

By Dean Maisey

Dean Maisey is a professional gunsmith based in Tauranga. Rod&Rifle Magazine welcomes Dean who will contribute regularly on technical gun info.

FROM THE GUNSMITH'S BENCH

Dean on a recent trip to New Caledonia.

In all aspects of our lives we have expectations and we would like to see that they are met. If they are not, disappointment, anger or frustration can be the result. This can be because you are expecting too much or, in the case of guns and associated gear, something is not performing to standard.

'You get what you pay for' and 'you can't make a silk purse out of a sow's ear' are true in most cases and especially in relation to guns. A brand new rifle costing \$600 is not going to have the fit and finish or anywhere near the performance of a \$5000 to \$6000 rifle. Some good medium price bracket guns can compare well with their more expensive rivals. It often comes down to purchasing wisely and in some cases just plain good luck. In the case of cheaper factory rifles, sometimes you just manage a fluke one that shoots really well straight out of the box, or with very little tuning.

In my first feature I would like to bust a few myths and analyse a few common faults regarding factory rifles.

FACTORY MADE

Factory rifles are usually made by factory workers – not gunsmiths. Very few arms factories employ qualified gunsmiths at all. If they do it may be just in an overseeing or 'finisher' capacity, or for assisting in special order guns or projects.

FINISH

Parts are often left roughly finished or only partly polished. Some parts are warped slightly due to heat and treating. Very commonly, barrel bores are not straight and the throats of machined chambers are not true and concentric with the bore. In these cases the bullet is never going to get a straight start into the rifling, which will always limit the accuracy potential.

BEDDING

Some rifles are poorly bedded or have no bedding at all. Poorly bedded rifles will often not shoot well, no matter how good the barrel and scope are.

SCOPES

Scopes are often described as 'the weakest link' when chasing the ultimate in rifle accuracy. Every time a rifle fires the scopes internal reticule system moves under recoil, then has to reset back to exactly the same position. A poor quality scope or mounting setup can be the cause of frustrating 'fliers', no matter how good the barrel and bedding are. With scopes, you also get what you pay for although even some high-end scopes can have faults or problems.

COMPONENTS

Component costs for custom parts are often much more expensive than similar mass-produced factory parts. Let's look at rifle barrel blanks, for example; in the USA most custom barrel blanks run around the US\$300 mark, plus freight and taxes. The actual barrel component cost of some common factory rifles is in the US\$20 to \$40 range. The reasons for the huge cost savings are higher production volumes, cheaper quality steels plus cutting corners / time saving in the production processes. The introduction of bore scopes in recent years means that it is so much easier now to see the difference in the bore finish between 'custom' and 'crap'.



Factory receiver face roughly ground and not machined. Bluing is showing on no-contact areas. Often the receiver face is not 'square' with the receiver threads.



Straight edge along bottom of factory actions shows up warping due to heat treating when viewed against light source.



Rough finishing of machined surfaces.



Shows 'section' of a factory barrel at chamber end. For best accuracy the machined throat section must be perfectly concentric in order to give the bullet a good straight start into the rifling.



Shows rough factory crowning job with large gouges on the rifling lands from lathe tooling.



Wind flags are essential for accurate shooting, so that you can time your shots to occur in the same 'wind condition'. Professional flag on right is made by Ian Owen of Dunedin. Basic wind flags (shown on left) can be made from electric fence standards and surveyors tape/ribbon.

AMMO

Ammo – you can't shoot match winning groups with bargain-box ammo, budget projectiles or poorly prepared, low quality brass. To this end you also have to decide whether you are going target shooting or hunting, in order to make the right bullet selection for what you are doing. It is arguably foolish to go hunting with target projectiles, and you are never going to shoot groups like Tony Boyer (US benchrest shooting legend) with hunting bullets. At that level of competition if you're not using hand-swaged custom bullets – and you're planning on finishing anywhere near the top - then you're dreaming! When you're trying to shoot under the 0.2" group sizes, mass-produced bullets are simply not competitive.

SHOOTER ABILITY – POSSIBLY THE BIGGEST VARIABLE

I think that many shooters believe their rifles can shoot better than they themselves actually can. Somewhat similar to those who claim to have champion gun-dogs but never go to trials. I sometimes hear of guys boasting of having super accurate hunting rifles that can shoot 0.2" groups 'all day long' but the same guys rarely show up on the range. Air has mass, and when it moves it really will shift your bullet impact on the target – or even right off the target at longer ranges! In my opinion, shooting well at longer ranges has more to do with wind-reading and shooter ability than the accuracy potential of the rifle, relatively speaking. Shorter-range shooting is where you see the biggest differences in results due to equipment and component quality.

KEEP IT REAL

I think one of the best ways to avoid disappointment is to keep your expectations realistic, especially if you are new to the market. Thinking of factory rifles as a 'project' is one of the better suggestions that I have heard over the years. It is just that with some brands you will have to expect to do more 'work' on them than

others. There may be little things that you can remedy yourself, whereas other things may require a trip to the gunsmith.

In recent years there has been a bit of an outbreak of 'long-range fever' as well as some rather optimistic articles and rifle reviews that tend to give newbies the impression that any new rifle should, as of right, be able to shoot 'sub-1-inch groups'. In reality, even a budget deer hunting rifle that shoots 2-inch groups at 100 meters may be perfectly acceptable for general hunting purposes. At the crucial time you still have to aim the rifle correctly and 1-inch variance in impact point on a shoulder shot is not going to make much difference to the deer. With a varmint or target rifle system rig you would obviously expect something better.

Ultimate accuracy is a combination of the rifle, scope, ammunition (and part components), stock / bedding and of course the shooter. Even my super accurate .30BR target rifle will shoot lousy groups with a load that is 'out of tune', or using poor quality bullets. But this same 'rifle system' can consistently put 125-grain match bullets into a 100 yard 5-shot group of 0.150" center-to-center, shooting 'free-recoil' style, and providing I do my bit correctly.

And don't forget those wind flags!!

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