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EVERY MONTH* SEE P. 46

GUNNING FOR SMALL GAME

Essential shotgun tactics for
rabbits, foxes & other little ferals

ON THE HUNT

- Proving the .350 Legend
- Feral pigs after school
- Big red stags in NZ

SPECIES SPECIAL

Your guide to
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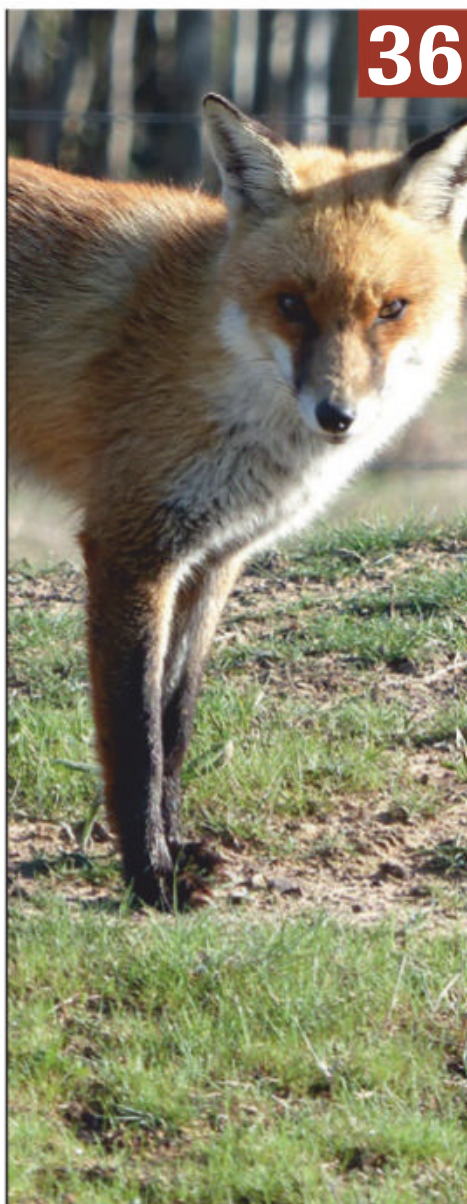


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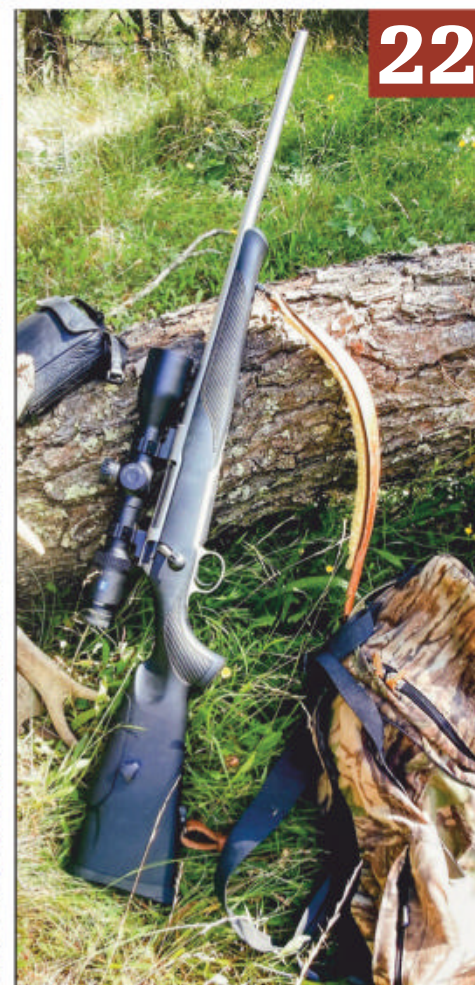
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Howa 1100 rimfire 30

We've been anticipating it for decades. Howa's first rimfire rifle is here and it's a ripper!



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ON THE COVER

Rabbits still breed on despite the diseases and still provide one of the great Australian hunting experiences.



MAIN FEATURE

There are so many techniques you can use for hunting small game, and so many types of firearms. But is the shotgun the best? In his lead story for this issue, Leon Wright puts up a pro-gun argument that's hard to refute!

GET TO WHERE THE GAME ARE



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PROTECTION



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4X4 ACCESSORIES

Expectation and reality

Mick is on a roll with a rifle and a calibre that are both better than expected.

WHEN expectation meets reality, you're onto a winner. I just bought a new rifle that is, on that measure, a winner. And I've adopted a new calibre which has also proven a beauty.

First, the rifle. In this issue, Nick Harvey's review of the Howa 1100 rimfire exactly matches my experience with the rifle, which is a bit of a relief if only because I'd bought mine before Nick did his review. Normally I wait for an expert opinion before leaping in. Mine shot brilliantly straight out of the box, shooting good to excellent groups with 10 out of 12 different types of .22LR ammo. It's the most accurate .22 I've got, which is impressive for such an affordable little thing.

If fact, when it comes to expectation and reality, the reality is better. I expected something good from Howa but

the 1100 I've got is very good. Coincidentally, the new calibre I'm using is also covered in this issue: the .350 Legend. John Starr has written a great yarn about it. He seems to love a new calibre. On the other hand, I don't really want to like anything new, especially a calibre, and ended up with a Winchester XPR in .350 Legend – just like John – almost by accident. But that's another story. The thing is, I'm glad I've got it.

I did wonder why anyone would want a .350 Legend. It's like someone took a 150gn .308 projectile, cut it off at the knees and fed it till it was fat, then jammed it into an itty bitty .223 case. It's got the ballistic coefficient of a brick, the range of a chained dog and the impact of a wombat.

Ever hit a wombat with your car?



Mick's Howa 1100 punches above its expected weight.

The .350 Legend, as John demonstrates in his article, hits like a wombat fired from a catapult. I know John is correct about it because mine does exactly what his does. I've seen exactly the same results as he describes, shot after shot. True, all my shots have been no more than about 130 metres, but that's just fine in the country I'm hunting with it.

My Winchester XPR, using Winchester's Deer Season XP ammunition, groups around the 1MOA mark, which is not quite as good as John's one, but I'm willing to bet it's probably because he's a better shot than me. No matter, because it's better than I need. And better than I expected.

My experience of the rifle and calibre are so similar to

John's that I've supplemented his photos with a few of my own in the story.

I like stories such as John's, which expand on what we've already stated in *Sporting Shooter's* initial reviews. We can give you a good idea of what the calibre is capable of, tell you all about the specs and ballistics, and provide some insight into whether it's up to the role its designers intended. People like John can add the insights that ownership and longer-term familiarity can provide.

On top of that, I especially like the fact that *Sporting Shooter's* reviews are demonstrably accurate. We're very proud of that.

MICK MATHESON
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SUBSCRIPTIONS
WWW.GREATMAGAZINES.COM.AU
Call: 1800 807 760
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Subscription Rates:
1 year / 13 issues \$113
1 year PLUS (print + digital) \$125.00
Overseas 1 year rate NZ A \$136.00
ASIA \$136.00 ROW \$170.00

SPORTING SHOOTER

is published by Yaffa Media Pty Ltd,
17-21 Bellevue St, Surry Hills,
NSW 2010
Tel: (02) 9281 2333
Fax: (02) 9281 2750
ACN 54002 699 354



Publisher: Chris Yu

Production Director: Matthew Gunn

Studio Manager: Lauren Esdaile

Designer: Maria Alegro

Freelance submissions should be emailed to the Editor as a MS Word File or in Rich Text format with accompanying high resolution (1 Megabyte+) Jpg images in email packages no more than 14 megabytes per email. Alternatively stories and images on a memory stick/thumb drive can be mailed to the Editor at the above address.

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ISSN 1835-6923



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Letters containing questions for answering by Nick Harvey must be accompanied by a stamped self-addressed envelope. Mail your letters to: **The Technical Editor, 3 Reef Street, Hill End, NSW 2850.**

LETTER OF THE MONTH

Short-action magazine length

Q I have come to realise that most short-action rifles have magazines that are too short, averaging 2.85". This may be fine for cartridges like the .308 and necked-down versions like the .243 and 7mm-08, but the 6mm Rem, .257 Roberts, 6.5-284 and .284 Win are cramped and bullets must be seated deeply to fit in the magazine. This reduces powder capacity, preventing these cartridges from achieving their full potential. Are there short-action rifles which have magazines long enough to allow bullets to be seated out further?

James Hewitt



Most short-action rifles with a detachable magazine don't have enough room to seat bullets out any further than a factory cartridge.

A There are some short-action rifles which have 3" magazines instead of 2.85" with the advantage of allowing shallower bullet seating. This is fine with short cartridges based on the .308 case but the 6.5-284 and

.284 Win are better suited in a medium-length action. A rifle for the .257 Roberts should have a long action where magazine length allows the chamber to be long-throated so the round can be loaded to its full potential.

This is one area where I disagree with American gun writers who have never understood how to gain the full potential of the good ol' Roberts. Or maybe they don't want to upset the makers of these rifles?

Scopes With Mil-Dot Reticles

Q Recently, I bought a secondhand Leupold scope which has a Mil-Dot reticle system. I am not sure how this reticle works as it seems very complicated compared to my other scopes with ¼-inch clicks. What can you tell me about this system?

Bob Batten

A Mil-Dot is a reticle based on the milliradian unit of measurement, sometimes written as mrad, MRAD or simply mil. It is used mainly for range estimation and long-range shooting and sees a lot of use by military snipers. A mil is an angular measurement equal to one-thousandth of a radian. Basically, 0.1 mil equals 1cm at 100 metres or 0.36 of an inch at 100 yards.

Another two magnums

Q I just read a book where mention was made of a sniper who used a rifle chambered for a magnum cartridge, the .375 CheyTac, that I've never heard of before. Does it really exist or is it just a figment of the author's imagination? If it's real can you tell me what the ballistics are?

Arthur Holden

A The .375 CheyTac is a necked-down version of the .408 CheyTac, a long-range cartridge based on the .505 Gibbs case. The .408 fires a 419gn bullet at 2850fps for a whopping 7559ft-lb of muzzle energy. The .375 CheyTac is no slouch either. Favoured by extreme long-range match competitors who shoot targets beyond 3000 yards, it fires a 350gn bullet at 2970fps



The .17 Hornet does a great job of bridging the gap between the rimfires and the .223 Remington."

(4410ft-lb). Both cartridges were developed by Cheyenne Tactical in Wyoming, USA.

.17 Hornet no slouch

Q I have been offered a CZ 527 in .17 Hornet for a good price and am tempted to buy it. What is your opinion of the .17 Hornet as a varmint cartridge? What weight bullet would you load for all-round use on predators up to the size of wild dogs? Could you suggest a couple of good loads?

Anthony Pierce

A The .17 Hornet does a great job of bridging the gap between the rimfires and the .222 and .223 Remington, not to mention larger varmint cartridges. It is mild mannered and has modest muzzle report and no noticeable recoil, but it is also accurate, shoots flat and, on a day when there's no zephyr at play, is a genuine 300-yard varmint round.

Hornady brought out the .17 Hornet in 2012 with a factory load pushing a 20gn V-Max bullet at 3650fps,



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which actually provides a flatter trajectory than the 55gn .223 load. From a 200yd zero, this Hornady .17 Hornet load drops about 6½" at 300yds and 21" at 400.

Other loads include a 25gn bullet at 3375fps, which is better for larger varmints such as foxes and wild dogs.

The .17 Hornet is based on the .22 Hornet case shortened from 1.403" to 1.350" with the shoulder blown out to 25 degrees and necked down to accept .172" bullets. A good load for distant rabbits is the 20gn Nosler Shot and 12.5gn of RE-7 for 3605fps. For larger predators, the 25gn V-Max and 11gn of AR2205 gets 3300fps and duplicates the factory load.

I am sure you would greatly enjoy using the .17 Hornet. It is cheap to reload too, yielding about 600 loads per canister of powder.

What size group is valid for accuracy?

Q What size groups do you regard as being truly indicative of the kind of accuracy a hunting rifle is capable of? Some gun writers judge a rifle's accuracy by three-shot groups, while others use five-shot groups. You seem to use both. What's your opinion about this?

John Hawkins

A The debate over what constitutes acceptable accuracy in a sporting rifle, how it should be measured and what size group is definitive has been argued about for probably the past 150 years. Early gun writers used 10-shot groups, but in the early 1950s Jack O'Connor wrote that the 10-shot group was too strict for judging a hunting rifle and argued in favour of five-shot groups, a measure which modern gun writers soon adopted.

In more recent times, however, some shooters began



using three-shot groups, since you get more small 'bragging' groups than you will with five-shotters.

As a rule, I rate a test rifle's accuracy with five-shot groups, but with ultra-light rifles which have skinny barrels, I am willing to settle for three-shot groups. I've found that a five-shot group gives me a fairly good idea of a rifle's accuracy potential.

But getting down to the nitty-gritty, more than two shots are seldom fired at a game animal, so maybe we should use two-shot groups from a cold barrel just like we do in the field. Perhaps this would give us a more realistic idea of how our rifle performs?

.25-06 versus .257 Weatherby Magnum

Q I am thinking of having my Winchester Model 70 in .30-06 rebarreled for either the .25-06 or .257 Weatherby Magnum. How do their velocities compare using 100, 110 and 120gn bullets? Average barrel life? Which cartridge would you prefer for all-round use on goats, pigs and deer?

Barry McAlister

A If you are going to fire a lot of shots at game, I'd recommend the .25-06 over the .257 Weatherby. Barrel life of the bigger cartridge averages

“

An acquaintance of mine broke three extractors due to the use of steel-cased cartridges.”

1500 rounds against 2500 for the .25-06.

In my Kimber .25-06 with 23½" barrel, I have the Barnes 100gn TSX and 61gn of WMR doing 3390fps. My mate's Weatherby Mark 5 has a 26" barrel and he gets 3532fps with the same bullet and 72gn of Re-22. With the 110gn ELD-X and 60gn of WMR I get 3310fps; he gets 3455fps using 70gn of Re-22. With the heavy 120gn Core-Lokt I get 3105fps in my .25-06 with 58gn of Re-26, against 3260fps with 66gn of Re-22 in the .257 Weatherby. That's not an earthshaking difference by any means, particularly when Weatherby velocities are taken in a 2" longer barrel. Also, the .25-06 has less recoil and muzzle blast in an outfit which weighs 7½lb against one that's 2lb heavier. Take your pick, chum!

LEFT: The .17 Hornet, shown in a CZ 527, is very accurate, mild to shoot, has a flat trajectory and is cheap to reload.

Unknown 7x54mm Mauser cartridge

Q I was reading a book (actually a novel) wherein the hero took part in the Boer War on the side of the Cape Dutch forces. Mention was made of DWM Mauser rifles shooting a 7x54mm cartridge. At first I thought this was a misprint and should have been 7x57mm, but it was repeated several times. I cannot find any mention of a 7x54mm cartridge in *Barnes Cartridges of the World* or any other book. Can you tell me if this 7x54mm cartridge really existed or was a figment of the author's imagination or lack of knowledge?

Charles Jenkins

A Ludwig Olsen, a well known authority on Mauser rifles, makes mention of a special short-neck round with a 53.5mm case being used by the Boers. It was loaded with a long round-nose bullet and overall length was the same as the standard 7x57mm cartridge. Australian authority Colin J Simpson called the short-neck cartridge the 7x54mm Mauser and said it was probably produced by DM (DeutscheMetalpatronen fabrik) in 1896 by simply necking down 7.65x54mm Argentine Mauser cases to fill the urgent need for 7mm ammunition by Boer forces during the Boer War.

Problems with ruptured cases and bullets blowing up were frequent, but overcome by lubricating the bullets. Later, RWS loaded the 7x54 with a pointed hollow-point bullet for sporting use from 1925 to 1934. I don't have any ballistics for the 7x54, but they were most likely not much different to the 7x57.

