

Apprenticeship Standard for a Gunsmith.

Occupational Profile:

The Gunsmith is responsible for repairing and/or manufacturing a wide range of firearms. They must ensure that all work is carried out within the parameters of the prevailing law within the UK. They have a working knowledge of various (expired and current) patents and ballistics to ensure guns are maintained and manufactured to obtain optimum performance for the intended use of the firearm. They can ultimately work on their own or as part of a larger team within small to larger businesses ranging in size. They will be working with end customers/users and must ensure customers/users needs are met. Typically employees within this occupation will be managed by either by a Foreman or Works Manager.

The Gunsmith carries out a range of duties through application of engineering skills as outlined below:

1. Fault diagnosis and repair of a variety of firearms
2. Manufacturing and re-manufacturing of firearms for clients or resale
3. Effective negotiation with both suppliers and customers
4. Seeks and supports development of new/alternative methods of manufacture and repair to improve costs and technical outcomes
5. Maintain the highest security and safety levels
6. Advises customers based on the need, budget and intended use of firearms
7. Makes technical contribution to the design and development, of firearms and associated accessories
8. An understanding of business finance
9. Safe use of a range of machinery and hand tools
10. