barr who I've worked with from day one. Everyone in the National Office has become like a second family to me and I'll miss each and every one of you."

Judy's dedication to the SSAA



**You'll be missed: Judy is retiring after 34 years with the SSAA.**

contributed immensely to the camaraderie and culture in the National Office. Her cheerful demeanour will be sorely missed as both co-worker and friend and we wish her all the best in a well-earned retirement she plans to spend with her children and grandchildren. ●





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# Barrels, bullets and benchrest

Don Gilchrist



First shoot with the new barrel combining break-in, fireforming and early load development.

When I became interested enough in centrefire benchrest shooting to give it a go, a Savage 110 with a heavy profile, 9" twist barrel in 223 Remington was available at my local gunshop. With Savage's reputation for out-of-the-box accuracy that became my introduction and it developed over a couple of years with a good scope, new stock and Basix SAV2 trigger.

At my club there were half a dozen guys shooting centrefire, mainly 6mm

PPCs. Nothing shot better in my Savage than Berger 70gr VLD bullets pushed by 22.5gr of ADI Benchmark 2 and Lapua Match brass. If I shot well, I had 100yd aggregates in the mid to upper 0.4" which was good enough to mix it with the PPCs, but at 200yds it was a different story. My slow-running 70gr projectiles were being knocked around far more than the fast-moving 68gr bullets from the PPCs - the small 223 Rem case meant my bullets were out in the breeze too long to group tightly at 200yds.

I needed more accuracy but thought the Savage 223 had hit its limit so I'd have to step up the power and didn't feel the flexy receiver was worth re-barrelling. I knew about the fire-forming, neck-turning palaver inherent to 6PPC and the fact there are no factory offerings in 6PPC, so it was custom rifle 'full-tilt' or something else.

On the accurateshooter.com website, the cartridge showing most promise for my shooting was 6BR norma. Savage make a couple of offerings in 6BR and one of them, the LRPV model 12, was available which I bought with a 26", 8" twist barrel on a single-shot receiver. It came with a 'target' accu-trigger but the Basix drop-in replacement was better.

After a re-crown the gun shot well with Berger 80gr flat base tangent ogive, match bullets, Lapua match brass and 30.1gr of ADI 8208. On a good day I shot aggregates in the low 0.4s MoA. But there's never enough accuracy once you're



The Savage 110 on a Choate stock is a strange looking beast - only the barrelled action is original.





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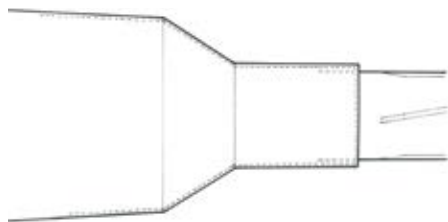
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## Barrels, bullets and benchrest

hooked and the temptation of a custom barrel and chamber proved irresistible. So the rig became a modified H-S Precision stock, factory receiver, Basix SAV2 trigger and 28" PacNor, 3-groove, super-match barrel with 7" twist.

Then my gunsmith asked: "What chamber do you want? Loose neck or tight? Long freebore or short? Whose brass will you shoot?" In researching the aforementioned I found a lot of 6BR shooters use Lapua factory brass, a 0.272" no-turn neck and freebore of 0.073" so I went with that. In addition to chambering and bedding the action I had Jerome Ziersch, gunsmith in SA's Clare Valley, go over my Basix SA2 trigger. Jerome sees a few Savage F Class model 12s with Basix triggers and has a routine of trueing-up the bolt face and refining the sear/trigger interface and his efforts made a noticeable difference. What follows is a summary of the basic factors affecting rifle accuracy (see diagram for components of the chamber).

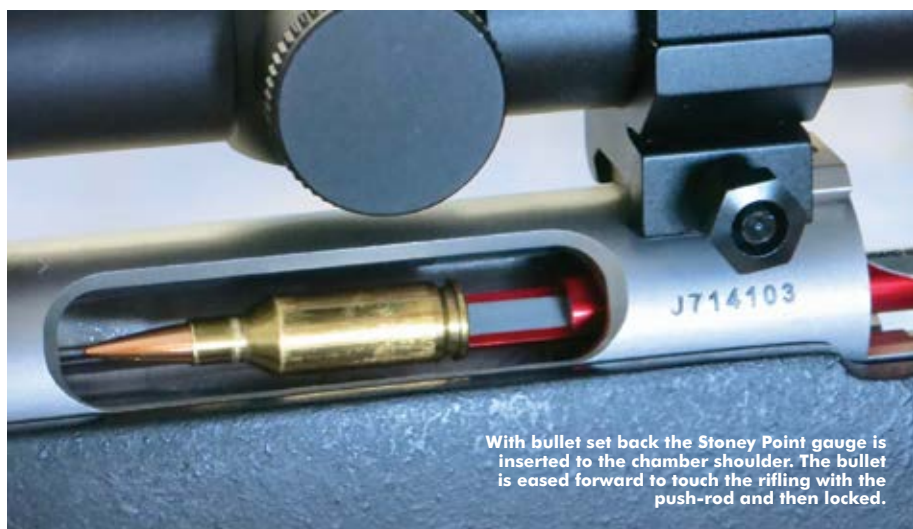


**Schematic of a rifle chamber: case body, case shoulder, case neck, neck shoulder, freebore, tapered leade, rifling, dotted case outline when chambered, bore, throat is combined freebore and leade.**

Before I fired a shot, I spent a day with the projectiles on my shortlist, a Stoney Point gauge and bullet comparator to find where the rifling started, set up my seating die and made sure the freebore would match my range of projectiles. Freebore is the little bit of un-rifled bore just after the neck shoulder and before the tapered start of the rifling.

Understanding freebore means looking at bullet shapes and how they engage the rifling when fired. The pointy part of the bullet is the ogive and there are two main shapes. With a conventional 'tangent' ogive, the junction of the ogive to the body of the bullet is smooth and that's where the bullet engages the rifling.

Low-drag, ballistically more efficient bullets have a longer, pointier nose with a 'secant' ogive. A secant/body junction is more abrupt which is why secant bullets are far more sensitive to seating depth and bullet makers usually put a taper at the back of the bullet called a 'boat-tail'



to increase flight efficiency. The result of this quest for ballistic virtue is a long, pointy bullet with a boat-tail but one with a relatively short body, the only part of the bullet which actually engages with the case neck, bore and rifling.

If the freebore is too long, the body of the bullet can emerge from the neck before the ogive has caught the rifling and as the bullet rattles down the freebore it may not be centred along the bore when it fully engages the rifling. If the freebore is too short and a heavy, tangent ogive bullet has a boat-tail, the entire body and boat-tail can be in the neck and projecting back into the case, compressing the powder load with risk of excessive pressure.

In 6BR chambers there's usually no problem with heavier bullets with boat-tails as the extra weight is carried in a longer bullet body. In lighter secant bullets it becomes a factor as the body has to be quite short to carry both secant ogive and boat-tail. The freebore treads a fine line which can limit the choices shooters have, particularly VLD or boat-tail bullets in the 90-95gr range so my bullet choices will be flat-based up to 90gr or boat-tails of 105gr.

### At the lands, jump or jam?

If the bullet is seated so the junction of ogive and body just touches the start of the rifling when chambered, that seating depth is 'at the lands'. With bullet seated 0.010" further into the case it gets a run-up before making contact with the rifling and is 'jumped' 0.010". If the bullet is seated 0.010" longer than 'at the lands' it's already in solid contact with the rifling by the act of chambering the round. That bullet is 'jammed' 0.010".

With Berger 80gr FB projectiles I found some serious encouragement around 30gr

of ADI 8208. I was firing only three shots, paying little attention to the wind and grouping in the 0.2s". As you master break-in, fire-forming and load development you get an idea of what a good load might be. For what follows it makes sense to assume we're starting with a new gun or barrel or a secondhand gun you're unfamiliar with. My sequence runs something like this:

1: Start with new brass all the same batch. Lapua costs plenty but if treated gently 200 match grade cases last for years, 200 cases being several cycles of competition shooting if you maintain cleaning and case preparation. I've reloaded Lapua 223 brass dozens of times and never had a split neck or loose primer pocket.

2: Select the bullets you'll use with care. I shoot 100 and 200yds so prefer FB bullets in the 80-90gr range. Choose bullets you can buy reliably - Bergers work for me but availability's an issue. Find the base-to-ogive measurement that reliably places your bullets at the lands and record it so you can set any amount of jam or jump your gun likes with your seating die. I use Redding micrometer competition dies and without equivalent kit you won't be in the hunt. Every bullet is different so measurements must be done for each weight, type or manufacturer. I seat bullets 'at the lands' to begin with which has never given excessive pressure signs and has proved to be close for my best loads.

3: Choose conservative starting loads. Initially you're only fire-forming so top accuracy can't be expected (you can fine-tune loads, bullets and seating depth to tighten groups later). Start 10 per cent below maximum recommended loads and work up 0.5gr increments. ➤



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## Barrels, bullets and benchrest

From left: Factory 223 Rem 55gr soft point, Lapua Match 223 Rem case with Berger 70gr VLD seated at the lands, Lapua 6BR with Berger 105gr Hybrid at the lands for the original barrel.

Mid-weight Bergers from left: 95gr VLD (secant) body length 7.62mm, 90gr boat-tail (tangent) body length 9.37mm, 88gr FB, High BC (secant) body length 10.93mm.

Heavier Bergers for 6BR from left: 95gr VLD (secant) body length 7.62mm, 105gr VLD (secant) body length 9.66mm, 105gr BT target (tangent) body length 10.93mm.



4: Fire three-shot groups of each load. If after three shots the group looks dodgy it's not going to improve after five.

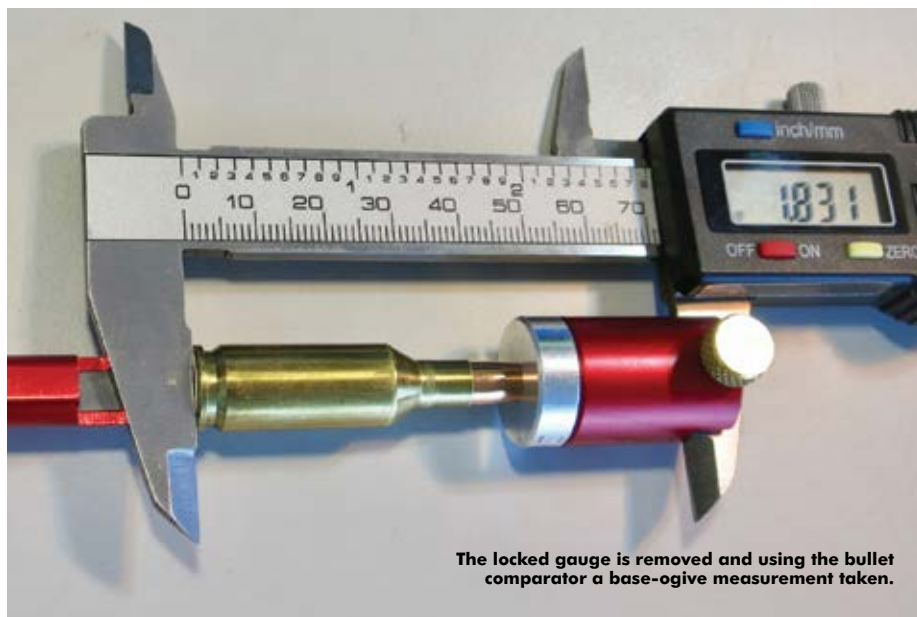
5: Check for signs of pressure (I use the primers as a guide). There are many YouTube clips on what to look for and always using the same primer helps.

The vital components are the locked bolt face and chamber, bullet and barrel and the first critical factor is all of these must be perfectly co-linear and symmetrical, with the locked bolt face exactly at right angles to this axis of symmetry. Barrel and chamber are big contributors to accuracy and little can be done about that without major gun surgery.

Next of the major factors you can control are the brass, bullet, powder load and seating depth. The 6BR is such a forgiving cartridge there's a saying among top US shooters: "Use a standard Lapua case, CCI 450 primer, seat a Berger 105 at the lands and push it with 30gr of Varget (AR 2208). If the gun won't shoot that it's not the load's fault."

The hardware of the action, chamber and barrel accounts for about 60 per cent of a gun's potential accuracy, case, powder and bullet can add another 20 per cent, competition dies and seating depth maybe 10 per cent and so on as you strive for that unattainable 0.0" group.

After three fire-forming sessions breaking in the new barrel and load development, there will be enough brass and



The locked gauge is removed and using the bullet comparator a base-ogive measurement taken.

load data for competition. I load 50 rounds for the comp and up to 10 extras to get the gun going, check fall of shot at the change of distance, plus a few spares. I may also load up to 15 shots of testing on the same day.

I live in the tropics where heat and humidity are high and variable and learned the hard way that all competition shots and extras should be loaded at the same session. If you're jamming your bullets it's a good idea to test a round to

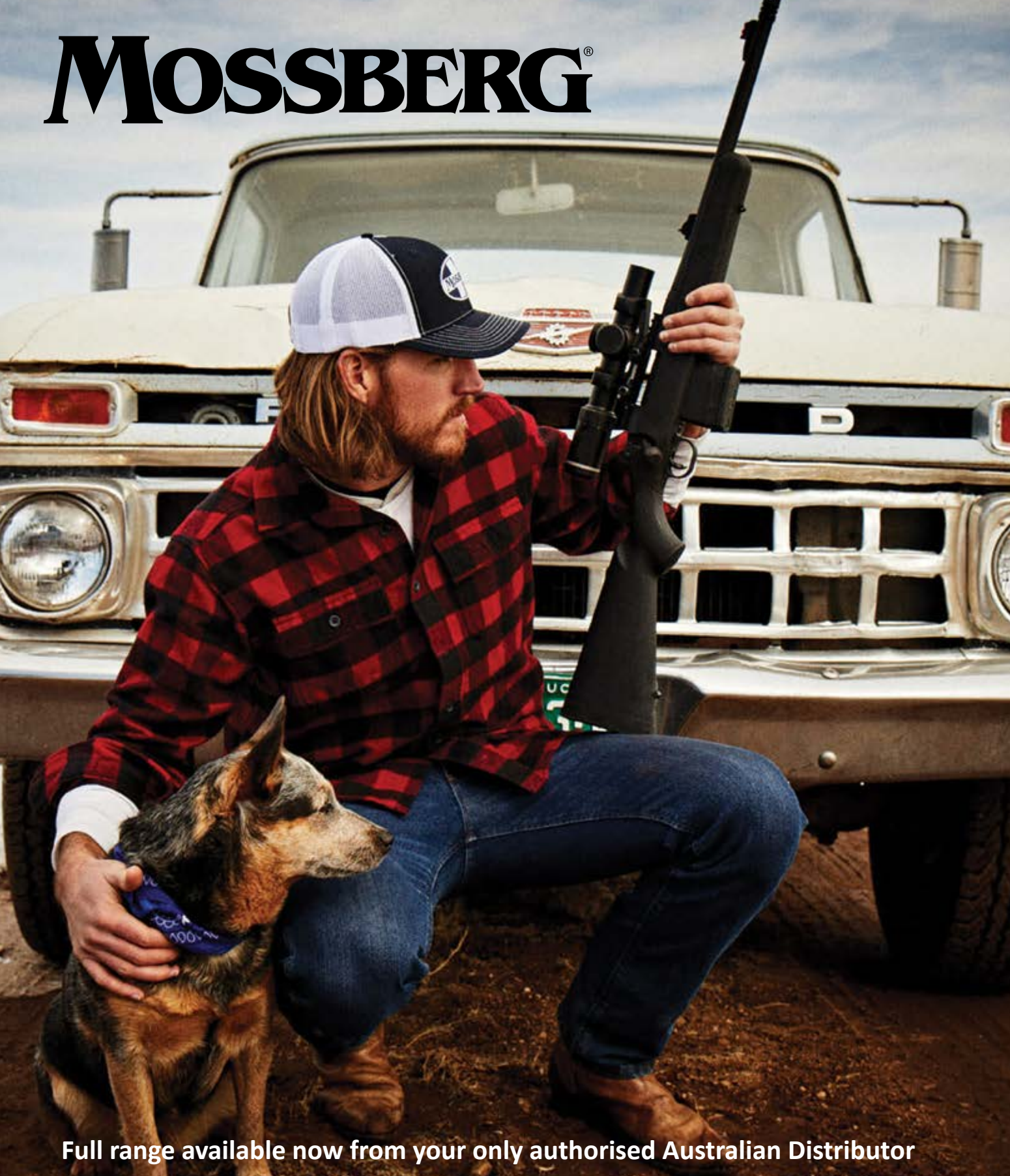
make sure it chambers properly before heading to the range.

Handloading for benchrest competition is about uniformity, your gun's chamber sets the case form and the barrel is what it is. Everything else is about controlling the variables that affect the projectile leaving the case neck and engaging the rifling.

Benchrest shooting is a challenging, disciplined and cerebral sport. You'll never shoot a perfect competition but you can do better than you did last week ➤



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## Barrels, bullets and benchrest

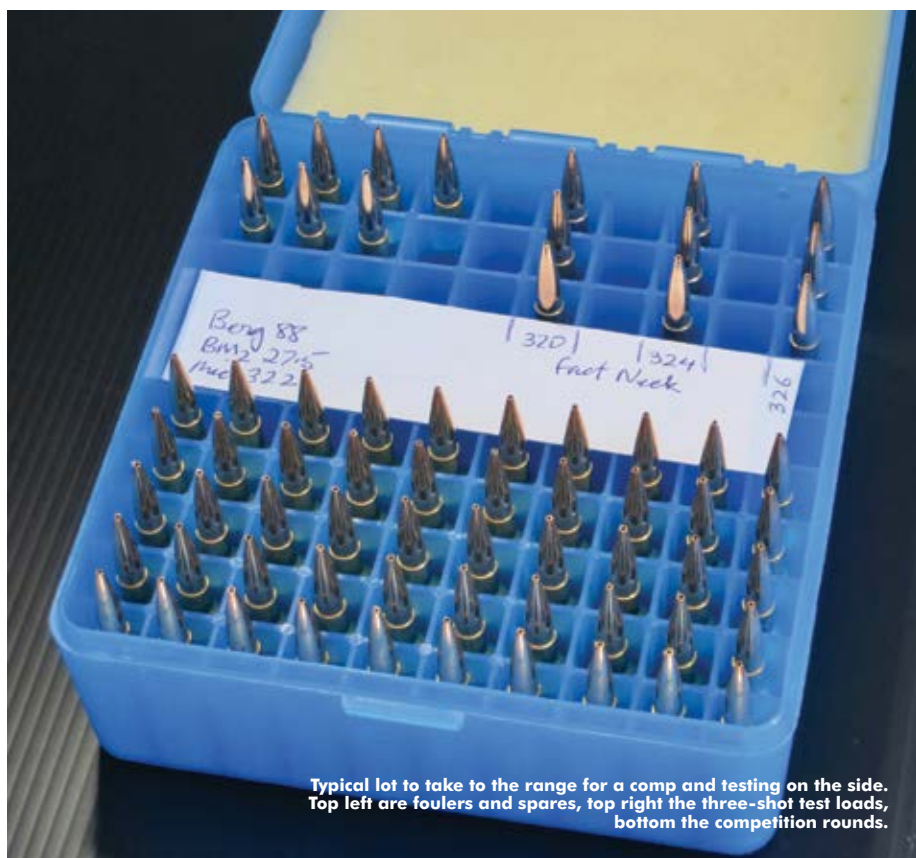
or maybe better than anyone else on the day. You can't control the weather but you can learn to assess the best wind conditions on offer.

Read and believe the SSAA's Brendan Atkinson's *Ten Tips for Benchrest Shooters* especially the first and last: Proper Preparation Prevents Poor Performance; and Never, ever give up. If you don't want to study old targets or look forward to hours at the loading bench cleaning, preparing and loading your ammo then centrefire benchrest isn't for you. Luck has nothing to do with shooting - the last shot went exactly where you put it. Every shot has a lesson for you, learn it and apply it to your next shot.

- Page 87: Do the twist. ●



**Headspace bushing and anvil.** The reference plane is about middle of the shoulder and measurement is a reference number to set up the body die to 'bump' the shoulders back after repeated firings stretches the brass.



Typical lot to take to the range for a comp and testing on the side. Top left are foulers and spares, top right the three-shot test loads, bottom the competition rounds.

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John Dunn with prized Moluccan trophy stag.

# In search of a Broadsound Moluccan

John Dunn

It's impossible to say how many rusa deer we saw that first morning, several hundred at least I'd say. Some stood with their heads up like periscopes above the long grass, focused on the approaching ATV. A few remained where they lay. There were individual animals, lone hinds with single calves and mother groups with crèches of striplings. There were small stags with simple spikes, larger animals with velvet-covered racks and every other size in between.

Mid-April in Central Queensland and I'd booked a two-day hunt with Broadsound Safaris, a hunting outfit with an international reputation for producing the largest free-range Javan rusa deer in the world. Owned and operated by Greg and Colleen

Coyne, the 4000-acre property is home to six species of deer as well as banteng cattle, some large horned goats and the occasional pig. It also serves as the base for their crab fishing operations.

Habitats on the land vary from mangrove forest along the St Lawrence Creek to dry forest hill country. In between there are mud flats and grasslands and thick patches of sub-tropical forest where even bantengs can disappear in the blink of an eye.

Scattered throughout are lagoons and waterholes, some natural others man-made, which provide deer with the mud and water they love as well as feeding and breeding zones for the huge number of waterfowl and other birds.

Javan rusa are the predominant deer

species having been around for several decades. The antlers some of the stags produce are amazing and not surprisingly the current world record bow-shot rusa was taken on this property. Red deer have also lived in the vicinity for many years, their numbers fluctuating according to the season with travelling stags attracted by a resident herd of red hinds. Also present are small herds of Moluccan rusa, chital, hog and Mesopotamian fallow deer which Greg introduced himself.

