

CAP COAST GUNSMITHING · YEPPPOON, QLD

CALIBRE

What walks in the door.

A gunsmith's honest look at the cartridges Australians actually shoot, the ones the internet argues about, and why those are not the same conversation.



A FIRST ROUND EFFECT KNOWLEDGE GUIDE

Safety first. Data always. Ego never.

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FIRST ROUND EFFECT · KNOWLEDGE

Why this guide exists

Ask a room of shooters for the best cartridge and you will not get a conversation. You will get a referendum. Someone will defend the .308 like it raised them. Someone else will tell you 6.5 Creedmoor made everything before it a museum piece. A third will mention 7mm PRC with the confidence of a man who has watched a lot of American YouTube and not yet paid for the barrel.

I am a gunsmith. I do not get a vote in that referendum. I get a bench.

Last month it was a farmer with a lever gun in .30-30 and a red dot on it. The internet would not know where to file that rifle. I do. It is a property tool that just grew a modern sight, and it will still be walking in here when the current fashionable case has had two more names. That is this guide, in one visit.

What walks in the door in Central Queensland is not what trends on a forum. It is what people can buy ammunition for, what their father left them, what the licence and the property and the shoulder will actually live with. It is also, increasingly, what someone commissioned after falling in love with a cartridge that was designed around a suppressor they are not allowed to own.

This guide is my opinion, based on what comes through the shop, what I have shot, and the same physics we teach in First Round Effect. It is not a shopping list. It will not name a winner. It will give you a way to think, a few tables you can argue with, and the handful of things even keen shooters get backwards when the cartridge conversation gets emotional.

One housekeeping note. Strictly, calibre is the diameter of the hole and cartridge is the whole round: .308 Winchester and .30-06 are the same calibre and very different cartridges. Everybody says calibre. So will I. And this guide is about centrefire rifle cartridges, the ones that come across a gunsmith's bench.

If you came looking for a fight, you may still enjoy yourself. If you came looking for a decision, you are in the right place.

Safety first. Data always. Ego never.

THE TWO THAT WALK IN

.223 and .308

Start where the work starts. In this shop, in this country, the two cartridges that come across the bench more than any others are **.223 Remington** and **.308 Winchester**. Not because they won an argument. Because they won the unglamorous contest: ammunition on the shelf, rifles in the rack, brass in the bucket, and a job they can do.

.223 Remington is the small one everybody owns. Foxes, dogs, small pigs, club paper, a pile of brass that never seems to run out. It is mild, cheap relative to everything else in the safe, and accurate in a way that spoils people. The catch is the one the internet skips: it is a small bullet, and small bullets have a job-sized envelope. Inside that envelope it is superb. Outside it, no amount of “but mine shoots tiny groups” makes the physics larger. Twist matters more than people think. A 1:12 barrel that grouped 55-grain varmint bullets in 1998 will not stabilise the long 69- and 77-grain match bullets the long-range crowd now take for granted. Match the twist to the bullet, or the target tells on you.

.308 Winchester is the other half of everybody. It is the cartridge I can almost always find a factory load for, in a town that is not a city. Pigs, goats, deer, steel to a sensible distance, a spare rifle you can lend a mate without a briefing. Recoil is real and manageable. Barrel life is honest. The ballistic coefficient of a typical 168- or 175-grain match bullet is not fashionable, and past about 700 to 800 metres the wind starts charging a tax the Creedmoor crowd like to mention. They are not wrong. They are also not standing in a CQ gun shop on a Thursday.

FROM THE BENCH

When someone asks “what should I get,” and they cannot yet tell me the job, I still put .223 and .308 on the counter first. Not as a lack of imagination. As a refusal to sell a personality. A rifle you can feed, in a cartridge you can shoot well, beats a fashionable case you apologise for at the range.



The two that walk in. Not because they won an argument. Because they won the unglamorous contest.

The one-line version: .223 and .308 are not exciting. They are the reason the rest of the conversation can afford to be.

THE OLD KING AND THE NEW ONE

.30-06 and 7mm PRC

Once you leave “everybody,” two more walk in, and they tell you a lot about the person carrying them. A third rides out with the farmer, and it tells you more.

.30-06 Springfield is the cartridge that refuses to die, and I am glad of it. It is a hundred and twenty years of “enough.” In a hunting-weight bolt gun it does pigs and deer without drama, it takes a huge range of bullet weights, and the factory ammunition still exists because the world never quite finished with it. Compared with a .308, you pick up a little velocity and a little recoil, and you pick up a long action. Compared with a modern 6.5 with long bullets in it, you give away wind at distance and you gain bullet weight, and a bullet a meat hunter understands. The people who love it are often the people who inherited it. That is not an insult. Some of the best rifles I see all year are old .30-06s that have been looked after.