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Lubricating steel cases

Q I've been shooting steel-cased ammunition in my Howa .223 and was wondering if they'd feed more smoothly if I used grease on them? Also, I recently suffered a broken extractor and wondered what the cause might be?

Adrian Brown

A Cartridge thrust against the bolt is reduced by friction between the brass case and the chamber walls. While difficult to calculate, this reduction in friction is very large and can make the difference between safe operation and cracked or broken bolt lugs. Don't use grease on cartridge cases since it would reduce the amount of friction between the case and the chamber, increasing bolt thrust enough to cause bolt lug failures. An acquaintance of mine broke three extractors on his Howa due to the use of steel-cased cartridges.

Meaning of minute of angle

Q It is common to read about minute-of-angle (MOA) accuracy in different articles dealing with the subject of accuracy. Since I am no mathematician, can you translate minutes of angle into inches at 50 and 100 yards? With my Ruger American .22 WMR I can land five shots into roughly one inch at 50

yards. My Ruger M77 .270 Winchester averages about 1½-inch groups at 100 yards. I consider that level of accuracy to be adequate for my style of hunting, but am curious as to what you consider to be decent grouping for the average shooter with a factory rifle at those distances.

Rod Taylor

A A minute of angle is 1.047" at 100yd; therefore, one MOA is 2.094" at 200yd and so on. A 1MOA rifle then is one that will theoretically shoot 1" groups at 100yd, 2" groups at 200yd and so on.

Your M77's 1½" groups are no handicap for hunting big game animals over normal ranges so there's no need to worry. For a good many rifle/factory ammunition combinations, that's average grouping.

Shooting glasses for several reasons

Q Is it advisable to wear shooting glasses for target shooting? If so, what colours? Is there any one colour that is suited for all lighting conditions?

David "Ossie" Osborne

A I strongly recommend the wearing of shooting glasses. Many experienced competition shooters, both rifle and shotgun, wear special shooting glasses whenever they are firing. They wear



Yellow coloured lenses which cancel out blue wavebands and sharpen the image are preferred for shooting glasses.

them because they believe the colour not only gives better target definition, but affords protection to the eyes.

As to choice of colour, a light shade of yellow seems to be preferred by a majority of shooters, who consider it gives a more distinct outline of the bullseye, regardless of the light conditions.

Shooters of bolt-action rifles who reload their ammunition should wear shooting glasses that have impact-resistant lenses. This protects them from gases from a pierced primer or fragments of brass from a case-head separation. Even trap and skeet shooters find it worthwhile to wear glasses for protection against flying particles of wads or powder grains. The fact that a man has shot for years without protection and suffered no injury does not mean he might not come to grief on the very next shot he fires.

Glasses can be had with optical correction if required.

Wants a light mountain rifle

Q I have decided to buy a rifle for mountain hunting, but it must be light, short and handy. Most of my hunting is for deer and the range they are shot seldom exceeds 200yd. The rifle I

have in mind is the Kimber Adirondack in .308. What do you think of my choice? Or can you suggest a better option?

Ken Grimes

A The Kimber Adirondack is in many ways similar to the company's Mountain Ascent and Montana rifles. All three are dimensionally scaled to their cartridges, have thin barrels and featherlight stocks, which make them easy to carry. I have reviewed all of these three ultralight rifles and prefer the latter pair. There are things I'm not crazy about in regard to the Adirondack: the fluted bolt is not as smooth to operate as the other models; the stubby 18" barrel cuts down ballistic performance, delivering reduced velocities and higher trajectories.

If you want a light mountain rifle that's effective against deer-size game I'd recommend the Mountain Ascent in either .270 Win or .280 Ackley Imp. It has a 24" barrel and weighs less than 5½lb. In those calibres it will shoot flatter and hit much harder. Fitted with a light scope it should tip the scales at about 7lb. Unless you are a consumptive dwarf, you should have no trouble toting it in the steepest terrain. ☒



The lighter the outfit, the better it is in high, steep country where a rifle is carried more than it is fired.

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SMALL GAME





Leon Wright is convinced there is no one-gun solution for small game hunting, but the shotgun comes mighty close.

Gunning for the small game

Thinking of taking up small game hunting? Think carefully, maybe the shotgun is the firearm for you. Nothing beats using a shotgun, whether you're swinging onto a fast-rising blackie that has landed among your decoys; or for that bolting rabbit flushed from its squat by an eager working dog; or taking that fox you lured into range with skilful calling; and not forgetting that quail which exploded from under your dog's nose, scaring the daylights out of you.

Leon's Beretta 692 Black Sporting is his favourite shotgun these days for rabbit hunting.

I MUST be getting soft in my old age for I am starting to drop words like ‘feral’ and ‘vermin’ when talking about hunting rabbits, hares, foxes etc. I think they are deserving of much better titles than that. Nobody in their right mind would like to see them reach plague proportions, as they have in the past, but you can’t deny they offer an awful lot of hunters — new chums and old hands alike — excellent hunting at low expense.

I’d hazard a guess and say a large number of firearms and ammunition would be sold to small-game hunters. Facebook has any number of small-game hunting pages, all with thousands of followers, so I am not the only one who considers it good hunting.

I am going to stick my neck out here and state that anyone venturing into the small-game scene for the first time and looking for their first firearm would be best served by a shotgun. We have rabbits, foxes, hares, ducks, quail, crows (in some states), geese and introduced birds like pheasant, Chukar etc, all covered by numbered shot. If you are prepared to step up to lettered shot, you can even include pigs, goats etc.

The only governing factor is range, but this cannot be considered a real handicap as a hunter has to get in close, which in itself teaches you the skills of stalking and showing restraint, both traits that will benefit you if and when you hunt big game.

Yes, I know a lot of these can be taken with a rifle, but I combine a number of species on a hunt if possible. I am often out calling foxes during duck season, and it is just as easy to deck a fox as a duck with a shotgun, but the same cannot be said if you are carrying a rifle, even ignoring the fact that it is generally illegal to fire at a duck with a rifle.

RABBITS

The old bunny has been hunted in many ways and is probably the easiest to start your hunting journey with. For the simple outlay for a shotgun and some



“

It is just as easy to deck a fox as a duck with a shotgun.”

shotgun cartridges you can have a great day. A single-barrel shotgun in 12 or 20 gauge is all you need.

You can wander around a suitable area, taking rabbits as you flush them with your heavy footsteps. You can use ferrets to flush them from warrens then take them as they bolt from their burrow entrances. My favourite is taking them as my curlies flush them from heavy cover.

Folding a rabbit with a smooth,

flowing shot as it streaks for cover takes a lot of beating.

As you get the hang of shotgunning rabbits, experiment with chokes, matching them to different loads. Begin with lighter loads, such as 32 grams of No 4 or No 6 shot out of a half-choke barrel. The half choke — known as the modified choke — is probably the best choice for 90 per cent of the small-game hunting you are going to encounter.

1 2



FOXES

Foxes can be hunted in numerous ways and can be targeted while also hunting, say, rabbits. The shotgun is perfect for use when calling in foxes, especially if you are a newcomer and have yet to learn how to bring a fox to a standstill when in range and, of course, a shotgun is highly desirable for use on that fox that is hell bent on reaching the distressed creature that is making that alluring wail.



ON THIS SPREAD

1 Hunting rabbits with shotguns over dogs takes an awful lot of beating.

2 Leon's mate Mike thoroughly enjoyed his outing after rabbits, using Leon's 20-gauge Beretta.

3 Leon is a keen user of the much maligned 20-gauge. He has used this Silver Pigeon Sporting on rabbits, quail, pheasant, ducks, hares and foxes with great success.



“

Folding a rabbit with a smooth, flowing shot as it streaks for cover takes a lot of beating.”

foxes were a bit more prevalent than usual and, seeing as I was using 36 grams of No 3 shot, I started blowing the tin whistle that I religiously carry around my neck when I am out after foxes or rabbits. One after another, the foxes trotted in to my whistling, and all fell to the load of No 3 shot out of my 20-gauge shotgun.

QUAIL

One of the greatest days in the field a shotgunner can experience is hunting quail over a dog of the pointing or flushing breeds. German shorthair pointers are

ON THIS SPREAD

4 Shotguns are excellent for small game under the light at night.

5 Leon's brother, Greg, and labrador, Jock, with the results of a day in the field with the 12-gauge shotgun.

6 This Beretta Silver Pigeon Sporting Classic in 12-gauge is a very popular field gun.

7 Don't knock the .410, which is a good gun for a young up-and-coming hunter to start with.

Hunting organisations usually run a few fox drives annually and shotguns are always used on these drives for a couple of reasons, including for safety's sake.

Fox calling or whistling is usually best carried out from early summer through to the breeding time, which is usually June and July, when, as a general rule, they want nothing to do with the call.

During summer a large percentage of the foxes coming into your calling stand will be young ones with summer skins and these can easily be taken with 36 grams of No 4 shot. In the colder months their fur thickens up and heavier loads of No 2 shot or even BBs are desirable.

As you gain the necessary experience a good load for foxes as well as rabbits is 36 grams of No 3 shot in either 12 or 20 gauge.

Some years back on a rabbit hunting expedition we noticed the





GUNNING FOR DUCKS

You have no choice but to use a shotgun on ducks. The choice of cartridges is also limited and in many jurisdictions must be steel shot. If you're new to it, join one of the gun clubs where you will learn how to shoot properly. Remember to pattern your shotgun to see where your shot is hitting; you may be surprised.

It may take a bit of experimenting to marry your steel shot load to the choice of choke, which is why it may pay to be a member of a gun club. It took me quite a bit of experimenting on the pattern board with my Beretta under-and-over before I settled on 32 grams of No 2 or No 3 shot out of the improved cylinder in the bottom barrel and modified in the top barrel. As I do a lot of shooting over decoys during the season, I find this combination of cartridge and chokes about as good as it gets in my Beretta.

When shooting over dams, which is just one method of duck hunting, the ranges are usually between 30 and 40 metres, which I consider about the maximum for steel shot. For consistent kills I step up a bit to using 36 grams of No 2 or No 3 shot out of modified and improved modified barrels.

Duck hunting and shotguns go together like peaches and cream and the gauge you choose will be up to you. If you plan on doing a bit of trap shooting during the off season to keep your eye in the 12 gauge would be the better choice, but if you want a shotgun just to hunt game, the 20 gauge will serve you just as well. Don't listen to the armchair experts. I can tell you from a lot of experience the 20 gauge will handle ducks quite adequately and I prefer it when hunting over decoys.



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Shotguns are always used on fox drives for a couple of reasons, including for safety's sake.”

extremely popular with quail hunters, as are the English pointers, but there are other breeds along the spaniel lines that are excellent quail hunters as well.

Even a single-barrel shotgun in 12 or 20 gauge is quite adequate under normal conditions; I prefer to take the birds one at a time. More open chokes are favoured by quail hunters for often the quail will sit pat and burst from under the dog's nose in a whirl of drumming wings. A 32-gram load of No 7, 8 or 9 shot is perfect for taking these little rockets, and chokes from modified down would

be the perfect choice most times.

Truth be known, most dogs can be used for quail hunting. Curlies, labradors, Jack Russell terriers, all will get the job done.

PHEASANT

As with quail, pheasant hunting is at its best behind a good dog as pheasant can be quite elusive when they become aware of your presence. I have hunted pheasant a few times and found it exhilarating. A big, cackling cock-bird rising from under the dog's nose is a sight to remember. Similar loads and chokes to quail



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hunting are appropriate but I step up to No 6 shot in both barrels of my Beretta.

There is no such thing as the dyed-in-the-wool choke and cartridge combination. It boils down to the weather conditions on the day. The last time I hunted pheasant the weather conditions were far from perfect with the wind all but blowing us off our feet. This time I opted for the modified choke in the bottom barrel and the improved modified in the top barrel, but I chose to stick with the 32 grams of No 6 shot. I have known others to step up to 36 grams of No 4 shot in extreme weather.

GEESE

I have hunted Canada geese in New Zealand and Cape Barren geese on Flinders Island, and I found tighter chokes and heavier loads the way to go for these very large birds. ☒

ON THIS PAGE

8 For taking foxes coming in to the call or while driving them, the shotgun is supreme.

9 Shotgun ammunition is fairly easy to obtain in most areas, with the 12-gauge the easiest by far.

10 Three different models of shotgun, from the top down: an under and over, a side by side and a single barrel.



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The Sauer 100 was tested with eight different factory loads, with average groups ranging from .694 inches to 1.056.

Storm chaser

Sauer's new 100 Stainless XTA is a handsome, well-designed rifle with a polymer stock that provides a pragmatic answer for a hard-working hunting rifle carried in the most extreme weather conditions.

THIS Sauer can hardly be classed as an entry-level rifle but its utility lies not only in its no-nonsense approach to being an all-weather rifle, but the attractively contrasting combination of stainless metalwork and soft-touch black polymer stock. The metal requires less attention during a foul-weather hunt

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The grip, being sharply curved, is very comfortable to grasp.”

and the stock will never shift or move due to absorbing moisture. You can tell at a glance that this stainless steel/synthetic rifle can handle anything that extreme climatic conditions can dish out, without missing a beat.

The Ergo Max stock is classically styled, an injected glass-reinforced, moulded unit. There are no visible mould lines and the overall surface is smooth with a soft-touch finish. There is a black rubber recoil pad and instead of chequering there

are panels of impressed stippling on forend and grip. They afford a secure grasp and are more friendly to the hand than a sharp diamond pattern.

A disc bearing the Sauer logo is inset into the bottom of the pistol grip. The grip is 5.5 inches (14cm) in diameter or half an inch bigger than my Kimber Classic Select and custom Mauser. It has a slight palm swelling on both sides. Being sharply curved, I found it very comfortable to grasp. The slim, tapered forend is rounded on the bottom, making it comfortable to hold offhand, and it also has a schnabel tip — a classy touch. Blued steel swivel studs are included.

A synthetic comb insert in the stock can be adjusted higher to suit the conformation of the shooter's face and cheek. Length of pull is 14.5" (37cm). All of my rifles have a 13.5" LOP, but I found the extra length fitted me pretty well and left the scope with 3.75" (9.5cm) of eye relief.

The Sauer's action bears a close resemblance to that of the Mauser M18, but is made of stainless steel and the left side of the receiver, instead of being round, has a dished area with "Sauer 100" in relief. The bottom metal is different too: the M18 has the trigger guard moulded as an integral part of the stock, whereas the Sauer's



is a one-piece alloy unit with a nicely contoured guard that looks very upmarket. The bolt release, a rocking catch on the left rear of the receiver, is identical to that of the M18.

The medium profile, stainless steel barrel is cold hammer forged with a 1:12" rifling twist. The barrel is 1.11" (28mm) in diameter at the receiver ring and it maintains that measurement for the first 1.268" (32mm) before tapering to 0.553" (14mm) at the threaded muzzle, where it has an 11-degree crown. The outside diameter of the muzzle cap is 0.685" (17.5mm).

A major contributing factor to the Sauer 100 XTA's accuracy potential is the company's Ever Rest bedding system. This consists of a 1.2" (30mm) long aluminium bedding block and from there on out the barrel is free floating. The 100 XTA doesn't have a conventional recoil lug. The bedding block is dished at the front to be a close match for the contour of the barrel and is then recessed with a ridge at the rear that extends upward to engage a slot in the receiver ring. A 10mm nut attaches the barrelled action to

the bedding block and controls the torque at the front of the receiver ring.

