



Building British guns a different way

Does the revolutionary design of the Longthorne shotgun, including barrels made from a single billet, mark James Longthorne Stewart as genius or maverick?

WRITTEN BY DOUGLAS TATE

It is seven years since the launch of the Longthorne shotgun, with its barrels machined from a single, solid billet of special Swedish steel. In that time, James Longthorne Stewart has continued to improve his revolutionary design, although his initial idea may have a longer history. Over a century and a half ago, Sir Joseph Whitworth secured a patent for “cutting both barrels out of the solid from a single piece of metal”. This poses a question: is Mr Stewart the great mechanic (as Sir Joseph Whitworth was called) of our times? I asked Elaine Stewart, James’s wife and

Longthorne’s marketing director, what was the genesis of James’s idea and whether he was influenced by Joseph Whitworth?

“James originally started making the barrels conventionally but being an engineer wasn’t satisfied because they were never going to be straight. He decided that making them from one piece of steel would achieve this and realise the precision he was after. At this point he was not influenced by anyone. We were not aware until after we had launched the gun in 2010 that Whitworth had experimented and patented a method of making barrels from a solid billet. The fellow who told us is now a customer of ours, who also has two Whitworth guns.”

The significance of creating both tubes, the ribs, lumps and chokes out of a single 27kg block of high-quality steel is that the barrels are trim and light but also unbelievably strong; substantial without being bulky. They are so strong that James Longthorne Stewart can stand on a set, bridging two blocks of wood, and they don’t bend. I even came across a photo of someone driving a Range Rover over them without harm.

A small I-beam between the barrels (measuring 2mm-3mm, depending on the gauge) eliminates the need for a traditional, soldered rib so reduces the weight. Despite being light, Longthorne barrels are tough enough to handle 3in steel magnum loads

through full chokes without bulging. “This ensures that our guns are ‘future proofed’ in the event of a lead ban,” says Elaine Stewart. The barrels are also perfectly straight yet a charge from either will strike the same point of impact at 40 yards. The most significant feature of Longthorne guns is that they have negligible felt recoil, even with the heaviest loads, which the makers attribute to a greater rigidity compared to traditional guns.

So much for the ancestry of one-piece barrels but what about securing the barrels to the breach? “During the design stages of the other metalwork contained in the gun we did look at certain aspects of Boss, Woodward, Perazzi and Beretta, considering these manufacturers to be leaders in their field – there’s no point in reinventing the wheel – and combined and adapted certain aspects of these with our own distinct and unique design.” Reviewing the Longthorne for this magazine, Michael Yardley wrote: “The hinging is Woodward with replaceable

“James is a skilled engineer with a background in toolmaking”

stud pins near the knuckle. The locking is Boss with draws and wedges smaller than the original and which actually do something.”

Both Boss and Woodward over-and-unders are 100-year-old designs still being built today. The hinges and bifurcated bolts are alongside the barrels, which allows the trimmest of actions; at just 2.29in Longthorne claims its 12-bore as the lowest profile over-and-under on the market. Another borrowed idea comes from Italy, where the Brothers Rizzini have long machined their bridle and lock-plates from a single block of steel. A bridle integral with the lock-plate increases rigidity but also eliminates external screws and potentially creates a cleaner canvas for engraving.

“The company has been conscious of the fact that there is somewhat of an imbalance between the number of imported shotguns and the number currently produced in the UK and is keen to redress this as Britain was once considered the traditional centre of the gun-making industry and, as such, produces the gun entirely in house from only the best-quality materials,” explained the firm in a prepared statement. “In so doing, they have produced a high-end, traditional English



Above: James Longthorne Stewart preparing a stock. Above left: a selection of Longthorne shotguns

shotgun of unquestionable quality and for reasonable cost, bringing excellence and accuracy to a much wider marketplace.”

The Longthorne moniker is part of the familial name of the company’s founder. “My husband’s family surname used to be Longthorne-Stewart,” explains Elaine Stewart. “I think it was his grandfather who dropped the Longthorne for whatever reason so my husband was christened ‘Stewart’. We resurrected it for the purposes of Longthorne Gunmakers.”

Clearly Stewart has married new technology to hinges and side bolts borrowed from traditional, craft-built shotguns while

incorporating Italian innovations. He has been involved in the precision manufacturing of firearms components for 30 years and is a skilled engineer with a background in toolmaking who has operated companies in Australia and England. He’s also a shooting nut with Level 1 instructor classification with the Clay Pigeon Shooting Association.

Longthorne guns first appeared at the CLA Game Fair at Ragley Hall in 2010. At that time,



the guns were built in an old potting shed behind the family home located just west of Whitworth's old Manchester factory. Since then, the company has moved to Formula One valley in Northamptonshire, where greater expertise is on tap. "Northampton is a hub when it comes to attracting staff with technical skills, such as CNC programming," explains Elaine Stewart. "It proved to be the perfect location as it's so central, near lots of major motorways and, most importantly, being the centre of the automotive trade there are lots of experienced engineers who can operate our equipment."

In England during the Edwardian period, there was a plethora of patents for superimposed barrels. I asked Elaine Stewart if any of her husband's innovations are

patentable: "Mr Gunmaker a bit concerned about revealing too much at this point about patents to public at large." However, she was kind enough to send photos of the patent certificates her husband has been granted. The first, UK patent GB2517724, reads in part: "a patent has been granted to the proprietor(s) for an invention entitled 'gun barrel manufacturing process' disclosed in an application filed 29 August 2013"; it is dated 8 July 2015. The second, granted to "James Anthony Stewart", is US patent 9,227,250 B2 dated 5 January 2016.