Here is the part the long-range internet never sees. **The lever guns that walk into this shop are .30-30.** Not as a curiosity. As the farmer’s rifle. A cartridge designed in 1895 for a close, fast job in scrub, and it still owns that job, for the same unfashionable reasons people love the .30-06: it feeds, it hits, it rides out on the property, and nobody needs a manual before they pick it up.

And it is not stuck in 1960. **A .30-30 lever with a red dot on it is a live trend on this bench.** Farmers, mostly. They want both eyes open, a fast sight picture on pigs in scrub, something that does not snag the way a big tube can, and a cartridge they already have a bucket of. The action is generations of “run it,” the sight is this year’s, and the job has not changed. I mount a lot of those dots. It is one of the more honest jobs I do all week.

That rifle is not in the 800-metre column of the table coming up, and it does not need to be. A red dot on a .30-30 is a close-and-fast tool in a cartridge that was only ever a close-and-fast cartridge. The optic and the case agree on the job. That is not a limitation. That is a brief, written clearly.



The farmer’s rifle. A .30-30 lever gun with this year’s sight on it. Nobody needs a manual before they pick it up.

7mm PRC is the other mood. Hornady’s 2022 design, built around long, heavy, high-BC 7mm bullets and a fast twist, has done to the American new-rifle counter what 6.5 Creedmoor did a decade earlier: it has become the thing a certain kind of shooter is sure they need. On paper it is a genuine step. High-BC 7mm bullets, launched hard, stay supersonic a long way and shrug off wind in a way a .308 175-grain will not. In the shop it arrives as a special order, a “I want what they are shooting,” and a conversation about recoil, barrel life, and the fact that the ammunition is neither cheap nor always on the wall in Yeppoon.



.30-30 beside 6.5 Creedmoor: both ends of the bench, side by side. A rimmed case from 1895 that never wanted more than a couple of hundred metres, next to the modern efficient case that changed the long-range argument.

I like the 7mm PRC. I will chamber it for the right person. I will also tell you that in Australia, without a suppressor, it is a different rifle to the one in the American video. You feel the blast. You feel the recoil. You pay for the barrel. You had better have a job for all of that, or you have bought a very expensive way to flinch.

Put the two visits next to each other and the whole Australian cartridge conversation is in the waiting room. One bloke wants what the American videos are running. The next one wants a red dot on the lever his property already understands. Both can be right. Only one of them is what this country runs on.

FROM THE BENCH

.30-06 walks in with a story. The .30-30 walks in with a red dot on it. 7mm PRC walks in with a thumbnail. I will do the work on all three. I trust the first two conversations faster, because they started with the animal, the country, and the shoulder, not with a comment section.

BEFORE YOU PICK A TRIBE

How to think about a cartridge

There is no best cartridge. There is a best *fit* for a job, a shoulder, a barrel, a budget, and a licence. That sentence is in our long-range programme for a reason. The moment you treat calibre as a personality, you stop seeing the system.

The trade-offs, the ones that actually move the result:

Purpose. What is the rifle for, most Tuesdays, not on the one Saturday you imagine? A pig rifle that also does steel to 600 metres is a different brief to a PRS gun that also “might hunt,” and both of those are a different brief again to a close, fast, both-eyes-open property rifle. Write the brief down. Most poor chambering decisions skip this step.

Recoil you will actually shoot. Not recoil you will tolerate for three shots on a rest. Recoil you will shoot well, from the positions you use, for a string, without growing a flinch you then spend a year denying. A cartridge you flinch with is a worse cartridge than a milder one you own.

Barrel life. Faster and flatter usually means more powder through a given hole, which means the throat erodes sooner. That is not a moral failing of magnums. It is thermodynamics. If you shoot a lot, this is money. If you shoot a little, it is less money than the internet pretends.

Wind and drop. Ballistic coefficient and velocity decide how much the wind charges you, and how much you have to hold or dial. This is the part the modern cartridges genuinely win, and it is why 6.5s and 7mms took the long-range world. It is not the only part.

Availability and cost. In Australia this is not a footnote. It is often the whole decision. A cartridge you cannot feed is a single-shot curiosity. A cartridge whose match ammunition is four dollars a round will not get practised.

The rifle around it. Twist, barrel profile, action length, magazine, muzzle device. A good cartridge in the wrong tube is a bad rifle. We will come back to the tube.

Licence and law. In Queensland, bolt-action, lever-action and single-shot centrefire rifles sit in Category B; self-loading centrefires are Category D, and a suppressor is Category R. Capacity limits and a handful of calibre restrictions vary by state. Confirm yours. The course covers the map; this guide will not pretend to be a lawyer.