If you try to remove the stock by removing the front and rear action screws, you'll find the action is still securely held to the stock. The front action screw merely serves to hold the bottom metal in place. Before the stock can be removed, it's necessary to remove the retention nut,

ON THIS SPREAD

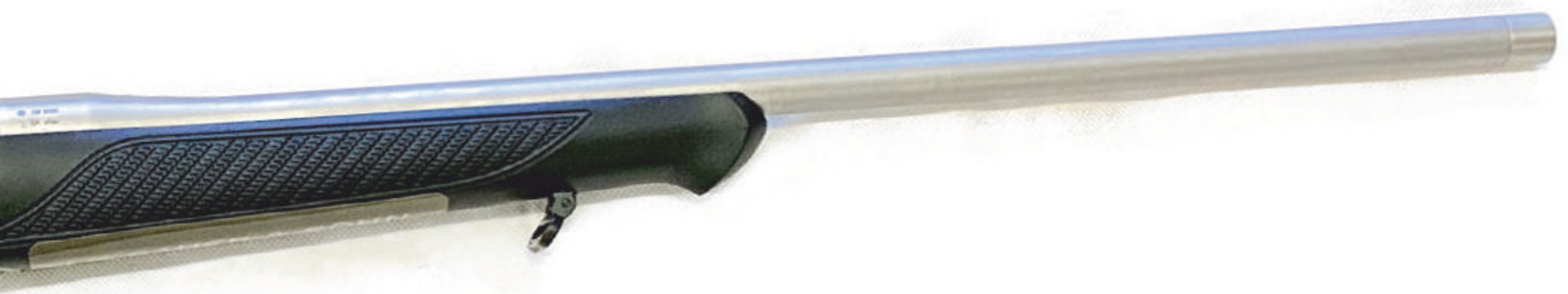
1 The contrast of stainless steel and black soft-touch stock gives the Sauer a good look.

2 Bedding plate in the stock supports chamber section of barrel, and a ridge on its rear end enters a slot in the receiver ring to act as the recoil lug.

3 The rear end of the bolt is contoured to match the shape of the receiver's tang. Rocker safety has three positions and bolt knob is ribbed.

4 The Sauer's bolt face is deeply recessed and houses two plunger-type ejectors and a sliding-plate extractor.

5 The Sauer is an attractive rifle with excellent foul-weather features that will protect it no matter where you hunt.



Sauer 100 Stainless XTA

Type: Three-lug bolt-action
centrefire

Calibres: Mini – .222 Rem, .223
Rem; Medium – .243 Win, 6.5
Creedmoor, 6.5x55 SE, .270 Win,
.308 Win (tested), .30-06, 8x57IS,
9.3x62; Magnum — 7mm Rem
Mag, .300 Win Mag

Capacity: 5+1 (standard rounds);
4+1 (magnums)

Barrel: 22" (59cm) cold hammer
forged, 1:12" twist

Overall length: 42in (107cm)

Weight: 7lb (3.2kg)

Stock: Injection molded Ergo
Max, ambidextrous palm swell

Trigger: Single-stage adjustable
from 2.2-4.2lb (1.0-1.9kg)

Safety: 3-position rocker

Sights: None; drilled and tapped
for Remington 700-style bases

Manufacturer: Sauer, Germany

Price: \$1690 RRP



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The trigger is excellent, crisp and totally inert without the slightest hint of any creep or backlash.”

which is threaded internally for the 6mm front action screw, and another screw in front of the trigger housing as they are what hold things together. The rear action screw goes through another 10mm nut to secure the trigger housing to the tang, but it is left in place. Unlike the M18 guard screws, which have 3/16” hex slots, the Sauer uses a 5/32” Allen wrench.

The receiver is round-bottomed, 8.50” (215mm) long with a diameter of 1.386” (35mm). The tang is short and thick, being rounded out from the rear end of the cylindrical receiver, which has cutouts for the magazine and the ejection port. The ejection port is partially enclosed, a detail which adds to the stiffness of the action and promotes accuracy. The port is wide

enough to allow you to insert a cartridge into the magazine to single-load the rifle.

The bolt is of the fat-body design common to many makes of rifles today, and it has a low 60-degree lift. The bolt face is deeply counterbored with its wall interrupted only for passage of a sliding-plate extractor. Twin spring-loaded, plunger-style ejector rods situated at two o’clock and six o’clock consistently pelt fired cases out at a low trajectory so that they miss the scope tube.

The bolt body is only slightly larger in diameter than that of its three locking lugs, which does away with the need for machining lug raceways in the receiver. A spring-actuated bolt-release catch pivoted on the left wall of the receiver acts to guide

the bolt. Engaging a long lengthwise groove milled into the bolt body, it supports movement of the bolt in a very uniform and steady manner, preventing any wobble and aiding smooth bolt travel.

A fluted polymer knob on the bolt handle has a series of shallow cuts around its circumference. Whether they offer any advantage is open to question, but the knob is easy to lift and the bolt operates very smoothly.

Additional machining was

eliminated by having the bolt lugs lock behind shoulders on a steel ring sandwiched between the barrel shank and receiver ring, a la M18. Sauer fitted the barrel for minimum cartridge-head protrusion. The barrel seats directly inside the receiver, rather than out at the front rim of the receiver ring, and it clamps the steel ring carrying the locking shoulders between it and the receiver. Besides fitting close to the bolt, the barrel’s chamber mouth has a very shallow

ON THIS PAGE

6 Nicely shaped trigger guard assembly is alloy with flush-fitting magazine. A grip cap carrying the Sauer logo is inletted into bottom of the grip.

7 Butt has an insert in the stock that allows the comb to be adjusted for height.

ACCURACY RESULTS SAUER 100 STAINLESS XTA

Ammunition (.308)	Bullet type & weight (gn)	Velocity (fps)	Group size (inches)
American Eagle	130 JHP	2940	.959
Winchester Super-X	150 Power Pt	2775	.694
Browning	155 BXR	2955	.869
Federal Power-Shok	150 JSP	2790	.990
American Whitetail	150 Interlock	2725	1.056
Sellier & Bellot	168 HPBT Match	2459	1.007
Federal Premium	185 Berger Match	2536	.996
Sellier & Bellot	180 PTS	2426	.946

Accuracy is the average of three five-shot groups at 100yd. Velocities measured with MagnetoSpeed chronograph. Temperature 26C



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chamfer. These factors combine to give an effective cartridge head protrusion not much in excess of the .125" (3mm) depth of the bolt-face counterbore itself.

The receiver ring tends to entrap and control any gas escape. Not only does it lack gas ports in its walls, it is blocked off at the rear by the enlarged shoulder behind the bolt head, leaving only the magazine feed ramp for gas release. But the Sauer 100 lacks the large flange that the Mauser M18 has on the bolt sleeve to deflect any gas flowing to the rear along the bolt exterior.

The trigger is the same unit fitted to the Mauser M18 and from the factory it consistently lets off at 3lb (1.36kg). It is excellent, crisp and totally inert without the slightest hint of any creep or backlash. It made the rifle a pleasure to shoot.

The trigger is externally adjustable by inserting a 1.5mm Allen wrench into a hole in the base of the finger lever, which has a smooth surface and a width of 0.30" (7.6mm). Adjustment range is 2.2 to 4.2lb (1.0-1.9kg), but I saw no reason to tinker with it as I am best-suited by a 3lb trigger.

The rifle uses the M18's double-stack, five-round polymer magazine (four in

magnum) that's easy to load. The bolt pushes cartridges off the follower smoothly and straight into the chamber. Study of the Sauer locking system reveals some very careful engineering. Each lug moves just past its receiver cam on bolt closure yet without any wasteful over-rotation or overlap.

Sauer uses one action length for short- and standard-length cartridges, no matter if they are short like members of the .308 family or .30-06 length. The .308 magazine in my test rifle was blocked to provide a maximum overall cartridge length of 2.875" (73mm). Other action lengths include a mini for the .222 and .223 and a magnum for the 7mm Rem Mag and .300 Win Mag.

The magazine clips in and fits flush with the trigger-guard assembly, something that really looks neat and I'm very much in favour of. Removing the magazine to refill it is easy — you simply push on a serrated button located in a circular depression behind the front guard screw and it drops out easily into your hand.

The receivers on many European rifles have their upper surface designed to take their proprietary or a similar expensive mounting system. Aussie shooters will be happy to know that the receiver of



Trigger with integral safety is adjustable from 2.2 to 4.2lb (1.0-1.9kg) without removing the stock.

the Sauer 100 XTA is contoured to take Remington 700 bases which are not only affordable, but rugged and reliable. I mounted a Zeiss Conquest V6 3-18x50 in Nikko Stirling Zero-Lok rings for testing. These mounts are not only featherlight, but are one-piece and attach directly to the receiver. In my book, they are a much better fit for a sporter than a Picatinny rail and Weaver-type rings.

The blued scope looks good on the Sauer.

I had a good supply of .308 factory ammo on hand that I could use. The Sauer 100 is a hunting rifle and the results with different loads are listed in the table.

Adding the Zeiss Conquest V6 and five rounds to the

Sauer increased its all-up weight to 8lb 14oz (4kg), which is a bit on the heavy side for lugging around the high sierras. It should be fine, however, for lower elevations where weight is not a factor and it's not too much of a burden to carry on a long hike. If I owned the Sauer 100 Stainless I would reduce its carrying weight by fitting a lighter scope.

However, this is my personal preference and no matter what scope you choose, it won't effect the Sauer's field performance enough to worry about. If you are looking for a genuine all-weather rifle at a reasonable price, you'll look a lot farther to find one that will be better than the Sauer 100 Stainless XTA. 

A safer safety

The Sauer 100 and Mauser M18 are both made by Mauser in Isny, Germany. From the angle of keeping costs down, it makes good sense to interchange parts. The trigger is one item that both rifles share.

The safety is an integral part of this trigger mechanism. The engineers obviously spent a great deal of time making these rifles as safe as possible.

Thumbing the three-position lever located at the right side of the tang, directly behind the

bolt handle, to its rearward position blocks both sear and trigger movement, as well as bolt rotation. Moving it to its middle position allows the bolt to be opened for loading or unloading the chamber with the safety engaged.

Should the safety be disengaged while the bolt is in its unlocked position, the firing pin remains blocked from forward travel until the bolt is rotated to full lock-up. To test this feature, I chambered a dummy round with the safety disengaged and then pulled the trigger

with the bolt rotated about halfway toward its locked position. This released the firing pin with enough force to automatically complete bolt rotation to lock-up, but the firing pin fell short of reaching the primer of the chambered case. I repeated it several times with the same result — the firing pin never once made contact with the primer. Lifting the bolt handle far enough to re-cock the firing pin and then rotating the bolt to full lock-up before pulling the trigger allowed the firing pin to fall and fire the round.

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AVAILABLE CALIBRES: .223 Rem., .308 Win., .30-06 Spring., 6.5 Creedmoor, 6.5 PRC & .300 Win. Mag



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

AVAILABLE CALIBRES: 223 Rem, 243 Win, 270 Win., 6,5x55 SE, 7mm-08, 6,5 Creedmoor, 308 Win., 30-06 Spring., 8x57 IS, 9,3x62, 6,5 PRC, 300 Win Mag & 7mm Rem. Mag.



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We've been anticipating it for decades. Howa's first rimfire rifle is here and it's a ripper!



HUNTERS of small game have been waiting for Howa to bring out an inexpensive rimfire for the past four or five decades. Finally, it has happened. The Model 1100 is outstanding, with several attractive features not found in the majority of rimfire rifles.

The Howa Model 1500 centrefire rifle has been around for a long time, its lasting success probably due to it being a clone of the highly successful Sako Finnbear action. It is affordable and accurate as well. The rifle first appeared on the market in 1967, labeled the Dickson Howa Golden Bear, and has since been sold under a number of different brand names including Smith & Wesson, Mossberg and Weatherby before finally ending up in the stable of Legacy Sports to be distributed in Australia by Outdoor Sporting Agencies under its original monicker.

The new rimfire builds on that success. Naturally, the Howa 1100 has a tubular receiver and the polishing and bluing on the metalwork is excellent for a rifle that is relatively inexpensive. At the rear, the bolt sleeve is contoured to match the shape of the receiver, giving it a streamlined appearance.

The Howa's receiver is

drilled and tapped to allow for mounting a scope, just one of several unusual refinements found on this economically priced rimfire. Outdoor Sporting Agencies sent me a two-piece Zero Lock mount which has the rings machined as integral parts of the bases. They are pleasing to the eye and look a bit more upmarket than the usual tip-off rings.

The bolt is the typical half cutaway rimfire type with dual extractors and a round firing pin rather than one having a chisel nose. The rifle cocks on the uplift of the bolt handle, which has a large pear-shaped hollow handle. Lock-up is accomplished by the root of the bolt handle turning down into a matching square notch in the side of the receiver.

Another nice touch is having a bolt release catch on the left rear side of the receiver that runs in a slot in the bolt body, instead of using the sear as a bolt stop like most .22s.

The Howa has a 457mm (18.5") barrel that's pressed

ON THIS SPREAD

1 The Howa 1100 is a practical rifle in the field even with its target-type stock.

2 Consistent, precise accuracy delivers literally drop-dead performance on ferals.



ON THIS PAGE

3 The ergonomic target-type stock is easy too hold steady from the offhand position

4 Two 10-shot polymer magazines are supplied with each rifle.

5 Howa has finished the 1100 so well it belies the low price tag.

6 Butt stock has a high, straight comb that places the eye dead in line with the eyepiece of a low-mounted scope.

and pinned into the receiver. Much has been made of having rimfire barrels threaded into the receiver ring, but rather than being threaded for attachment to the action the barrel shank has a smooth surface and is force-fitted into the receiver, then pinned in place. This is nothing new. Anschütz, whose match-winning record is exemplary, attaches its barrels using the same method.

The barrel is medium sporter weight and straight

tapered from 22mm at the receiver ring to 16mm at the threaded muzzle cap, which makes it pretty stiff — something conducive to fine accuracy. Twist rate is the standard 1:16 for .22LR. The bullet in a .22LR reaches its maximum velocity in a barrel length of approximately 16 inches. Velocities published by ammo makers are obtained under controlled conditions with a barrel measuring 14” in length for most .22LR cartridges. As a result, it is

quite common for instrumental velocities to differ somewhat from published figures. The only way to find out the exact velocity your rifle is giving is to chronograph it.

My test rifle had a target-style injection-moulded black synthetic stock with a vertical pistol grip and a butt stock with high, straight comb. It also had sling swivel studs and soft 1” recoil pad. The forend is flat on the bottom with grasping grooves along

the upper edges and M-LOK slots for attaching accessories. The stock is obviously optimised for sandbag or prone shooting but feels like a piece of 4x2 in the hand when shooting offhand. The stock will undoubtedly hold most of its appeal for target shooters, but Howa will offer the rifle with a classic-style sporter stock made of walnut. Traditionalists will find it worth the wait.

The Howa M1100 comes with two banana-shaped,

HOWA MODEL 1100 ACCURACY & VELOCITY

Ammunition	Velocity (fps)	Groups sizes (inches)		
		Smallest	Largest	Average
Dynamit Nobel Target Rifle	1070	.50	.90	.82
Lapua Polar Biathlon	1132	.38	.69	.65
Dynamit Nobel R50	1065	.55	.72	.68
Dynamit Nobel Club 22	1075	.55	.88	.74
Hornady .22 Long Rifle	1236	.74	.90	.85
Eley Match	1115	.45	.76	.69
Eley Club	1025	.76	.99	.84
Eley Tenex	1058	.36	.55	.48
SK High Velocity	1352	.79	.99	.85

Accuracy taken as the average of 10 five-shot groups fired from a sandbag benchrest. Velocity is the average of 25 rounds measured with Chrony chronograph.



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10 11



10-shot polymer magazines. The follower and magazine well are made of the same material.

To find out what this new rifle was capable of I installed a Bausch & Lomb 2.5-10x40 scope in the rings and adjusted it so that the bullets landed on point of aim at 50 yards. After selecting the ammunition to be fired, the initial firing was carried out with Dynamit Nobel Target Rifle ammunition. The high magnification of the Bausch & Lomb scope made it possible to see the holes as they appeared in the target and, as usual, five-shot groups were fired.