All the hunting is done from a small ATV. The acreage has a grid of trails used according to the weather or the time of day and once a suitable animal is spotted it's then stalked on foot. Given the number of animals, walkabout







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## In search of a Broadsound Moluccan

hunting isn't feasible or practical as the chances of accidentally bumping into something you're not looking for is high and if one deer takes off in a hurry so will all the others.

While most hunters go to Broadsound for a big Javan rusa, I was looking for a Moluccan. Smaller than the Javan, Moluccan rusa stags differ in appearance with a lower, stouter build and a thicker head and lack the mane present on the Javan and the distinct throat patch. Additionally, their antlers don't grow as large with around 76cm suggested as the maximum length.

During the first day we appreciated all the different deer on the property, saw some wonderful Javan stags and a classy hog deer that crept away through the grass as well as a couple of small herds of chital. Moluccan stags were a bit thin on the ground. We only saw one animal of any size and he wasn't what I was looking for. Fortunately he was feeding alongside a nice Javan and the differences between the two species were obvious, especially their size, shape and colouration. The Moluccan's antlers were rubbed clean of velvet while

those of the Javan were still growing.

Day two dawned with us travelling around in the vehicle. As it had been the day before, there were deer everywhere and once again I was enthralled by what we were seeing. In a back corner of the block we bumped into the main herd of bantengs, the bulls resplendent with their dark coats, cows and calves brighter in caramel coloured hides. As we approached they disappeared into a patch of jungle-like subtropical forest, leaving a thin cloud of fine dust hanging in the still autumn air.

Further on a couple of red stags were racing around in a shallow gully, each trying to steal the other's hinds and literally roaring up a storm. In a patch of scrub behind us a fallow buck fired up, possibly inspired by the antics of the reds.

We kept dawdling and looking and eventually, on top of a low hill, found a group of deer with prospects - half a dozen rusa hinds with calves, the same number of rusa spikers, a lone red hind and two big-bodied stags. One of the stags was a typical Javan with a wonderful set of velvet antlers most hunters would be happy to collect. Here he was just another contender for the

better-head-in-a-few-years-time stakes and consequently of little interest.

The other was a smaller, blockier animal about two-thirds the size of his companion, his velvet antlers shorter and heavier, grey and frosted towards the tips with pointed rather than dome-shaped tips, a sure sign he'd reached peak growth and was ready to rub out. When Greg said he thought the stag was as good a Moluccan as he'd seen for some time, the job was on.

We drove away from the knoll going across the wind until we were out of sight then came around in an arc until the breeze was in our faces, climbed out and began a stalk back towards the deer. The rifle I carried was borrowed from Greg, a Model 70 Winchester fitted with Leupold scope and chambered in .300 Winchester Magnum. With one round up the spout and two spare in the well it was more gun than I'd handled for many years. I'd test fired it the previous morning and knew it would shoot exactly where I aimed.

We were closing in on the deer when the red hind hove into view, feeding towards us and away from the others on a tangent of her own. Moving from



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Australian Shooter 41

## In search of a Broadsound Moluccan

tree to tree we eased closer, stopping each time she raised her head to look around.

When we were about 40m away Greg gave her a friendly little wave, the slight movement catching her eye and stopping her in her tracks. She raised her head, cocked her ears and stared. He waved again with the other hand and snapped a few small branches off the tree we were standing behind. The hind raised her head a little higher, had a think about what she thought she was seeing then turned and trotted away, leaving the others undisturbed.

We moved up 30m or so and stopped behind another tree to look ahead. The other deer were still feeding slowly across the wind no more than 80m away. The Moluccan stag was out in front but his all-important shoulder area was shielded by a couple of small trees. We shifted sideways and stopped again, the rifle cushioned on my hand against the tree trunk as I watched him through the scope. With the cross-hairs settled on his shoulder I waited until he stepped clear of the other deer then stroked the trigger.

He disappeared at the sound of the shot,

most of the noise whipped away by the breeze. Out of long habit I reloaded the rifle, watching the spot where he'd stood and didn't expect he'd need a second shot but it pays to be prepared.

Unnerved by the sound of the shot but uncertain of where it had come from, the



A nice hog deer stag found while looking for a Moluccan stag.

other deer milled about for 30 seconds then headed off down the other side of the hill in a tight bunch. Only then did we walk down to where my stag lay on his side in the weeds with those wonderful antlers thrown back.

Greg stuck out a hand and I accepted his congratulations. As always there was a sense of achievement in having taken what I'd come for, tempered by a touch of sadness at the stag's demise - a slightly weird admixture of feelings all hunters experience at different times.

I unloaded the rifle and lay it against his haunch then walked around him, taking in his size and smell and shape. Then I knelt in front of him and held his antlers for the first time and silently thanked him for the hunt he'd given me and the personal goal he helped me realise.

Greg went off to collect the vehicle and I sat with my deer, slowly winding down after months of planning. When he came back there were photos to be taken and an animal to be dressed and broken down and made ready for the cool room. As responsible hunters that was the least we could do.

Back at the house with all the knifework and lifting completed Greg ran a tape over the antlers, both coming in at just under 75cm. With the last of the formal proceedings completed, my Broadsound Moluccan hunt was over.

More at [broadsoundsafaris.com](http://broadsoundsafaris.com) or email [broadsoundsafaris@bigpond.com](mailto:broadsoundsafaris@bigpond.com) ●



A Javan rusa, left, and Moluccan stag together. Notice the differences in size, shape and colour of the animals and their antlers.



The Moluccan stag John Dunn eventually shot.



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# The power of eight

## Nightforce NX8 riflescopes

Senior Correspondent Rod Pascoe

The NX8 is the scope of choice for practical competitions.

Since 1992 Nightforce has built some of the most desirable riflescopes in the world, the one that started it all being the Bench Rest (BR) series which revolutionised long-range optics. Designed originally for the Australian night hunting and spotlighting market, BR scopes crossed over neatly into the precision long-range arena and the robust format gained the interest of the US military, prompting the idea of the NX8.

Since then a number of other precision scopes have come about due to specific requirements of military and law enforcement customers. The NX8, which was

earmarked for the US Navy Seals, transformed long-range optics and today's favoured military scopes are the Nightforce ATACR and BEAST series. The latest addition to the Nightforce range is the NX8 available in two models - 2.5-20x50 F1 and 4-32x50 F1 - and *Australian Shooter* had the chance to assess them courtesy of Nightforce of Adelaide.

The NX8 is a culmination of all the best features developed for other models and put into one versatile package. The task was to build a scope to meet the needs of hunters and competition shooters requiring a first focal plane reticle with precise hold-over

detail as well as being generally affordable. A bright 50mm light-gathering objective lens and low magnification was also a must-have.

In a first focal plane (F1) scope the reticle is positioned in front of the magnification lenses and so the size of the reticle changes proportionally with that of the image as you zoom through the magnification range. Therefore the MOA or milliradian graduations on the reticle also change in size so the shooter can calculate hold-off or hold-over at any power setting. Reticle patterns also let you size targets, judge



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## The power of eight

distances and calculate wind brackets. Previously, if you wanted a first focal plane Nightforce you'd have to choose between the 4-14x SHV with NXS glass quality or take the premium ATACR which has the ED or extra-low dispersion glass and extra elevation adjustment in the 34mm tube. The NX8 has the features of the ATACR series including flip-up lens caps and digital illumination, all priced like a second focal plane NXS which is quite an achievement as F1s are generally more expensive to make.

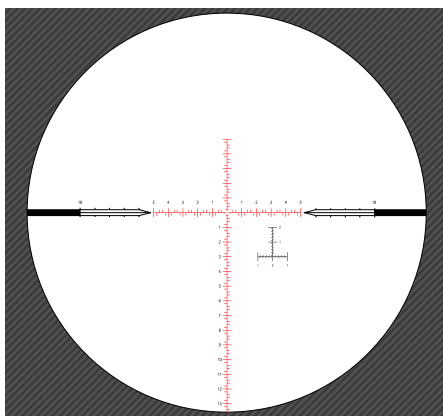
Typically, variable power riflescopes have a magnification multiple of three (4-12x) four (8-32x) or five (4-20x). Nightforce claim that while it's possible to build a scope with a multiple of eight, creating one that delivers exceptional clarity, resolution and brightness at every setting across the entire magnification spectrum has been a major challenge for optical engineers.

The NX8 range is designed to offer one scope that will handle any shooting environment at almost any distance, the vast magnification range meaning one scope will provide versatility in any situation you may encounter and you can certainly use it for close-range .22 or air rifle shooting.

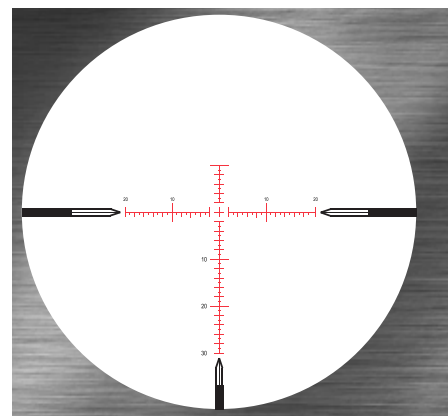
Nightforce have always been among the most reliable and solid scopes on the market but that build comes with some criticism they're generally heavy and not thought of as hunting scopes for that reason. Weighing only 800g for the 2.5-20x and 810g for the 4-32x and measuring 305mm and 340mm respectively makes the NX8 series a compact package.

Nightforce uses a bedding resin called mil-bond, injected by hand into holes cut around the circumference of each lens after it has been seated within its own aluminium cell assembly. The resin floats the glass away from the metal and sets stiff enough to retain the location of the glass and with enough flexibility to allow the glass to absorb sharp impacts from the side.

Nightforce optics are designed for



L-R: Mil-C reticle and MOAR reticle.



rugged environments and an impact from the side can potentially fracture glass and move lenses. That's why they go a step further during quality control testing by applying substantial side impact around the objective lens, the largest and heaviest lens group with the greatest chance of moving under side impact.

According to Jamie Dennis, Lightforce account manager for Australia and New Zealand: "Our special bedding method means every lens assembly needs to be housed in its own alloy cell independent from the body tube. Although this adds weight, the upside is we can guarantee lens alignment within each cell which makes our scopes 'modular', that is, we can test and swap out each lens assembly until we can guarantee all lenses have the highest possible specs on lens alignment.

"Most manufacturers have multiple lens groups either glued or held directly into the body with locking rings. Usually these optics are lighter weight but it only takes one lens to be slightly out of alignment and the light transmission and resolution of the entire optic suffers regardless of glass quality."

First focal plane is important for Precision Rifle Series (PRS) shooting and other practical shooting disciplines such as SSAA Long Range Precision and practical rifle matches, this style of shooting

requiring a wide field of view and hold-over capability at low magnification. The glass elements in an ordinary lens can provide distortion of the image wavelengths resulting in a compromise of the image. The ED glass mentioned earlier focuses these wavelengths to a much more precise point, producing brighter colours, higher resolution and better contrast. Hunters will also appreciate the extended shooting time at dawn and dusk provided by the bright and crisp optics.

There's a choice of four illuminated reticle options for each scope, one in Minute of Angle (MOA) and three in milliradian (mil-rad). The Mil-XT is the most popular tactical reticle on the market with the T3 used by all law enforcement and military units in Australia. But is the reticle too thin at low magnification for hunting? Nightforce have thought of that too with a daytime bright red or green illumination at the push of a button (digilume).

Parallax focus adjustment comes down to 11yds (about 7m) which means you can dry fire practice indoors or tracking tests at 11m on your wall at home. There's a huge amount of internal elevation and windage travel in the NX8's turrets in the 2.5-20x50 version 110 MOA elevation and 80 MOA windage and slightly less in the 4-32x50. To put that in perspective, the NX8 8-32x56 has only 65 MOA



The supplied power throw lever is easily fitted.



A dust cover is supplied for the windage turret.



Reticle illumination is at the push of a button.



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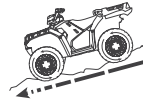
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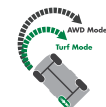
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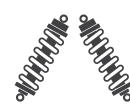
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ENGINE BRAKING  
SYSTEM



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SEATS 2

# The power of eight

making this scope an ideal long-range target item. The windage adjustment has a dust cap that can be left on or off once wind zero has been set.

Some shooters prefer to aim from a known windage setting and by loosening the windage turret with the supplied key, windage zero can be set then aligned to '0' on the turret. The ZeroStop feature on the elevation turret allows you to return quickly to, and stop at, a pre-set zero and there's the option of installing the supplied power throw lever to adjust magnification quickly even when wearing gloves.

At the range both scopes performed as expected. Precise tracking was a given as was the return to pre-set elevation and quick, easy-to-adjust parallax and windage settings, the brightness at all settings astounding. On a day of overcast and diminishing daylight, detail of targets at long range was excellent and in heavily-timbered state forest the light gathering attributes were equally impressive, illumination intensity settings enhancing the reticles through the entire magnification range.

Accessories include a Tenebraex flip-up lens caps, instruction manual, power throw lever, tool for internal and external scope adjustments and lens cleaning cloth.

### Summary

There's growing demand for rifles and scopes since the introduction of a number of precision and practical long-range competitions and the SSAA has disciplines where the NX8s are beginning to make a home. Apart from the long-established Practical Rifle Discipline, the more recent Long Range Precision is also where being able to quickly make scope adjustments or use the hold-off or hold-over features of a first focal plane reticle is essential.

Nightforce have managed to put eight-times magnification range into a compact scope and keep the image crisp and bright. The low-end magnification coupled with a 50mm objective gives this scope an incredible field of view and massive light

gathering, great for lowlight deer hunting.

According to Jamie Dennis, the Nightforce lifetime warranty naturally covers mechanical defects in materials and workmanship in the optical and mechanical components and they'll repair or replace if required, though their warranty return rate is less than one per cent.

"We have a fix, not replace policy with

our warranty as we're in the business of testing, fixing (if needed) and guaranteeing your riflescope specs out 100 per cent to our standard, not just replacing it with another one which may have a different issue due to less intense quality control, less hearty design or poorer components or manufacturing process," he said. ●



| Specifications:           |   |  |
|---------------------------|---|--|
|                           | NX8 2.5-20x50 F1                          | NX8 4-32x50 F1                             |
| Magnification             | 2.5-20x                                   | 4-32x                                      |
| Focal plane               | First                                     | First                                      |
| Body tube diameter        | 30mm                                      | 30mm                                       |
| Overall length            | 12"/305mm                                 | 13.4"/340mm                                |
| Mounting length           | 5.44"/138.2mm                             | 5.73"/145.5mm                              |
| Weight                    | 28.3oz/802g                               | 28.6oz/811g                                |
| Click value               | .25 MOA or .1 MRAD                        | .25 MOA or .1 MRAD                         |
| Internal adjustment range | E: 110 MOA/32 MRAD<br>W: 80 MOA/23.3 MRAD | E: 90 MOA/26.2 MRAD<br>W: 70 MOA/20.4 MRAD |
| Parallax adjustment       | 11yds - infinity                          | 11yds - infinity                           |
| Eye relief                | 3.44"/87.4mm                              | 3.40"/86.3mm                               |
| Field of view at 100yd/m  | 2.5x: 41.8ft/13.9m<br>20x: 7ft/2.3m       | 4x: 26.1ft/8.7m<br>32x: 4.6ft/1.5m         |
| Exit pupil                | 2.5x: 7.1mm<br>20x: 2.5mm                 | 4x: 7.3mm<br>32x: 1.6mm                    |
| Recommended retail price  | \$3173 + \$407 for TReMoR                 |  |
| Distributor               | Lightforce Australia                      |  |



The ZeroStop feature allows you to return the turret to a pre-set zero.



Setting the ZeroStop is a simple operation.



The Nightforce toolkit helps precise alignment and adjustment.



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# Portable powerhouse hits the mark

## Chiappa Alaskan takedown



Graham Park

An airborne shell cleanly ejected.

I have an enduring attraction to takedown rifles, finding them both practical and fascinating and apparently I'm not alone as there's a healthy number of manufacturers and models to choose from. So when *Australian Shooter* was approached by importer Raytrade to review their Chiappa Alaskan takedown, I was keen to say the least.

Having no previous experience with Chiappa firearms I was unsure what to expect in regard to quality and function etc., especially when the Alaskan is Chiappa's own version of the classic Browning-designed Winchester Model 92. At first glance the rifle looks like it's stainless steel but in fact has a hard-wearing and attractive brushed chrome finish (I learned this from the manual), which may in part explain why the Alaskan is the smoothest operating lever gun out of the box I've ever shot in 45 years of using them.

Neither is the stock what it seems at first, being wood with a specially bonded and tough black rubber covering rather

than solid polymer or rubber, which seems to give the gun an excellent feel and balance. The slightly 'grippy' feel of the stock makes it a dream to handle and even in the rain or with blood on my hands the rifle has never even thought about slipping or moving. Not sure how they do it but the feel is exceptional.

After three months of using it around the farm the finish on both stock and metal remains unmarked and still looks new despite me using it as a work rifle (luckily Raytrade told me to use it like I owned it) so the finish is tough and to my mind attractive and practical.

With a 420mm (16.5") barrel the Alaskan is compact, fast-handling and useful around vehicles or heavy scrub and balances exceptionally well when carried by hand. This barrel length is likely ideal for the two calibres (.357 Magnum and .44 Magnum) in which it's available as both reach maximum velocity in short barrels.

Don't underestimate the .357 Magnum in a short rifle or carbine as it gives massively

improved ballistic performance when used in rifles compared to handguns, and as an example I found velocity increased by more than 300fps compared to being fired in a 150mm (6") revolver. I was getting slightly more than 2000fps from 125gr factory loads and around 1850fps from the more common 158gr loads, which gives vastly improved stopping power out to the 100-150m or so effective range of this rifle/cartridge combo.

The takedown part of the design is exactly as the original Winchester Model 92s were made at the turn of the 20th century, so is a truly well proven design using a simple interrupted thread to assure consistent and reliable functioning despite being taken apart repeatedly.

### Why a takedown?

For me there are a few excellent reasons. 1: Ease of cleaning from chamber. Since normally you can't easily clean the barrel of a lever action except from the muzzle or get inside the action to clean, this is a real advantage. ➤





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## Portable powerhouse hits the mark

2: Portability. When travelling, a takedown needs far less space but can be assembled rapidly and be ready to use in seconds.

3: Discretion. Sadly Australia isn't always the most gun-friendly place and travelling with obvious gun cases can sometimes cause issues. Takedown designs mean you have the gun in a much more compact and less obvious gun bag.

To disassemble the rifle (after ensuring the gun is empty) open the lever, flip out the small arm at the front of the tube magazine below the muzzle and unscrew it. This allows the magazine tube to slide out and then just twist the barrel sideways and the gun will come apart. It actually takes less time to do than to write about and is both simple and intuitive. The rifle can then be cleaned or stored as needed.

I've taken the Alaskan apart 30-40 times and put more than 500 rounds of both .357 Magnum and .38 Special ammo through the gun and it has never changed point of impact. It seems just as tight as the first time I took it apart so is extremely well built with exacting tolerances.

I admit I was sceptical about the barrel-mounted peep sight when I first saw it. I'm a big fan of peep sights as I age, especially the excellent Skinner brand sights fitted to the Chiappa, but I'd never seen one mounted on the barrel. Normally peep sights are mounted very close to the eye on the receiver or even on the stock but yet again the Chiappa proved the makers had done their homework, as the barrel-mounted Skinner sight is quick and accurate to use and, mated with the fluoro orange front sight, highly visible under any light suitable for shooting.

### Testing

After making a couple of small adjustments to elevation and windage to the rear peep sight (easily done with an Allen key), the Alaskan was spot on for me. I sighted it about 25mm (1") high at 50m and this worked very well on a variety of ferals from goats to pigs and out to around 125m which is as far as I've used it on game.

Off the bench using a variety of ammunition, I found the GECO 158gr .357 Magnum supplied by Cleaver Firearms and PPU 158gr I had on hand both performed well, consistently grouping three shots into 25-35mm at 50m time and again on more than a dozen different visits to the range. With my 60+ year-old eyes that tells me this rifle has excellent accuracy for its intended purpose and could likely be enhanced if you want to fit a red dot or scout-style forward mounted scope (a combination peep



Top Left - The Alaskan can be disassembled and reassembled in seconds; Top Right - Alaskan in mid-takedown; Bottom Left - Magazine tube removal for takedown; Bottom Right - Close-up of the barrel-mounted Skinner sight.



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## Portable powerhouse hits the mark



Above - The Chiappa Alaskan takedown; Top Right - Zoe had fun with the rifle; Bottom Right - 50m groups were consistent during several range sessions.



sight and scope/red dot rail is available as an option).

The Alaskan feeds .38 Specials just as quickly and smoothly as .357s and were just as accurate and naturally quieter with far less blast. Recoil is simply not an issue even with full power .357 loads and with .38s it's almost zero. One of my daughters was visiting with a friend and they spent an afternoon shooting tin cans and bowling pins at the farm, between them putting more than 100 rounds (mixed .357 and .38) through the gun, only stopping when I ended their free ammo supply.

The Chiappa Alaskan retails for \$2075 and is well worth the asking price with exceptional fit, finish and function. It was a little stiff on the thumb to load for the first few magazines but then settled down and I now load it by feel quite comfortably. It has never once jammed or hesitated after more than 500 rounds and is easily the smoothest lever action of any type I've cycled. This truly is a portable powerhouse which puts the fun back into shooting. ●

### Specifications - Chiappa Alaskan takedown

**Calibres:** .357 Magnum, 44 Magnum

**Magazine capacity:** 7+1

**Barrel length:** 407mm (16")

**Overall length:** 864mm (34")

**Weight:** 2.66kg (5.9lb)

**Stock:** Wood with soft-touch rubber finish

**Sights:** Fibre optic front, Skinner Express rear

**Action:** Lever

**Finish:** Matte chrome

**Price:** \$2075

**Importer:** Raytrade





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# Don't go scrimping on crimping

Thomas Tabor

**W**hether to crimp or not is a question many handloaders struggle with. While I find it reasonable and appropriate to crimp the neck of any cartridge that seemingly produces enough recoil to jar my eye teeth loose, it's really the other rounds, the marginally powerful ones which most people have trouble making up their minds on.

