

So, you want to be a gunsmith?

The skills required for modern gunsmithing blend of traditional manual techniques with newer mechanical ones, as Longthorne Gunmakers explain

If gunmaking is to survive as an industry in the UK we have to adopt the same philosophies as our continental cousins and move with the times. It is all very well trying to preserve the traditions of old but if you don't progress you effectively go backwards, which is why the English gunmaking trade has declined so dramatically over the past 100 years. However, there is a change in the air.

In this current age almost all gun manufacturing in the UK and elsewhere involves some degree of CNC and engineering input. To this end, what is involved in the gunmaking of the future?

'Although anything can be mechanised with enough investment, there will always be a need for traditional specialists'

Well, it all depends on what type of gunsmith you want to be. If you want to encompass the whole thing and become a modern gun manufacturer then, most importantly, you require passion for what you are creating and an exemplary eye for detail. Good engineering skills, including the ability to programme and/or operate CNC machines and the ability to understand the design elements, tolerances, mechanics and metallurgy behind what you are making are also crucial. You will need to be able to turn your hand to the fitting and finishing skills as required when necessary – these are generally the skills befitting an HND in Mechanical Engineering plus some.

Unfortunately, the passion isn't something which can be taught – it comes from within. If this sounds like you, please give us a call – we would love to hear from you!

We have several openings at the moment for our new factory in Northampton where we are looking for engineers with passion, diligence and excellent engineering knowledge to work with our bench staff to form part of our inaugural team at our new location.

The other skills can be broken down into the following categories:

Gun designer

For this role you have to be an ideas person and understand the mechanics of how a gun operates, desired design elements and how it all goes together, as well as being a dab hand at CAD/CAM (Computer-Aided Design and Computer-Aided Manufacture). Design programmes like Pro Engineer, Siemens and Delcam are usually used for this type of work. Of course, you could draw it by hand, but it's much simpler for the person making the parts to understand a computer drawing rather than something drawn on a sketch pad, and it enables testing of limits and fits, interference, structural analysis, etc. Using a CAD/CAM system can save hundreds of hours of production prototyping and testing.

Engraving designers/Engraver

For this you do have to have artistic flair and be computer literate, as many gunmakers now use various mechanical methods of designing and/or applying engraving using computerisation. Hand artistry is still used, however, and if you are interested in hand engraving a good place to start is The Hand Engravers Association, who can point you in the right direction. It is also our intention, here at Longthorne, to offer limited placements to



A gun manufacturer must have an exceptional eye for detail

hand engravers once our new factory is established. As regards hand engraving, there is no substitute for practise, which also helps you build up the required muscle memory.

Programmer

Returning to the machining element, once we have a drawing we need a programmer to transfer the data from the drawing to a CNC machine. A programmer needs to be familiar with the various types of control systems commonly used on CNC machines; the more common ones would be Fanuc, Mazatrol and Siemens. He/she also needs to be conversant with speeds and feeds and the types of cutting tools available. The Setter will then make a fixture to hold the material in place while the machine cuts the material.

Operator

When the programmer and setter have completed their tasks, we then need an operator who will basically press the 'go' and 'stop' buttons and monitor the progress of the manufacturing, making sure that the cutting tools are doing their job correctly and altering the parameters of the machine to compensate for wear of the cutting tools and fluctuations in temperature. They also pay particular attention to the surface finish of the parts and check the dimensions, which are critical. Here at Longthorne we work to one micron tolerances. Quite often the programmer/ setter/operator will be one person.

Our metalworking bench team work in conjunction with our engineers to ensure that the desired surface finish and measurement tolerances are maintained and have a range of skills including heat treating, polishing, fitting, finishing, blacking, assembly for proofing, final assembly, inspection and testing – we teach these elements in-house.

Our woodworking bench team also have a range of skills: stock finishing and oiling, chequering and fitting of the fore-ends and stocks to the metal part of the guns, making leather stock



For more information about The Hand Engravers Association, go to www.handengravers.co.uk

pads as well as 3D scanning of clients' stocks.

Although anything can be mechanised with enough investment, there will always be a need for traditional specialists such as stockers, chequerers and engravers, and to form any sort of industry we need enough good people in these manual trades from which to choose.

For this reason, since 2003 The Gunmakers' Company Charitable Trust has worked to promote and support training of the craft and technology of gunmaking by supporting gunmakers with bursaries for apprentices. The Trust has been supported financially by a range of individuals, including members of the livery of the gun and allied trades, and of the wider shooting community both in the UK and abroad. If you would like to make a donation to The Trust please visit our website and complete the pledge form, the Trust would welcome your donation. ■



Metalworking elements are taught in-house at Longthorne



The woodworking bench team ensure a precise wood-to-metal fit

CONTACT DETAILS

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