My mate who was watching through a spotting scope exclaimed, “The groups look small!” When the first five groups were measured we found they were .500, .720, .580, .660 and .740, with an average group size of only .640 inches. This was only the first target, but it made me form the opinion that the Howa M1100 is a very desirable rifle. It’s in the orbit of the CZ, Sako and

other high-class European rimfire rifles. A summary of the accuracy data obtained using several different types of ammunition is shown in the accompanying table.

The crisp, clean trigger pull helped me gain tight groups. According to my RCBS Trigger Pull Scale, the trigger pull consistently broke at 3½lb (1.6kg). The trigger can be made lighter by turning the adjustment screw located in the front of the trigger housing.

The rifle’s accuracy was very consistent. I fired 10 different .22 Long Rifle cartridges and the overall average group size was under an inch at 50 yards. The load that gave the tightest groups was Lapua Polar Biathlon, the best five-shot group with that cartridge measuring just .383.

Summing up: I believe that the Howa M1100 selling in the \$600-\$700 bracket will capture a significant segment of the market. The bottom line is that the Howa rimfire showed it is one of the best bargains available today. ☒

ON THIS PAGE

7 Howa Model 1100 taken down into its major component parts.

8 The grip is straight and vertical, ideal for use with a bipod or on a bench. Texture provides good grip.

9 Bolt has twin extractors and straight handle with large pear-shaped knob. Lock-up is the root of the bolt handle engaging a notch in the receiver.

10 Unusually for a rimfire, the tubular receiver has two action screws instead of the usual one. Trigger housing is steel with integral safety and weight-adjustment screw. Magazine well is polymer.

11 An unusual feature: the Model 1100 has a bolt release catch on the rear of the receiver just like a centrefire.



Howa Model 1100 .22LR

Type: Turn-bolt action

Calibres: .22LR, .22WMR

Capacity: 10 rounds

Barrel: 457mm, 1:16-in twist

Overall length: 940mm

Weight: 2.6kg

Stock: Black synthetic; target

Grips: Textured

Length of pull: 360mm

Finish: Blued, matte

Trigger: 1.6kg / 3½lb (adjustable)

Sights: None, drilled and tapped for scope

Maker: Howa, Japan

Price: \$690 RRP

Contact:
Outdoor Sporting Agencies
Web: osaaustralia.com.au



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SPECIES GUIDE





Sporting Shooter's resident fox-hunting fanatic, Tony Pizzata, shares his knowledge of this introduced and infamous predator.

The Wily Fox

Foxes (*Vulpes* *Vulpes*) are a member of the Canidae family which also includes dogs, wolves, coyotes, dingoes and some 30 other species. While the European fox is the most common and, indeed, the subspecies found throughout many parts of Australia, there are in fact many sub-species of fox around the world.

A healthy fox who lacks a healthy sense of suspicion will often give you a perfect chance for a well-aimed shot, instead of bolting.



“

A fox has an average territory of two to five square kilometres, but that can be governed by food source and availability.”

I’VE been fortunate enough to have hunted them in Canada, where the sub-species is a lot smaller in body size than our European foxes. During the winter months, however, they feature a much thicker hide and bushier tail, probably due to the fact they live in extremely cold conditions.

Today, fox hunting provides excellent sport with rifle, shotgun or bow via several different methods.

A brief history

The European fox was first introduced into Australia in the late 19th Century. They were released in Melbourne for sporting purposes, to be hunted on horseback. By the late 1800s their remarkably quick adaptation and subsequent spread through Victoria made the fox a nuisance to society and a pest to landholders, but arguably an asset to hunters.

By the early 1900s the cunning red dog had been sighted as far west as Kalgoorlie in Western Australia. Since then they have flourished throughout the country, but tend not to be found in significant numbers where other predators like wild dogs are present.

Location, habitat, behaviour

The red fox, sometimes referred to as Reynard, has today spread through most of the southern two-thirds of Australia. There have been claimed sightings in Tasmania but with no real proof that they exist there.

The fox has adapted remarkably well to our countryside and is also found on the fringes of suburbia. It’s not uncommon to sight a fox around urbanised landmarks such as Sydney Airport and the ACT’s Capitol Hill. In fact, I’ve seen them around many suburbs, streets, parks and beaches in NSW, and I’m sure this would be the norm in other states.

Foxes may be found living in a variety of habitat. A typical Reynard will often take over a rabbit or wombat burrow or may even choose to live in dense vegetation such as a blackberry bush or thick overgrowth. An indication of their presence is usually a strong, musky odour, food remnants around their burrow or long, twisted droppings, usually tapered at both ends. Studies indicate a fox has an average territory of two to five square kilometres, but that can be governed by food source and availability.

While the fox is usually nocturnal, it is not uncommon to see them during daylight hours. They have an excellent sense of smell used to detect their quarry and to identify competitors and potential predators like us humans. Diet will include small mammals, birds, reptiles, frogs and even fruit or sweet vegetables, however, his favourite diet is young lamb, chickens and rabbits.

Foxes do not bark like a dog, but instead can often be heard around mating time giving a throaty yelp or screech to attract a partner.

Both the male (dog) and female (vixen) become sexually mature in their first year, with mating season occurring around June or July.

ON THIS PAGE

1 Tony has had years of success in hunting foxes, and his experience is invaluable.

2 Fox populations can be huge in good areas, where it’s not difficult to knock over half a dozen without going far.

3 Foxes prints are easy to identify: they’re like a small dog’s.





X-BOLT

We didn't hold back when designing the X-Bolt Speed. The sporter contour barrel is fluted, light and easy to carry. The Cerakote Smoked Bronze finish is applied to the action and barrel and offers metal protection that is better than traditional bluing or stainless steel. The lightweight composite stock features the concealment of Browning OVIX camo.



X-Bolt Speed Ovix Camo

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Calibres:
243Win, 270Win, 300PRC, 300WM,
30-06Sprg, 308Win, 6.5CM, 7MMRM

The Max stock found on the Browning X-Bolt Hell's Canyon Max Long Range rifle is designed to help improve your shooting confidence by offering the adjustments necessary to adjust the stock to fit your body and dial-in fit for shooting at extended ranges. The wide fore-end has a flat bottom for added stability from the bench. A pair of swivel studs up front allow you to mount both a sling and bipod. A vertical pistol grip places your hand in perfect position, from the bench or prone, to manipulate the tang safety and optimize reach to the trigger. Browning OVIX camouflage provides maximum concealment against a wide variety of natural backdrops.



**X-Bolt Hells Canyon
Max Long Range**

RRP **\$2,495.00**

Calibres:
300PRC, 300RUM, 300WM, 6.8WST



4



5

“

Spotlighting is very effective but nothing beats the thrill of watching a fox eagerly come to the whistle.”

ON THIS PAGE

4 Tony with a Canadian fox. The luxurious coat is typical of these cold-climate animals.

5 Foxes are considered a pest almost all over the world, not only in Australia

The gestation period for foxes is 51 days, after which a vixen will usually produce three to four cubs, although mother nature varies the number a vixen will produce depending on food availability and the general condition of the fox.

Babies are referred to as cubs and born hairless, blind and deaf. Within two weeks they start to grow fur, see and hear. At four to six weeks their blue/grey colour begins to change to a red coat. The dog hunts for the family while the vixen tends to her young. Once cubs reach a certain age

they begin to stray from the den and fend for themselves, eventually moving into new territory.

Firearms and calibres

There are many ways to hunt the wily red coat and a variety of calibres to choose from. In the mid-to late-1970s, when fox pelt prices were at a record high, an appropriate calibre was required to do the job with minimal skin damage. The .17 Remington, released in the early '70s with a 25gn hollow point, was undoubtedly the correct medicine, producing little more than a pinhole in valuable fox pelts.

Today, due to a substantial lack of demand, fox skins are almost worthless to the fur trade and so foxes are hunted more for sport or pest control than profit. A thick winter pelt, however, makes a fine memento of the hunt.

Minimum calibre equals minimal pelt damage.

That said, the .22-calibre rimfire is all that's required to take care of a fox, although this will limit the safe effective range to around 50 metres. Other common calibres include the .22 magnum and .223, which are both used widely. For those who choose to hunt with a 12-gauge shotgun, loads using No 2

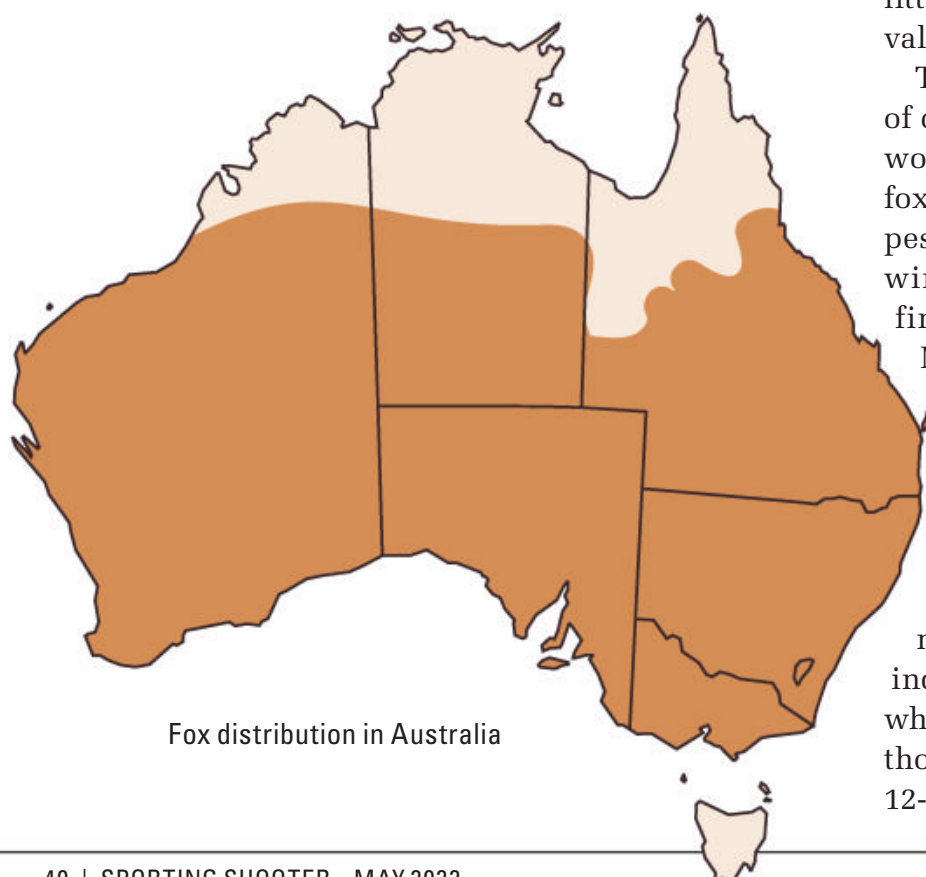
or BB are good medicine for the humble fox.

Hunting techniques

Spotlighting is a very effective way to control fox numbers around lambing paddocks, but nothing beats the thrill of watching a fox eagerly come to the whistle. To do so, first choose a vantage spot to whistle from with a good field of view and down-wind to prevent him from catching your scent. Ensure you are in a position where your body outline will be camouflaged and not sky-lined. If you do it right, Reynard may come within metres of your location and can be dispatched using a .22, .22 magnum or shotgun.

As a rule of thumb, a fox will not come to the whistle during mating season, or in areas where rabbits are non-existent, as the shrill of a whistle is designed to imitate a rabbit in distress.

Flushing foxes from blackberry bushes, thick vegetation and bull rushes is also another great method for hunting them. For this I've used well-trained dogs to flush them out or simply walked along a creek at first light with my trusty 12 gauge and a charge of BBs. Game dogs such as the fox terrier or Jack Russel are ideal company when flushing foxes as they are small enough to run through and around tight bushes and ferns. 



Fox distribution in Australia



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Talk about feed!

Even if there were lions in the long grass, you'd never see 'em.



“

His eyes were wide open and he was motioning that something was on the other side.”

IT'S hard to believe that over the past couple of years we've seen a swing from one of the worst droughts in recorded history to some of the highest rainfall in recorded history. Paddocks I used to fly across in my ute when checking trail cameras now have grass so high it's difficult for a vertically challenged person like me to hunt them effectively.

Not only can I not move properly, but I can hardly see! I've started taking tall friends with me to point out the game.

The weather just started warming up when I went out on one such hunt.

Conventional wisdom in pig hunting circles suggests checking spots they are likely to wallow when they want to cool off. In granite country that's soaked to the core, where all the game is spread out, this means walking through swamps and hoping to get lucky.

I'd hunted this area in the weeks prior and found a big mob; a few dominant-looking boars and plenty of sows. Even before I laid eyes on them, the damage on the ground left little to the imagination about the amount of fun the big mob was having.

Some of the sows were in season and the boars weren't leaving them alone. It was a great show, but I was carrying a bow at the time so keeping up with the mob was difficult. For this reason, when I asked a friend who hadn't shot a pig for a few years to come and

check the spot with me on the next trip, we brought rifles.

The afternoon played out like a typical hunt at this time of year: swatting mosquitos, dodging black snakes and struggling in the heat until the sun started to play nice in the waning light. I loved the look on my mate's face every time we found a new patch of sign.

“How many bloody pigs are in here?” he asked.

It's nice to find yourself in a target-rich environment from time to time.

As we sat up on a sheet of granite and tried to get the lay of the land, we both heard the unmistakable sound that can only be described as “happy as a pig in the proverbial”. It was close. I looked towards the sound and saw nothing. As I turned back to my mate, his eyes were wide open and he was motioning with his hand

that something was just on the other side of the grass; again, I wasn't tall enough to see.

He took aim with his rifle and the lone boar kicked his last.

On reflection, I think the extreme seasons we experience provide hunters with just as many problems as they do opportunities. During the drought, most of the critters I was taking home for the freezer left a lot to be desired in fat cover and muscle tone, yet finding them was a piece of cake. Now, the animals are breeding like crazy but it's hard to lay eyes on them.

Things will settle down soon enough and we may look forward to a couple of years of prime hunting.

Until next time, enjoy living your wilderlife.

Follow Dylan on Instagram at ‘_wilderlife_’

ON THIS PAGE

1 Dylan's mate with a boar from the granite country.

2 Every pig hunter wants to see this sort of sign.



The revolutionary one-piece bolt action rifle provides more stability hence more precision. The newly developed aluminium synthetic stock with handcrafted leather elements on the forend, cheek-piece and pistol grip offers a perfect grip and elegant design. The trigger unit can be easily removed without tools and stored in the butt. The butt plate can also be removed in a few easy steps and can be customised to personal requirements. A succesful innovation for modern hunters.

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The Shooters Union

Graham Park introduces a new column that will keep you in the loop.

YOU may have heard the Shooters Union name mentioned about the traps before – you may even be a member already – but just in case you aren't familiar with us or what we do, we'd like to take some time at the start of our new monthly column here to share a bit about us.

Our mission is simple: We fight for a fair go for all law-abiding firearms users. That includes target shooters, hunters, collectors, primary producers, pest controllers and anyone else who legitimately uses firearms.

We're a rapidly growing national organisation with members in every state and territory, and are particularly strong in Queensland, NSW and South Australia. We understand we're currently the second-largest national shooting organisation in Australia.

Our members are active and engaged, and come from all walks of life. Among others, we have doctors, lawyers, university professors, journalists, farmers, tradies, office workers, retail staff, police officers, health workers, firefighters, home-makers and even politicians in our membership base.

We provide \$20 million in liability insurance to each of our members while shooting. We are also a Genuine Reason for a firearms licence in Queensland; a Genuine Reason (Hunting) for Category A and B firearms in NSW (and

are an Approved Hunting Organisation there for the purpose of R licensing); and are a supporting reason in South Australia, Tasmania and the Northern Territory.

Our focus remains ensuring our members, and law-abiding shooters generally, get a fair go. Last year alone we helped more than 100 people in Australia with successful legal actions to keep or be issued licences. Many of these were made possible by our Legal Defence Fund scheme, whereby we arranged a free initial consultation with a lawyer and then, if the lawyer thought the case had merit, we paid the Civil Administration Tribunal filing fees on the member's behalf.