Obviously the main reason most handloaders crimp their shells is to ensure bullets are held tight enough to prevent them from working loose. Magazine-fed rifles with sizable recoil can sometimes be particularly problematic and in some instances that recoil could cause the cartridges inside the magazine to be driven forward, causing the bullets to impact the front of the magazine housing. When that happens it can damage the bullet points which in turn can adversely affect the accuracy of those cartridges, but even worse could result in driving chamber pressures beyond acceptable limits.

## When to crimp

There are lots of parameters to consider when making a decision to crimp or not. Sometimes doing so can result in increased

chamber pressures so you must proceed slowly and with a certain degree of caution, particularly if your handloads are already approaching maximum recommended pressure limits.

I believe all cartridges in the classification of big bores should have their case necks crimped and even though most shooters wouldn't necessarily place the various .375 magnums in that category as being 'true big bores', in this case I'd include those too. The only exception would be single-shot rifles which may not need crimped at all due to no worries over magazine-held cartridges and the effect on them from recoil.

I believe most shooters recognise the need for crimping really large cartridges - it's really those calibres that fall a little below that category which are usually most worrisome. I seldom crimp standard calibres like the .30-06, .270 Winchester, .308 Winchester, 7mm and smaller rounds though on occasion will crimp magnums, particularly the .30 calibres, but that's personal preference.

Variations in the thickness of brass can in rare instances affect how tightly bullets are held in place. Case neck thickness issues sometimes become a problem for

wildcat cartridge shooters who've manipulated cartridge necks either by enlarging or shrinking them, and this shifting of the metal can make the neck metal thicker or thinner which can have a direct influence on how securely bullets are held as well as chamber pressures.

A few years ago I encountered a unique problem which to this day has me scratching my head. At the time I was testing a rifle chambered for a newly-produced production cartridge and after firing a couple boxes of factory ammunition, which seemingly functioned perfectly well, I decided to handload those same cartridge cases.

A major problem arose immediately. No matter how I adjusted my sizing and seating dies I couldn't get enough neck tension to hold the bullets securely in place and with virtually no effort I could easily move bullets in and out of the case using only my fingers. I'd never encountered a problem like it and spent several hours exploring every possible cause and solution before finally contacting the rifle manufacturer who sold the ammunition under their own name.

After a lengthy discussion about the problem they asked me to send back any remaining unfired ammunition





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## Don't go scrimping on crimping



Lee Precision produces dies intended to duplicate the crimp used by commercial ammunition manufacturers.

along with the fired cases for analysis. I did so and a few weeks later received my answer (at least a partial one). They said they'd had problems early on with some of the first cartridges produced and apparently my ammunition was part of that lot but unfortunately would not be more specific. The replacement cartridges functioned and reloaded perfectly and I can only assume the problem had its roots in the thickness of the neck brass. Early on I thought that might be the problem and attempted to measure that thickness but my calliper wasn't precise enough.



Very large cartridges like the .50 BMG should be crimped and Lee makes a die to do so.

### Another potential problem

Some shooters feel they achieve the highest degree of accuracy when seating bullets out as far as possible, in some cases almost touching the lands and grooves of the rifling. Some rifles seem to shoot more accurately by doing so but this can also result in increased chamber pressure, so if you choose to seat bullets in this manner you must proceed cautiously.

Aside from that there's another potential problem to consider. In the chambering process if your bullets come into contact with the rifling it could cause them to stick

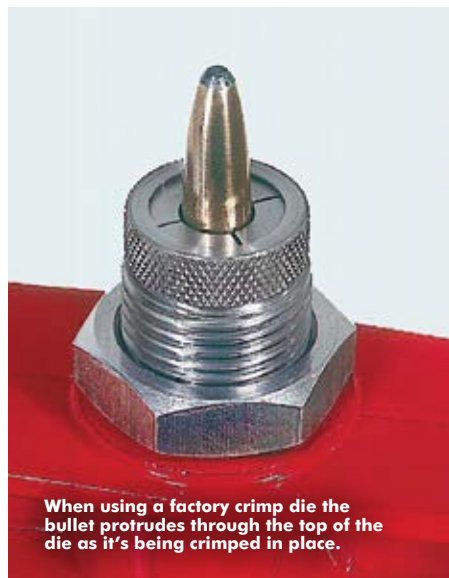


If you handload big bore cartridges, consider crimping the necks.

or jam in the chamber. Then if you attempt to eject the unfired cartridge the bullet could be pulled out of the case. On the rare occasions I load ammunition in this manner I make certain my bullets are seated just shy of touching and, as a second layer of insurance against a problem, give careful consideration to crimping the necks of the cartridges.

### Methods

Crimping can be done two ways, either by roll crimping or by the tapered crimp method (sometimes called the straight



When using a factory crimp die the bullet protrudes through the top of the die as it's being crimped in place.



While the Nosler bullet on the right doesn't have a cannelure groove to crimp into, a crimp can still be applied, just be careful.



Crimping is usually a good idea when loading very heavy recoiling cartridges like Thomas's .500 Jeffery.



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## Don't go scrimping on crimping

crimp). When crimping into a cannelure bullet groove the preferred method would likely be the roll crimp, but when no bullet cannelure groove is present the best method would be the tapered or straight crimp.

Most seating dies have the capability to not only seat the bullet but can be adjusted to crimp as well, but getting the die precisely set to do so can be a bit tricky. If you choose to crimp your cartridges in this manner I recommend starting with a dummy cartridge then if a problem arises in the setting of your die and the case becomes damaged, you can toss it and start again without jeopardising any of those newly processed and charged handloads.

The second method of case crimping - and my personal favourite - is using a separate die specifically designed for crimping. There are a few firms making this type of die but the one that seems to have the largest and most diverse selection of calibres to choose from is Lee Precision. Using one of these Lee crimping dies as a final reloading step will produce an effective and perfect crimp virtually every time.

### Lee factory crimp dies

The Lee crimp dies produce crimps very



similar to those used by commercial ammunition manufacturers. These dies gently and firmly squeeze the very end of the case into the crimping groove or around the jacket of the projectile to produce a straight-style crimp and by using one of these dies it's almost impossible to buckle the brass as sometimes happens when a roll crimp is attempted.

### Shoulder flare

I've had shooters show up at my front door asking to use my private shooting range and when they get all set up and attempt to close the bolt on their rifle, they're unable to do so. On several occasions this problem stemmed from an ill-adjusted bullet seating die.

Whether or not the handloader was trying to use the seating die to crimp their cartridges or not, the die may have been set to do so and too heavy a crimp can cause the leading edge of the case shoulder to flare or bulge outwards. Often that flare is so slight it can easily go undetected until you attempt to chamber the first cartridge and for this reason, regardless of whether you decide to crimp or not, if you handload your own ammunition I strongly recommend you chamber every cartridge in the firearm you intend

to shoot in it prior to heading off. I do that with all my handloads, not just those I've crimped, as it makes sense to ensure there will be no problems when it comes time to squeeze off that shot.

### And finally

As mentioned earlier, crimping the necks of your cases can result in elevated chamber pressures, so you should proceed with a degree of caution. Some shooters are firm in their belief those typically higher start pressures produce a more uniform pressure curve, which they accredit to improved shooting accuracy. Others take the opposite viewpoint, believing crimping could adversely affect accuracy because the degree of crimp sometimes varies from cartridge to cartridge.

When reloading bullets that are short and light in weight it may be more appropriate to crimp the necks of the cases simply because these bullets can sometimes possess such short shanks that a little extra neck tension can assist accuracy.

Crimping bullets that don't have a cannelure groove specifically intended for accepting the crimp can be a bit tricky to get right. It's do-able though - you just need a light touch and proceed slowly and cautiously. ●



For long-lasting durability Lee produces crimp dies made of carbide steel.





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# Hunting high and low

## Recollections from a life on the land

Dave Rose

**E**steemed firearms writer and hunter John Dunn has been entertaining SSAA members for more than three decades with his wry insights into life on the land. As one of *Australian Shooter's* senior correspondents, John has shared his tales of country life in his monthly *Jumbunna* column which has run in every issue since 1988, the colourful and often whimsical look at country matters never failing to strike a chord with readers.

Now John has put together a book recalling numerous hunting adventures from Australia and around the world. *In the footsteps of my father - stories from an Australian hunter* is a 200-page sweep through a rollercoaster ride traversing the great southern land as well as memorable hunts abroad including in North America and New Zealand.

It's clear John's father was a major influence. In his foreword John says he feels grateful to have grown up when he did, learning the ropes on putting food on the table through trapping or shooting game, catching fish and prawns, harvesting mushrooms, berries and home-grown vegetables.

This book is John's third, following on from *Hunting in Australia* (1989) and *The Jumbunna Collection* (2000) which collated various articles written for *Australian Shooters' Journal* and *Australian Shooter* between 1988 and 1999. This time round John recalls how he became involved in hunting as a child then passed on the art of hunting and fishing to his children.

Drag-netting for prawns with his father at Lake Illawarra on the New South Wales coast was John's introduction to landing food for the fridge and from there we're on our way as he teaches his son the wonders of the great outdoors.

John's hunting adventures began on home soil and he explains that most of the

game animals in Australia are introduced species and lauds the varieties on offer, from bunnies to buffaloes. In the early 1980s his job with the NSW National Parks and Wildlife Service intertwined perfectly for him to undertake numerous helicopter shooting programs targeting feral pigs, goats, buffaloes and wild cattle.

But it's the pursuit of deer which holds a special place in his heart. "For a long time deer hunting was the spur that drove my hunting life, especially sambar deer," he recalls. And that spur hasn't diminished down the years as John now extracts just as much pleasure from simply taking what he needs for the table.

Deer feature prominently in the 32 pages of glossy photographs, all complete with cross-references to the text the pictures refer to. There are stunning scenic views depicting the author in breathtaking panoramas of the New Zealand high country and Alaskan ranges along with snaps from days gone by.

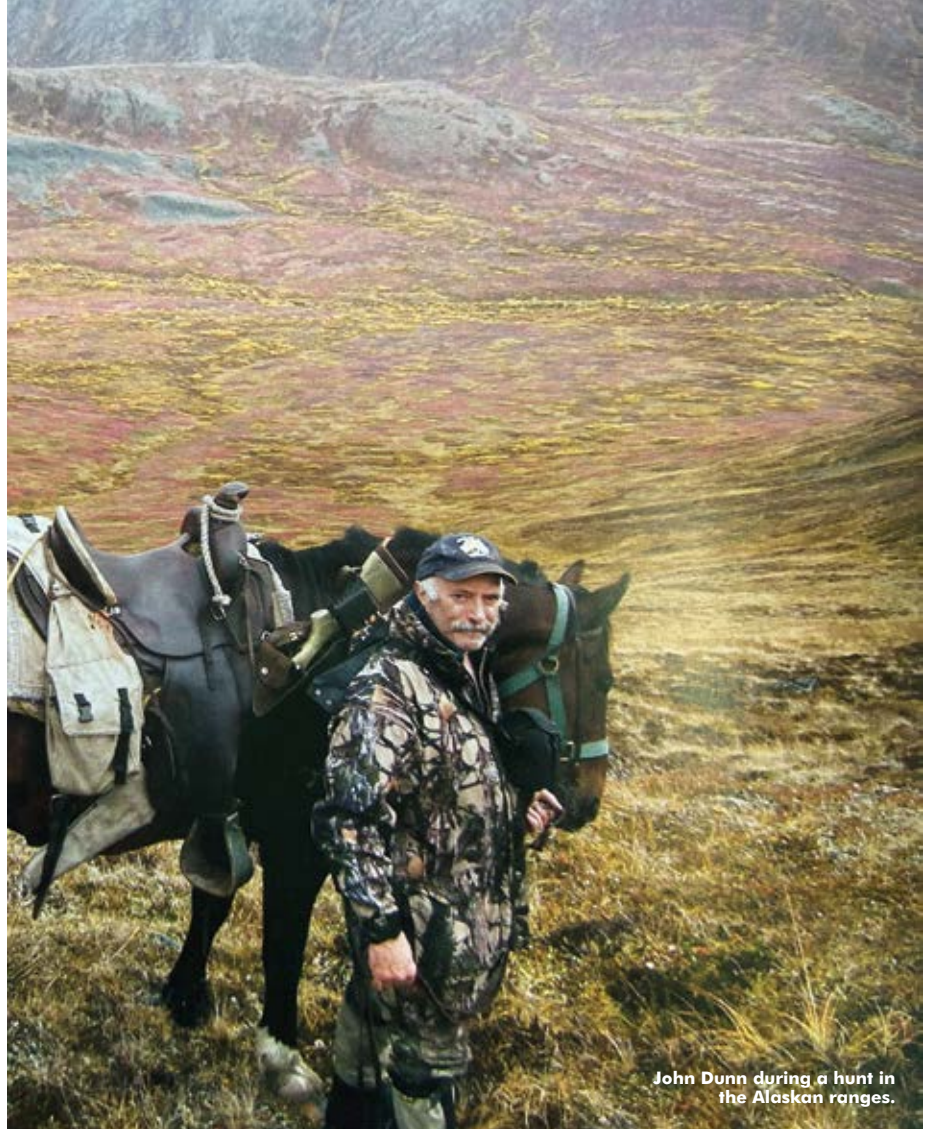
John's fondness for New Zealand is evident in these pages as he hints he'd like to have spent more time hunting across the Tasman if work commitments had allowed,

scrambling over rugged terrain on the path of chamois clearly a tricky assignment which he recalls vividly.

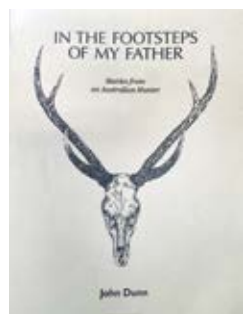
The narrative is just as gripping when he flies into back country Alaska to hunt moose, a mission that had been 45 years in the making and one he truly savoured. As an encore John outlines trips to Utah, Wyoming and Montana for back-to-back hunts which yielded elks, mule deer, white-tail deer and pronghorn antelopes, trophies which had been on his radar for years.

Many will be familiar with John's engaging style through his *Australian Shooter* articles and this highly entertaining book - clearly a labour of love - is packed with more of the same.

The book is priced \$25 plus \$10 P&P and is available by emailing the author at [footsteps5350@gmail.com](mailto:footsteps5350@gmail.com) ●



John Dunn during a hunt in the Alaskan ranges.







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# Straight shooter!

## Browning T-Bolt all class

Senior Correspondent John Dunn



Set up for testing with a 3-9x42 Meopta Meopro in Recknagel mounts.

The Browning T-Bolt action was introduced to the US rimfire market in 1965. Made in Belgium, the early T-Bolt was recognised as a masterpiece of innovative engineering - handy, accurate and easy to use, it should have been a winner. Sadly that didn't happen. Instead it was largely ignored by a conservative shooting public, probably because it was so different to what most people were used to and was consequently withdrawn in 1974.

Reintroduced in 2006-07 it persists as a low-profile participant in the marketplace admired and respected by those it's known to but generally overlooked by the rest of us. Why that should be is something of a mystery as everyone I've met who has owned or used the T-Bolt tends to sing its praises. That includes this writer, a convert

after Winchester provided a Mossy Oak Bottomlands model in .22 WMR for review a couple of years back. The rifle shot extremely well in a calibre not generally noted for its accuracy so when *Australian Shooter* was given the chance to look at a current T-Bolt Target/Varmint model in .22LR I wasn't about to refuse.

### Rifle

New rifles are always a joy to handle and the T-Bolt Target/Varmint is no exception. As befits the Browning name it's put together the way good rifles used to be, the old-fashioned wooden stock perfectly complemented by blued metalwork to eye-catching effect. Its designation as a Target/Varmint model doesn't do it any harm either, providing the expectation of better than ordinary performance. A left-handed

version of the walnut/blued steel T-Bolt is also available as are grey laminated wood/stainless and composite/blued variants.

### Receiver

The cylindrical receiver is machined from solid bar stock and nicely finished with a semi-gloss, blue/black, an ejection port machined into the top with receiver ring and bridge drilled and tapped to accept screw-on bases. A magazine port is machined into the bottom of the receiver, once again the receiver ring and bridge drilled and tapped. The front of the receiver ring is also fitted with a small, protruding pin which helps relocate the receiver when it's replaced in the stock.

The rear section of the receiver is slotted along the right-hand side to accept the bolt handle, which also acts as a bolt guide when the action is being cycled. At the front of the slot is a 15.88mm hole and on the left directly opposite a 12mm hole which work together to accept and laterally lock the T-shaped cross bolt when the bolt assembly is pushed home.

### Barrel

This is rated by Browning as heavy, with a diameter at the receiver of 22mm tapering gently down to 17mm at the muzzle which has a small recessed crown, barrel length listed as 589mm. The left side is stamped with 'Browning Arms Company, Morgan,



Component parts of the T-Bolt.



Utah. Made in Japan/Miroku' while the right side shows 'T-Bolt Cal. .22 Long Rifle Only.' The barrel is finished to the same colour as the receiver and no sights are fitted.

## Bolt

This is what sets the T-Bolt apart from most other rimfires, its straight pull operation faster and less complicated than conventional bolt actions that require the handle to be turned down to lock the bolt closed. In the T-Bolt, lock-up is achieved with a cross bolt that slides laterally to engage holes either side of the receiver when the bolt is closed.

When the bolt handle is pulled back to open the action the handle pivots to the right on a large pin through the rear of the bolt body, pulling the cross bolt out of engagement with the receiver walls and allowing the bolt assembly to be drawn back. When the bolt is pushed forward, the process is reversed with the rifle loaded and ready to fire.

The mainspring for the firing pin runs through the middle of the pivot pin, cocking effort equally split between opening and closing of the bolt for ease of operation. When the bolt is cocked a red indicator is visible atop the firing pin, disappearing when the rifle is fired. The bolt has a cylindrical, one-piece body that houses the firing pin and mainspring internally, the firing pin short travel with super-fast lock time.

The bolt face is recessed with dual extractors that function like similar set-ups on other rimfire rifles. To remove bolt from receiver the safety catch must first be engaged, the bolt handle then pulled back until the cross bolt disengages. The bolt

release, a small serrated bar under the bolt, must then be pushed down before the bolt can be removed and to reinsert the bolt into the receiver the bolt handle must be in the unlocked position.

## Trigger and safety catch

The T-Bolt uses a three-lever trigger system contained in a polymer-bodied housing that includes the triggerguard and appears to be pinned and screwed to the bottom of the receiver. The system is externally adjustable to meet individual needs with appropriate instructions and warnings in the owner's manual.

As it arrived the trigger broke cleanly and crisply with a minimum of effort, no obvious take-up when firing and minimum over-travel. The sliding safety catch is on the top rear of the trigger housing behind the tang of the receiver and sliding the catch to the rear locks the trigger yet still allows the bolt to be cycled and with the catch disengaged a red dot is visible behind it.

## Magazine

The double helix magazine holds 10 rounds of .22LR ammunition and features a torsion drive spring and interlocking gears to maintain correct timing and alignment for smooth feeding.

The opaque walls of the magazine make checking the number of rounds easy, unfired ammunition smoothly inserted or removed by turning a plastic gear at the top rear section to ease spring tension internally. The magazine fits into a polymer well inlet in the belly of the stock and is retained in situ by the action screws, the magazine held in the well by a simple spring-loaded catch at the front of the well.

## Stock

This is made from a piece of straight-grained American walnut with satin finish which lends a nicely understated appearance, something that appeals to true believers like me who never warmed to plastic composite stocks which have



## Browning T-Bold all class

become the new norm. The butt has a synthetic buttplate carrying the Browning name, the stock itself having a nicely sculpted Monte Carlo comb that sits suitably against the face and brings the shooting eye up high enough to see through the scope without craning the neck, always a plus when it comes to shooting well. The pistol grip is hand-filling with a slightly oval shape that provides a comfortable fit, the panels of chequering on either side giving plenty of grip.

The receiver sits proud in its mortice until just forward of the locking hole, from there the top of the forearm rises up, finishing with an almost square fore-end tip. Laterally, the forearm spreads out into a beavertail shape forward of the knox form to provide a good wide grip that's equally at home in the field or on the range. The bottom of the forearm is wide and only slightly rounded to guarantee it will sit correctly on a sandbag off the bench.

Internally the receiver mortice is cleanly cut and sealed against moisture as is the barrel channel, pads of bedding compound ensuring the receiver goes back into the same place whenever it's taken out. Similar



Internally the stock mortice is well finished and sealed. Notice bedding pads for receiver and swell of the forearm.



Rear of receiver showing serrated steel bolt stop that must be depressed to remove the bolt from the receiver. The sliding safety catch must also be engaged.

pads are provided in the mortice for the magazine well to make sure well and receiver go back into alignment every time to warrant proper feeding from the magazine. When the rifle is properly assembled the barrel floats, steel sling swivel bases fitted to both the toe of the stock and forearm.

### Testing the T-Bolt

For accuracy testing the Meopta Meopro 3-9x42 scope provided was set up in Talley mounts on Recknagel bases screwed to the top of the receiver, the rifle then tested at 50m. I also shot some responsive steel targets offhand to see how the rifle handled under field conditions and was pleasantly surprised with my strike rate.

### Overview

Though the straight pull difference takes a little getting used to, the takeaway message is the Target/Varmint T-Bolt Browning is a classy rimfire and with ammunition it likes will serve agreeably as both a target and small game hunting rifle. It handles well, is light enough to carry around without a sling and will deliver all the accuracy most rimfire shooters will ever need. I like it and am sure lots of other hunters and shooters will too. ●



Bolt in closed or locked position shows how the locking bolt protrudes on either side to engage the receiver walls.



With bolt pulled back the bolt handle pivots on the blue pin at the back of the body, drawing the locking bolt out and allowing the action to be opened.

### 50m target results (mm)

| Ammunition             | Best | Worst | Ave |
|------------------------|------|-------|-----|
| Winchester Super Speed | 20   | 35    | 24  |
| Winchester Expert      | 8    | 25    | 14  |
| Winchester Subsonic    | 12   | 30    | 16  |
| Winchester T22         | 12   | 25    | 14  |
| Winchester Wildcat     | 8    | 25    | 12  |
| RWS HP                 | 22   | 30    | 25  |

## Specifications

**Make** Browning - made by Miroku in Japan

**Model** Target/Varmint

**Action** T-Bolt straight pull with enlarged handle, blued steel receiver

**Calibres** .22LR (tested), .22Win Mag., .17HMR

**Trigger/safety** Three-lever adjustable, two-position safety

**Barrel/sights** 559mm, heavy varmint profile, semi-match chamber, target crown, blued finish. No sights fitted, receiver drilled and tapped for bases

**Magazine** 10-shot detachable, helix design

**Stock** Satin-finished walnut

**Overall length** 1022mm

**Weight** 2.49kg

**Length of pull** 343mm

**Distributor** Winchester Australia

**RRP** \$1245

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# Trophy recovery in the field

Sam Garro



**A**ny trophy recovery in the field such as antlers, horns or boar tusks which mean cutting through skin, meat and bone requires a few essential tools to adequately do the job. Preparation and a little know-how will also go a long way in achieving a satisfactory recovery as opposed to experiencing frustration and not knowing where to even make the first cut. Here are a few tips.

## General field gear

A sturdy or flexible skinning knife such as a Dick, Victorinox, Dexter Russell or similar quality brand knife are excellent for cutting through skin, flesh and around bone but avoid cutting into bone as it will quickly blunt fine knife edges. To reach the more

confined meaty parts inside bone sections or within the skull cavity, a scalpel-type folding knife with replaceable blades such as a Havalon or Gerber will greatly assist. For removing a pelt or skin for tanning, a Loveless Drop Point-type knife with more rounded tip is a good option and lessens the likelihood of cutting through the skin.

A good sharpening stone, steel rod or diamond impregnated rod or stone is essential for maintaining a sharp knife edge as there's nothing worse than wasting time trying to hack through tough skin and sinew. To cut through bone to retrieve antlers, tusks or horns, a handsaw with appropriate blade or lightweight battery-powered reciprocating saw make cutting more accurate and easier as opposed to an

axe which can splinter and damage bone structure. For bigger game such as scrub bull or buffalo with large, heavy bone structures the use of a small or mini chainsaw with care would be more appropriate.

## Cutting bone structure

Deciding on the type or style of mount you're contemplating - whether full skull, skull cap, tusks or jaws - will help determine the cutting line and angle. If undecided at the time remove the head, place on ice or in a cooler or fridge, if practical, and decide later. If the trip home is a few days away, boil the head or animal part sufficiently to remove as much skin and meat as possible, then leave to dry in the shade away from rodents and predators. Parts can





## Trophy recovery in the field

be re-boiled and a high-pressure hose used to remove stubborn clinging meat or cartilage pieces.

The initial unattractive process of cutting through skin, meat and other parts may become discomforting but once you overcome this the rest is easy. But if it's not for you - and you're not alone in this regard - employing a taxidermist or capable fellow hunter is an option.

### Where to cut

If retrieving a full skull the cut should be made where the spine joins the skull. Too often the bottom of the skull is cut short, necessitating build-up with builder's bog or like product so it sits properly on the shield. For a goat or deer cap skull mount, the cut starting just below the eyes and angling back to the base of the skull should provide the angled base for mounting. If it proves awkward to make such an angled cut in the field then boil the whole head out, clean and dry then make the cut.

Many hunters, experienced and novice, retrieving tusks for the first time may not realise that two-thirds of the tusks remain in the jaws and often cut short. Again, the use of an axe is not recommended as it can split both jaw and tusks. Particularly where record trophy tusks are involved, the utmost care should be taken. Knife cuts through the skin and meat at the rear of the mouth on both sides to the bone, then cutting through the rear vertical bone will remove the jaw fully. Jaws can be removed for a bottom jaw mount or both upper and lower.

When boiled for the appropriate time, essentially one to two hours, boar tusk removal is achieved by using a leather glove or placing a thick folded rag over the top of the tusk then, with thumb and forefinger initially, carefully pushing down then pulling upwards to dislodge. If it doesn't budge after a few attempts, boil a bit longer and try again.

Once removed the inner nerve will dislodge by an outward flicking motion of the open end.

Leave to dry in a shaded place and when dry, fill with silicone gel to prevent cracking later, a regretted oversight by many a hunter. It's important to also remember when finished with the boiling process to filter the waste water through wire mesh to collect any dislodged teeth or wanted parts.

### Cleaning and preparation

Fill a container with sufficient water to cover any skull or bone structure, including horns. For about every 20 litres of water add a spoonful of soap powder, a cup of



salt and small bottle or two of Hydrogen Peroxide solution (3 per cent) available at most supermarkets as this will help sanitise and whiten bone. There's no specific measurement or combination of additives but the one outlined should prove effective. Top-up water may be needed depending on boiling time required.

On average, two to three hours boiling for a pig, goat or deer head should be sufficient, the larger the skull or part the longer it takes. Pig jaws, top and bottom, and jaws for tusk removal should boil for one to two hours, taking care not to overcook as this can cause tusks to crack and once thoroughly cleaned the pieces can be placed in full sunlight for a few days to achieve the desired result. Scrub bull, buffalo and goat horns should screw off to leave a honeycomb bone sub-structure which can be trimmed with a hand saw.

Once removed, place them back individually in boiling water for another hour or so





until all foreign matter is dislodged from the bone and inside the horns. Any stubborn pieces of meat, sinew and gristle can be removed by a high pressure washer. Use of bleaches is not recommended as they tend to eat away at the bone structure and cause flaking.

### What can go wrong?

One hunter a few years ago went to the trouble of bringing back his buffalo trophy, only to suffer a setback when he reached the airport for his flight home. He'd thoroughly boiled, cleaned and partly dried the buffalo skull and horns then wrapped everything in several layers of plastic a day or two earlier. During that time the contents started to sweat and work their magic with pungent odours and at the airport, despite his efforts to sway officials, he was refused boarding due to his offensive-smelling luggage. The trophy skull and horns eventually came home by road.

For another hunter trying to flesh out a goat head on an ant hill, the result was disastrous. A mess of bone and partly decayed meat stowed in a cardboard box in his trailer attracted every dog in the town where they stopped to refuel. They were not popular with the locals.

### Trophy mounts speak volumes

Hunters recount extraordinary tales involving huge-antlered stags, tusky boars, billies with impressive horns and other hard-to-find antlered game but have nothing to show for them, not even a photo, as they didn't retrieve them, they were gifted to others or displaced over time.

You can talk about how tough and



Glenn Giffin of Muckadilla Safaris salting buffalo cape for shoulder mount.

dangerous wild boars can be but there's nothing like showing your mates the real thing. Once they see those upper grinders, sharp tusks and heavy-boned skulls they soon appreciate how formidable an animal they are and the potential damage they can inflict on a human or dog caught in a sticky situation.

So make the effort to recover those tusks, antlers or horns of a trophy animal, even if they don't meet your expectations and especially if it's in a place you're unlikely to revisit. If you happen to score a better specimen in future, you've lost nothing. ●



Jaws and tusks from an NT boar hunt.



Retrieving tusks by cutting through skin and jaw to rear of jaw bone then sawing bone.



Skin and meat removed ready for boiling.



Boiling out boar head and tusks in camp.

# Let there be light

## actually, we don't need it

Pete Kincade



**P**ulsar Accolade XP50 thermal imaging binoculars are distributed in Australia by ExtraVision, the same firm who handle Vortex optics and the first to supply thermal imaging products to the Australian market back in 2010. The Accolade series of thermal imaging binoculars, monoculars and telescopic sights must be experienced to be believed. I had the chance to use a set of these hi-tech wonders and am convinced that for culling of feral animals they're superior to traditional spotlighting methods, but more on that later.

### History lesson

To put thermal imaging binoculars into perspective, let's briefly review the history of telescopes.

Holland 1608: Hans Lippershey invents the telescope and builds the first binoculars later that year.

Italy 1609: Astronomer Galileo develops

a telescope that uses convex lenses for the objective and concave for the eyepiece, his first working model of 8x magnification.

England 1704: Sir Isaac Newton devises a radical concept in telescope design. Where others are using glass lenses, Newton uses a curved mirror which reflects incoming light back to the point of focus. This approach 'collects' light and sends it to the eye. By increasing the size of the collector, more light can be captured and light transmission efficiency increased.

Scotland 1740: James Short develops the 'Short' telescope, a significant advance. An optician and astronomer, he devises a distortion-less, parabolic and elliptical mirror, solving the problem of distortion which has plagued developers since Newton.

England 1800: Astronomer Sir William Herschel is an exception in the history of looking at distant things, famous for discovering the planet Uranus but less well known for discovering the electromagnetic

spectrum or what we know as infrared. While Lippershey is the daddy of binoculars, Herschel is the daddy of thermal imaging.

Italy 1854: Ignazio Porro patents his prism system for binoculars and telescopes. His memory lives on in every set of porro prism binoculars.

### No light, no image

Binoculars let us see into the distance and are an invaluable aid to hunters for spotting and identifying game and non-game animals. However, conventional binoculars and spotting scopes, regardless of whether they're porro prism or roof prism by design, have one thing in common - they transmit light which passes to the viewer's eyes and is translated into colour and shape in our brain. No light, no image. Conventional light-gathering optical devices don't let us see much of anything when it's dark so when it's black it may as well be nothing.





### How do they work?

Unlike conventional binoculars the XP50s don't rely on light that can be seen by the human eye and while they're very effective in daylight, their primary role is night-time use. Instead of capturing rays of human visible light, these thermal imaging binoculars do just as their name suggests, receiving and decoding heat energy (infrared radiation) that we see as shapes we understand and shows them on its high-contrast AMOLED display.

All living things emit infrared energy as heat and Pulsar Accolade XP50s detect even the slightest differences in temperature of objects and scenery. They enable you to literally see in the dark, even total, pitch-black darkness. I'll forgive you if you don't believe me but when it comes to using them, seeing really is believing.

The XP50 caters to all viewing conditions with an eight-colour palette, the most versatile mode being 'White Hot' though during night-time review I mostly used 'Hot Black'. According to Pulsar this mode is "often favoured for detecting wildlife at night. Red monochrome helps reduce or prevent bright backlight from exiting the eyepiece. Sepia often improves long-range observation while 'Red Hot', 'Rainbow' and 'Ultramarine' enhance temperature

differences of various object attributes. Violet helps identify objects faster".

Pulsar developed thermal imaging equipment for the law enforcement market before recognising their application for sporting purposes. For the efficient and humane culling of feral pests, the potential of Pulsar thermal imaging equipment is undeniable.

Spotlighting of pigs, dogs, cats etc only lets us see a fraction of the number of animals within the arc and range of even the best spotlights, which can also alarm quarry and cause it to go to ground. My experience with the XP50s was amazing and providing I was mindful of the wind and maintained stealth, I could observe wildlife indefinitely.

The XP50s are built around an infrared sensor, intuitive in operation and have features which let the user capture digital stills and video. There's 8GB of built-in storage providing up to 150 minutes of video or almost 10,000 images, downloading video and still images done via micro USB interface to your PC, Mac or Linux computer. While their primary purpose is night use, they can also see through serious weather such as snowstorms and heavy fog.

Unlike earlier generations of night-vision equipment, no external source

of infrared light is required which may explain the excellent run-time from the rechargeable 3.7-volt Lithium Ion battery, Pulsar claiming run-time of seven hours on a full charge.

I gave the battery a complete charge and never recharged it during the night I reviewed it, running it for several hours and switching off during travel. If you need more than seven hours, Pulsar offer longer-charge Li-ion batteries which last up to 24 hours.

The XP50s have features in common with conventional binoculars such as dioptre and interpupillary adjustment, the former done in the same way as conventional binoculars, focusing via a central ring. Because they have a single sensor for both eyes, the need for two 'barrels' as in conventional binoculars is eliminated, nor is there any requirement for a central hinge as in roof prism binoculars.

While I didn't go out my way to abuse them, when not in use they bounced around the front box of my Polaris 4-wheeler. They look and feel very strong and Pulsar's reputation for supplying law enforcement with high-end thermal imaging kit is testament to their rugged construction and weather proofing. The sealed non-reflective polymer body has an IPX-7 waterproof >



Unlike conventional binoculars the XP50s don't rely on light

## Let there be light - actually, we don't need it

rating and can endure a depth of up to one metre for 30 minutes.

The XP50 has a single Germanium objective lens, interpupillary adjustment done by merely sliding the eyepieces inward or outward to suit. The unit doesn't have fold-down eyecups, rather soft rubber shields on each eyepiece to ensure no ambient light enters your viewing area, and as I wear glasses I simply folded these to the side. With a super-generous 16mm of eye relief, these are suitable for using with or without specs.

Optical zoom is 2.5x and digital zoom enables 2x, 4x and 20x magnification and I found images to be crisp and clear once I understood the importance of calibrating the sensor for each viewing session. Calibration is easy, merely close the hinged cover over the front lens and toggle the power button with a short press. Once calibrated, open the flap and start scanning.

Image resolution is 640 x 480 pixels and results in the highest quality at all distances. I found image quality a real advantage when looking for game in thick-with-oats paddocks, thermal detection 2000yds or 1829m. They come with a nylon carry pouch and shoulder strap, one Lithium Ion rechargeable battery, USB cable and charger and comfy neck strap.

Operating the unit is easy. The onboard 2.4Ghz wireless card lets you stream vision to your smartphone or tablet up to 15m away. On the underside is a 1/4-20 UNC embedded fastener for standard camera tripod mounting, handy for capturing digital stills and video. The stills shown in this article were taken offhand and don't do justice to how sharp the vision is.

The XP50 under review didn't include a Laser Rangefinder which is available as an optional extra but stadiametric range finding is included and assists range estimation to an animal based on its size, the stadiametric display gradient pre-calibrated for hare, pig and deer.

### Conclusion

Until you use a thermal imaging binocular or scope you really don't know what you're not seeing, literally. At first I wasn't expecting much but you can't find what you can't see and compared to spotlighting for pests at night, thermal solutions are the way to go. Animals are not disturbed as with spotlights and more likely to be found out of cover. Hunters must still be mindful of stealth and wind when searching for game, but results are likely to be better than with a spotlight. If the

game is there and you're mindful of your hunting craft you'll find it.

Something which became obvious after using the XP50s was just how much night shooting safety is increased. I could see not just the animals I was after but stock in the background, machinery and outbuildings near to and behind the game. Compared to spotlight culling I was enjoying a safer shooting experience.

Pulsar Accolade XP50 thermal imaging binoculars are clearly a high-end and rugged 50Hz piece of kit for night-time cull-hunters. When combined with a thermal imaging scope I believe they'd be phenomenal for efficient and humane eradication of all feral game.

These are not cheap and will be out of reach for many of us. The ExtraVision website lists a retail price of \$7500 but an online search revealed Australian retailers listing them at prices which make them far more affordable.

If price is not an issue you won't be disappointed. Head into the dark bush at night with these and you've put the odds of connecting with feral game firmly in your favour. ●

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# Miroku ML Silver Edition raises the bar

John McDougall



It's always a pleasure to review the latest offering from Miroku Firearms of Japan. Miroku guns have made a huge impact since being introduced into Australia just on half a century ago, their engineering and excellent assembly with strict quality assurance meaning they're probably the best value-for-money shotgun on the market, given their reputation for reliability.

Miroku have also not been afraid to modify their offerings, for example the Invector choke system of the 1980s and '90s has been replaced by the longer Invector Plus system of choke tubes when it was decided to adopt over-bored barrels for their shotguns. Having used 0.728" barrel diameters in the early years, they introduced 0.737" over-bored barrels to prevent the crushing of pellets for improved patterns and a marginal increase in down-range velocity.

The Grade 3 walnut with oil finish used on the limited run ML 11 Silver Edition, with only 50 guns made in the production run, is something to behold. But let's take a closer look at this limited edition sporter and see what uncanny modifications Miroku have made to their latest line of shotguns, the ML models progressing from the previous MK series.

## Barrels

These are typically finished in a deep blue/black which has been a Miroku hallmark of the past three decades. Their earlier models in the Stirling range had a matte finish with a blueing colour closer to European manufacturers but more recently a semi-gloss polished surface supporting a deep blueing colouring has become the norm. From my observations this darker colouring also looks to have greater resistance to corrosion.

Manufacture of the barrels is faultless and I've never seen residual soldering salts or any other imperfections on a set of Miroku shotgun barrels - they're always perfect. The top ventilated rib is parallel throughout its length and measures 10mm. There's a white bead at the muzzle for the front sight and smaller white bead midway down the rib to help prevent gun 'canting', where the barrels are not mounted to be vertical. The purpose of the two beads is to coincide as a figure-of-eight, one behind the other, when the gun is mounted correctly and the barrels perfectly vertical.

As mentioned, the Silver Edition is fitted with Invector Plus choke tubes. These are 60mm long and the various constrictions of the four choke tubes supplied are in the specifications table. My only disappointment is that a flat choke tube key is supplied for use on a gun selling for



## Miroku ML Silver Edition raises the bar



The Miroku MK11 Silver Edition has stylish lines and superb walnut woodwork.

around \$3600. If I owned this gun the first thing I'd do is store the key away and buy a Briley speed wrench, a much-preferred design to a fiddly flat key.

The side ribs joining the barrel set are also ventilated which often helps prevent severe wind playing havoc with the gun while shooting, or to balance the weight of the barrels in respect to the overall weight of the gun. These are well regulated and

complement the overall structure of the barrels. At the chamber end the famous Browning-style two-piece ejectors expel fired cartridges well clear of the breech. Chamber length is such that the gun is suited to either 2¾" (70mm) or 3" (76mm) cartridges, while extensive jewel polishing about the monobloc is excellent for retaining lubricants.

### Receiver

This is impressive with silver inlaid ducks and pheasants on both sides. Being a boxlock gun and underpinned, Miroku have tried to improve the swing and balance by lowering the standing height of the receiver which, in effect, lowers the gun's centre of gravity and gives it a better feel of 'balance' for a smoother swing. The 30" barrels also assist in attaining this quality so the overall design of the gun is excellent.

Being an inertia trigger system gun, the second barrel can only be fired if a successful first barrel shot is taken. Trigger pulls were measured at 2.2kg for the under barrel and 1.8kg for the over barrel, 5lb and 4lb respectively, which I felt were a touch heavy as I prefer around 3.5lb for the under and 4lb for the over barrel on a full-on competition sporter shotgun.

There are three gilt triggerfeet supplied which are not only interchangeable for shooter comfort but additionally adjustable for length of pull, an Allen key also supplied for relevant adjustments and interchange of the trigger foot. Shape of the triggerguard is quite generous and complements the style of the gun and would easily enable a shooter to wear gloves when necessary.

Design of the top lever is superb, comfortable to operate and positive in its action of locking and unlocking the barrels from the receiver. Just below the top lever is the barrel selector-cum-safety catch, also well designed and adjusted for ease of operation. Sliding the catch forward puts the gun on 'safe' and the barrels can be selected, slide it rearward and you're ready to fire. U signifies the under barrel, O the over barrel and S for safe. All too easy.

### Stock and fore-end

Made from quality Grade 3 walnut the stock and fore-end match nicely in colour and grain, the tulip or Schnabel-styled fore-end well shaped while the belly filled my hand for great gun control.

Chequering about the stock and fore-end is around 18-20 lines per inch and applied faultlessly, obviously by laser-guided machine. The fore-end has a generous coverage while the pistol grip on the



Design of the top lever is perfect as the lever slides across with little effort to open the gun.



The selection of trigger 'feet' provided for shooter comfort.





Stylish engraving, great wood-to-metal fit and generous triggerguard are all positives.



Stunning silver inlays highlight perfectly the quality of the Miroku ML11 Silver Edition.



It was great to have a decent recoil pad fitted to the butt of the stock.

stock is also well covered and supports a palm swell. I found the palm swell a little uncomfortable during shooting as it was set back further than I prefer but someone with a bigger hand would be quite comfortable. The provision of a Pachmayr Decelerator recoil pad on the butt is a pleasing addition, great for positive gun mount and improved comfort, especially for 3" hunting loads.

#### In the field

I took the gun out several times for assessment. It partnered well with the Cleaver loads supplied and demolished targets at the range during practice, other shooters who fired the gun being suitably impressed. For some unknown reason the ML 11 caused me to freeze on the trigger a couple of times (shooter error) as this



Extensive chequering about the pistol grip is well appreciated.

## Miroku ML Silver Edition raises the bar

is caused by not completely releasing the trigger forward after the first shot is taken. I'd never experienced this before and that's one of the reasons I prefer a mechanical to an inertia trigger system.

In conclusion, the Miroku ML 11 Silver Edition is every bit a pedigree shotgun as many high grade Miroku shotgun models before it, the engraving and Grade 3 walnut timber with oiled finish about what you'd pay for a gun in its price bracket.

I found the Miroku ML 11 well balanced and sufficiently weighty should you decide to take it into the field for hunting. Being chambered for 76mm loadings (3" cartridges) it's obviously suited beyond 28g loads in 70mm for sporting clays, as such chambering will also enable the hunter to ply his skills with some enjoyment.

The versatility of interchangeable choke tubes is always welcome but an improvement in the choke tube spanner would seem appropriate. At \$3600 the gun represents good value and carries a five-year warranty mechanically and two-year discretionary warranty on the woodwork. ●



John McDougall tests the balance, swing and overall performance of the Miroku MK11 Silver Edition.