FROM THE BENCH

I can chamber almost anything. The question is whether I should. The clients who leave happiest are the ones who let the job pick the cartridge, then let the cartridge pick the barrel. The clients who come back unhappy are the ones who picked the cartridge off a video and asked me to make the rifle suit it afterwards.

THE NUMBERS

So the argument has somewhere to sit

Opinion is cheap. A table is a courtesy.

These figures come from the **CCG-LR solver**, the same engine as the companion app, using manufacturer-published G7 ballistic coefficients and representative factory-class muzzle velocities. Atmosphere is a Capricorn Coast summer morning: 28 °C, 1010 hPa, 75% relative humidity. Zero at 100 metres. Wind is 16 km/h, full value. Sight height 50 mm.

They are a starting point. True them to *your rifle, your ammunition, your chronograph*. That is the whole religion.

COME-UP AND WIND, IN MILS

CARTRIDGE (REPRESENTATIVE)	300 m ELEV / WIND	600 m	800 m	1000 m	CLEAR OF TRANSONIC TO
.223 Rem, 77 gr match, ~830 m/s	1.5 / 0.9	5.6 / 2.1	9.8 / 3.2	15.8 / 4.4	~700 m
.308 Win, 175 gr match, ~800 m/s	1.6 / 0.7	5.2 / 1.6	8.7 / 2.3	13.3 / 3.2	~800 m
.308 Win, 178 gr high-BC, ~800 m/s	1.5 / 0.6	4.9 / 1.3	7.9 / 1.9	11.8 / 2.6	~900 m
.30-06, 178 gr high-BC, ~838 m/s	1.3 / 0.6	4.4 / 1.2	7.1 / 1.8	10.5 / 2.4	~1000 m
6.5 Creedmoor, 140 gr, ~820 m/s	1.4 / 0.5	4.5 / 1.1	7.1 / 1.6	10.3 / 2.1	past 1000 m
6mm Dasher-class, 105 gr, ~863 m/s	1.2 / 0.5	4.2 / 1.2	6.7 / 1.7	9.9 / 2.4	~1000 m
7mm PRC, 180 gr, ~900 m/s	1.1 / 0.4	3.5 / 0.9	5.5 / 1.2	7.8 / 1.6	past 1000 m

Elevation / wind hold in mil. 100 m zero, 16 km/h full-value wind, 28 °C, 1010 hPa, 75% RH, 50 mm sight height. Run in CCG-LR on manufacturer-published G7 BCs for typical match projectiles of those weights, at factory-class velocities. The last column is where the bullet slows to about Mach 1.2 and the transonic trouble starts, not where it goes subsonic; Mach 1 is another 100 to 200 metres on. A starting point, not a firing solution.

Read that twice. At 300 metres, with a 100 metre zero, the whole argument is inside half a mil of elevation. Five clicks, about a hand-span of difference in drop. Real, but not the fight. The fight starts when the wind gets a vote, and when you are trying to stay clear of transonic past 700 or 800 metres.

A 16 km/h full-value wind at 600 metres is about **2.1 mil** on that .223, **1.6 mil** on a typical .308 175-grain, **1.1 mil** on the 6.5, and **0.9 mil** on the 7mm PRC. That is the Creedmoor conversation, in one line, without the religion.

WIND HOLD AT 600 m · 16 km/h FULL VALUE · MIL

.223 Rem 77 gr	2.1
.308 Win 175 gr	1.6
.308 Win 178 gr	1.3
.30-06 178 gr	1.2
6mm Dasher 105 gr	1.2
6.5 Creedmoor 140 gr	1.1
7mm PRC 180 gr	0.9

The 7mm PRC is the flat one. Nobody who can read a table will tell you otherwise. The question is whether you needed that, at that recoil, at that cost, for the shooting you actually do.

FROM THE BENCH

I have watched people buy a flatter cartridge to fix a wind call they had not yet learned to make. The solver does not make the wind go away. It just tells you, more precisely, that you missed it. If the job is 400 metres of pig country, the table is interesting and the .308 is still the rifle.

CLEAR OF TRANSONIC TO · MACH 1.2 · METRES, SAME CONDITIONS



SHOULDER AND THROAT, IN PLAIN LANGUAGE

8.5 lb / ~3.9 kg rifle, no muzzle brake. Order of magnitude, not a lab certificate.