Many of the cases didn't even need to get that far, with our lawyers being able to resolve them for our members without going to a full legal hearing.

One of our fundamental beliefs is that members' money is for spending to fight for shooters, not for sitting in bank accounts doing nothing except cheering up our accountant.

You'll be hearing a lot more from us, particularly each month in this column. We'll be talking about what's happening in the shooting world in Australia, about some of the legislative developments, letting you know about major issues facing law-abiding firearms users, and generally keeping

you up to date with the more practical side of firearms ownership in Australia.

One of our big recent wins has been helping to get lever-release shotguns approved for import by the Department of Home Affairs and Border Force. We worked closely with other shooting groups and industry representatives, including the Shooting Industry Foundation of Australia (SIFA), the Firearm Dealers Association of Queensland, and others, to get the import regulations changed so lever-release shotguns would be considered Category A/B firearms.

You may not realise it, but it was *this* close to them being considered Category C or D and effectively being prohibited from import. It took a lot of work from shooters working together to help Home Affairs and Border Force understand the issues, and they deserve full credit and recognition for actually listening to the industry and making the recommended changes.

We're hoping affordable models of this design become available in the next 12 months – the only product currently on the market is too expensive for most shooters. There are allegedly patent issues between the premium gun maker and the Turkish manufacturers of the more affordable options, and these

issues need to be sorted out first.

While that aspect is disappointing, the successful changes to the import regulations are a monumental success for law-abiding shooters and their significance cannot be understated.

This is the first time since 1996 that we, as shooters, have had an explicit acknowledgement from the Commonwealth that we're not going to be restricted to firearms technology from the 1930s or earlier.

It's proof the authorities are willing to sit down and engage with shooters and the industry in good faith, and actually hear what we have to say — and not just in a tokenistic tick-the-consultation-box way, either.

We hope it's the first in a long line of positive outcomes for Australian shooters regarding this increasingly important issue, and we'll keep being there making sure our voices are heard by the governments at state and federal levels on firearm-related issues.

You can find out more about who we are and what we're doing on our website (shootersunion.com.au) or our Facebook page ([ShootersUnionOfAustralia](https://www.facebook.com/ShootersUnionOfAustralia)) and, of course, by reading this column each month! 📧

Graham Park is the president of Shooters Union of Australia.



Lobbying by various shooting bodies ensured lever-release shotguns were not effectively banned from importation.

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WEATHERBY/FIOCCHI PHOTO COMPETITION



WINNER

◀ This hefty boar fell to a shot by Tara Kempston on her first ever pig hunt! She was out early one morning in the brigalow belt of southern Queensland. "A team of pigs was spotted on the move under the rising sun," she says. "The lead pig proved to be the biggest. The trophy boar was no match for the Fiocchi ammo with a well aimed 55m shot from the vintage Remington 788." Beginner's luck? Not with a shot that well placed!



◀ Georgia Howell went hunting with dad on her post-lockdown, post-HSC schoolies experience. This billy is just one of the animals she bagged with her .223 using Fiocchi ammo.

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FIOCCHI



Leroy Smith sent this neat picture of a little bunny he got in a brother's vineyards in WA. It's hard to get a clear and well-exposed shot under flash. Well done!



Scott McCahon's daughter looks well pleased with herself, having got this pig along a semi-dry creek up Cape York way.

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PLEASE NOTE: this competition is not a game of chance. To achieve entry, photos must be submitted to the satisfaction of the Sporting Shooter editorial team. All entrants must be over 18 years of age and need to be suitably licensed as per individual state firearm regulations and requirements. The firearms will be issued to winners through licensed firearm dealers upon sighting a permit to purchase. Firearm industry staff, paid shooting publication contributors and staff are not eligible to enter this competition. For full terms and conditions please visit sportingshooter.com.au/wfphotocomp



THREE MONTHLY RUNNERS UP WILL WIN A CAP AND STUBBY HOLDER!



Hearing is not the same as listening

Did Jake Turnbull really hear that goat from 1.5km away? Of course he did!

AFTER parking the car on an overgrown track, we started to walk through heavy timber. Like most of NSW, the area had received a lot of rain. The colour of grass started to blend into the grey trap rocks as we walked further from the car. As so often happens when filled with excitement, it didn't take long for my mind to start playing tricks.

We had only walked roughly 250 metres when I stopped to listen. I truly believe my brain was making up sounds, as I thought I could hear, very faintly, a goat bleating. I turned to my mate with excitement and asked if he'd heard anything. He had not.

This process reoccurred several times as we pushed up to the top of some heavily covered rocky hills.

By this stage we had walked about 1.5km and had only seen wallabies. Feeling tired from the walking, and seeing no new goat sign, we sat down on an outcrop to have a drink and a breather. Sweat rolled down our backs and the shade from the trees seemed to do very little.

Opening Avenza maps, we

made the decision to keep pushing on and to circle around a feeder creek. It was a steep descent and heavily timbered. The wind was our enemy as it was constantly swirling while we walked down. We bumped a few roos only 10 metres away that ended up scaring the daylights out of us. We both froze and realised we had to try to walk more quietly.

As we were discussing this, we heard a definite goat bleat. There was no mistaking it!

We continued walking down the hillside into the gully where we believed it had come from, stopping every five metres to reassess. We heard the goat several times before I saw it. With my limited experience I didn't know how hard it would be to spot, even with the contrast between the grass and the colour of the goat. The white stripe gave it away, though.

Being so thickly timbered,



The white stripe finally gave away the goat's location.

having a rest to shoot from wasn't a problem, but getting a clear shot was. I told my mate to stay put and I walked another 10 metres.

My heart was pumping as I waited for a broadside shot. The nanny goat turned and I squeezed the trigger. The .223 let out a boom and the goat dropped.

Shooting my old Remington 700 VSSF, loaded with 55gr Sierras, this was my first state forest kill.

I honestly do not believe I heard that goat from 1.5km away, but of course I told my mate I knew all along where they were. 🎯

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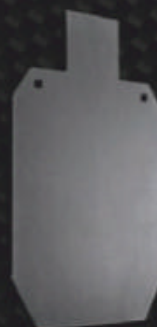


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Trouble when sighting in

Stringing shots. Variable groups. Double groups. What's happening when you can't get your rifle sighted in? Nick Harvey answers.



1

PROPERLY sighting in a scoped rifle isn't always straightforward. It can give rise to problems. We'll assume that you have a good quality scope on your rifle and that it has standard $\frac{1}{4}$ -inch click adjustments that are accurate and repeatable. You'll also need an easily seen target with proper aiming points. The 100-yard target I use is one I designed back in 1979 for benchrest shooters as well as hunters. It's 12 inches square and marked out in increments of one inch. In the middle

ON THIS SPREAD

1 A good quality scope will always adhere to the amount of change indicated by the number of clicks or calibration of the adjustment dials.

2 The only way to sight-in a rifle is over a benchrest with a good, solid rest to steady it.

there's a three-inch red square with a white one-inch square in the dead centre, and a red one-inch square on each corner.

I'll admit the thought of having diamond-shaped aiming marks instead of square ones did cross my mind, but kept on going. I tried it but the crosswires obscured the points, making it hard to make out where the real centre of the aiming mark was. It is easy to see the corners of a square which act as reference points.

A square aiming mark then is better than a circle any day. A square can be precisely dissected into four exact quadrants by the crosswires. The centre white square can be easily quartered using a hunting scope which has a top magnification of, say, 9x to 12x. With low magnification scopes in the $1\frac{1}{2}$ x, $2\frac{1}{2}$ x and 3x range, the large three-inch red square can be quartered by



their coarse crosswires, which can subtend an inch or more.

It used to be normal to bore-sight a newly mounted scope, but today most shooters own some kind of affordable optical collimator which is used to get the crosswires to centre on a grid. This ensures the bullet always lands somewhere on the target at 25 yards, the distance at which you should do your first shooting. It's my practise to get

the bullet hitting about an inch low at 25yd before shifting the target out to 100yd. This is the distance where I can make some precise adjustments and zero the rifle for its maximum point-blank range to allow me to take full advantage of its trajectory.

With the rifle solidly supported on sandbag rests, I usually fire one or two shots at 100yd, check through the spotting scope to see where



“

It is critically important that we know where the first shot from a cold barrel is going to go.”

In any case, it's a good idea to fire an additional three shots to ensure that the zero is correct and to see how well the rifle is grouping. It may be necessary to fire a few additional shots in order to get the group exactly where you want it, and to get the rifle properly sighted in for hunting.

Alas, other problems can surface during the sighting-in process. Most shooters think that firing one shot at a time is enough to find the point of impact and change their adjustments to suit. But even if the point of impact is now where you want it, take pains to shoot a three-shot group (five is better) to make sure. If the three holes form a tight little triangle in the right place, you can be confident your gun has been sighted-in.

There's an old saying: There's many a slip betwixt cup and lip, which could be applied to rifles. Some rifles shift point of impact as the barrel heats up and expands. This can result from the bedding applying uneven stock pressure on the barrel or unequal pressure on the sides of the forend. If the barrel bears against one side of the forend, it will shoot away from that side. 'Walking' as the barrel heats up causes the point of impact to rise above point of aim and string successive shots higher and

they've hit and make the necessary adjustments. The one-inch squares on my targets make it easy to know exactly how many clicks are needed. There's no problem with a good scope, but if you have a poor quality scope with internal mechanism that won't respond precisely to adjustment changes, you'll need to do a lot more shooting and checking.

Another method of sighting in uses the so-called one-shot

zeroing technique. After taking a careful aim, you fire a shot with your rifle which has already been zeroed at 25yd. Through your spotting scope it is easy to see where the hole made by the bullet is. The next step is to adjust the crosswires so that they coincide with the bullet hole. This is done by aiming at the central aiming mark as you did first, and then turning the windage and elevation adjustments until

the crosswires intersection the bullet hole. Then, if you want the bullet to hit, say, two inches above point of aim at 100yd, you simply adjust the horizontal wire to be two inches below the bullet hole. This method usually does save time and ammunition, but if the rifle happens to shift on the sandbags your point of reference is lost and you'll have to fire another round and start again.

2

sometimes off to one side or the other. As the rifle cools you can be sure the point of impact will shift again and be low.

A good many modern rifles are not only pillar bedded, but have epoxy around the recoil lug and two inches under the chamber section of the barrel. These rifles seldom give any problems, are easy to sight-in and hold zero. A rifle that shifts point of impact and walks its shots around the target can usually be cured by having a gunsmith re-bed it and float the barrel.

Rifles that are inclined to walk usually show a consistent pattern of holes after the same number of shots, but nothing is carved in stone and in my experience it would be foolish to rely upon a rifle to shift the same distance every time. It makes sense to get a gunsmith to do a bedding job on it before wasting expensive ammunition. If done correctly, a glass bedding job holds the action firmly in the stock so that it rests evenly and solidly in a stress free position which doesn't allow it to move within the stock. In addition, free-floating the barrel removes any uneven pressures against it and allows it to vibrate uniformly.

There are other considerations. Once your rifle is properly sighted-in, set it aside and let the barrel cool completely. Then fire one shot and see where it hits. Chances are it will be shooting a bit

lower. At this stage there's no need to worry about grouping because game animals don't hang about long enough to let you punch neat little clusters of bullet holes in their hide. It is critically important that we know where the first shot from a cold barrel is going to go. If the shot hits where the rifle grouped when the barrel was hot, you can be sure you have a very stable rifle, which doesn't change its zero hot or cold. At times a slightly fouled bore can contribute to the first shot going where it was intended. Some hunters believe this, and always fire a fouling shot from their rifle as soon as they get into camp.

It is not uncommon for a rifle to shoot two separate groups with successive shots alternating between them. This can happen if the ammunition isn't uniform or the screws aren't tight in the scope rings or bases. Different loads will have different points of impact, but split groups can also happen with different bullet weights at different velocities. It is not unusual for a heavier bullet to shoot higher at 100yd than a lighter, faster one. Often the 220gn bullet will shoot higher than the 150gn bullet in a .30-06. This is caused by the different barrel vibrations. Some barrels are fussy about what bullets they'll shoot and will throw one they don't like all over the place. Changing bullets is an easy fix.



3

“

The worst scenario is a bad barrel and the only solution is to have a new barrel fitted.”

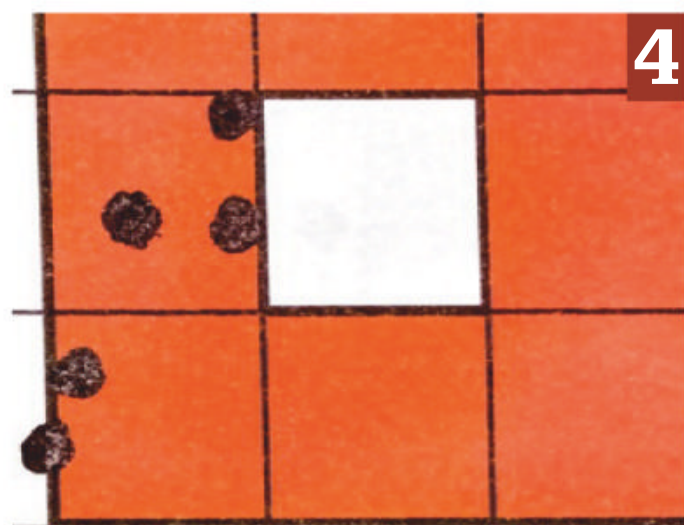
Other not so obvious problems can affect accuracy. For example, if you loosen off the front guard screw and the front of the action tips up as the other screw is loosened, it's a sign of uneven support under the action. Once again it's a job for your friendly neighbourhood gunsmith.

When a rifle goes haywire and doesn't shoot accurately, and it's still no good after eliminating all the obvious mechanical causes and re-bedding, it's possible the locking lugs are bearing unevenly, or you may have a faulty chamber or barrel fitting. The worst scenario is a bad barrel and the only solution is to have a new barrel fitted.

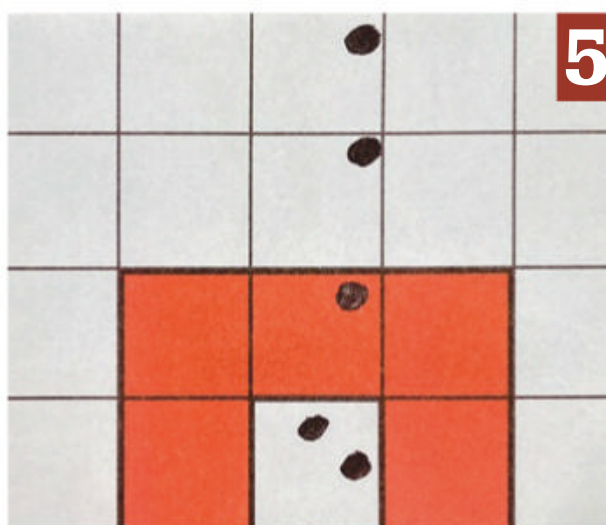
In the final analysis, you must decide how accurate is accurate enough. The mountain hunter is more concerned about the

portability and handling of his rifle than its grouping ability, and he'll be content to settle for 1½-2 inch groups at 100yd, knowing that his rifle will reliably put down every deer he shoots at as long as he does his part. You will hear of a great many standard, off-the-shelf sporting rifles that are capable of sub-MOA accuracy that you will never see. And if you do a lot of shooting at targets you'll find that a couple of 1MOA groups do not an MOA rifle make; the long run average is what counts.

If I told you about all the problems I've encountered testing new rifles for this magazine, you wouldn't believe me. But things don't always go as smoothly as I'd like or expect and there's a limit to what you can do to fix a rifle that's on loan to make it shoot acceptably tight groups. ☒



4



5

ON THIS PAGE

3 This stock has a good bedding job with pillars and epoxy compound under the receiver, barrel reinforce and recoil lug.

4 Double grouping is not uncommon and can usually be traced to ammunition that isn't uniform or loose screws in the scope rings or bases.