### SPECIFICATIONS

**Maker:** Miroku, Japan

**Model:** ML 11 Silver Edition

**Action:** Boxlock, underpinned gun jointing system with single trigger and selective ejectors

**Calibre:** 12 gauge, 76mm chambered and steel shot compatible. Bore diameter 0.738"

**Barrel length:** 760mm (30")

**Barrel weight:** 1.48kg (3lb 4oz)

**Overall weight:** 3.59kg (7lb 15oz)

**Overall length:** 1205mm (47½")

**Chokes:** Four Investor Plus choke tubes - ¼ choke 0.735", ½ choke 0.737", ¾ choke 0.717", full choke 0.707"

**Stock:** Stock and fore-end are Turkish walnut treated with semi-matte oiled finish. Test gun fitted with non-adjustable stock, drop at comb 35mm, drop at heel 55mm, length of pull 380mm

**Distributor:** OSA, Melbourne

**Warranty:** Five years on mechanicals, two years discretionary on woodwork

**Price:** \$3600



## 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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# SSAA volunteers in Parks Victoria goat cull



A group of SSAA volunteers were to the fore in a project to cull feral goats in the parklands of Victoria. The venture came together via a link-up between SSAA and Parks Victoria with expert shooters from the Association focusing their initial attention on the Heathcote-Graytown National Park over two weekends.

The 12,800-hectare park, which covers tracts of the Great Dividing Range, connects to various supervised rural areas including the McIvor Ranges and is close to the town of Heathcote and was declared a national park by the state government in 2002. It was principally decreed to safeguard waning box-ironback forests, vital in preserving the state's biodiversity.

The devastation caused by feral goats can take multiple forms so the SSAA volunteers were eager to be busy. Land degradation via soil damage, over-grazing and strip browsing are the hallmark calling cards of pest goats. The soil's top layer and its protective cover of vegetation are destroyed by the goats' hooves while the feral herds devour native plants and hamper the spread of seedlings.

The Association contingent comprised 13 members who had all completed the SSAA Conservation and Pest Management Accreditation Certificate and been issued with a Section 37 consent to carry and use firearms within National Park boundaries.

Plenty of planning had been put into

the venture with an initial data collection report on the presence of feral goats dating back to October 2009. The park remained open over the weekend with signs advising the general public of the shooting program posted at all road intersections and camping areas. Local police, Department of Environment, Land, Water and Planning and Parks Victoria crews were also kept informed.

The SSAA squad, including members of the Shepparton and Bendigo CPM branches, arrived on the Friday evening ready for a dawn start, their strategy to split into two groups, one of which used the breeze to their advantage and followed a creek bed and flanking ridge towards the only water source for miles while the rest headed for hill country.

Hopes were high from the outset and indeed several goats were downed early on as the group got off to a flier, SSAA members Kevin Currey and Rob Indrigo two of the shooters on target. "Three goats appeared out of the scrub into a sapling area and I dropped a white nanny," said Rob. "The second shot took a mottled one and my third downed another white one." On regrouping it was established 13 goats had been sighted and 10 despatched on a productive first morning.

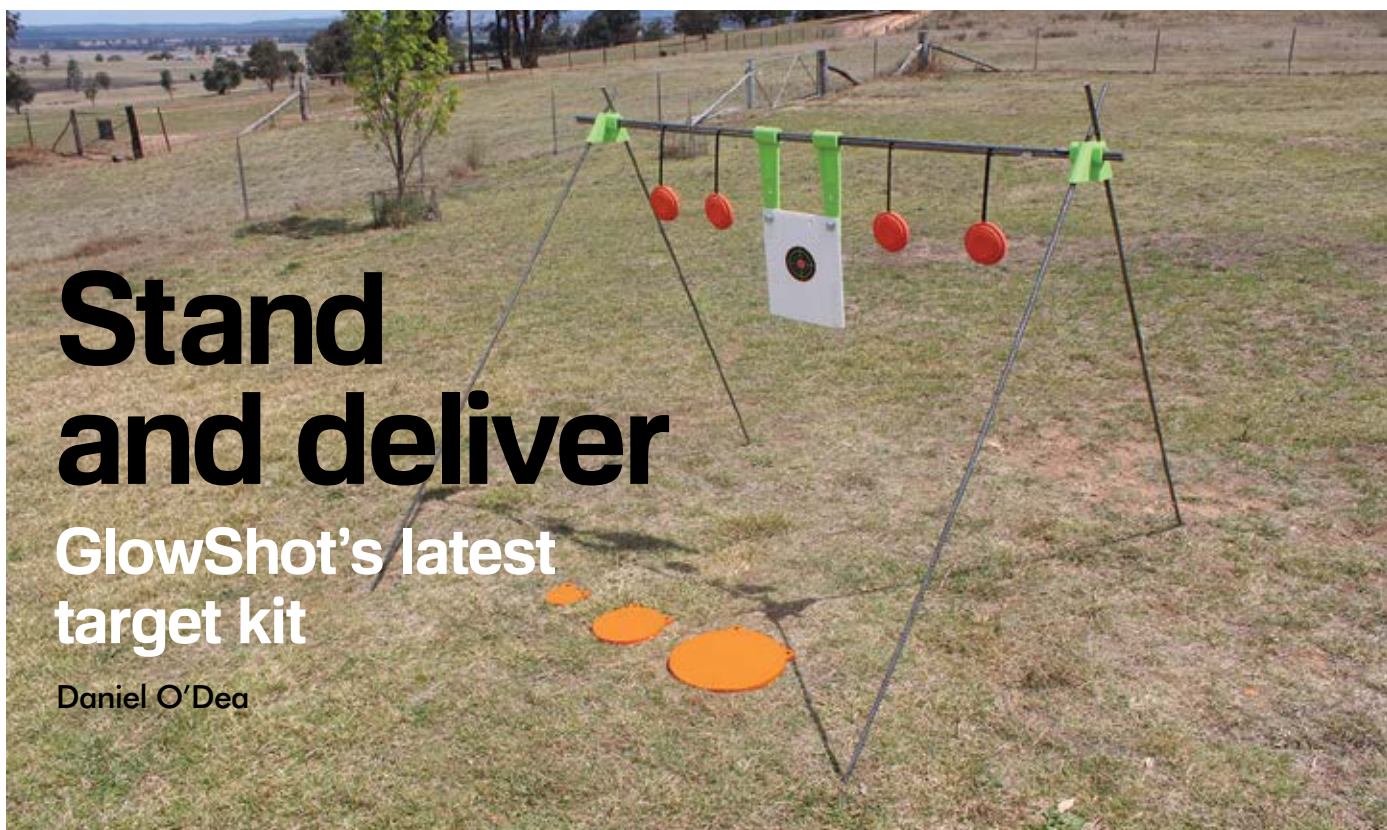
The state government department was delighted with their SSAA collaboration and impressed by the professionalism of the shooters. "Parks Victoria is really pleased



to work in tandem with committed volunteers from the SSAA and look forward to a long and productive partnership in parks throughout central Victoria and the rest of the state," said Mathew Sobey, Ranger Team Leader at Parks Victoria.

"We appreciate the time volunteers commit to programs such as this one in the Heathcote-Graytown National Park, where the work they're doing contributes to protecting the habitat of endangered species like the brush-tailed phascogale and swift parrot." ●





# Stand and deliver

## GlowShot's latest target kit

Daniel O'Dea

**G**lowShot are well known for their great range of reactive paper targets, the ones that, when shot, expose the point of impact in different bright fluoro colours depending on the scoring ring impacted. Available in both adhesive and non-adhesive versions they make accessing target impact, especially at distance, a lot easier to observe and identify.

Other GlowShot products include their caltrop-shaped .22 Flipping Jack reactive steel target which jumps and rolls when shot, always landing with one target paddle upright and providing hours of fun if you have a pair to race over a paddock against a mate using .22 rifles.

They also have handy clay target hangers, metal strips that clip over the edge of a clay target allowing you to string them from a wire or whatever is practical and safe. I've previously reviewed all the above for these pages with great results so was interested when *Australian Shooter* was offered the company's latest offering, the GlowShot Last Stand target stand kit.

With the popularity of longrange shooting ever growing in Australia, more and more shooters are looking for easy ways to rig up a portable target system that can be taken afield for basic target shooting and

sighting-in or set up for engagement over an extended range using reactive steel gongs or similar.

Over the years I've not only reviewed several different commercially available target systems but have designed and built a few of my own and came to the conclusion there are a series of issues that need to be overcome or compromised in developing such target systems as follows.

1: Components need to be easily transportable both in size and weight; 2: System should be easy and simple to assemble; 3: The fewer parts and tools required the better; 4: Sacrifice components such as frames and hangers should be cheap and easy to replace as they will be hit at some stage; 5: It should be able to be set up on uneven or sloping ground.

Looking closely at this kit I could see straight up it was pretty much going to tick all those boxes. The system uses six lengths of readily available 12mm 'Reo Rod' or 'Rebar' (steel rods used in concrete reinforcing) which can be found at most hardware stores or steel merchants. This along with the kit itself contains the GlowShot 'self-healing' target frame brackets and plate hangers, a 100mm x 12mm AR500 round steel gong, a couple of mounting bolts, 250mm target backer (corflute) for

use with paper targets and four GlowShot adhesive targets.

To item one on the checklist and the kit arrived with basic frame and hanger package weighing just a little over 2kg including the 100mm gong. That ticks the transportability box even considering the rebar which while a tad awkward in length (I use 1800mm lengths) bundle together well and weigh little. Larger 12mm AR500 steel gongs of 200mm or 300mm diameter are also available which would increase the weight but are no less portable in the scheme of things.

Moving to items two and three on the checklist, the frame kit contains two triangular brackets the rebar threads through to create basic A-frames which are joined by two lengths of rebar with the hangers threaded on to form a crossbar. You can then either hang the steel gong or target backer on the hangers using two cup-head bolts.

Nothing could be simpler in design or easier to assemble. So we have two brackets, two hangers, two bolts, a target/gong and six lengths of rebar - 13 items all up and only one spanner and perhaps a mallet to bang the rods in the ground. Few parts, few tools. Tick.

As far as sacrifice items, the 12mm rebar presents a very small profile for accidental





The GlowShot Last Stand target stand kit uses minimal parts and just a couple of tools to assemble.



At the heart of the kit is GlowShot's self-healing ballistic rubber polymer target frame brackets.



The kit can be set up on sloping ground by adjusting the length and angle of the rebar legs.



Often the slope of the target is not perpendicular to the shooting position, not a problem here at 300m.

bullet strike and being round is likely to deflect or deform more so than immediately fail if hit. Likewise it can easily be replaced and at time of writing 1800mm x 12mm rebar lengths were \$7.19 each from Bunnings which isn't even the cheapest way to buy them as they're less expensive in up to 6m lengths and most tradies will find leftovers on building sites. Hanger bolts are also cheap and easily replaced.

The GlowShot frame and hanger components are made of 'self-healing ballistic rubber polymer' which as the name suggests magically appears to heal itself as bullets pass through, although it's advised that hollow-point projectiles should be avoided. Either way this item is not intentionally going to be shot at and is designed to withstand multiple accidental bullet strikes. Tick No.4.

When it comes to setting up, most portable target systems I've encountered use either an A-frame or flat-base stand of some description. Naturally flat-based target stands only work on level ground and while some A-frame designs can be adapted for sloping ground, quite often they'll only work if the orientation of the shooting position is perpendicular to the slope.

Having a property in the ranges has taught me topography is a twisted beast

and hillsides seldom slope in the direction you want when setting something up. The GlowShot system can be set up on any slope or angle, regardless of orientation, simply by adjusting the legs accordingly, thus ticking the last box.

I set the kit up with a little help from my son on flat ground outside our farmhouse for a trial run before heading for the range to really test it. There I chose a location 300m from my shooting shed on uneven ground which slopes steeply away from the shooting position and set the whole thing up myself just to see how easily it can be done if flying solo.

Dialling the correct elevation into the Zeiss scope on the TSPX-stocked Howa rifle in 6.5 Creedmoor, I went on to hammer the plate with about 20 rounds using Hornady 147gr ELD projectiles. The AR500 12mm plate sucked up punishment as projectiles totally disintegrated on impact leaving nothing but a tell-tale lead smudge, no dimpling or cratering to speak of.

Shooting steel is lots of fun, especially at distance, and although 300m was a challenge for the rifle I was using, you never tire of the sound of ringing steel. One thing I noticed was how the flexible rubber target hangers, after a quick twisting dance on impact, swiftly threw the gong back into position to

present for another shot. I have a rifle plate rack with five 250mm hanging plates on heavy chain which, when hit hard, swing back and forth like a pendulum for some time.

I'd note that using such a system and shooting steel in general should always be accompanied by a couple of safety warnings. For high velocity rifle rounds always use steel targets (like GlowShot) made from AR500 grade steel or equivalent. If the steel maintains its integrity, bullets are more likely to disintegrate on impact leaving little to rebound or ricochet. Soft steel targets that dimple and crater heavily are more likely to deflect splatter or rebounding flak. Most importantly always set a safe distance and GlowShot recommend a minimum stand-off of 200m with centrefire rifles.

Another consideration is lead itself as both target and frames will be exposed to fine lead particles as well as lead and jacket spall. I noticed some small sharp pieces of jacket actually imbedded in the polymer rubber of the frames and would also note the rebar itself can carry sharp burrs so gloves would be a good recommendation. Lastly, wash hands thoroughly after shooting, especially after any form of possible lead exposure. More at [glowshot-targets.com.au](http://glowshot-targets.com.au) ●

# Shot in the dark

## SiOnyx Aurora day/night camera

Mark van den Boogaart

**A**dvertised as the world's first day/night camera with true night vision, out of the box the SiOnyx Aurora is a compact unit with similar appearance and shape to a handycam-style video camera. For your hard-earned dollars, along with the camera comes a start-up guide, drawstring carry bag, rechargeable battery, carry strap and USB charging lead. For detailed instructions on the unit's operations and use, head online to [sionyx.com](http://sionyx.com) where you'll find a number of resources to help you learn a lot more about it.

First impressions of the Aurora are it's compact, lightweight, well constructed and finished to a high standard. Reinforcing the quality and feel of the unit, the Aurora carries a stated IP67 water resistance rating or, put simply, can withstand being submerged to a depth of 1m for 30 minutes so is fine for normal outdoor usage.

With external dimensions of 12cm x 6cm x 5cm, a compact front lens and weighing 325g, the small rectangular unit fits neatly

in your hand and with the majority of controls within easy reach it's pretty much a one-handed operation, providing you're right-handed.

Looking more closely, some of the basic design features of the Aurora just make sense. For instance, the unit is powered by an easily replaceable re-chargeable battery while memory is via interchangeable SD cards. Now, while using replaceable batteries and memory cards make the Aurora more user friendly, after a few minutes of exploring you quickly realise it has a lot more to offer.

### Features

The most obvious feature is the Aurora's ability to shoot 720P colour video and 1MP colour still imagery at night. This is down to use of the SiOnyx XQE CMOS image sensor. SiOnyx are understandably proud of the performance of the proprietary ultra low-light semiconductor technology that sits at the heart of this unit.

The sensor has a resolution performance range of 1280 x 720 pixels. On paper this appears to make the Aurora a little outgunned when compared to more modern cameras on the market but the science behind using less, larger-pixel resolution is its overall ability to better capture light. So while the Aurora is not a standout in daylight image capture, at night it jumps significantly in viewed performance.

In terms of optical specifications I found the Aurora's 16mm fixed front lens much more usable than the typical wide-angle lens of a Point of View-style camera. The more standard Field of View worked well with the 3x digital zoom in providing ability to zoom in on more distant shapes and objects while still being wide enough to stop it feeling like a telescope or monocular.

While the digital zoom brings the images closer, focus is via a manual adjustment ring which has a short throw so you can adjust and readjust quickly. The viewfinder eyepiece also has a focus function



Test rig which would make a useful day and night set-up.



which again helps set up the camera to your personal specifications. The viewfinder display is also worth a mention as looking through, not only do you see information on the shooting mode, there's extra detail including current time and compass direction.

A sign of a well-considered piece of equipment is you should be able to improve performance as you become more familiar with its operation and the good news is that behind the physical attributes of the Aurora, there are a number of useful settings which let you do just that.

For instance, it comes with three shooting modes and a further range of night-time colour options. As a still image camera it features shutter speed adjustments, a variable burst mode, adjustable timer function and time lapse, along with pre-set panorama, landscape and portrait settings. In video mode the unit boasts image stabilisation and an adjustable video frame rate of 7.5 to 60 fps.

### Field testing

To test the still image night vision capabilities of the Aurora (this is a print magazine), I decided to compare it to my DSLR D7000. It's my go-to camera and has taken thousands of magazine-quality images during its working life. Both were set up on a tripod and for the Aurora I followed SiOnyx's advice for night shooting. It suggested I use greyscale for best results but I choose the colour setting as that's what I really wanted to test. For the Nikon I used a manual setting, slowed down the shutter speed, tried to find the best balance with the aperture setting and dropped the ISO rating to 100.

The testing ground was my local creek, tree-lined with plenty of overhead cover and very little visible light. The standard DSLR required a light source just to focus while the Aurora gave a colour mosaic image both with and without a light source.



Test light this time via the Aurora on Night Colour setting.



Creek bed without test light on the Greyscale setting.



Creek bed without test light on the Green setting.



The compact SiOnyx Aurora night-time video and still colour camera as supplied.

#### Wrap-up

Pros: Night-time image quality, one-hand operation, tuneable features. Cons: Daytime image quality, no real carry case or lens cap, not left-hand friendly.

As a colour night-vision camera the Aurora is a very capable night-time still and video device. Its colour functionality is a real point of difference and while not a mil spec, Gen 3 and night vision monocular, it certainly can be used as such. For those looking to capture video at night, in the bush, on the beach or in the boat, the Aurora provides a reasonably priced unit that can deliver some very impressive night-time video and still imagery capabilities.

Lightweight and easy to use, the Aurora would be a welcome addition to the hunter, fisher and outdoor enthusiast who likes to record their experiences. Recommended retail price of the SiOnyx Aurora as supplied by Night Vision Australia is \$1399. ●

## Get me a gun bag - and make it snappy!

Looking for a gun bag with a difference? Then here's one that definitely fits that bill - made from the tail of a saltwater crocodile! It's the brainchild of Danny Wickham of Australian Firearms Collection, the only place you'll find this unique item.

Danny told *Australian Shooter*: "Ever since I was young I've had a passion for all things firearms and hunting. In 2015 I started work on my own wildcat calibre cartridge - the 50 NT - a .510" bore diameter cartridge which could accept .50 safari calibre projectiles (440 to 535gr) and could also use .50 BMG projectiles.

"It was around this time I realised the tail of a large crocodile would make a collectable gun bag, especially if styled to look like the tail of a croc and not an actual gun bag. The design I thought best was for the tail to look as normal as possible, retaining its shape outside

as well as its round shape inside." Danny took his idea to a Darwin leather craftsman who agreed to make the bag and almost 18 months later the prototype was completed. Said Danny: "Several people found its design quite intriguing and expressed an interest in the bags being made available to the public."

The one-of-a-kind croc tail gun bag comes with an authenticity tag from the Department of Parks and Wildlife, proving the animal was caught legally. The bag in our photograph was handmade in Darwin from a locally-caught crocodile measuring 3.6m, the inside size of the bag comparable to that of a regular medium-to-large gun bag.

The original is available to buy for \$17,700 including shipping and insurance from [australianfirearmscollection.com](http://australianfirearmscollection.com) from where you can also contact Danny by email if interested in further details. ●



Danny Wickham with the original croc tail gun bag.





Unfinished TSP X chassis stock assembled and in component parts.

# This is getting personal

## The TSP X chassis system

Daniel O'Dea

In recent years the popularity of modular chassis-style rifles has been ever-growing. For many they offer the next progression of firearms development as traditional timber stocking has transitioned to modern synthetic polymers and now composite alloy chassis. For others the appeal of modularity and the ability to adjust, adapt and personalise their rifle has been the driver of demand. For some they just look cool.

From an industry standpoint in the world's largest firearms market, the US, the concept of the 'Barbie' or 'Lego' gun has been long-standing as it was realised consumers love the ability to effectively 'build up' a rifle to their own specifications. Likewise, it was apparent that creating DIY modular platforms which allowed such personalisation without trade gunsmithing as such, wasn't only desired but very profitable as it promoted sales of multiple bolt-on options and accessories.

For rifles, no better examples of this are evident in the US than the Ruger 10/22 and ever-popular MSR platforms (Modern Sporting Rifle, AR15 variants). Arguably

the Ruger 10/22 was the first and earliest to exploit this concept. Even in pre-1996 Australia when this handy little .22 self-loader was very popular, there was an absolute plethora of parts and accessories available to jazz up your 10/22, from handle and mag release extensions to muzzle brakes, ventilated hand guards, various stocking options and so on.

By nature of design self-loading firearms are modular and well suited to the concept, bolt-action firearms not so. The advent of the chassis rifle changes that as although built around a conventional 'bolt action' barreled action, it allows much more flexibility in modification than traditional stocking options.

In a rather unassuming factory unit in Sydney's south western suburbs, you might be surprised to learn an Australian small business has been making significant inroads in the manufacturing of such chassis systems for bolt-action rifles. Readers may be familiar with the Howa APC or Australian Precision Chassis rifle, marketed and sold in the US by Legacy Sports and in Australia by Outdoor Sporting Agencies.

Enjoying great success, the Howa APC rifle is in effect a Howa barreled action mated to a modular chassis made here in Australia by Southern Cross Small Arms as the OEM (Original Equipment Manufacturer) for Legacy/OSA. Although primarily sold as a complete rifle, the Howa APC is a truly modular design in that it uses an AR-style buffer tube and pistol grip allowing for fitment of any standardised MSR stocks and grips as well as having a tubular M-Lok compatible fore-end for accessory fitment. OSA also have the complete standalone APC stock catalogued for those wishing to upgrade their existing Howa rifles as well as a version inletted for the Lithgow Arms LA102.

I recently gave my go-to farm rifle, an older Howa 1500 in .223, a new lease of life by dropping the barreled action into a Howa APC chassis, a relatively easy process of unscrewing the two action screws, removing the stock, triggerguard and magazine housing then setting the old stock aside and reassembling the rest back into the APC. You can use the standard bottom metal though in my





This is getting personal



An APC chassis-stocked Lithgow LA102.