CARTRIDGE CLASS		FELT RECOIL		THROAT LIFE, IF YOU SHOOT IT LIKE YOU MEAN IT
.223 Rem	●○○○○	Mild. Almost nobody flinches from this.	●●●●●	Long. The barrel will bore you before it dies.
6mm PRS (Dasher / GT)	●●○○○	Mild-plus. The whole point.	●●○○○	Short-to-medium. You are buying groups, not decades.
6.5 Creedmoor	●●○○○	Civilised. Most people shoot it well.	●●●○○	Medium. The famous bargain.
.308 Win	●●●○○	Honest. Manageable in a hunting weight.	●●●●○	Medium-long. A virtue of the old design.
.30-06	●●●●○	A step up from .308. Fine in a rifle with some mass.	●●●○○	Medium. A little greedier than .308.
7mm PRC	●●●●○	Stout without a brake. Stout and loud with one.	●●○○○	Short-to-medium. You knew that when you bought it.
.300 Win Mag	●●●●●	A lot. Some people like a lot.	●●○○○	Short-to-medium. Same family of bargain.
.220 Swift (full noise)	●●○○○	Mild-plus. The recoil is not the problem.	●○○○○	Short. The throat is the problem.

WHAT THE SURVEYS SAY

And why Australia is not in them

Here is where the comments section will try to live.

American PRS, 2025. Precision Rifle Blog surveyed the top 200 shooters in the Precision Rifle Series. **6mm Dasher** was run by 46% of them, a record share, five times the next cartridge. Then **6mm GT** at 9%, the **.25s** arriving fast (25×47 Lapua at 7%, 25 Creedmoor at 6%), and **6.5 Creedmoor** still hanging on at 5%. **.308** sits at 5% too, and it is there because the Tactical division is written around it (and **.223**). The American precision game, at the pointy end, has become a 6mm sport with a .25-calibre subplot. Recoil, heat, and time on the clock picked that. Not nostalgia.

American hunting counters. The new-rifle heat in US shops over the last couple of years has been 6.5 Creedmoor, 7mm PRC, 6.5 PRC, then the old faithfuls. That is a real shift. It is also a country where match ammunition is a commodity, a suppressor is a form you fill in, and the animal on the calendar might be an elk.

Australia is not that country. I do not have a national survey with a pretty chart. I have a bench, and I talk to other smiths. What I see, in order, with room for you to argue:

AMERICAN PRS 2025 · TOP 200 SHOOTERS	THE CENTRAL QUEENSLAND BENCH · IN ORDER, ARGUE WITH IT
6mm Dasher 46% 6mm GT 9% 25×47 Lapua 7% 25 Creedmoor 6% 6.5 Creedmoor 5% .308 Win 5%, Tactical	1 .223 Remington The small one everybody owns. 2 .308 Winchester The other half of everybody. 3 .243 Winchester The quiet Australian all-rounder the US forgot to keep famous. 4 .30-06 Springfield and .30-30 Winchester The farmer's pair: the inherited .30-06 bolt gun, and the .30-30 lever that rides out with a red dot on it. 5 .270 Winchester 6 6.5 Creedmoor Up, and up again, among people who shoot steel on purpose. 7 .300 Winchester Magnum 8 .22-250 Remington 9 7mm Remington Magnum 10 Everything else 7mm PRC and 6.5 PRC as special orders, .303 for service and sentiment, the odd Swift, the odd wildcat, the odd "I have been on the internet."
Precision Rifle Blog, "Best Rifle Cartridge: What The Pros Use", September 2025. Share of the top 200. The .308s shoot Tactical division, which is written around .308 and .223.	Not a poll. What a working bench in CQ sees, checked against other smiths. Room left for you to disagree.
WHAT THAT LIST IS SOLVING FOR Recoil Spot your own impacts, stay on the glass, run the next shot. Heat Long strings in a heavy tube. Efficient cases stay civil. The clock Fast, repeatable, easy brass. Nostalgia does not score. Not a property. Not a pig at 80 metres. Not a shop wall in a town that is not a city.	

That fourth line is doing more work than a ranking can show. **.30-06** is not "still hanging on," and the **.30-30** lever is not a museum piece. Between them they are the rifles a lot of this district actually uses. The PRS table will never have a column for either. That is fine. The PRS table is not a property.

Why the lists do not match is not a mystery, and it is not Australians being backward.

Ammunition. We pay more, we wait longer, and the wall at the gun shop is not a US superstore. A cartridge you cannot practise with is a cartridge you will not shoot well. .223 and .308 win that fight every week of the year.

The game, and the property. Pigs, goats, foxes, fallow, the odd sambar if you travel. Not elk, not mule deer at 500 yards as a default day. A lot of Australian hunting is closer, faster, and in scrub. Energy at 80 metres in a .308 still does the job a 7mm PRC was bought to imagine at 600. And a lot of it is not “hunting” as a sport at all. It is a farmer getting out of a ute with a .30-30 lever gun. That rifle’s calibre was decided in 1895. The red dot is the only new part.