5 If a rifle is walking its shots as the barrel heats up and expands, there is likely to be unequal pressure on the barrel.

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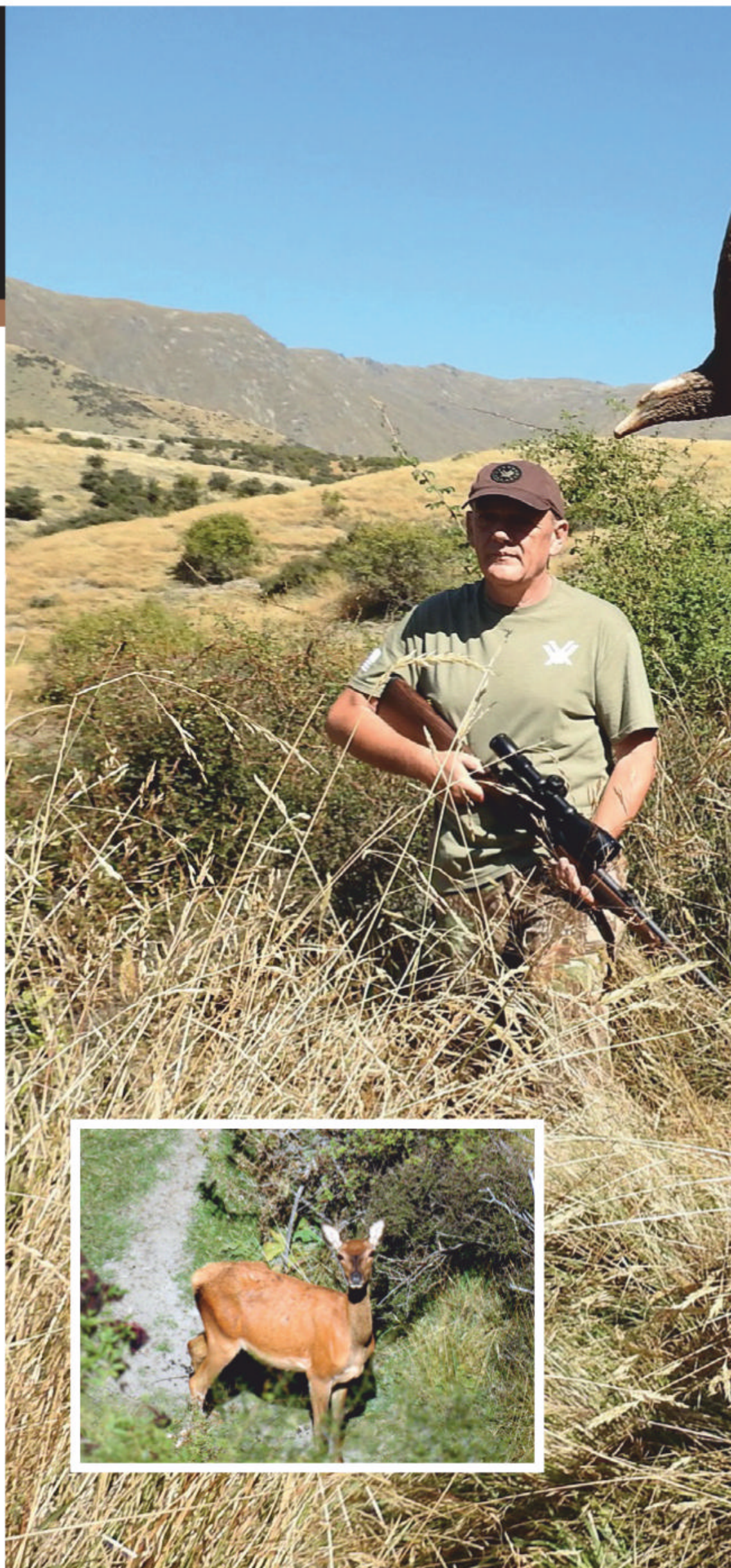
RED DEER

Learn a lot about how to shoot a trophy red deer as Goran Pehar takes you on an adrenaline-charged hunt in New Zealand.

The majestic morning stag

March brings a golden fall to New Zealand's South Island, with swift morning winds racing up hills and rain springing creeks to life. Trout make rivers alive and bubbly, noisy ducks gather in the swamps as the weather cools, days shorten and heavy clouds announce majestic events. Deer start to roar through the night and you get that infectious urge to climb the hills and look for stags with swollen necks and deep, challenging calls.

MAIN: A massive wild stag, at the end of his prime and a perfect trophy. INSET: Sprung! Even lining up a camera will help the alert hinds detect you.





I STARTED climbing early to make sure I could find the old stag I was told about by friend and experienced global trophy hunter Jim Hunter from Glenroy Lodge, near Queenstown. These days Jim spends his time hunting all corners of the globe, looking for exotic game and unique trophies, but he keeps tabs on the local deer.

This is truly God's country. Mornings are fresh, deer are roaring, sunrays are slow as warm air pushes fluffy clouds up the hill. Yesterday, I spent a few hours zeroing my rifle and adjusting to NZ's climate. I zeroed the Razor LHT 3-15x50 at 100m, as this scope has a very practical G4 illuminated reticle for quick and accurate response to standard and occasional longer-reach shots.

Most of my Kiwi friends have their deer rifles zeroed at 300 yards, as they expect quick longer shots. Kiwi hunters are practical and effective, and I have learned many things from them since I started coming to NZ back in 1991.

I was keen to try the Razor on my new Strasser Solo in .30-06. Strasser is an old, family-owned Austrian factory making a comeback and unfortunately not many people know about them.

I wanted to find a good spot to observe the valley and wait for a stag to come out of the bush-covered pockets. I picked a dominant but well-covered edge of the ridge with great views and good position against the wind and sun. Glassing from elevated positions can produce much better hunting opportunities than wasting energy and hoping to walk in on a trophy.

This type of country, with open grassland, pockets of thick matagouri and rosehip bush, steep gullies and sharp rocky outcrops knitted with pine forests, demands less movement and more observation. I have been hunting this area for many years and I learned the best way is to observe, identify and stalk.

I sat in the shade, Fury 10x42 LRF binoculars in my hands, methodically scanning the area after making myself comfortable. Face and hands often glow and their movement alerts deer, so deep shade, a hat and gloves help.

With rifle rested in the grass I continuously checked likely locations, watched the shooting conditions, measured distances and checked wind behaviour. Looking down makes objects look

1

“

Sun reflected off a shiny antler moving through the heavy bush and I spotted two reds moving in line.”



ON THIS SPREAD

1 Goran waits on full alert, ready for the deer to break from the bushes.

2 A red hind grazes by the creek below Goran's vantage point.

3 A hunters' cabin, full of memories of deer hunts and trophies.

further away and looking up makes them look closer but the Fury with HCD mode eliminates these kinds of illusions and gives you the true ballistic distance.

A few hinds fed on the other side of the canyon, out of range. A herd of mums and yearlings was feeding on the banks. Feral goats were slowly moving through the bush as well. They have often managed to spoil previous deer hunts but when you quickly want goat for the roast they are nowhere to be found.

Just over 600 metres away a few fallow spikers trotted over the crest and continued feeding between the bushes. I took up my rifle and set the reticle on the deer and sharpened the image with the parallax knob as I increased magnification to 15x; the view was clean and crisp with no distortion, and contrast was sharp. I saw two spikers moving up the hill and that was that.

After a few hours of glassing and taking photos, I decided to rest my eyes and slowly change location.





4

“

My heart went to overdrive as a massive stag crashed through the bush, jumping into the open.”

The sun was getting higher, and my chances were diminishing as the deer would soon seek shelter.

On the bottom of the valley the herd was still feeding near the creek. I could see a few fallow bucks occasionally but not a single red stag in sight. These stags average 200kg before the roar starts and stand up to 1.3m at the shoulder. Very elegant, impressive, cunning, and smart — old stags elude hunters for years to grow the most impressive racks.

Around 15,000 acres of hills, deep valleys, grassy flats and rocky outcrops in front of me and I was desperately trying to find the red coat in it somewhere.

To have a better chance I went to the top of the ridge and glassed. Soon a deer came running over the hillside. It was more like a confident trot, head high like a show horse, not too worried about anything. It's antlers were thick and impressive. I grabbed my rifle and gear and went after him over the ridge, carefully observing where I expected him to come out.

Nothing happened so I followed. After half a mile he crossed a clearing and climbed over the ridge. Another smaller stag followed him. I ran across the ridge and lost sight of them. Grassland opened and I walked into the wind, checking out smaller patches of bush. Matagouri is prickly, dense and hard to avoid but high enough to hide deer, so I started checking it. After a while the younger stag lost its nerve and took a run across the clearing into another large patch of dense bush. It was a game of patience now.

With wind in my face and sun behind me I was in a dominant position, so I reduced magnification on the scope to 3x to get the biggest field of view in case the stag ran out. I searched carefully, patch by

patch, and after a few minutes recognised legs and belly, but I couldn't see a head and antlers. The Fury was desperately separating shadows and shapes, but I could not see the neck or head so I had to wait. I moved closer to around 120m and decided to use the rifle scope as an observation tool but with both eyes open to keep the field of view as wide as possible.

Sun reflected off a shiny antler moving through the heavy bush and I spotted two reds moving in line, followed by another smaller fallow buck. They were moving straight into the small clearing 40m ahead. I darted sideways to get a better view once they reached the clearing. They heard me and disappeared in a split second.

ON THIS SPREAD

4 Goran on the move between matagouri bushes, always on the lookout.

5 A trout river to die for!

6 Goran missed his rod and reel on more than one occasion.



Soon after, a fallow buck followed by two does bolted out of the bush towards the ridge and I almost fired from excitement. I kept my cool and patiently wait for the stag to bolt. It would be quick, hard and risky so I had to sneak in closer and close the gap to ensure a better hit. I moved swiftly through the grass and stopped close to the bush line to observe. I was on the edge of patience, eyes darting over the whole area, hearing the wind and seeing fast-moving dry fern bushes.

My heart went to overdrive as a massive stag crashed through the bush, jumping into the open. I instinctively drew my rifle, lined up the crosshair and let the bullet hit the deer in the rib cage. I reloaded the straight-pull almost instantly and let another rip, this time hitting him high in the chest and he collapsed into the grass.

By the time I got to him he had already gone to the heavens, so I wished him a good journey to better pastures. He was old but with a massive body and a very impressive rack of majestic antlers. I'm not sure if his forefathers came from the Scottish Highlands or the grasslands of Hungary but I was amazed how heavy and massive those antlers were. His teeth were worn out and his antlers were showing his older age.

This stag obviously jumped the fence years back, roamed the hills and kept coming back when the

sweet smell of hinds on heat muddled up his mind.

A hard-working and patient stalker can find impressive deer trophies in these hills but seldom as good as this one. The 'timber' was heavy and wide with a massive number of points.

I sat down next to him, took my hat off and thanked St Hubert for a beautiful day, successful hunt and great trophy. It is truly a privilege and great gift of life to be here and to hunt these majestic animals and drink water out of mountain creeks. Just to camp and spend a weekend in this country with a camera is awesome fun.

As the adrenaline wore off, I realised I needed help to recover the venison so I contacted Jim and Steve for help. We managed to load the deer and secure lots of meat for sausages, and I got a great trophy to remember this day forever. In the process I found both Interlock mushrooms on the other side of the ribcage, stuck near the bones.

Afterwards, we went to a local winery near Kawarau River and had some stunning local seafood and Gibbston wines. Next morning, I went to Wanaka for the Mountain Challenge Long Range competition, after which I spent the remainder of my fortnight roaming the South Island and having a great time. That was over two years ago, and I boarded the last plane to Sydney as COVID lockdowns changed life forever. 📍

THE VITAL SHOT



I fell in love with the Strasser straight-pull rifle when I tried it on a driven boar hunt in Europe. Mine is a lightweight and elegant straight-pull rifle in a proven deer calibre, combined with the wide-range Razor LHT scope, which is a solid all-rounder for open or forested spaces and occasional longer shots.

For NZ hunts on deer and tahr I prefer the .30-06 or 7mm Rem Mag for their reach and knock-down energy. The last thing you want is to look for game after a marginal shot in steep and difficult country. Meat and trophy recovery is hard enough at the best of times.

In high-country hunting it is very important to make a precise shot and pick a location carefully, so you do not lose a trophy in some crevice or endlessly deep gorge. I will never forgive myself for shooting a chamois buck which went off the ledge into a deep gorge and broke both hooks. That stupidity is forever engraved in my mind.

ABOVE: Goran's Strasser Solo straight-pull rifle topped with Razor LHT scope.

FIELD EXPERIENCE

John Starr is an experimenter and lately he has been putting his



A Legendary Experience

new Winchester XPR in .350 Legend to good use.



When a new cartridge is released, shooters fall into two camps: the ones who say, bugger it, I don't need one of those; and the others whose ears prick up as they say, well, just maybe I'll have a look at this. I fall into the latter.

WHEN I first heard about the new .350 Legend I thought it sounded kinda cool, much to the disgust of the Minister for War and Finance. It offered low recoil, decent velocity and decent penetration on gel tests. So with a bit more research, it became a matter of time. I thought I might hang out for a Howa 1500 in the Mini Action, then considered the Ruger American, but eventually thought the Winchester XPR would fit the bill.

The Winchester is very light with its synthetic stock. It has a very soft butt pad and good chequering for its contact points. The action is pretty smooth for the price point. So overall I was happy with the rifle. I matched it with a Leupold VX Freedom 3-9x40 scope, featuring its adjustable elevation turret purpose-built for the .350 Legend. It is a sweet match, with nice, clear glass and straightforward reticle for getting the job done.

I took it to the bench with three types of Winchester ammo: the 145 grain FMJ target ammo, the 150gn XP Deer Season and the 180gn Power Point. I thought the 145gn target ammo would be the winner, and it was pretty good at just .76 inch at 100 yards. The 180gn Power Point was a smidge over an inch, which I kind of expected with its big, solid-looking lead point, built for smashing flesh and bone rather than

LEFT: The beefy boar which crossed the creek and piled up after the Legend hammered through both his shoulders.

ON THIS PAGE

1 The XPR is a functional and practical rifle with excellent accuracy at a budget price.

2 A chunky billy, just like the pigs, proved no challenge for John's new combo.

3 Factory rifle, factory ammo: a couple of typical groups with the XPR in .350 Legend.

punching paper. But the winner in my rifle turned out to be the XP Deer Season, which smacked the paper at just under .75 of an inch; nicely under MOA.

The little Legend will be interesting to reload and I think I'll end up trying Hornady's 147gn XTP and also 165gn FTX projectiles. It could be a challenge to build a load to get the correct velocity to match the Leupold's dial-up turret, which is basically really matched to the velocity of the Deer Season at 2325fps. Maybe I'll have to send a question or two off to our favourite scribe, Mr Harvey.

On the bright side, the Winchester ammo available is very reasonably priced and compares well with common calibres.



To me, the Legend will make a great rifle for anyone looking for something in the ballpark of a .30-30 built on a bolt-action rifle with very little recoil, plenty of wallop on the receiving end and suited to shots at 200 yards or less. I've now shot pigs and goats from 30 to 130 yards with it, with devastating results.

On its first run out the Legend dropped a couple of small pigs with devastating results on their end when using the XP Deer Season. It goes in one shoulder and smashes the shoulder on the opposite side, leaving a hole you could put your thumb in.