Transformation from raw billet to finished prior to coating the main components - stock, inlet and fore-end.



TSP X chassis components at various stages of completion.

case I'd already converted to a detectable 10-round magazine with a Howa magazine conversion kit.

Expanding on the range and complementing the APC, Southern Cross Small Arms have just introduced a brand new chassis of their own design which will also be distributed by OSA. The TSP X is significantly different to the APC and importantly will be available for a greater range of donor barrelled actions. Starting with three variants at launch, the TSP X will be available for Tikka T3, Howa 1500 and Lithgow LA102 and I understand a Remington 700 version is also in the wings.

Keen to find out more about the TSP X chassis system I had the chance to visit Southern Cross Small Arms to learn about the product and its manufacture first-hand. Like the APC the TSP X is a modular, component-based design, but in this case more a proprietary system than relying on standard MSR components (no AR-type buffer tube or stock for instance). Each component is precision engineered in-house and supplied as a kit to be assembled by the owner.

There are three main components in the stock, fore-end and chassis inlet which combine with the grip/magazine and

forward magazine sub-assemblies to build the main skeleton. Other minor components such as the kick pad, cheek riser, bolts etc are also provided.

Each component starts life as a billet of aircraft-grade 6061 T-6 aluminum which is mounted on the tombstone of a multi-axis CNC machining centre to begin the series of operations required to complete each unit. Southern Cross Small Arms has multiple state-of-the-art CNC machining centres specifically set up to complete each of the required steps.

Once precision machining is complete, components are processed through what





Differences may be subtle but important in the chassis inlet between models - Tikka T3 inlet (top) and Howa 1500.



The TSP X stock has an adjustable comb for height and yaw.



The TSP X fore-end has two QD cups for sling mounting and M-Lok slots on three sides.



Selection of TSP X Chassis rifles at the Southern Cross Small Arms factory.

appears to be the world's biggest case tumbler before being anodised, components inspected along the way for quality control and tolerances kept to a tight standard. From a manufacturing standpoint the design is quite ingenious in that one main component, the chassis inlet, is what dictates which rifle variant the chassis will ultimately be for with all other components interchangeable.

Components are bolted together using hi-tensile hex head bolts with the main three recess lugged for added strength and precise alignment to a gapless precision. Besides the bolt heads only a fine line indicates the location of each joint. The basic profile of the stock is rather conventional, albeit of a pistol grip design featuring a 'fixed' but adjustable stock and a non-shrouded barrel/fore-end.

The grip/magazine assembly uses a standard A2-style pistol grip which comes supplied and as such can be swapped out for any MSR compatible grip such as by Magpul or similar manufacturers should you wish to further customise. The same sub-assembly incorporates the triggerguard and a large, fully ambidextrous magazine release.

The magazine release sits inside the triggerguard at the front of the bow and is

easy to operate by simply extending your trigger finger. The system uses standard AI pattern magazines for all variants, with original Accuracy International magazines recommended. I'd note, contrary to popular belief, there is variance between different manufactures of AI pattern magazines so fit and function can likewise vary, hence the recommendation.

The buttstock is skeletonised in a triangular pattern which is strengthened by two vertical braces that double as columns for the adjustable cheek riser struts, two small screw levers providing the locking for these adjustment struts. The cheek riser itself is polymer, mounted to a machined alloy block that contains the struts, the cheek rest section attached to the riser block with hex bolts again and allowing for about 5mm of left/right or 14 degree of yaw adjustment for the cheek rest.

Two small rubber O-rings, one on each strut, provide an effective zero stop for the riser, simply slide the O-rings down the struts when fully extended then push down the cheek rest to the desired position. The O-rings will run along the struts with friction fixing them in the set position and with the cheek rest removed for cleaning the O-rings mark the position at return.

Machined clear through the heel



TSP X grip adapters during one stage of the CNC machining process.



An operator checks progress at one of the CNC machining stations.



Sharp edges are removed in what looks like the world's biggest case tumbler - note 10-round Al magazine on top for scale.



Daniel's old Howa .223 farm rifle reborn in a Howa APC chassis (top) and sneak peek at a TSP X chassis build detailed next month.

of the buttstock is a QD attachment point for operation on both left and right sides, the butt itself finished with a thick rubber kick pad generously packed with spacers for length of pull adjustment. The fore-end features M-Lok anchor slots for compatible accessories with five slots on all three surfaces at 90, 180 and 270 degrees. There are also two reinforced QD cups, one at the fore-end tip and one to the rear of the fore-end just forward of the magazine well, bringing sling attachment points to a total of four prior to using any of the available M-Lok slots.

The TSP X system provides a very solid bedding platform where the action recoil lug is clamped into position during installation.

The method for this varies slightly between the Howa action with its fixed recoil lug and the Tikka or Lithgow with their floating recoil lugs systems. Of course, being aluminum, the chassis/stock system is also totally inert and remains impervious to climatic conditions.

The Southern Cross Small Arms TSP X chassis system looks a well-featured chassis stock design that's both ergonomically functional and visually pleasing. Not only that, at a recommended RRP of \$795 it represents good value too. More info and dealer list at [scsa-au.com](http://scsa-au.com) or [osaaustralia.com.au](http://osaaustralia.com.au).

• Next month we'll use a TSP X chassis in our 'how-to' chassis rifle build. ●

## TSP X Chassis system specifications

|                          |   |
|--------------------------|---|
| <b>Available for:</b>    | Howa 1500, Tikka T3 and Lithgow LA102 short action rifles, with long action and other rifle variants in development |
| <b>Material:</b>         | 6061 T-6 aluminum billet  |
| <b>Finish:</b>           | Durable black anodized coating  |
| <b>Bedding:</b>          | Free floating with unique recoil lug clamp design   |
| <b>Weight:</b>           | 1.97kg (4.1lb)  |
| <b>LOP:</b>              | 25mm/1" of adjustment   |
| <b>Cheek rest:</b>       | 28mm/1.1" vertical and 14° yaw adjustment   |
| <b>Forend:</b>           | M-Lok compatible, five slots at 90°, 180° and 270°  |
| <b>Sling attachment:</b> | QD sling cups in four positions   |
| <b>Magazine:</b>         | Al with ambidextrous release  |



# Do the twist

## Know your barrel rate needs

Steve Hurt

Ever since it was realised in the 16th century that spinning a rifle bullet stabilised it and improved accuracy, engineers and riflemen have wondered how much a bullet should be spun to obtain best results and the first person recognised for developing a general rule was Sir Alfred George Greenhill, Professor of Mathematics at the Royal Military College, Woolwich in 1879.

Greenhill's work was a milestone, providing a framework for manufacturers to produce firearms and ammunition that would function well together within constraints of the technology of the day. This work was followed a few years later by some clever mathematicians in Le Gavre, France using Colonel Francesco Siaci's methodologies to develop what we know today as the G1 Ballistic Coefficient standard. The relationship between a bullet's stability (Sg) and flight efficiency (BC) were only beginning to be explored and research continues to this day.

Recognising the valuable contributions made by people such as Robert L. McCoy, Don Miller, Michael and Elya Courtney, Bryan Litz and many others is beyond the scope of this article, but we should be ever grateful for the wonderful work these people have done and contributions they made and continue to make to our understandings. For a layman looking for easy guidelines in selecting the perfect twist, any simplification comes with a number of qualifiers but this article will attempt to provide them within the modern context.

Bullet stability is the foundation of everything a shooter is trying to achieve - accuracy, flight efficiency and terminal performance are all in some way dependent on it. Don Miller produced his first stability model in 2005 and it has been under constant development and refinement ever since. For non-mathematicians this incredibly helpful guide can be easily applied by downloading it from the accurateshooter.com website (search 'Miller Formula'). To find out what bullet is best for a particular barrel twist, type in the bullet's calibre, weight, length and expected velocity. Other variables for changing standard atmospheric



conditions are options but not necessary for first-time users seeking general guidance. The Miller Formula is an excellent guideline but it comes with a trio of caveats.

The first caveat: The work of the Litz Applied Ballistics team has established a new baseline for stability which is currently 1.5, uplifted from the 1.4 benchmark previously established by McCoy. According to Litz, for every 0.1 that stability falls below this mark there's evidence to support a discount to the bullet's optimal BC by around 3 per cent through increased drag. So your bullet with a theoretical or ideal BC would be discounted by roughly 9 per cent if your launch stability is only 1.2 and when stability falls below the reference point of 1.0, stability is lost altogether and the bullet will tumble. Deteriorating atmospheric conditions will accelerate this degradation so it's best to be conservative by using standard metrics initially.

The second caveat is that the first version of the formula, the only one automated for general use, assumes the bullet is similar and consistent throughout its structure which is fine for most jacketed lead and some copper hunting bullets. Without going into a long and technical discussion, this version of the formula appears to underestimate the stability of open-tipped match bullets by around 5 per cent and this should be accounted for in any consideration (Courtney - BTG Research).

**If you wonder why 308 Win barrel twists have accelerated from 13" (old SAAMI standard) to 12" then 11" in Europe and 10" in the US, consider the length of these 135gr and 160gr projectiles. The 215gr (right) is designed for the 300 Norma in 7" twist. Running 300 AAC Blackouts at subsonic velocities requires faster twist rates to stabilise bullets, even with mid-weight projectiles, due to low muzzle velocity.**

The third caveat: Plastic tipped bullets should only measure the length of the metal component, not the plastic tip. This isn't especially helpful if the manufacturer only publishes total length and you're trying to do your homework before making a purchase decision. I can imagine the look on a dealer's face when you ask to open a box and pull out your Vernier. These rules of thumb are not absolute but you'll be surprised how close they'll get you to the mark.

### Twist rate misconceptions

1 - Describing barrel twist: The common way to express a barrel's twist rate is in inches per rotation. A 1-in-10" twist rotates one full revolution in 10 inches. If a bullet does one full rotation in 9" it's spinning faster - the smaller the number the faster the barrel twist.

2 - Under-stabilising vs over-stabilising a bullet: In the early days of jacketed lead bullets, tolerances were not what they generally are today. Traditionally a gilding metal (brass) jacket is formed, >

## Do the twist

a lead core dropped into the cup then swaged into the required shape. Should an air pocket form between cup and core the bullet will be unbalanced and you can't know before it's fired. We call these flyers.

Slower twist barrels may reduce the magnitude of this imbalance though this paradigm is for the most part no longer relevant as modern production technologies have largely resolved this issue and it will only manifest itself if you're in the habit of using cheap 'seconds'. Litz research claims it's almost impossible to over-stabilise a quality bullet. A bullet that's marginally stabilised (Sg 1.2-1.5) is less likely to produce great outcomes depending on range and, by inference, not worth the risk.

3 - Are specific twist barrels designed for specific bullet weights? This rule may have been helpful once but not now. In pursuit of ever higher BCs, bullets are often longer for weight than they traditionally have been and the use of lighter copper and copper alloys are longer for weight again. Both types require faster twist rates to stabilise a similar-weight bullet.

4 - Do faster twist barrels produce lower velocities and wear out more quickly? There are many opinions on this but very little evidence to support either assumption. Faster twist barrels can be either faster or slower for many reasons, but research to date challenges this assertion and it's extremely difficult to isolate these variables for testing.

Anecdotal tests conducted by the Applied Ballistics team showed a velocity drop of around 3fps in roughly 3000 for test results provided (Litz - Modern Advancements in Long Range Shooting). This figure is so small as to be not worth considering if we're contemplating going from an 11" twist to 10" and as for going from a 14" to 7" I'd like to see the evidence. Regardless, if I want to shoot a high quality bullet to the limit, the choice of appropriate twist barrel is required.

Barrel wear is far more heavily dependent on the coefficient of friction (CoF) of your bullet. Longer bullets tend to have more bullet-to-bore engagement and therefore greater CoF, tend to be heavier, be fired from larger cartridges and use slower powders all of which will have a much greater influence on throat wear than any acceleration of twist could ever produce.

5 - What to do if multiple projectiles with different twist rate requirements are intended: This is a relatively simple one for hunters - use a barrel twist which accommodates the longest bullet you intend using. Provided you're using high quality bullets that would otherwise



Measuring barrel twist is relatively easy and requires only basic equipment.



Remember when the 223 Rem came standard in a 12" twist? Varminters can still order the old standard but 9" and 8" twist barrels are now far more common, enabling the use of higher BC projectiles for broader application.

require a slower twist rate, there should be no loss in accuracy.

For target shooters the great variable here is not the barrel's twist but its nodal point for accuracy. This is more heavily dependent on the nuances of the particular bullet, cartridge, barrel chamber and length. Finding a range of bullets that will all find the nodal points in a particular barrel before you burn it out is a huge challenge so it's better to limit bullet selection in this case.

6 - How do I find what my current barrel twist is? Most rifle manufacturers now publish barrel twist rates and some have options to choose from. Commercial barrel tolerances aren't always as close as we might like so a conservative approach to bullet selection would be helpful here. If you still can't find any information you can measure it yourself as follows.

|                 |   |
|-----------------|---|
| Calibre         | 0.264 inches                              |
| Bullet weight   | 115 grains                                |
| Bullet length   | 1.315 inches                              |
| Barrel twist    | 8 inches/turn                             |
| Muzzle velocity | 2850 fps                                  |
| Temperature     | 59 degrees Fahrenheit<br>(59 is standard) |
| Pressure        | 29.92 inches of mercury<br>(29.92)        |


Sg= 1.60

\*Sg shouldn't be less than 1.4. If Sg is greater than about 2.0, you may gain some accuracy by going to a slower twist barrel.

The automated Miller formula downloaded from [accurateshooter.com](http://accurateshooter.com) - remember to use the minimum 1.5 base line value, not 1.4.

Make sure your rifle is unloaded and remove the bolt. Take a rotating cleaning rod with a reasonably tight patch and carefully insert it about 100mm into the barrel from the muzzle end. Place a piece of masking tape at the handle end and mark top dead centre (TDC). Place another piece of masking tape on the rod where it meets the barrel and slowly push the rod until the marker near the handle returns to TDC and place another piece of tape on the rod against the barrel. Remove the rod and measure the distance between the leading edges of the tape and you now have a pretty good estimation of your barrel twist. Confirm this by repeating the exercise a few more times and you've something to work with. Now boot up that Miller spreadsheet and choose your bullet. ●





This 220 Swift has a fast-twist 26" barrel to extract the most ballistically from longer, heavier projectiles.

# Mr Versatile

## adapting that .22 centrefire rifle

Paul Miller

Australians have a fondness for 22 calibre centrefire rifle cartridges, the most well-liked factory loads including the 222, 223 and 22/250 with the 223 by far the biggest selling centrefire cartridge according to my sources - and rightly so. It's a well-balanced cartridge that covers most bases when used on small game, while for medium game it's pretty marginal as most of the projectiles available in factory ammunition are designed for thin-skinned creatures like rabbits and foxes.

These bullets are intended to be explosive so are far from ideal for larger, tougher game and with the 223 often used in farm rifles, sometimes this means asking more of these factory-loaded projectiles than what they were originally set out for. There has been some interesting work done with the 224 calibre using faster twist barrels and it probably started in the target shooting fraternity who found that a 223 (military 5.56) with a fast 1:8" twist barrel actually shot longer, heavier bullets a lot flatter over competition ranges out to 1000 yards than the standard military 7.62, known in civilian guise as the 308 Winchester.

The advantage of the 223 was much lower recoil therefore less fatigue in competition. The 7.62 or 308W has more recoil and is costly to shoot and if this was true at the range the same should apply hunting in hills and paddocks or under spotlights. You can't compare the 223 and 308 as game cartridges as they're worlds apart in terms of projectile weight and energy figures but the point is relevant in competition, shooting at paper targets.

It was Greg Matthews who alerted me to this phenomenon with his excellent articles in earlier editions of *Australian Shooter's*

*Journal*. The only problem from a hunter's point of view in those days was a complete lack of stoutly-built projectiles in 22 calibre designed to take medium-sized game. Sierra have their long 22 calibre MatchKing target projectiles in 77gr and 80gr which are extremely accurate and work perfectly in fast-twist barrels, but are not recommended by Sierra for hunting. Nosler made a 60gr solid base which worked a treat if your slower twist barrel stabilised them.

In recent years we've seen more powerful 22 centrefires in some US states (where legal) for game up to the size of small deer. This was frowned upon on by many gun writers until the Swift Bullet Company introduced their amazing Scirocco bullets in 62gr and 75gr with a much tougher jacket and big game bullet construction - load these in your 223 and it's a whole new ball game.

There are also suitable projectiles now from Nosler, Barnes and Hornady but the Swift Scirocco is what I've experimented with on targets and game. Load these long, heavy calibre projectiles in your 22/250 or 220 Swift and you can end up with more downrange performance than the factory 243 Winchester and 6mm Remington with similar weight bullets - hard to believe but true.

This improvement in performance relies on the shooter being a handloader and a bit of a ballistics enthusiast. There are few if any factory 22 calibre loads available in Australia with long, heavy projectiles and high ballistic coefficients (BC) suited to humane hunting of medium game, anything that might be available probably only in 223. It really is reloading territory if you want to experiment and there's nothing tricky about the process, just a matter of finding a good



Goats are easily handled by fast-twist 22 centrefires with Scirocco game projectiles.

reloading manual or two that cover your favourite 22 centrefires with data for longer, heavier bullets in the 62 to 80gr bracket.

You'll also need to re-barrel from your conventional 1:14" to a faster twist to stabilise these bullets or buy one of the rifles being imported by the likes of Beretta Australia with a 1:8" barrel twist. I had my friend Robert Tobler of RDT Products in Robertson, NSW make me a 26" stainless medium weight barrel, chambered for the standard 220 Swift with a fast 1:8" twist rifling for a left-handed Remington 700 BDL rifle chambered in 30-06 that I rarely shot. ➤



The essential 1:8" twist Tobler Stainless steel barrel makes the concept of longer calibre bullets viable.



## Mr Versatile

I soon learned to be careful what bullets I used as anything with a thin jacket was likely to vapourise in flight at top Swift velocities. I tried Sierra 77s and 80s which were great but then I read an article in a New Zealand magazine by Peter Clarke about optimising the 22 calibre and went in search of the bullets he recommended. The facts presented and number of successful long-range shots he was taking at feral goats and smaller deer were so compelling from the 223 through the 22/250, 22/250 Ackley Improved and up to the freakishly fast 22/6mm Improved, I thought I better dust off the Swift.

Tony Saros at Beretta Australia sent me a packet of 62gr and 75gr 22 calibre Scirocco projectiles. My Swift would provide the upper end of the speed and energy performance curve and while I hadn't access to any wildcats like the 22/6mm Improved or 22/284, the Swift is roughly equivalent to the 22/250 Ackley Improved and can be relied upon to come within about 200fps of the 22/6mm and, theoretically, provide a longer barrel life than the top end 22 wildcats with their reputation for burning out barrel throats quickly.

I worked up loads carefully approaching the maximum shown in my reloading manuals then used the Hornady ballistic program to see what the approximate ballistic performance should be, given certain speeds and high ballistic coefficient of these two projectiles. This research confirmed the energy and trajectories from the NZ article and I was suitably impressed.

The most interesting part was the dramatic lift in performance of the 223 and particularly the 220 Swift, which can be achieved by anyone prepared to use a custom barrel for their 22 centrefire or buy a rifle in 223 with a 1:8" twist barrel off the shelf and reload using these high performance projectiles. Unfortunately there are no fast twist 22/250s or Swifts available in factory rifles I'm aware of, but this may



Heavier bullets like the Swift Scirocco transform centrefire 22 cartridges with fast-twist barrels. Nosler Solid Base were probably the first bullets designed for game rather than varmint use.

change if manufacturers see demand for these specialised outfits.

The 62gr and 75gr loads worked like lightning on foxes and goats, only one shot ever needed and I was amazed at the flat trajectories and downrange punch. I think the combination of 220 Swift with 75gr Scirocco projectiles has created the perfect long-range fox or feral goat rifle where optimum performance with minimal recoil is an advantage for more precise shooting. This style of hunting rarely involves rapid fire unless you come across a mob of goats, so barrel life is greatly enhanced. The same could be said for the 22/250, 22/250 Improved or the 22/6mm or 22/284.

The 223 with a fast-twist barrel and loaded with these heavier projectiles designed for game can only afford better results at closer ranges. Looking at the table you'll see that

driving a 75gr Swift Scirocco at 3200fps in a 223 actually has equal energy at 300 yards to the sensational 220 Swift propelling a 55gr Nosler ballistic tip at 3700fps.

The 223 has a closer 200 yard zero but it's the energy figures which are relevant in this comparison. The Swift is much flatter shooting but the energy delivered out to 300 yards by both cartridges makes you think about how effective a heavier streamlined bullet with high ballistic coefficient can turn the tables on a faster cartridge with a lighter, shorter bullet with much lower BC.

The 220 Swift has light recoil, superb accuracy and a laser-like trajectory even with these heavier projectiles, so your confidence levels are enhanced and a great cartridge can do double duty as a varmint and harvester of medium game.

With sensible care these barrels should



High-quality 22 cal bullets for varmints and game - Sierra 55gr BlitzKing, Sierra 69 and 77gr HPBT Match, Scirocco 75gr and explosive Hornady 40gr V Max.



The Swift Bullet Company provides two exceptional bonded bullets called the Scirocco II in 62 and 75gr.





Pigs of all sizes can be taken with stoutly constructed 22 cal projectiles like the 75gr Scirroco.

last much longer than those of our shooting ancestors and I may even have to think about having my Swift rechambered to 220 Swift Ackley Improved with the sharp-looking 40 degree shoulder for another 150fps with less case trimming and more shooting.