The sports. We have SSAA, F-Class, Big Game Rifle, a growing PRS scene, and a lot of property shooting that is none of those. American PRS picked 6mm because the clock and the recoil did. Most of the rifles on my rack are not on a PRS clock. Some of them still have a lever.

The suppressor-shaped hole. That one gets its own page, because it quietly changes everything above.

FROM THE BENCH

I do not think Americans are wrong. I think they are solving a different problem, with a different shop behind them. Copying their answer without copying their conditions is how you end up with a 7mm PRC you flinch, a Dasher you cannot get brass for, and a .308 in the safe that you should have just shot.



Five cases, one country. .223, .243, .308, .30-30 and 6.5 Creedmoor: most of what this bench sees, in one row.

LAW, AND THE ENGINEERING IT FORCES

The suppressor-shaped hole

This is the page that makes the American comments interesting, and the Australian ones quiet, because we already live it.

In most Australian jurisdictions, **suppressors (sound moderators) are prohibited for civilians**, with limited exceptions. Treat one as illegal unless your state explicitly allows it and you hold the right permission. That is not a vibe. That is Module 17 of the programme, and you should verify your own state before you even have the daydream. This guide is not legal advice and it is not a how-to.

In most of the United States, a suppressor is a form, a wait, and then a very ordinary piece of hunting and competition equipment. That single fact has reshaped their cartridge market.

A can does the brake's job on recoil without the brake's bill on blast, and it does a third thing neither of them can: it lets people run **shorter barrels** without feeling like they have opened a hall. Short barrel plus can plus a 6.5 PRC or 7mm PRC is a sweet American hunting rifle. Take the can off and you have a louder, punchier, blastier rifle, often with less velocity than the same cartridge in a 24-inch tube.

So when an Australian copies that rifle, they are copying the wrong half of the system.

What we actually live with:

- **Recoil is not optional.** You cannot hide it in a tube on the end. You hide it in rifle weight, stock design, a brake (with all the blast that brings), or a milder cartridge.
- **Hearing is a range-day problem, not a can problem.** Doubled-up protection is not theatre, especially next to a braked magnum.
- **Barrel length still buys velocity here.** There is no can to make a 16-inch 7mm PRC civil. If you want the numbers in the table, you probably want the tube.
- **Brakes are the Australian substitute, and they are a poor one socially.** They work. They also make you unpopular on a public mound, and they punish the person spotting for you.

This is why a 6.5 Creedmoor, in a rifle of some mass, is such a sensible Australian long-range answer, and why a 7mm PRC has to earn its place rather than inherit it from an American video. It is also why .308 has not "died" here. It was never relying on a can to be shootable.

FROM THE BENCH

The most useful question I ask, when someone wants a magnum, is not "what will it do at 800." It is "who is standing next to you, and what are they wearing on their ears." If the answer is your teenager, your partner, or a spotter you hope to keep, we talk about brakes, barrel weight, and whether you actually wanted a 6.5.

THE TUBE

Why the barrel has to match the cartridge

A cartridge is not a rifle. I will keep saying that until it sticks.

Every shot makes the barrel vibrate in four directions at once: fore-aft, side to side, up and down, and a twist from the rifling. The bullet has to leave at the same point in that motion, every time, or the group is a conversation about luck. Powder, seating, temperature, and barrel *shape* all move that motion. A skinny barrel heats fast, whips more, and tends to walk its point of impact as a string goes on. A heavy barrel soaks heat, moves less, and weighs like a punishment on a ridge.

Pencil / light sporter. Hunting. You carry it. You do not shoot strings. Pairs with moderate cartridges: .243, 6.5 Creedmoor, a .308 without a brake, a .270 or .30-06 that gets carried more than it gets shot, and every .30-30 lever ever made. Put a 7mm PRC in one of these and the rifle will tell you, and so will your shoulder.

Medium / sporter-varmint. The honest all-rounder. A .223 that will be shot a lot, a .308 hunting rifle that also does steel, a .30-06 that is not trying to be a mountain wand. Enough mass to stay civil, not so much you leave it in the ute.

Heavy / Sendero / Palma / bull. Target, PRS, varmint strings. This is where 6mm Dasher and 6mm GT belong, and where a .308 or 6.5 that is supposed to group in the wind belongs. Heat is the enemy of a 6mm run hard. The heavy tube is not a fashion. It is the radiator.

Magnum contour. More steel at the chamber end, where 7mm PRC, .300 Win Mag, and their cousins dump heat. You can hunt with a lighter tube in a magnum. You may also watch groups walk as it heats, and you will pay for it in flinch if the weight is not there to soak the recoil.