My daughter, Kaitlyn, and I got onto a bunch of billies trying to

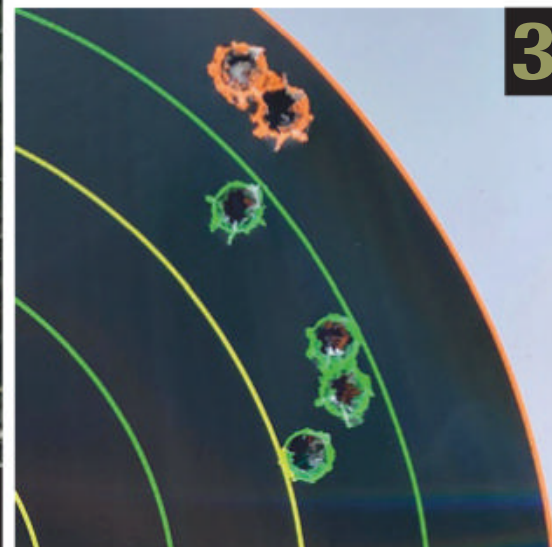


“

I've shot pigs and goats from 30 to 130 yards with it, with devastating results.”

romance a little nanny. We snuck in to about 100 yards and I put the crosshairs on the shoulder of the biggest bodied billy and squeezed off the shot. He took off like ... well, like he was shot. He bolted for about 10 yards, made a huge leap into thin air and crashed to the ground without another kick.

We headed in to grab a couple of pics with the victim, dodging tall sticky beaks or farmers friends or whatever you want to call them; they seem to find a way to stick





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into every article of clothing you're wearing.

A few days later, I threw the Legend in and went for a quick drive. A young boar made a mad dash across the track in front of me. Unfortunately for him, the track he took was going to put me in front of him again and when he realised this he pulled up to think about it but took way too long. The Legend sent an XP that hit with a hell of a wallop, only giving him time to spin and fall without a kick.

An unlucky sow fell victim to the .350 when she squirted out of a hollow and pulled up at 130 yards to test her luck, which ran out with a bang. The same shoulder shot had the same results, in one shoulder and smashing the other on exit and doing explosive damage in between. That bullet did all I want a projectile to do, but I wanted to test the .350 on a big boar.

Next day I got a call from the young bloke on the property who said that there was a handy-looking pig on the wrong side of a quick flowing creek after 40mm of rain the previous night. I was off like greased lightning. I wasn't there in time to see the boar swim the swollen creek, so he was almost on top of me before I knew what happened. I took a quick off-the-shoulder shot, which hit the boar with a thump. He took off into the tea tree that lined the creek. Cautiously, I ran to see where or how far he was going.

I didn't see him cross the creek but I was just in time to watch him on the opposite edge of a semi-



“

The Legend hit with a hell of a wallop, only giving him time to spin and fall without a kick.”

submerged rock bar as he got wobbly, threw his head back as they do when that last bit of life runs out, and tipped over. I was hoping he wouldn't fall back into the flooded creek, which he didn't.

I had to wait till next morning until the creek was down enough for me to cross and check the pig. He too had received the busted exit shoulder, so I was gobsmacked that

he had got across the flooded creek with what would have been at least one useless front leg.

I've been very impressed with the XPR in .350 Legend. Since breaking it in, the groups from all three Winchester ammo types have tightened up, all coming in sub-MOA. The FMJ and Deer Season are closer to half an inch. As a pig rifle it's a ball to shoot. It would make a great rifle for a younger shooter or anyone who wants to put porkers on the deck without the recoil of any of the bigger cartridges, provided they're not trying to shoot them from a mile away.

This thing hits with plenty of stopping power. It sounds like a cricket bat hitting a bag of wheat when the bacon tries to stop the forward momentum of those projectiles.

I can see a rosy future for me with this rifle and cartridge. ☎

ON THIS PAGE

4 One of the early “test pigs” sacrificed on the .350 Legend altar.

5 This billy was hit in the shoulder from only 20 metres away and dropped on the spot.

6 Everything seems to be very accurate but the XP Deer Season has proved the pick of the hunting cartridges, with devastating effects.





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PIG HUNTING

1



School's out!

What's the first thing you do when the holidays begin? Go pig hunting, of course! By Glenn Hando.

School had finished for the year and I asked my youngest daughter if she would like to get away for a hunt. My eldest daughter would have loved to but she had to work. I'm off work every second Friday, so I packed up the ute and we headed out to my cousin's property in Central Western NSW.

SOME mates were also away at the same time, fishing at Windamere Dam, near Mudgee. They called us on the way.

"How's the fishing going out there?" I asked.

"We're not having any luck," came the reply.

Seeing as though the hunting block was only a few hours away, they decided to join us. They love coming out to my cousin's property.

"I'll warn you that this trip is for Alexis because she's never shot a pig before," I told them. They were happy with that.

"It's better than sitting around Windamere catching nothing," said Josh.

Alexis and I were near Cowra by this stage and so we beat Josh and Marty by about two hours. We arrived and were greeted with a typical country welcome – a cup of tea and biscuits!

Josh wasn't going to be here until mid-afternoon so we had a few hours to kill before they arrived. My cousin's eyes lit up at this news as he needed some help with some sheep that had flies. His son was working on a neighbouring property so he was unable to help.

We got in and did them, giving them a quick crutch and dip. Josh and Marty had arrived with their usual perfect timing – after everything was done!

We all headed up to our camp for the next couple of days, which was at the back of the property. It borders a national park and there are always pigs there. After setting up our swags, we prepared tea — hot dogs. You can't beat them while you're out hunting as they're quick and easy.

After tea, we sat and waited. The pigs had been coming in to the sheep feeders in the early evening, just as it was getting dark. Out of the corner of Josh's eye, he spotted a good size pig near the National Park fence. We decided to walk and glass the area as we went.

But we lost sight of the pig so we went back to camp and waited.

The sun had completely gone down by this stage so we added the ATN X-Sight night scope to the

rifle. I have found this is a great infrared scope as you can sync it to your smartphone. It allows the shooter to look through the scope on the gun and anyone in your party to view it through the phone. Amazing technology! I thoroughly recommend it.

After not too long, some more pigs appeared. Alexis spotted a nice size boar that had pretty good tusks. I told to her to take her time and not be nervous. The other pigs kept walking in front and there were little suckers getting in the road as well.

“If you can see just behind his shoulder, aim for there,” I said to her.

No sooner had I said it than bang! It was a bit hard to tell if she’d hit him as the other pigs were running everywhere. We walked up and within 50 metres of the feeders, there he was, lying dead. He was a beauty! We took some pictures but would get some better ones in the morning when there was better light.

We settled down for the night and what a night it was!

The sun was just coming up over the national park when I woke Alexis and we went back to take some more photos.

We took the boar down to the woolshed to weigh him on the wool pack scales. He went 75 kilograms. His tusks measured three inches (76mm) out of his gums.

It was a great weekend with my daughter and mates. I was stoked for her and pretty proud too! 🎯



ON THIS SPREAD

1 Alexis beams in the morning sun after decking her first feral pig.

2 A 75kg boar with 76mm tusks — a fine first effort!

3 Even through night vision gear, this big boar’s size and tusks were quite evident.

4 Handy having a set of woolshed scales nearby to weigh the trophy.



“

Out of the corner of Josh’s eye, he spotted a good size pig near the national park fence.”



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One product I use regularly is the Rem Oil Wipes, which is a quick and effective way to keep your firearm's outer surface free of rust after handling. They are also great on

extended hunting trips, as a quick wipe takes care of any moisture, blood or fingerprints on your gun that might otherwise turn to rust. These pre-oiled tissues come in a handy 60-count canister that can be carried conveniently in your pack, taken to the range or used at home. Ask for them at your local gun shop.

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AccuSharp Precision Knife Sharpening

AccuSharp is an American-based company that has been producing manual cutlery sharpening devices for many years. A trusted name in the business, AccuSharp also produces knives and multi-tools, but is better known here in Australia for its diamond stones, sharpening rods, tri-stones and multi-tool sharpeners.

For example, to get an exact edge and extremely sharp knife finish, you need to try the 5-Stone Precision Knife Sharpening Kit from AccuSharp. This Precision Sharpening Kit allows you to manually sharpen your knives at a consistent, precise, fixed angle without any guess work. This kit provides accurate results via the way it's designed and a razor sharp edge via the six angles and five stones provided.

The knife clamp features settings for 11, 15, 19, 21, 25 and 30 degree angles. The five stones give you everything from a course grit for a dull knife to a fine ceramic grit for polishing and honing. The 5-Stone Precision Knife Sharpening Kit come packaged in a handy carry case and is now available through your local gun shop. **For further details about the full range of AccuSharp products visit www.osaaustralia.com.au or ask at your local gunshop.**



Peltor Hearing Protection

Peltor produces a large range of hearing protection, including passive and electronic ear muffs and even reusable ear plugs. For example, the Peltor Protac Hunter green electronic ear muffs are specifically designed for hunters, with a level-dependent function for ambient listening that helps protect you from harmful impact noises such as gunshots while allowing ambient sounds below 82dB to be heard. This model also allows stereo input and provides connection to external devices such as mobile phone or two-way radio.

Next are Peltor's passive ear muffs

like the H540A Optime III ear muffs for high performance hearing protection. They're ideal for extremely high noise areas. The Optime III ear muffs reduce noise levels up to 33dB, with double casing technology and soft, wide cushioning to help reduce pressure around the ears.

Last but not least, Peltor's reusable ear plugs feature a triple flange design for high protection and are easy to keep clean with soap and water.

Ask to see the full range of Peltor ear protection at your local gun shop or visit www.nioa.com.au for more information.



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NEW



Accura Optics

CR Kennedy is the well-known distributor in Australia for such brands as Vixen, Minox, Vanguard, Athlon and more. Recently, however, they created the Accura range of optics right here in Australia. The name Accura was introduced back in 1967 when CRK formed a line of lenses and binoculars that were made in Japan. Today they have created an exclusive, direct-market line of rifle scopes with that same quality for hunters and shooters. It represents great quality at great prices.

The Accura range offers three scopes in the series. First, the Tracker features a traditional German 4 dot reticle in the second focal plane, six-fold magnification, in 3-18x50. This scope features a 30mm tube and ¼-inch click adjustments. Its recommended retail price is \$479.

The second is the Reacher, available in 4.5-27x50. Offering 30mm tube construction, the scope features a bullet-drop compensation (BDC) reticle in the second focal plane and is excellent value at \$549 RRP.

Last but not least, the Varmintor is available in 5-30x56 and also features a 30mm main tube and BDC reticle. Add to this pop-up exposed turrets for the long-range enthusiast. RRP is \$599.

All three scopes offer an illuminated reticle. They are nitrogen purged, making them water, dust and fog proof. There's a lifetime warranty to the original purchaser covering accidental damage along with any manufacturing problems that may occur.

To find out more ask at your local gun shop or visit www.crkennedy.com.au.

Ridgeline Hydration Bladder

To complement its great range of backpacks, Ridgeline offers a three-litre hydration bladder for under \$30 RRP that will allow you to keep fluids up to your body while on the go, without having to stop and remove a water bottle from your pack. While this bladder is suitable for use with any pack, it will fit Ridgeline packs like a glove. Made of a durable polymer material, it features a generous hose that doesn't restrict flow and a rubber bite valve that won't leak.

This bladder also features a smart handle at the top, making filling it very simple.

If you don't carry a large pack and wish to travel light, Ridgeline also produces a compact hydration pack with 3L hydration bladder already installed.

Available in Buffalo camo, olive or blaze orange, these purpose-built mini packs have a little room for a few essentials as well. RRP is around \$100.

Ask for them at your local Ridgeline dealer or visit www.ridgelineclothing.com.au.



Liemke Merlin 50

Liemke Thermal Optics are based in Germany and produce high-end thermal night vision optics. One of their latest is the Merlin 50, a top-shelf dual-use thermal imaging camera that can be quickly and easily mounted as an attachment to your firearm owing to its compact design. This thermal imaging attachment features a powerful 640x512 Vox detector with 12um pixel pitch. Featuring a 50mm objective lens, it provides a range of up to 2500 metres and an extremely wide field of view of over 15 metres at 100 metres.

The device has a high imaging quality which means that even when combined with your target device set at high magnification, the game is clearly seen with sharp detail.

The Merlin 50 offers four colour modes to choose from, sophisticated focus adjustment and high-contrast imaging.

To find out more about the Liemke range of thermal imaging devices ask at your local gun shop or visit www.osaaustralia.com.au.

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 **HUNTER**

Pulsar Thermal Riflescope

Pulsar is world renowned for its excellent range of night vision equipment, with factories in Latvia, Scotland and Lithuania, to name a few. Recently, however, they have lifted the bar even further with the Rolls-Royce of thermal riflescopes that offer the ultimate in clarity and performance. This new model is referred to as the Thermion 2 LRF XP50 Pro and it will retail here in Australia for around \$7,900.

The new Thermion 2 offers a classic riflescope design while featuring a built-in laser range finder and high-definition thermal sensor for the ultimate in clarity. In fact I'm told it's the first thermal imaging riflescope that combines all these features in one unit. This scope will mount to a firearm using standard 30mm rings. It also features variable magnification from 2x to 16x and will record photo and video. Completely water proof, the Thermion 2 Pro has high-calibre recoil resistance, 10 reticle shapes in nine colour modes, high-precision aiming in the picture-in-picture mode, long detection range up to 1800 metres, up to 10 hours battery life on a single charge and lots more.

To find out more about this amazing thermal imaging riflescope ask at your local gun shop or visit www.extravision.com.au.



Pro-Tactical Super Vice

Make gun maintenance simple using the Super Vice by Pro-Tactical. This all-in-one gun vice is easily adjustable for all size gun stocks and will hold your rifle or shotgun securely in a rubberised, quick release cradle for hands-free maintenance, cleaning or scope fitting.

Other features include round- or flat-bottom storage compartments for screws, small parts and bottles of solvent and oils; anti-slip rubber feet; non-marring contact points to protect firearms; and a solvent-resistant polymer base. Dimensions are 81.5cm x 19.5cm x 24cm. Well made and fully adjustable, the Pro-Tactical Super Vice retails for around \$159.

To find out details of your nearest stockist visit www.protactical.com.au.



Ridgeline safes

Ridgeline offers a premium range of gun safes that all feature 2mm thick walls and 3mm thick doors. The range includes three sizes to choose from: 7-, 10- or 16-guns. All three safes feature an interior padded gun rack, separate lockable compartment for other valuables, and security hinge system. While the 7- and 10-gun safes feature five locking points and come with two sets of keys, the 16-gun safe has six locking points and includes a digital lock with key override.

All three safes are powder-coat finished in black slate colour and feature the Ridgeline logo on the front.

The 7-gun safe is 1510mm high, 360mm wide and 350mm deep, weighing 45kg. The 10-gun safe 1510mm x 510mm x 350mm, and 55kg. The 16-gun safe 1510mm x 550mm x 550mm, and 90kg.

As safe storage requirements may vary from state to state, it's advisable you check with your local registry or police to ensure requirements are met for your category of firearms.

To find out more ask at your local gun shop or visit www.ridgelineclothing.com.au.



Vortex Razor HD Gen III

For the competitive or long-range shooter, Vortex originally offered the 4.5-27x56 in its Razor HD GEN II, but recently they have released the Vortex Razor HD GEN III in 6-36x56. This great new riflescope is available in the first focal plane (FFP), with EBR-70 or MRAD reticle and a completely redesigned turret system that features L-Tec+ Zero Stop.

This new riflescope features a 34mm tube and an illuminated reticle for quick acquisition in low light or against dark targets. The new Razor Gen III also provides a great balance of magnification and field of view with excellent optical resolution and clarity. The new Razor offers a maximum elevation adjustment of 36.1 MRAD or 121 MOA and maximum windage of 15.5 MRAD or 52.5 MOA. Made in Japan, these scopes are top class and retail for around \$4895.

To find out more ask at your local gun shop or visit www.extravision.com.au for more details.



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LEFT: Small-bore, small-capacity cartridges like the .17 Hornet require fast-burning powders ranging in quickness from Lil Gun to AR2219.