One thing I'm sure of is modern technology is now delivering higher bullet speeds and barrel longevity in the ultra-high-speed world of the .22 hotshots with more

stoutly constructed projectiles capable of cleanly and effectively taking medium-sized game in Australia. I haven't shot any fallow or rusa deer with the Swift 75gr Scirroco combination yet but feel confident it will be up to the job and then some. For anything bigger I can always use my favourite 25/06 or its parent, the grand old 30/06. ●

## Ballistic comparisons

### 223 Rem

55gr Nosler B Tip 100 yds (+1.4")  
200 yds (zero)  
300 yds (-7")  
400 yds (-21.4")

BC 0.267

MV 3200fps Energy at 300 yds  
591 ft-lb

75gr Scirroco

100 yds (+1.8")  
200 yds (zero)  
300 yds (-8")  
400 yds (-23.6")

BC 0.419

MV 2850fps Energy at 300 yds  
811 ft-lb

### 220 Swift

55gr Nosler B Tip 100 yds (+1.6")  
250 yds (zero)  
300 yds (-2.7")  
400 yds (-13.5")

BC 0.267

MV 3700fps Energy at 300 yds  
810 ft-lb

75gr Scirroco

100 yds (+2.1")  
250 yds (zero)  
300 yds (-3")  
400 yds (-12.2")

BC 0.419

MV 3250fps Energy at 300 yds  
1100 ft-lb

### 22-6mm

75gr Scirroco 100 yds (+1.7")  
250 yds (zero)  
300 yds (-2.6")  
400 yds (-11.4")

BC 0.419

MV 3450fps Energy at 300 yds  
1250 ft-lb

### 243Win

80gr Nosler B Tip 100 yds (+2.1")  
250 yds (zero)  
300 yds (-3.2")  
400 yds (-14")

BC 0.329

MV 3300fps Energy at 300yds  
1059 ft-lb

### 25/06 Rem

85gr Nosler B Tip 100 yds (+1.8")  
250 yds (zero)  
300 yds (-2.8")  
400 yds (-12.3")

BC 0.329

MV 3500 Energy at 300 yds  
1281 ft-lb

The powerful .44 Magnum revolver can be tamed to acceptable recoil in reduced Trail Boss loadings.



# ADI Trail Boss hard to go past

Dick Eussen

A pistol powder that has it all when it comes to light and medium load applications is ADI's Trail Boss, a bulky doughnut wafer-shaped concentrate which, even in light loads, occupies most of the cartridge case. Originally designed to deliver consistent low-pressure velocity for Western Action shooting, its versatility gels with other cartridges - rifle and handgun. Oddly, ADI doesn't publish shotgun data for Trail Boss but it's especially useful for black powder cartridges in reduced loadings. Originally intended for low velocity lead bullet loads, as such it is primarily a pistol powder but is also suitable for reduced loadings in some rifle cartridges.

It has excellent temperature stability, being able to withstand severe climatic variations. Even though it has the

second-fastest burning rate of ADI's reloading powers - sitting between AS30N and AP50N - it's impossible to jam enough of it in a pistol case to cause pressure peaks due to its bulky nature, unlike other fast-burning pistol powders. But for all other cartridges you can fill the case up to the base where the bullet seats with Trail Boss happy in the knowledge that pressures don't exceed safe levels. That is your maximum load.

However, for prudent practice pour the load in your scale powder pan and measure it. Reduce it by 30 per cent and use it as a starting load and increase it by a quarter-grain at a time to help to determine the best velocity, accuracy and, for some, recoil. Data from Hodgdon indicates Trail Boss doesn't respond well to compressed loads as results can become erratic. IMR,

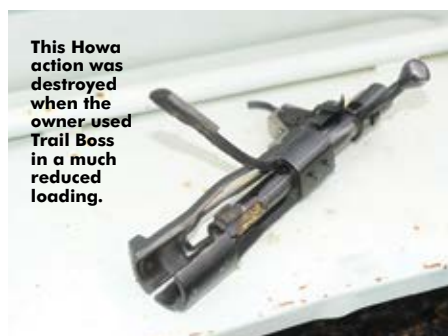
owned by Hodgdon, also cautions against trying to use it for high-power loads as some shooters have attempted with large capacity cases.

Further factors must also be considered. I have a picture of a blown-up Howa action .308W rifle whose owner swears this happened with a much reduced Trail Boss load in an effort to obtain subsonic performance and velocity. This is entirely possible due to the fast-burning powder - but he struck an unknown problem. Apart from him having no idea, there are three potential causes for this. He could have loaded the wrong powder or had the remains of another powder in his measure. Both are unlikely and the most probable scenario is he had a secondary explosion which can happen with any reduced load, especially with slow-burning powders.





From left: ADI AS30N, ADI AP50N and ADI Trail Boss. The three powder charges all weigh 3.5gr and are safe to use in the .357M with a 137gr Wadcutter.



This Howa action was destroyed when the owner used Trail Boss in a much reduced loading.



Old-time Winchester lever-action black powder cartridges can be given a new lease of life with Trail Boss.



ADI Trail Boss powder is designed for low velocity lead bullet cartridges and has the company's second-fastest pistol powder burning rate.

While not fully understood it's believed this happens when the power charge is located too far ahead of the primer to ignite properly. The primer explosion pressure begins to push the bullet into the barrel a millisecond before the powder ignites by which time the bullet has come to a stop and is lodged in the barrel. The result is the pressure can't escape and instead of it being a controlled explosion it becomes a dangerous one that generally destroys the firearm and sometimes the shooter.

In this instance it appears the shooter tilted the rifle down before firing, causing the light powder charge to lodge about the bullet instead of up against the primer. When fired, the flame was too short to ignite the powder but had enough pressure to launch the bullet into the barrel before the flash ignited the powder. Be warned so you're not caught out the same way and recognise that even reduced loadings with Trail Boss may be dangerous, especially in large cases. Always remember, even though it's a high-loading density powder that fills most cases, it's a very fast-burning powerful pistol powder. However, it's a pistol-safe powder in comparison to similar fast-burning powders used for reduced

loads as there's no chance of double-charging a case as it will overflow when using Trail Boss.

It looks unlike any other powder, being waffle silvery doughnut-like in appearance, something similar to confetti. In proper terms its bulk density and porosity are beyond all other propellants, so its placement in the case should matter little due to its weight and bulkiness.

In my rifles and handguns it has always ignited and burned cleanly, coupled with acceptable pressure and high accuracy and flows without bridging or hang-ups in the three powder measures I have. Always check your powder measure hopper to ensure it's totally devoid of previous powder used. Never store powder in hoppers for extended periods, even overnight, especially in hot or humid climates. Always pour it back in the original canister when you're done, a reason why you should only have the canister containing the powder in use on your bench.

I always use a powder that fills the shell as close as possible but refrain from using compressed loads. To avoid a secondary explosion many handloaders operating with fast powders use filler wads composed of

Dacron, cornmeal, grits, felt, cardboard and more - none that should be in a case. If you still do this you're living in the last century and Trail Boss has come to the rescue.

I've been loading Trail Boss for years in .38/357, 9mm, .38 Super and .44 Magnum and while most loads give good to excellent accuracy, I had some slide problems with a 9mm CZ and stopped using the powder for it as the loads failed to cycle the action consistently. Groups were fired from a Ransom Rest at 25m and I used a chronograph for some, others not. Groups in all calibres ranged from 20 to 80mm and the larger groups came from big-kicking revolvers where recoil was a likely factor. Those chronographed showed consistent velocities, burned clean and had little barrel residue, CCI primers used conclusively with no misfire encountered.

#### Rifle loads

I loaded the .38/357 Magnum, .30-30 WCF and .45-70 Government with Trail Boss using the method set out of filling the cases to bullet level and dropping the load by 30 per cent as a starting load. I'm not sure why I did this as I have no intention of using them on game, it was



## ADI Trail Boss

curiosity at best just to see what could be done with the stuff.

Trail Boss works well with reduced loadings and with the lack of noise, recoil and acceptable accuracy (with some bullets) to 50m the furthest I fired them there's an opening for shooters restricted by rural settlement or recoil. It's also much cheaper to shoot lead cast bullets than expensive copper projectiles, while the cost in powder saving is considerable.

The Hodgdon Powder website has a comprehensive list of subsonic Trail Boss loads for most popular calibres, the .30 considered the upper limit for bullet diameter coupled to case capacity for reduced loads in bottleneck cartridges, so Hodgdon doesn't list reduced Trail Boss loading from the .30-06 upwards.

Indeed some authorities say Trail Boss is the only safe powder that works to achieve subsonic or reduced velocities in a number of rifle rounds. However, a problem that can crop up is some rifle barrel twists are unsuitable for subsonic loads when using heavy bullets. Acceptable accuracy with 405gr lead bullets was gained in my .45-70S Marlin and double-barrelled Baikal rifle with Trail Boss loads.

The .30-30 Marlin L/A loaded with 110gr to 150gr cast lead bullets averaged 60mm groups at 50m. I used the same loads in my .357 Marlin rifle as I do in my revolvers and 30mm groups at 50m were easy to achieve. The .45/70 rifles averaged 45 and 70mm respectively, still good accuracy for hunting at short ranges.

There are a lot of short-barrelled high velocity rifles and single shot pistols in rifle cartridge chambering sold these days. The muzzle blast from a 16" barrel fired with a .223R or a .308W will launch your hat into orbit and bristle the eyebrows, especially when fired without ear protection. When shells loaded with Trail Boss are used at reduced velocities your ears and eyebrows will thank you for it. However, I feel there's little to gain from using Trail Boss in rifles, especially for hunting. For instance, subsonic lead bullets fired from my .30-30W are on energy par with full power .357M revolver loads.

In summary, Trail Boss is an amazing fast-burning pistol powder which, in my book, has made similar powders obsolete due to its inbuilt safety factors. Over-charging cases is a thing of the past when loading for pistols and revolvers but never forget to follow the strict safeguards when loading cartridges even with Trail Boss and above all don't under-load big cases. ●



New and old model Winchester 92 rifles can safely be used when cartridges are reloaded with ADI Trail Boss powder.



# Family affair helps Simplex endure

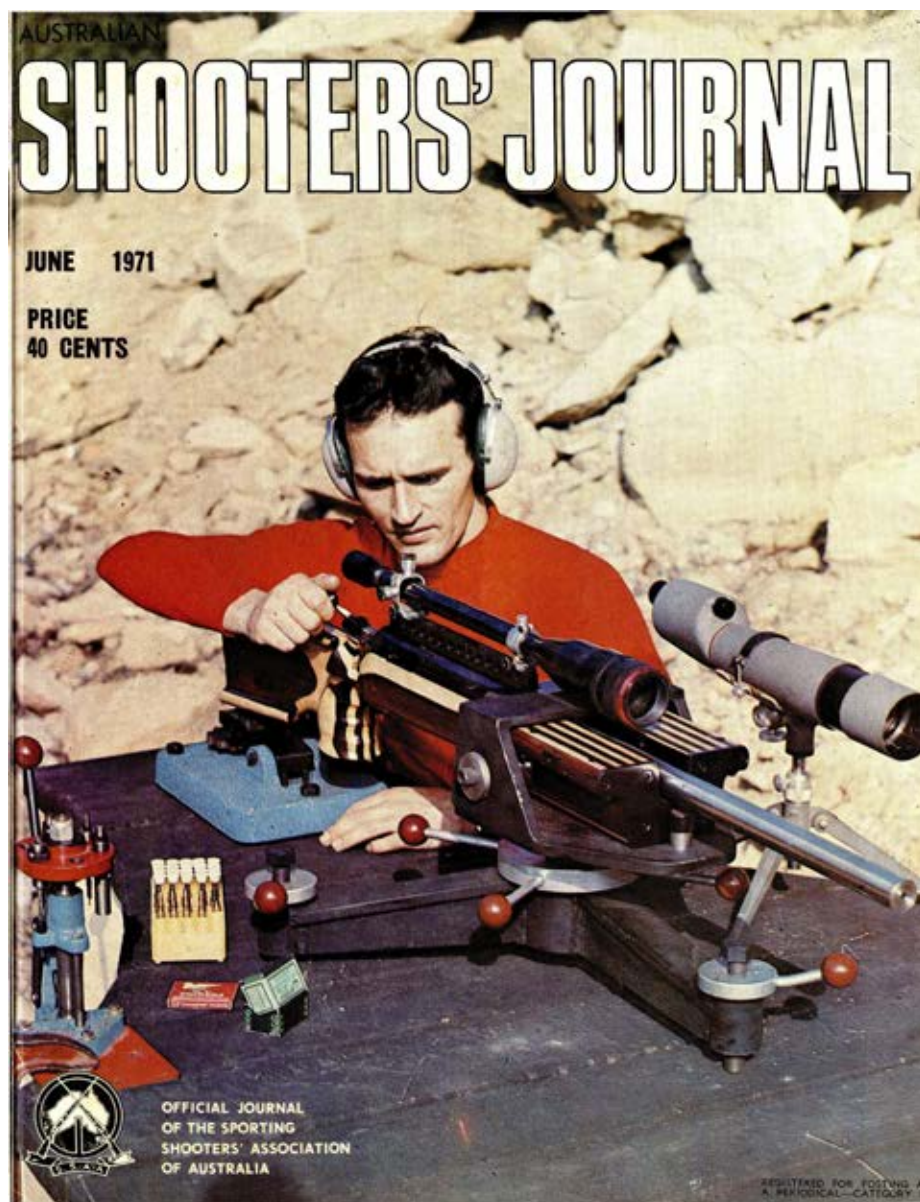
Dave Rose

It's always satisfying to report on an Australian success story within the firearms industry and even more fulfilling when the tale involves a family connection that spans the generations. That's the case with Simplex Manufacturing, the Sydney-based reloading firm which has survived some tough times and remained a staple for Australian shooters and handloaders for more than 60 years.

The quality and reliability of the Simplex brand has never been in doubt since it was founded in 1958. Architect of the Simplex idea was Eric Marden, better known as Bill, who began by making reloading presses and dies in a tiny makeshift factory in his backyard in Punchbowl.

When Eric (Bill) passed away in the early 1980s the reins were picked up by his son, Bill Jr who reckons the business was operating in some form in the early 1950s as his dad laid the foundations of the present day enterprise. "I remember even from my childhood days in short pants going into town with my dad to pick up riflework - that was the start of W. Marden Gunsmiths," said Bill Jr, now 74 and still busy.

Bill Jr continued to make Simplex reloading equipment, growing the business and exporting products worldwide and in 1970 the firm's headquarters was moved to Peakhurst with reloading materials still to the fore. Fast forward to 1989 when Kingsgrove became the hub of the Simplex brand before the final switch in recent years to the current Condell Park base.



Cover star: Bill Marden Jr in the June 1971 magazine.

Unfortunately the firm suffered a bumpy ride in some of the intervening years, particularly after the Port Arthur tragedy. "We had a 60 per cent drop off in business after 1996," said Bill Jr. "With the demise of the Australian market we also lost sales abroad but gradually began to rebuild with the O-frame press in late 2019 and the turret press due in 2020. We simply produced what we had always produced."

To aid the company's survival it extended operations into general engineering though reloading products were still on the production agenda, notably the revered Super Simplex turret press. "It is an efficient little tool," said Bill Jr, "and it's what our reloading business has been built on."

Thankfully the business, which has

remained 100 per cent Australian owned and made, has emerged unscathed through the financial maelstrom and is enjoying a revival in fortunes, much of it due to the guiding hand and business acumen of Natasha Welsh, daughter of Bill Jr.

Natasha is Sales and Process Engineer and deals with the bulk of in-house matters. She was also responsible for setting up the Simplex website so customers could download instructions and look up information on spare parts. Thanks to this, Simplex is very much alive and kicking and going from strength to strength.

"I virtually learned myself how everything operated," said Natasha. "I built the website so we could keep our customer base informed. We deal



## Family affair helps Simplex endure

in presses, dies, tools and all kinds of accessories.”

As well as its turret press signature item, products available include dies and a host of parts to assist in the various processes. Diagrams and illustrations on the website feature case trimmer pilots, case neck turning tools, decapping rod nuts, seating screw nuts, neck expanders and much more.

Helping Natasha at the Condell Park base is the experienced Kevin Loy, a long-standing SSAA member. The factory measures 12,000 sq/m and employs seven people on the shop floor. “It’s been a matter of expediency with a better site and conditions over the past three or four years since sales have regenerated,” said Bill Jr.

The reputation of the Simplex pedigree has been forged over decades and Bill Jr featured on the front cover of the June 1971 edition of *Australian Shooters’ Journal*, forerunner to *Australian Shooter*. Bill and his father had been taking part in the SSAA national championships for Benchrest, Shotgun and Pistol in Brisbane and as well as earning plaudits for the Super Simplex reloading press, father and son were regarded as Australia’s leading target rifle precision gunsmiths.

Nowadays Bill Jr focuses on giving shooters what they want. “The big issue people are faced with are choices,” he said, “and in nine out of 10 cases that means price. So they can buy rubbish or good stuff - we pride ourselves on producing good stuff. We’ve stayed loyal to our customers down the years as it would have been a bit rude if we’d suddenly packed it all in and left them with nowhere to go to for their reloading equipment.”

The firm’s loyalty has been reciprocated by a band of buyers who remained faithful to the Simplex moniker. One of those is Geoff Smith, a long-time *Australian Shooter*



Family ties: Bill Jr and daughter Natasha.

correspondent who’s able to look back on the early days as a friend of the business. “I was one of many thousands who started reloading using the Simplex turret press and dies in the 1960s,” said Geoff. “My chats with Bill Jr revealed his dad established the business over a period of time in conjunction with Mick Smith’s Sports Store in Sydney, when he’d take home Lithgow Lee Enfield rifles and actions to rebarrel.”

Geoff recalled the managing director of Mick Smith’s store at that time was Roger Darwon who penned many articles in *Australian Shooters’ Journal* in the 1960s and ’70s. “No doubt Bill Snr also took home the small Martini Cadet actions which were rebarrelled for the enormously popular .222 rimmed round as well as many others. The Super Cartridge company also became very popular at this time,” said Geoff.

“The kangaroo harvesting industry, initially for skins, really took off about that time in the eastern states. Before long they were using thousands of military surplus Lee Enfield rifles to make .303-25, .303-243, .303-22 and various other combinations for the growing number of shooters using centrefire rifles.

“Eventually Sportco and Parker-Hale got into that market but there were plenty made by people like Mick Smith and, while Bill Snr was doing this work, it opened the door to make reloading equipment.”

Geoff looks back on that era with fondness and is pleased the family has endured. “The Marden name certainly became famous in connection with the rise of benchrest shooting in those times,” he said. “It would probably be fair to say Bill Snr was the father of handloading in Australia.”

The past aside, Geoff sees room for the modern concern to continue thriving. “The newer O-frame presses and dies being offered by Super Simplex in the 7/8" x 14 thread size will certainly add to the appeal of their products in today’s market, especially as the value of our dollar drives overseas product prices upwards,” said Geoff.

Keeping it in the family has allowed Simplex to endure and seen the customers coming back as they know they’re on to a tried and trusted commodity which has remained wholly Australian through three generations. More at [simplexreloading.com.au](http://simplexreloading.com.au) or call (02) 9758 1280. ●



The reloading press.





# Top barks for Retrieving National Championships

**T**he SSAA (Qld) 'Stewartdale' property at Ripley was the venue for the Working Gundogs Association of Australia's 2019 Multi-Level Retrieving National Championships with a healthy turnout of competitors from around the country taking part.

The ongoing drought ensured conditions were dry and the dams low but the natural environment and terrain were still more than capable of providing a wide range of tests for dogs and handlers alike. Runs were held in multiple areas of sparse or thick cover, through undulations and gullies as well as across broad expanses of water in the main dam, thus simulating duck and rabbit shooting scenarios.

The first Retrieving Championship using the SSAA WGAA rule book was held in 2014 and while restricted to only the Open category, the highest competition level, that trial attracted a select group of competitors. Organisers then identified a need to make the event more inclusive so the 2017 championships were reformatted to include all three levels of competition - Open, Advanced and Intermediate, likening it to an A, B and C grade contest.

This saw entries more than double and proved to be a popular rework of the old model and so the decision was made to retain that format going forward and rename the event a Multi-Level Championship.

Things got under way on Saturday morning after an introduction from WGAA national discipline chairman Jim Jeffrey, each level heading to separate areas of the grounds to start the day's competition.

Retrieving trial championships require Intermediate and Advanced competitors to complete six runs with Open tackling eight runs across two days and as the weekend



**Champion: Open winners Laurelle Draper and Kai.**

progresses, dog and handler teams drop out as judges introduce more and more challenging tests, leaving an elite group to fight it out for the major placings. The Intermediate section was whittled down to nine competitors for day two, Advanced featured only six survivors from the original line-up and the Open category had seven pairs competing for the honours.

When the dust settled the final placings were as follows. Open: 1 Laurelle Draper and Kai, 2 Ron Jackson and Rudy, 3 Rob Boodnikoff and Onyx, 4 Geoff

Dawson and Denz. Advanced: 1 Ron Jackson and Daisy, 2 Denis Bullimore and Opal, 3 Trevor Davies and Magic. Intermediate: 1 Wayne Outtram and Harley, 2 Rad Miramon-Jeffrey and Luna, 3 Mick Allen and Sascha.

The event was voted an outstanding success by all concerned, testament to the dedication of the Queensland organising committee. Thanks go to all volunteers, sponsors and Logan City Cadets for operating the throwers all weekend and to all who donated trophies. ●



Dave McCarthy's winning style  
in Standard Rifle.

# Aussie shines at 2019 Gallery Rifle World Titles



A trophy haul to make the trip worthwhile.

The SSAA has a new world champion in the shape of Dave McCarthy who clinched two titles at the 2019 Gallery Rifle World Championships in South Africa. His total medal haul throughout the event was three gold, a silver and two bronze but it was securing the Standard Rifle and Classic Rifle world titles which put him top of the pile.

"It was a real surprise to find out I'd won both Standard and Classic Rifle," said Dave. "I was confident of getting among the medals going into the Classic shoot and

thought I'd probably end up in the top 10 for Standard Rifle as there were so many great shooters competing."