"We currently have a US Patent and UK Patent granted, others in process, making our guns stronger, although lighter," added Elaine Stewart. "We can proof for magnum steel up to extra full choke, nothing can fall



Top: James Longthorne Stewart with his favoured "Deluxe" model 16-bore.

Above: Longthorne barrels in the making



All the barrels for Longthorne shotguns are polished by hand

apart – we even incorporate the fore-end loop. The main advantage is significantly reduced felt recoil and muzzle flip, because of the straightness and accuracy of the barrels. We recently compared, for example, the wall thicknesses and straightness of a set of barrels from a best Italian sidelock to ours. The wall thickness varied by 10 thou, ours vary by 1 thou, the straightness had a screw of 32 thou, our tolerance is 1 thou. In simple terms, this combined with the rigidity enables more accurate shooting and a light, pointable gun. We also use a superior quality material, which is at least 50% harder than most common barrel material, and because of the method of manufacture our nominal wall thickness is 40 thou and yet a 30-inch barrel 12-bore would weigh around 1400 grams – lighter in the side-by-side."

This much departure from traditional barrel making must have required some outside help and I learnt that Longthorne has been working closely with London

proof master Richard Mabbitt, who has a background with the Royal Electrical and Mechanical Engineers. I asked him about the gunmaker.

"I first met Jim some years ago and was immediately impressed by both his 'fresh' approach to the industry and his enthusiasm," he said. "Since taking over the reins at the London Proof House some nine years ago, I have adopted a very open, accountable and traceable attitude in all that we do. It is in all of our interests that everyone involved in the process fully understands what is involved in the proofing and why we do it – this goes for all members of the Company and for our clients. If there are any areas in which we can improve, we will certainly embrace the opportunity. I have extended this invitation to all of our clients, some of which have accepted, others still view the Proof House of old.

"Jim visited us and I was able to show him the process and give him some history to

the Company," Mabbitt continued. "Likewise he was completely open about what he was aiming for and how he proposed to accomplish these goals. Honesty and communication was the key here. Initial submissions did not necessarily pass without issue but we were both aware that this is all part of the development process and so we were more than happy to assist – again, it was refreshing to talk with Jim and impossible not to share his passion.

"I believe that Longthorne are the first company to have been able to achieve the production of a barrel from the solid and able to withstand the pressures generated (and momentum) for steel shot on a tight choke. Jim's innovation, skill, enthusiasm and personality all shine through; not just personally but also through his wife and daughter who, as you know, are also an integral part of the operation. Longthorne have been a pleasure to deal with over the past few years and I believe that they will be here for many more years to come – no

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“Clearly, traditional craft design was wed to new technology to create a vivid, post-modern product”

doubt continuing with their innovations in design and production and certainly keeping some of their competition on their toes.”

THE LONGTHORNE FIVE

Five Longthorne models are currently available: The Hesketh, named for the Lancashire town where Longthorne was born, is a 12-bore over-and-under featuring a minimum of scroll engraving; The Hesketh Deluxe, launched in 2011, is similar but with deeper floral scroll engraving designed by the Stewart's daughter, Chloe; The Rutland, named for the Duchess of Rutland (of whom Elaine Stewart has been quoted as saying, “Longthorne Gunmakers feel incredibly honoured to have been entrusted by Emma, 11th Duchess of Rutland, to produce the Rutland Range of shotguns; the Duchess is passionate about British traditions, heritage, craftsmanship, creativity and innovation and Longthorne are proud to be partnering her in this exciting project”); The Celtic, featuring Celtic strap-work engraving with the option of a dragon, shamrock or thistle (for Wales, Ireland or Scotland) on the top lever; English Small Rose & Scroll, which features traditional bouquets. All of the standard engraving patterns are executed in a combination of hand work and machine

technology. Custom engraving from the best British engravers is an option at extra cost. A leather-trimmed canvas case comes with each gun, however, clients can upgrade to suede with leather trim if required.

“We are concentrating on new models. We already have our new side-by-side barrels designed and we are working on



our boxlock model,” says Elaine Stewart, adding, “we have also just had our US patent granted, which is a major stepping stone for the company as far as our Intellectual Property is concerned. We expect to have other international patents granted in due course.” Customers include the late Duke of Westminster and the Earl of Leicester as well as royal clients in the Arabian Gulf.

Clearly, then, the Longthorne shotgun action originated in traditional craft

Above: a Longthorne “Rutland” designed around the heritage of Belvoir Castle

Inset: raw material for actions and fore-ends

design but was wed to new engineering barrel technology to create a vivid, post-modern product with its own unique character. Though thoughtfully engineered, the Longthorne is not a manufactured gun stamped out in multiple identical iterations; it is lovingly crafted one at a time. Longthorne reminds us that working in an established field can be both restricting and empowering. Much of the traditional gun trade dismiss him and his guns; others admire him. That James Longthorne Stewart may have re-engineered a concept with which he was not familiar in no way precludes him from becoming a great gunmaker. So is he a genius or a maverick? He's probably neither, but James Longthorne Stewart may be the greatest mechanician of our times. ■

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