Propellant powders: Making your choice

In part two of his detailed look at propellants, Nick looks at how to narrow down your selection of powder.

PROBABLY the most perplexing question facing handloaders is which powder to use in a given load. The answer is simple: Consult the reliable tested loading data in a reloading manual and choose the powder which gives the highest velocity with the chosen bullet weight in the cartridge. If you don't exceed the maximum listed charge weight you shouldn't get into trouble.

Pressure is what makes bullets move! No object moves from a state of rest unless a force acts on it. This is Newton's First Law of Motion. The force which moves the bullet is pressure exerted on the area of its base. The powder burns rapidly to release the energy, which raises pressure to move the bullet down the barrel.

The equation for force created by the propellant is: $F=PA$,

where F is force in pounds, P is pressure in pounds per square inch (psi) and A is bullet base and bore area in square inches. This force acts on the bullet to accelerate it in this manner: $a=F/m$, where a is acceleration, F is the force and m is the mass of the bullet.

Reloading rules of thumb

Here are a few things the reloader should keep in mind:

- The amount of velocity given to the bullet depends upon how much pressure the powder exerts against the bullet's base and inversely against the weight of the bullet.
- A large-calibre bullet of a given weight is accelerated more by the same pressure than a smaller-calibre bullet of the same weight.

- The heavier of two bullets of the same calibre will always need more pressure to drive it to the same velocity.
- Chamber pressures are largely determined by rate of acceleration and the bullet weight.
- Bore friction and forcing the bullet into the rifling require low pressure compared to acceleration.
- The desire for high velocity results in higher pressure. When a hot load is mixed with some secondary pressure-raising condition, however, there may be trouble. Even a small increment added to a maximum load can over-stress cases and guns.

There are some general rules that apply, but they are very much approximations and not to be relied upon in place of

reliable loading data:

- Roughly, the larger the bottleneck case you're loading, the slower burning the powder.
- Straight-sided cases such as the .444 Marlin, .458 Winchester, .350 Legend and .450 Bushmaster perform best with powders that are faster burning than those used in bottleneck cases of similar capacity.
- In a given case, the heavier the bullet being loaded, the slower burning the powder for maximum velocity.
- Reduced loads in any case always require faster burning powders than would be used for full power loads in the same case, regardless of bullet weight.

These rough rules of thumb apply to handgun cartridges as well as rifle cartridges, but the former use powders that burn at the fastest rate on a scale of relative quickness. Even a 'slow' pistol powder is faster burning than the quickest propellants used in most centrefire rifles. Shotshell powders are much quicker burning than rifle powders, but often see use in pistol cartridges and sometimes in rifle cases with cast bullets at very reduced loads.

A word of warning: Do not take a chart of powder burning rate approximations in metallic cartridges as being gospel. Burning rates cannot be measured precisely or even in absolute or relative terms with a finite degree of accuracy. Rates may vary slightly for a number of reasons: from production lot to production lot; from year to year of manufacture; and the same powder may burn at different rates in a .243 Win compared to a .308 Win or .358 Win, even though each of

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these cartridges has the same approximate case volume. Burning rates between two powders may change positions at certain velocities, which often happens with IMR 4064 and IMR 4320. If you are a wise reloader you'll take nothing for granted.

True, modern rifles are well made and very strong, but we've all heard of shooters being injured by a blow-up. If the cartridge case doesn't fail, a well-designed rifle will withstand 80,000psi, but not many times before the factor of safety bows out and the case gives way. Pressures above the normal maximum will gradually break a gun down. At the least sign of excessive pressure or increasing headspace, stop and reduce the charge.

Pressure builders

There are a number of things that will increase pressure:

- Bullet weight: pressure rises directly as it increases. For top loads check both charge weight and bullet weight before loading.
- Variations in chamber dimensions: a tighter barrel, a tight chamber neck, and longer bearing length or a tougher jacket on the bullet.
- Powder burns faster as pressure starts to rise,

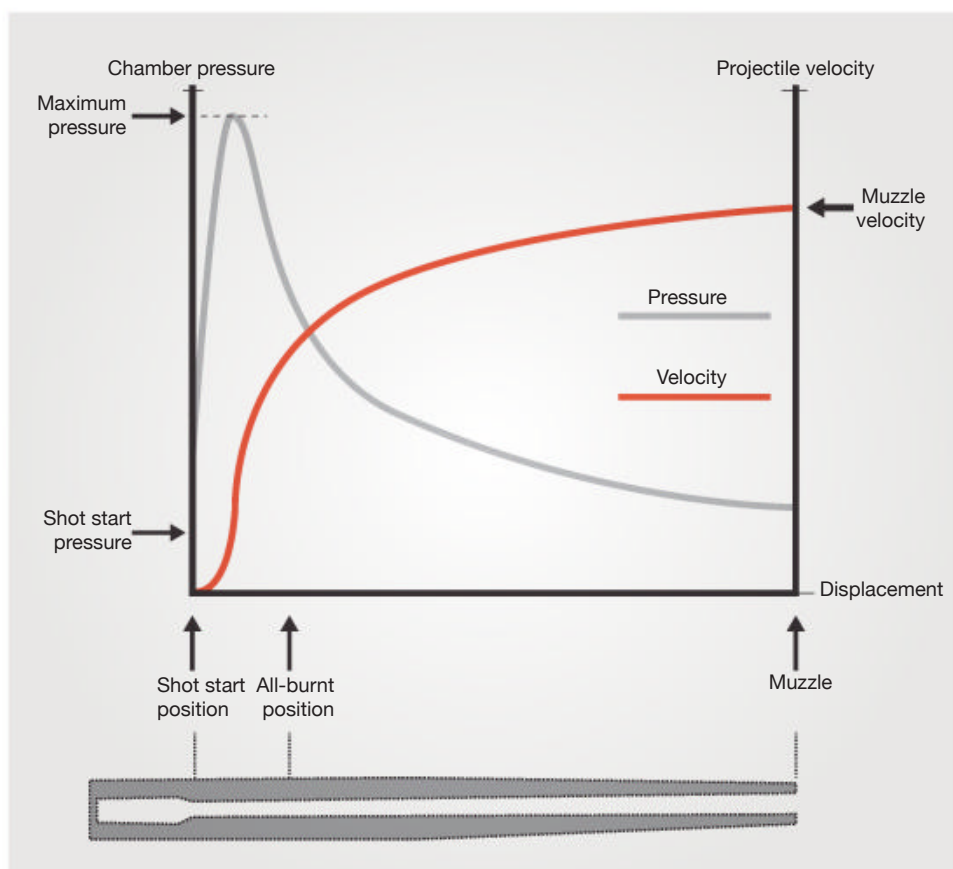
increasing the effect.

- Reduced powder space raises pressure in heavier cases with thicker walls and reduced capacity, especially when sized to fit small chambers.
- Seating long, heavy bullets deeper is another contributing factor.

Anything that increases powder burning rate raises pressure. Rising pressure itself does this, and so in effect does increasing the powder charge.

Anything that tends to raise pressure and causes the pressure to keep increasing by quickening the burning rate of powders would seem to be disastrous. But because the bullet is free to move, this doesn't happen. Every surge in pressure is accompanied by an increase in bullet velocity, both absorbing energy and opening up more volume to hold the pressure.

Any increase in pressure causes more acceleration. The farther a bullet moves, the more the volume increases behind it. Thus, lessening the confinement of energy reduces pressure. Firearms systems may be self-compensating, but this is effective only as far as the bullet can travel to dampen the rise in pressure. If the powder is too quick



Graph showing typical behaviour of pressure and velocity of a bullet in a firearm.

burning, or the bullet is too heavy for the charge, or if the charge is too heavy, pressure can rise faster than the bullet's movement down the bore can relieve it. When pressure is not controlled, the result is unpredictable.

It takes some force for the bullet to engage the rifling. This normally happens before pressure peaks. The bullet's entry into the rifling has an effect on the early burning rate, which influences peak pressure, but only to a degree. Boring out the origin of the rifling for a distance ahead of the chamber — 'free-boring' or lengthening the throat — gives the bullet a bit more free travel, increases the powder capacity and delays the time before pressure peaks.

The energy needed to propel the bullet to the target is furnished by the powder charge. The cartridge's ballistic performance can thus be altered significantly by selecting a different powder

and/or by adjusting the charge weight. Optimising powder selection and the charge used often involves making compromises with other components and handloading practices. Now the compromise is between accuracy, muzzle velocity and chamber pressure.

If maximum velocity without exceeding allowable chamber pressure is a priority, top accuracy may not be achieved. However, firearms and their barrels are individuals; one rifle will produce the smallest groups with loads close to maximum, while another will prefer a slightly reduced load with the same bullet over the same range.

If you want optimum accuracy, a good first choice is a powder with a charge weight slightly under the maximum listed in the loading manual and which takes up nearly all the space in the case up to the base of the bullet. Such loads generally produce uniform pressures and muzzle velocities, hence best accuracy. But this won't be true for all rifles. Optimising the combination of powder



Work up to a safe maximum by firing lighter loads. When a load shows signs of excessive pressure, drop the charge by 2gn and call it quits.

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burning rate and charge weight/volume to wring the best accuracy out of a rifle can be a time-consuming process.

Factors in accuracy

Factors that can affect accuracy include charge weight, moisture content, manufacturing lot, the position of the powder inside the case as well as a charge that takes up a small part of the available powder space, and temperature.

Temperature can have a remarkable effect on the powder's burning rate and resulting chamber pressures. Experiments have determined that a rise in temperature of 10°C can vary peak chamber pressures by 3% and muzzle velocity by 1%. For example, an accurate load that produced muzzle velocities of 3050fps on the rifle range in mid-summer with temperatures of 29°C will produce about 3% less velocity (only 2950fps) on a cold winter morning when the temperature is -1°C. Though accuracy may not be affected, the rifle's zero established in summer will almost certainly be different in colder weather. This recommends against leaving your handloads on the car's dashboard for some time and then using them on a hot summer's day.

Another variant is the powder's position in the case. In a partly filled case the powder burns unevenly and results in uneven ignition of the powder which may

produce a pressure wave in the case and cause a blow-up. This phenomenon, known as secondary explosion effect (SEE), seems to occur only when a light charge of slow-burning powder is used and there's a lot of air space in the case.

This is why a powder that fills the case is recommended, especially with large-capacity small-bore magnum cartridges.

Charges that fill the case less than half way should not be used under any circumstances. Powder should always be evenly distributed within the case for consistent ballistic performance. This happens with a load that gives a full or nearly full case.

There is no computer program that will select powders and charges for various bullet weights and case sizes with total accuracy. I've used "Load From A Disk" and "Quick Load", both of which give an indication of the best powder to use with a given bullet weight, plus starting and likely maximum loads. Both are useful, but the results should always be checked against reliable reloading data before use.

Maximum versus maximum

Many reloaders are aware that the maximum loads listed in different handbooks vary considerably. This is because

different guns exhibit distinctive individual preferences in ammunition components, and often perform differently from other seemingly identical guns. This is just as true of the test guns used in ballistic laboratories in which handloading data is developed for publication. If you acquire several different manuals and make comparisons between recommended powders and charges for the same cartridge, you'll find quite a variation in the recommended maximum charges.

Recently, while working up loads for my .30 Nosler, I couldn't get near any of the top loads listed by Nosler, but I could duplicate Hodgdon's data almost exactly. However, Nosler's data for the .26 Nosler was spot-on and recommended maximums were acceptable in my Browning X-Bolt.

These apparent contradictions do not mean any of the data is wrong. The manuals are meticulously prepared by technicians using the best modern equipment to measure pressure and velocity. Different data only means that no two guns are exactly alike, and the data listed in the manual is correct for the guns used in testing.

It is likely that your own gun will differ from those used to develop the loading recommendations. Very minute differences in the dimensions of chamber, bore

and rifling can make startling differences in the maximum powder charges accepted by a firearm. This is why you'll find on every page of every reloading manual the warning "maximum loads should be approached with caution" and worked up to by test firing lighter loads. In other words, always work up your loads from the recommended starting load.

The most efficient powder is the one which offers the highest velocity per grain of powder. If two powders look to be nearly equal in this respect, the one which produces lower pressures can be considered more efficient.

One last tip: Whenever you change powder lots, cut the charge by at least two grains below the full-power load you used with the old lot, then work back up if pressure permits.

Next month we'll check out specific powders and the cartridges and calibres they are best suited to. ☒

ON THIS PAGE

1 Du Pont powders and ADI powders are all single base; the Hercules powders (now Alliant) are double base and contain more energy.

2 Small-calibre super magnums from 6.5mm to .30 use the slowest propellants in heavy charges which fill the case and leave no air space.



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Outside the classroom

Some of the best lessons are not learned in class, but by being out in the field.

IT was fantastic to head back to Kilcoy and catch up with my good friends Clark and Judy from Wild Country Adventures before Brendan and I moved back to Goulburn. Now that my sales territory for Ridgeline Australia has changed, it made more sense to be central to the NSW gun shops.

Catching up with Clark and Judy at the hunting lodge is always an adventure. No matter how much I think I know about hunting and deer I always drive away with newfound knowledge and an even deeper respect for these magnificent animals. As I finished writing this, I was a scratching post to a young poddy stag who was bottle raised after his mother was shot when he was only a few days old.

Arriving Friday just after work, we had enough daylight to go for a drive to see what we could see. Just as the sun was setting behind the mountain ranges around us, Clark and I crawled slowly across a ridge



1

to get a closer look at three beautiful up-and-coming stags. They were making their way down the opposite face into the gully below.

Oblivious to us, they presented a perfect broadside shot. However, the sheer enjoyment we got from watching the three stags hanging out together before they go head-to-head fighting for the girls in only a few short weeks, was much more enjoyable than taking a shot.

Sunday morning, I dropped

off Clark and Ben (who was also up enjoying the hunting lodge) in one of the blocks, choosing to sit out that hunt to rest my bung hip, which still gives me grief two years after dislocating it. When they radioed in just before lunch, I secretly hoped I hadn't missed out on the fun. But although they had seen plenty of deer and fresh sign they'd decided not to shoot.

After lunch, a relax and a run up to check the dog traps Clark, Ben and I piled into the old Suzuki. As we drove along



2

“

The sheer enjoyment we got from watching the three stags was much more enjoyable than taking a shot.”

one of the ridges, we noticed a large mob of red deer down below us. We jumped out and carefully made our way towards the group of hinds and spikers, closing the gap to 80 metres. Sitting on the hillside, concealed by tall grass, we took a proper look at what was in front of us. Clark quickly pointed out a cull.

It was Ben's turn to shine. Slowly standing, using a dead tree to break up his figure, he gently closed the bolt of his .270. Steadying himself, he squeezed the trigger, a textbook shot dropping the creature metres from where it had been standing.

The spiker Clark had pointed out had one antler growing south. We later learnt he had broken one of his pedicles and it had healed itself at an unnatural angle, with nearly 180° of rotation. If this spiker hadn't been shot, each season he would have continued to cast his antlers, paving the way for the next and larger malformation to dangle below his head. 🎯

ON THIS PAGE

1 Ben and his first red stag cull. A textbook shot dropped it only metres from where it was hit.

2 Drafting my article under baby's watchful eye on Sunday morning.

3 Cruising in the ol' Suzuki.



3

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John Starr has been at it again! "I just thought I'd send a pic through of an old sow that was stopped by the Rossi .44 Magnum while walking a creek," he says. That shot would have stopped her real quick!



Maari Mitchener tells us this is the largest boar he's decked so far but he's sure there's even fatter ones out there in the current conditions. The rifle is a Remington 700 in .243. Maari's best results come from using the Buffalo River 87gn rounds, which he says are sensational.

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extra-large eye box, and minimal subtension due to the ultrafine illuminated dot. Despite their elegant design and narrow center tube of 30mm or 34mm, the new ZEISS V8 riflescopes are extremely robust and thus every hunter's unrivaled companions, even under the toughest conditions. For more success on your hunt.

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