Twist is the other half of the marriage. Long bullets need faster twist or they will not stabilise (gyroscopic stability, Sg, the thing we teach in Module 2: aim for roughly 1.4 or better, 1.5 if you want the bullet's full BC). A .223 in 1:12 is a 55-grain rifle. A .308 in 1:12 is happier with 150- to 175-grain than with 200-grain boats. A 7mm PRC is a fast-twist cartridge on purpose, because the whole point is a long, heavy, high-BC 7mm. Chamber a modern long bullet in an old slow twist and you have bought keyholes.

CONTOUR	THE JOB	PAIRS WITH
Pencil / light sporter	You carry it. Hunting. You do not shoot strings.	.243, 6.5 Creedmoor, a .308 without a brake, a .270 or .30-06 that gets carried a long way.
Medium / sporter-varmint	The honest all-rounder. Civil, still carried.	A .223 that gets shot a lot, a .308 that also does steel, a .30-06 with no mountain ambitions.
Heavy / Sendero / Palma / bull	Strings. Target, PRS, varmint. The radiator.	6mm Dasher, 6mm GT, a .308 or 6.5 that has to group in the wind.
Magnum contour	Mass at the chamber end, where the heat is dumped.	7mm PRC, .300 Win Mag and their cousins. Lighter tubes can walk, and they kick.

Pick the contour and the cartridge in the same conversation. A good cartridge in the wrong tube is a bad rifle.



Pencil, medium, heavy. Same steel, same light. The mass does the talking.

FROM THE BENCH

The saddest rebarrels are not worn-out throats. They are brand-new rifles where the contour and the cartridge were picked in different conversations. A light .30-06 that "carries nice" and then cannot be shot well from the shoulder. A 6mm PRS cartridge in a hunting sporter that heats in five rounds. Tell me the job. Then we pick both at once.

THE MUZZLE

Recoil, muzzle devices, and living with blast

Recoil is not theatre and it is not toughness. Recoil is a **follow-up problem** and a **flinch problem**. If the rifle moves enough that you lose the sight picture, you do not see the shot, you do not call the wind, and you do not fire the next one well. If it moves enough that your body starts to dread it, you will begin to push shots low and you will blame the load.

A muzzle brake reduces recoil by dumping gas sideways. It works. The bill arrives as blast: yours, your spotter's, the next mound's. In a country where the ordinary shooter has no suppressor, that bill is not optional. A big brake on a 7mm PRC or a .300 Win Mag turns a shootable rifle into a social problem. On a private property with the right ears on, fine. On a public range, you will make enemies you did not need.

The other option is no brake at all. Ordinary recoil, ordinary report, and nobody standing downwind of your ports. If the barrel is threaded, a thread protector keeps the threads clean; it does nothing else, and it is not a muzzle device. For a .223 or a 6.5 in a rifle of some weight, no brake is often the grown-up choice.

Compensators and "tactical" devices are, on this bench, usually a fashion that does neither job particularly well. If you want recoil down, a proper brake. If you want to be a good neighbour, more rifle weight, a milder cartridge, or both.

FROM THE BENCH

I would rather put a 6.5 Creedmoor in a 9 lb rifle with nothing on the muzzle than a 7mm PRC in a 7 lb rifle with a brake, for almost any client who has to shoot well rather than look like they might. The first one they will practise with. The second one they will talk about.



Two brakes, two sizes of the same trade. What they save you in recoil, they hand to whoever is standing beside you. No can in this photograph, and that is the point.



Where the gas goes: sideways, and into whoever is standing beside you.

SLOW ON PURPOSE

Subsonic: a different job (and a smaller one here)

Module 7 of the programme splits a bullet's flight into three phases: **supersonic**, **transonic**, **subsonic**. For long-range shooting, the one that causes trouble is transonic, roughly Mach 1.2 down to 0.8, where the airflow goes chaotic, stability can sag, and groups that were honest can go vertical and rude. The working rule we use on the Coast is simple: stay clear of that band at the target when you can, and treat Mach 1.2 as the edge, not Mach 1. That is why the table earlier has a "clear of transonic to" column, and why a .223 77-grain is a different rifle at 800 metres to a 6.5.

Subsonic ammunition is a different idea again. A heavy, slow bullet, kept below the speed of sound on purpose, so there is no ballistic crack. In a country where suppressors are ordinary, that pairs with a can and becomes a short-range specialist tool: quiet-ish, heavy, a different recoil cycle, often a faster twist so those long, slow bullets stay stable.