Dave credits a major part of his success to wife Ashlea, a world-class shooter in her own right who'd be on the team if not for family commitments. "The 2019 shoots were tough as it's the first time in many years Ashlea has not been by my side either at the nationals or international shoots. She gave up her spot on the team as our son Jack was born just eight weeks before I left for South Africa.

"Ashlea has pushed me on the range to maintain a high standard because if I lose to her I hear about it from my mates."

Despite the quality of the opposition Dave did enough to get himself over the line in Standard Rifle, posting an aggregate score of 2183.158 ahead of second-placed South African Heinrich Strauss (2182.147) and bronze medallist Jeffrey Kehoe of Ireland (2180.158).

Other members of the SSAA team also won individual medals including Sharn Brooker from Queensland who won three gold and two silver medals in the ladies under-25 category. National discipline chairman Don Robinson accompanied the team to South Africa and declared the event a success for Australia.

"We've only been shooting Gallery since 2014 and this was our second World Championships, so it's a pretty good effort," said Don. "The beautiful sunny days suited us and I wasn't a bit surprised at how well Dave shot given he has nine Lever Action national titles to his name."

As for the overall team placings, home range advantage saw victory go to South Africa ahead of second-placed Great Britain with Ireland third. The next Gallery Rifle World Championships will be held in 2021 at Bisley in England. ●



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# Gun & Knife Show List

## 2020

|                 |  |  |                                |
|-----------------|--|--|--------------------------------|
| Feb 29-March 1  | Eastbank Centre, Welford St, Shepparton                | 200 tables antique & modern firearms, militaria and collectables Expo                    | Ricky Seiter 0400 567 353      |
| March 7-8       | Bathurst Showgrounds, Bathurst                         | Bathurst Arms Fair   | bathurstarmsfair.com.au        |
| March 14-15     | Belmont Shooting Complex, Belmont                      | Brisbane Show of modern, sporting, military guns, militaria, edged weapons, collectables | Paul Brush 0412 562 252        |
| April 4-5       | The Betting Hall, Elwick Showgrounds, Hobart           | Antique & modern firearms, edged weapons and militaria                                   | Phil Gourlay 0477 411 457      |
| April 4-5       | Exhibition Display Pavilion, Ipswich Showgrounds       | Queensland Knife Show  | andrew@knifeartassociation.com |
| May 23-24       | Toowoomba Showgrounds, Glenvale Rd, Toowoomba          | 350+ tables firearms, ammo, militaria & collectables                                     | Dan Watson 0407 643 776        |
| July 18-19      | Belmont Shooting Complex, Belmont                      | Brisbane Show of modern, sporting, military guns, militaria, edged weapons, collectables | Paul Brush 0412 562 252        |
| September 12-13 | Toowoomba Showgrounds, Glenvale Rd, Toowoomba          | 350+ tables firearms, ammo, militaria & collectables                                     | Dan Watson 0407 643 776        |
| September 12-13 | Cannington Exhibition Centre & Showgrounds, Cannington | WA Arms & Armour Annual Militaria Fair   | Geoff Smith 0419 955 284       |
| October 17-18   | Belmont Shooting Complex, Belmont                      | Brisbane Show of modern, sporting, military guns, militaria, edged weapons, collectables | Paul Brush 0412 562 252        |

Persons wishing to purchase any firearm that requires a licence from any arms fair in NSW should apply for a Permit to Acquire at least six weeks before the fair. For reasons beyond the control of show organisers, some of the above dates may be changed. It is advisable to check the show dates before travelling.



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## National

### SSAA 2020 Muzzleloading Long Range National Postal Shoot

February 1-June 30, 2020

Various locations

Program: See website for full event details.  
Contact: Kim Atkinson 0417 089 915 or [muzzleloading@disciplines.ssaa.org.au](mailto:muzzleloading@disciplines.ssaa.org.au)

### SSAA Centrefire Benchrest National Championships

April 9-13, 2020

Jim McKinley Range, Majura, ACT  
Program: Thursday, April 9: Practice;  
Friday: Experimental Class 100 and 200yds; Saturday: Sporter Benchrest 100 and 200yds; Sunday: Light Benchrest 100 and 200yds; Monday: Heavy Benchrest 100 and 200yds. Light and Heavy Benchrest are qualifying rounds for WBC in South Africa. Nominations \$60 per class. Contact: Alex Chrissy 0405 812 639 or David Billingham 0418 478 160. See website for full event details.

### Rifle Metallic Silhouette National Championships

April 9-13, 2020

Eagle Park Range, Little River, Vic  
Program: See website for full event details.  
Contact: Mark Butler 0409 135 740.

### Black Powder Cartridge Rifle National Championships

April 14, 2020

Eagle Park Range, Little River, Vic  
Program: See website for full event details.  
Contact Mark Butler 0409 135 740.

### Shotgun 5-Stand National Championships

May 16-17, 2020

SSAA Albury, NSW

Program: Please note date change for this event. See website for full details.

### National Junior Challenge

July 9-12, 2020

Belmont Range, Qld

Program: See website for full event details.  
Contact: Jon McCarthy 0438 756 622 [junior@ssaa.org.au](mailto:junior@ssaa.org.au)

## ACT

### SSAA 2020 Fly Shoot National Championships and BRT Federal Cup

March 6-9, 2020

SSAA Majura, ACT

Program: See website for full event details.  
Contact: Dave Groves 0412 118 135.

### SSAA ACT Military Firearms Club Combined Services State Championships

April 4-5, 2020

SSAA Majura Range, Hector McIntosh Grove, Majura, ACT

Program: See website for full details.  
Contact: Simon Troeth [mfc.ssaa.act@inet.net.au](mailto:mfc.ssaa.act@inet.net.au) or 0439 300 335.

## New South Wales

### SSAA NSW Combined Services Pistol State Championships

February 29-March 1, 2020

Emmaville Range, 3884 Emmaville Road, Emmaville, NSW

Program: See website for full event details. Nominations: Online at [www.nswcsd.com.au](http://www.nswcsd.com.au). Adults \$60, juniors half price, individual events \$25 to be received by February 17. Rules: SSAA Combined Services rule book 2017. Prizes: Medals for all events. Facilities: Camping and caravans permitted Friday to Sunday. Contact: Evan Brown 0428 100 336.

### SSAA NSW Benchrest Score State Championships

March 7-10, 2020

SSAA Dairyville Range, Coffs Harbour, NSW

Program: Friday, March 6: Practice;  
Saturday: Light Rimfire; Sunday: Heavy Rimfire; Monday: Light Centrefire;  
Tuesday: Heavy Centrefire. Nominations: \$50 per class, juniors half-price. Rules: As per SSAA rule book. Prizes: Medals and Top Ten patches as per rule book.  
Contact: David Billingham 0418 478 160 or Ray Munro 0408 649 126.

### SSAA NSW Lever Action State Championships

May 1-3, 2020

Box Ridge Rifle Range, Ulamambri, NSW

Program: See website for full event details.  
Contact: Kevin Barrington 02 6842 1538 or [kevrol11@bigpond.com](mailto:kevrol11@bigpond.com)

## Queensland

### SSAA Qld NRA Pistol Metallic Silhouette Postal Shoots (1-4)

February 1-November 30, 2020

All SSAA Qld branches with approval to shoot Big Game Rifle

Program: See website for full details of all four events. Contact: Hazel Bozic 07 4128 0467 or [hbozic1@bigpond.net.au](mailto:hbozic1@bigpond.net.au)

### SSAA Qld Gallery Rifle State Championships

April 18-19, 2020

Hervey Range Shooting Complex, 102 Rifle Range Rd, Hervey Range, Qld

Program: Matches will be Imperial Silhouettes, America Match, 1020 Match and 1500 Match. Nominations to either branch or state chairman. Contact Dave Mitchell 0476 058 893 or Don Robinson 0428 986 070. See website for full event details.

### SSAA Qld Big Game Rifle Postal Shoots

Various dates in 2020

All SSAA Qld branches with approval to shoot Big Game Rifle. Program: Multiple events - see website for full details.

### SSAA Qld Junior State Championships

July 3-5, 2020

Madden Range, Belmont, Qld

Program: See website for full event details.  
Contact: Jon McCarthy 0438 756 622 [junior@ssaaqld.org.au](mailto:junior@ssaaqld.org.au) or Damon Olufson 0417 926 725 [ssaajbts@gmail.com](mailto:ssaajbts@gmail.com)

## Western Australia

### SSAA WA Cowboy Lever Action Silhouette State Championships

April 10-12, 2020

Wanneroo Complex, Pinjar, WA

Program: Thursday, April 9: Practice 8am-5pm; Friday: Rifle Cowboy Lever Action Silhouette (80 shots); Saturday: Pistol Cartridge Cowboy Lever Action Silhouette (80 shots); Sunday: Small Bore Cowboy Lever Action Silhouette (80 shots). Contact: Warren Goodfield 0407 440 431 or [clas@ssaawa.org.au](mailto:clas@ssaawa.org.au)

## Victoria

### SSAA Vic Rimfire Silhouette Junior State Championships

May 17, 2020

Eagle Park, Little River, Vic

Program: See website for full event details.  
Contact: Mark Butler 0409 135 740.

### SSAA Vic Scoped Silhouette State Championships

May 23-24, 2020

Eagle Park, Little River, Vic

Program: See website for full event details.  
Contact: Mark Butler 0409 135 740.

# SSAA Official Calendar

## INTERNATIONAL

September 12-13, 2020 Big Game Rifle International Shoot

Mickett Creek Shooting Complex, Darwin

0438 860 510

## NATIONAL

February 1-June 30, 2020 Muzzleloading Long Range National Postal Shoot

April 9-13, 2020

SSAA Centrefire Benchrest National Championships

April 9-13, 2020

Rifle Metallic Silhouette National Championships

April 14, 2020

Black Powder Cartridge Rifle National Championships

July 9-12, 2020

Field Rifle, 3-P Scoped Air Rifle, NRA Any Sight National Junior Challenge

Various locations

Jim McKinley Range, ACT

Eagle Park, Little River, Vic

Eagle Park, Little River, Vic

Belmont, Qld

[muzzleloading@disciplines.ssaa.org.au](mailto:muzzleloading@disciplines.ssaa.org.au)

0405 812 639 or 0418 478 160

[reltub4570@gmail.com](mailto:reltub4570@gmail.com)

[reltub4570@gmail.com](mailto:reltub4570@gmail.com)

0438 756 622

## STATE

Feb 1-May 31, 2020

SSAA Qld NRA Pistol Metallic Silhouette Postal Shoot No.1

February 1-Nov 30, 2020

SSAA Qld NRA Pistol Metallic Silhouette Postal Shoots

Various dates in 2020

SSAA Qld Big Game Rifle - multiple events

Feb 29-March 1, 2020

SSAA NSW Combined Services Pistol State Championships

March 6-9, 2020

Fly Shoot National Championships and BRT Federal Cup

March 7-10, 2020

SSAA NSW Benchrest Score State Championships

April 1-July 31, 2020

SSAA Qld NRA Pistol Metallic Silhouette Postal Shoot No.2

April 4-5, 2020

SSAA ACT Military Firearms Club Combined Services State Championships

April 10-12, 2020

SSAA WA Cowboy Lever Action Silhouette State Championships

April 18-19, 2020

SSAA NSW Lever Action State Championships

May 1-3, 2020

SSAA Qld NRA Pistol Metallic Silhouette Postal Shoot No.3

May 1-August 31, 2020

Shotgun 5-Stand National Championships

May 17, 2020

SSAA Vic Rimfire Silhouette Junior State Championships

May 23-24, 2020

SSAA Vic Scoped Silhouette State Championships

July 3-5, 2020

SSAA Qld Junior State Championships

August 1-Nov 30, 2020

SSAA Qld NRA Pistol Metallic Silhouette Postal Shoot No.4

Various locations

Various locations

Various locations

Emmaville Range, NSW

SSAA Majura, ACT

SSAA Dairyville Range, Coffs Harbour

Various locations

SSAA Majura Range

Wanneroo Shooting Complex, WA

Hervey Range Shooting Complex

Box Ridge Rifle Range, Ulamambri, NSW

Various locations

SSAA Albury, NSW

Eagle Park, Little River, Vic

Eagle Park, Little River, Vic

Madden Range, Belmont

Various locations

07 4128 0467 or [hbozic1@bigpond.net.au](mailto:hbozic1@bigpond.net.au)

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[sdsec@ssaaqld.org.au](mailto:sdsec@ssaaqld.org.au)

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**For more information about the complete range of SSAA merchandise go to [onlineshop.ssaa.org.au](http://onlineshop.ssaa.org.au)**



.au



# SHOP NOW - IT'S EASY!

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FOR SSAA  
MEMBERS**

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**or call 02 8805 3900  
for phone orders**



# SSAA MEMBERSHIP APPLICATION

ABN 95 050 209 688

SSAA Membership Office, PO Box 282, Plumpton, NSW 2761  
Phone 02 8805 3900 Fax 02 9832 9377 Email [mem@ssaa.org.au](mailto:mem@ssaa.org.au)

Membership No.

NEW ☐ RENEWAL ☐ Have you been a member before? Yes/No

|  |  |  |  |  |  |
|--|--|--|--|--|--|
|  |  |  |  |  |  |
|--|--|--|--|--|--|



Title (PLEASE CIRCLE) Mr Miss Ms Mrs or ..... Preferred SSAA Branch

First name

Middle name

Last name

Residential address

Town/suburb State Postcode

Postal address

Town/suburb State Postcode

(IF DIFFERENT FROM ABOVE)

Phone (Mobile) (Home)

Email

Date of birth Male ☐ Female ☐ Member referral number if applicable

☐ Tick to subscribe to the FREE SSAA National E-newsletter via email

## MEMBERSHIP CATEGORIES AND SPECIAL OFFERS

Each membership category (apart from Family Member) includes 11 issues of the Australian Shooter magazine per year.

### Add four issues of the Hunter magazine per year

☐ \$93

☐ \$128

☐ \$70

☐ \$105

☐ \$70

☐ \$105

☐ \$465

☐ \$1860

☐ \$175

☐ \$27

☐ \$123

☐ \$158

☐ \$100

☐ \$135

☐ \$100

☐ \$135

☐ \$236

☐ \$57

### Adult (over 18 years)



Includes \$35 insurance premium for SSAA Member Firearms Insurance for 12 months, valid until next membership renewal.

### Additional Family Member (No magazine) Applies to each additional person over 18 residing at the same address as a full-subscription Adult member.



Includes \$35 insurance premium for SSAA Member Firearms Insurance for 12 months, valid until next membership renewal.

### Pensioner Available on production or photocopy of both sides of your Australian Concession Card.



Includes \$35 insurance premium for SSAA Member Firearms Insurance for 12 months, valid until next membership renewal.

### 5-year Adult Contact SSAA for firearms insurance information.

### Member for Life Contact SSAA for firearms insurance information.

### Overseas Available to members living overseas.

### Junior (under 18 years)

Parent's or guardian's signature .....



Just \$30 per year!

Supporting Adult member No.

**SIGN UP ONLINE**

[ssaa.org.au](http://ssaa.org.au)



## PLEASE READ AND SIGN

This application is made in full recognition of the Association's requirement for responsible and ethical behaviour. I undertake to do all in my power to preserve the good image of the sport and the Association. I understand that members breaking the Code of Conduct may be subject to suspension or expulsion. The Code can be found at [ssaa.org.au/code](http://ssaa.org.au/code)

SIGNATURE: .....

DATE: .....

Refund Policy: Subject to Australian law, membership fees are not refundable, nor can they be transferred.

SSAA Inc collects personal information of members. The information you provide on this form will be disclosed to the state or territory branch of the SSAA to which your membership application relates. A copy of SSAA Inc's privacy policy can be found at [ssaa.org.au/privacy](http://ssaa.org.au/privacy). You can obtain access to your personal information by writing to: SSAA, PO Box 2520, Unley SA 5061.

## ATTENTION NSW & ACT MEMBERS

Complete this section ONLY if you wish to use your membership of the SSAA to support your Genuine Reason for having a firearms licence. Register your SSAA activities by marking one or more of the following boxes:

- ☐ TARGET SHOOTING (longarms only)
- ☐ HUNTING (club membership)
- ☐ COLLECTING
- ☐ HUNTING OTHER (R licence, property owner/permission)

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**02 8805 3900**



## PAYMENT OPTIONS

Enclosed is payment for the amount of \$.....

☐ Cheque ☐ Money order ☐ MasterCard ☐ Visa

Card number

Expiry date Signature.....

Cheques payable to the Sporting Shooters' Association of Australia Inc.

I also wish to donate the following amount to the SSAA \$.....



# Members-only competitions

**WIN**

For your chance to win one of these competitions, write your name, address, phone number and membership number on a piece of paper and place it inside an envelope, along with the name of the competition on the front of the envelope, as shown in the example. Alternatively, you can enter online. Competitions close February 29, 2020.

(Name of competition)  
SSAA National  
PO Box 2520  
Unley SA 5061

Enter online at  
[ssaa.org.au/win](http://ssaa.org.au/win)

## 1 of 4 .30-calibre pen sets

**Valued at \$186**

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& Handmade Gifts  
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Engraved pen sets will be as per name entered



## Bush Edge Red Deer T-shirt (Size L only) & rifle cover set

**Valued at \$90**

Kindly donated by Bush Edge  
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## Juniors

## SSAA blue earmuffs

**Valued at \$59.95**

Kindly donated by SSAA Online Shop  
[onlineshop.ssaa.org.au](http://onlineshop.ssaa.org.au)



## Competition winners

### Australian Shooter Nov 2019

**GlowShot Self Healing  
Target Stand complete kit**  
Aaron Fletcher WA

**Winchester shooting targets  
plus decals**  
Declan McCarthy NSW

**Junior - Shooting rest bags  
+ 2x Spika decals**  
Dannica George Qld

**November Best Shots Mug**  
Antony Knight Qld

### Hunter 70

**Winchester ammo box + 2  
decals**  
Samia Boukerchi Qld

**Outdoor Edge Razor-Blaze**  
Ethan Heeney NSW

**Dingo head lamp**  
Alex Chin WA

**GlowShot Last Stand Target  
Stand complete kit**  
Steve Jasek NSW

**Water bladder & filter**  
Adam Cullen NSW

**Lithgow Arms soft gun case  
rifle and baseball cap**  
Peter Rattle Vic

### Handgun 17

**Walther Pro PL70r flash-  
light**  
Lester Hillyar NSW

**Bushnell AK Optics 1x25  
red dot sight**  
Barrie Rhodes NSW

**UpLULA pistol magazine  
loader**  
Elli Scott Qld

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## An unlikely alliance

**O**n the squeaky dry sand above the high-water line, half a dozen pelicans stood at ease in the afternoon sun, seemingly unperturbed by the people wandering around them. The closest bird was resting well, eyes closed, head tucked between the raised shoulder of its wings, folded neck cushioning most of its long beak, only some of which protruded beyond the prominent curve of its chest. It appeared to be asleep, an illusion quickly dispelled.

As I inched closer with camera in hand, the one black and yellow eye I could see blinked open as the hackles on the bird's crown came up. The neck unfolded, head lifting and swivelling towards me as it hissed and rattled its beak in a 'stand back' warning. Then it turned and waddled flat-footed into the water, clearly tired of people and their picture-taking, possibly wondering what a hard-working pelican had to do for an afternoon nap in peace.

Early next morning the Monkey Mia dolphins put in their appearance more or less on time. Above the beach an eager crowd was gathering for the show, waiting until all the players had arrived and approval given to approach the water's edge. The National Parks ranger and her helpers stood knee deep in the water, waiting for the jostling to subside. Having asked the assembly to stay out of the water so the dolphins wouldn't be disturbed, she launched into her practiced spiel about the world-famous animals.

For 40 years, three generations of dolphins have been coming to the beach at Monkey Mia to interact with people and have always done so of their own free will. They've never been trained and the few small fish they receive as a reward each day



Fishing buddies: The pelican and the dolphin.

are carefully rationed to ensure the animals' natural hunting behaviours remain unaffected.

As the talk proceeded the dolphins loitered in the shallows, casually displaying themselves to the captivated crowd, very much at ease despite the wall of people moving around in search of that better shot, many of them missing out on the information the ranger was providing.

When the talking was over, a few lucky punters were randomly selected and given the once-in-a-lifetime chance to hand feed one fish to one dolphin. Even for those of us standing on the shore it was all pretty

special and you'd have to be a philistine not to appreciate how unique these animals are and why people come from all over the world to see them.

When the show was over the dolphins swam off, the crowd dispersed and the daily pattern of life on the foreshores returned to normal. Here and there along the beach a scattering of pelicans was resting on the sand above the high tide mark.

Some were still there later in the afternoon as I wandered along the water's edge, not looking for anything in particular, just walking because I could. A few metres offshore a trio of dolphins bobbed through the water, obviously hunting and methodically working their way along a weed bed. As they approached an alert pelican walked spraddle-footed into the water and swam with them.

I'm a bit slow sometimes and it wasn't until then I remembered something I'd read or possibly heard. Somewhere in the back of my mind a light came on as I realised that while some of the pelicans were resting, others were waiting for the dolphins to arrive, much like the people first thing in the morning but for different reasons.

As they hunt, the dolphins disturb as many fish as they catch and for an attendant pelican the escapees provide a passing chance to pick up an easy feed. I suppose the relationship could be called symbiotic but given the pelicans also feed elsewhere, opportunistic is probably closer to the mark. It's a learned behaviour, like dolphins coming to the beach each morning. There's always more to the natural world than meets the eye.





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# SSAA

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**Geoff Jones**  
SSAA National President



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Email - [megan@ssaains.com.au](mailto:megan@ssaains.com.au) | Visit - [www.ssaib.com.au](http://www.ssaib.com.au)

### Here's what SSAA Members Firearms Insurance covers:

#### FIREARMS AND ACCESSORIES.

All privately owned firearms registered to the member and fixed accessories.

#### COVERAGE.

- Accidental loss and damage of the equipment (including whilst in use, excluding chipping and scratching of stock).
- Malicious damage.
- Collision or overturning of the vehicle.
- Fire & extraneous perils.
- Flood
- 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.