

# Tube talk

## Unravelling the mysteries behind gunmaking, Longthorne Gunmakers kicks off its new series with an insight into the company and making barrels

Starting any company at the beginning of a recession is a challenge, but for a gunmaking company you can multiply that by 100 fold at least. When MD James Longthorne Stewart initiated development of Longthorne Gunmakers in 2006, he had little idea of the trials and tribulations he would have to face and the tenacity he would have to draw upon.

With over 30 years' experience in precision

tool-making and metallurgy and an absolute passion for mechanical engineering, James operated his own successful engineering companies in both Australia and England, but was looking for a new project and saw no reason not to develop a shotgun.

The UK was once a major centre for gunmaking throughout the world with most common designs and innovation having been instigated here by

great names such as W. Greener, Anson & Deeley and Sir Joseph Whitworth, but more recently innovation seems to have died a death. As modern gunmakers, Longthorne of Lancashire are true advocates of a 'rebirth' of the English gun trade, utilising the current technology available – just as gunmakers 100 years ago would have done had the technology been available – and combining this with traditional skills.

Having spent several years developing their now renowned barrel technology (patents pending), recognised for their low felt recoil/low muzzle flip qualities, Longthorne Gunmakers launched their signature gun, the Hesketh, at the CLA Game Fair in 2010 to the surprise of many.

Since then the family company, headed by James and his wife Elaine, has rapidly gained a reputation for manufacturing guns of exemplary quality with classic English looks suited to today's shooting demands and ammunition and all proofed for Magnum steel. Longthorne has invested heavily in state of the art equipment, which it uses in conjunction with traditional methods. Every part of every gun is manufactured and engraved entirely in-house in England, including the stocks. This allows them to control quality and, where required, make rapid changes to designs and manufacturing processes.

*Sporting Shooter* has invited Longthorne to share some of its gunmaking knowledge and philosophies

James Longthorne Stewart smoking-in the barrels



The Lancashire-based gunmakers are renowned for their state of the art barrel construction

Longthorne guns combine traditional looks with the latest technology



‘The UK was once a major centre for gunmaking throughout the world with most common designs having been instigated here’



James Longthorne Stewart with a Hesketh at Mulgrave Castle



Polishing the barrels



Barrels in the white with a Rutland action

PICTURES: LONGTHORNE

with you over the coming months, starting with an insight into how our barrels are made.

## Barrel technology

As a company we are probably best known for our barrel construction. Few people realise that when we first started designing we actually started off making a set of conventional barrels. Unfortunately, James, being an engineer to the core, could not get to grips with the fact that they just weren't precise enough or strong enough for his liking.

For those of you who aren't aware, there are several conventional methods of producing barrels. A chopper-lump or demi-bloc (demi meaning two) involves two separate forged tubes with a larger head that can be machined to produce a dovetail which is then silver-soldered together at the breach end. Monobloc (mono meaning one) barrels involve inserting two tubes into a single, solid piece of metal at one end. This is generally accepted as being a much stronger method than the demi-bloc method.

Both of these methods involve 'pulling' the bottom barrel towards the top barrel (in

over-and-unders) and soldering into position to allow the front of the barrel to converge with the top. The ribs are also soldered into position.

Because the aforementioned barrels are made to 'converge' it is critical that these barrels be made correctly and be regulated to shoot at a given distance. Providing they are made well by someone who knows what they are doing (such as top barrel makers Bill or James Blacker) and are regulated correctly, barrels made this way are functional.

Converging means that the paths the shot takes from both barrels should cross at some point at a given distance in front of the gun. This should be (regulated at) around 30-40m.

However, in reality this often does not occur. In tests we have performed with laser bore sights in the chambers, on numerous barrels the shot is converging, in a worst case scenario, as little as 3m in front of the gun, which means that the bottom barrel will shoot 'high'.

Surprisingly, you don't necessarily get what you pay for in this regard as some of the cheapest guns have produced better results than some of the more expensive ones in our tests.

## How we do it

In fully machining our barrels from a single piece of high specification steel, and this includes the fore-end loop and ribs, our over-and-under barrels are perfectly straight, being honed to micron tolerances and parallel, meaning that the shot leaving the gun remains on a more consistent path.

Furthermore, having only a 2-3mm gap between the barrels (depending on gauge) results in nice, tight patterning and they don't have to be further regulated. Another advantage of using this method is that blacking chemicals are unable to get trapped in soldered joints and cause corrosion.

Although functional, it is extremely difficult to get soldered barrels to remain straight as the heating process can cause softening and distortion of the base metal, meaning that it is more difficult for a projectile (i.e. shot charge) to leave the gun. This is one of the reasons felt recoil is experienced. Felt recoil is reduced in Longthorne barrels because they are perfectly straight and there is nothing hindering the exit of the cartridge. For the same reason muzzle flip of the gun is significantly reduced.

In working to such exacting tolerances we can also be sure that when manufacturing a pair or set of guns they will be identical and interchangeable, and the dynamics, weight and balance of the guns will remain exactly the same. ■