In Australia, without the can, you have taken the crack off and **left the gunshot on**. No crack makes it less loud than a supersonic round, and it is still a gunshot: the muzzle blast is all there and your ears still need protecting. You have not made a quiet rifle. You have made a slow one that is a little less loud. There are still jobs for that: some specialist target work, some close pest work, some people who just like the puzzle. It is not the American "quiet hunting" story, because that story had a suppressor in it.

If you want a subsonic .308, you are usually in a heavy bullet, 200-grain class is the common answer, and a twist that will stabilise it at that speed. Tell me that job plainly. Do not tell me you want it because it is quiet. Here, it isn't.

FROM THE BENCH

I would rather talk transonic with a long-range client than subsonic with a hunting one, in this country. One of those is the reason you miss at 900 metres. The other is a niche I will build if you have a real reason, and a disappointment if you do not.



Three projectiles, three jobs: .375 CheyTac, .300 Win Mag, .223. The longer and heavier the bullet, the slower it leaves and the faster the twist it needs. Slow on purpose is a different job, not a quiet one.

THREE MOODS

Classics, moderns, and the wildcats people love

Cartridges come in three moods, and the bench sees all of them.

Classics. .30-06, .30-30, .308, .270, .243, .223, .303 British, 7mm Rem Mag, .300 Win Mag. Ammunition exists. Dies exist. Everyone at the club has an opinion you can actually test. They hang around because the supply chain likes them, and because they still do the job. A classic in a good barrel, with a bullet from this century, is not a compromise. It is often the grown-up choice.

Modern factory. 6.5 Creedmoor, 6.5 PRC, 7mm PRC, 6mm GT, 6mm Creedmoor, 25 Creedmoor now that it is SAAMI. Designed around long bullets, fast twists, and efficient cases. The ballistics in the table are real. So is the ammunition price, and so is the wait when the shop is out. 6.5 Creedmoor is the one that has actually arrived in Australia as a *normal* cartridge. The PRCs are arriving as ambition. GT and Dasher are arriving as “I shoot PRS.”

Wildcats, and the ones that behave like them. A wildcat is a cartridge that lives in reamers and forums before it lives on a shelf. **6mm Dasher** is still a wildcat, which is a hilarious fact given that it currently owns American PRS. You will need a smith, a reamer, brass, and a plan. In Australia that plan includes import lead times. I will build you one if you are already in the sport. I will not build you one as a first rifle.

Then there are the cartridges that are technically standardised and still act like wildcats in the shop: fussy to feed, hard on throats, loved out of proportion to the number of people who should own one.

Which brings us to the Swift.



Three eras on one bench: the .30-30 from 1895, the .308 that became everybody's, and the 6.5 Creedmoor that came for the .308's lunch.

THE PROBLEM CHILD

Everybody loves a .220 Swift

If there is a cartridge that makes otherwise sensible people go a bit soft, it is the **.220 Swift**.

Winchester put it in the Model 54 in 1935. It was, for a long time, the fastest thing in a factory box, four thousand feet per second with a little .22 bullet, a flat trajectory that looked like a magic trick, and a reputation that has outlived most of the men who made it. Fox shooters still speak about it the way some people speak about a first car. I get it. I have shot it. It is a lovely, vicious little idea.

Then it comes into the shop.



That little ledge. The Swift's semi-rim beside a .22-250's rimless base, and two different shoulders above them: the whole feeding story in one photograph.

The Swift is **semi-rimmed**, parented off the old 6mm Lee Navy, with a rim a touch larger than the case body. In a Winchester Model 70 magazine that was cut for it, you can live with that. In a lot of other actions, on this bench at least, the rim of the top round can catch the rim of the one below, and feeding becomes a ritual: stack each rim *ahead* of the one under it, do not rush, do not hunt with a magazine you stuffed in the dark. Some detachable magazines never quite forgive it. I have seen people turn the rim down to make it behave like a rimless case. That is a confession, not a feature.

The other bill is the **throat**. A lot of powder, a small hole, a lot of heat. Early barrel steels copped the blame, and modern steels are better, but the Swift run at full noise still eats throats, and for the same reason a hard-run 6mm does: you asked a small bore to swallow a big fire. Slow it down and it lasts. Run it like the legend and you will be talking to me about a rebarrel sooner than your .223 mate.

The .22-250, which won the old wildcat argument Winchester did not pick, is the Swift's more civil cousin: rimless, feeds, almost as fast if you insist, and a lot easier to live with. Most people who think they want a Swift want the *idea* of a Swift. What they actually want is a fast .224 that chambers on Tuesday. That is a .22-250, or a .223 with the right twist and a heavy-ish varmint barrel, and I will say so even if it kills the romance.

FROM THE BENCH

I will still build a Swift, for the person who knows the feeding story, budgets the throat, and wants one because they want one, not because they think it will do something at 600 metres that a fast-twist .223 with a 77-grain bullet cannot. Romance is allowed. Romance with a loaded magazine in a pig paddock is how you learn about semi-rims the hard way.

MYTH-BUSTING

Myths worth killing

"Newer is more accurate." Accuracy is a barrel, a chamber, ammunition consistency, and a shooter. 6.5 Creedmoor is popular because the *package* is easy to shoot well, not because 2007 repealed physics. A good .308 still groups. A bad 7mm PRC does not.

".308 is finished." Not in this country. Not on this bench. Not at 400 metres on a pig. Not in Tactical PRS, where the rules still make it the point. The wind tax at 800 metres is real. So is the ammunition on the shelf.

".30-06 is a grandfather's bolt gun, and the .30-30 is a museum piece." The .30-06 is the inherited bolt gun that still does pigs and deer without drama, and the .30-30 is the farmer's lever with this year's red dot on top. Neither cartridge got the memo that it was supposed to retire. Neither did the people who still love them.

"6.5 Creedmoor is a toy / a fad / a man-bun." It is the most sensible all-round long-range cartridge most Australians can actually feed. Mild recoil, honest barrel life, genuine wind performance. The nickname is jealousy with a punchline. Shoot it before you joke about it.

"Magnum means serious." Magnum means more powder, more blast, more recoil, less barrel, and a flatter line if you can shoot it. Serious is a first-round hit. I have seen more game lost to a flinch than to a lack of case capacity.

"A brake makes a magnum a 6.5." It makes a magnum a loud 6.5, for the shooter, and a problem for everyone else. Recoil down, blast up. That trade is sometimes worth it. It is never free.

"Subsonic is quiet." Subsonic is slow. Quiet, in the American sense, was the can. We covered this.

"If it feeds in a video, it will feed in your rifle." Magazines, followers, rims, overall length, and the action it was designed around all get a vote. The Swift is the cartoon version of this. Plenty of modern cartridges have a quieter version of the same argument. Cycle it in *your* rifle before it matters.

"Barrel life numbers are a moral judgement." They are a budget. A Dasher shooter who rebarrels every season is not being cheated. They are buying groups by the month. A hunter who shoots eighty rounds a year in a 7mm PRC will most likely wear out before the throat does. Know which one you are.



Jobs, not mythology. Every cartridge on this bench has one, and it is rarely the one the internet gave it.

WHERE TO GO FROM HERE

Stop looking for a winner.

Calibre is one of those topics that, once you take the religion out, gets simpler and more interesting at the same time. You stop looking for a winner. You start looking for a fit. That is the gunsmith view, and it is the whole idea behind how we teach the rifle as a system.

Want more like this?

This is one guide in a growing library of straight-talking explanations of the things that actually matter. Join the list and we will send the next ones as they land. [Join the list → The CCG Knowledge library →](#)

Run the numbers yourself.

The table in this guide was built in the **CCG-LR** companion app, on manufacturer-published BCs, then left for you to true. A starting point is not a firing solution. [About the app →](#)

Want the whole picture?

Cartridge choice is one module in a much bigger puzzle: the rifle as a system, the trajectory, the wind, the zero, the first round. That is **First Round Effect**, the CCG Long Range Programme: 25 structured modules, metric, built for Australian conditions. [See the course →](#)

Need a chambering conversation that is actually a conversation?

Bring the job, not the thumbnail. We will talk twist, contour, magazine, muzzle, and whether you wanted a .308 all along. [Get in touch →](#) · capcoastgunsmithing.com.au · Yeppoon, QLD.



This is work, not a vibe. The job picks the cartridge, the cartridge picks the barrel, and then the barrel gets cut to suit it.

Safety first. Data always. Ego never.

A NOTE ON SAFETY

Before you close this

This guide is general education from a working gunsmith, not a recommendation to acquire any particular firearm or ammunition, and not a substitute for your own licence conditions, your state's current law, or a hands-on conversation about a specific rifle. Cartridge examples and ballistic figures are illustrative. The solver numbers use manufacturer-published ballistic coefficients and representative factory-class muzzle velocities under stated atmospheric conditions; they must be verified against current manufacturer data and trued to the rifle and ammunition in hand. This guide contains no load data. Always work from current published load data for your exact components.

Suppressors and some calibres are restricted or prohibited in Australian jurisdictions. Verify your state before you plan around either. Hunting and feral control must be lawful, licensed, humane, and done with landholder permission.

Precision Rifle Series survey figures are from Precision Rifle Blog, "Best Rifle Cartridge: What The Pros Use", September 2025, a survey of the top 200 PRS shooters. The Central Queensland ranking is bench observation, not a poll.

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Safety first. Data always. Ego never.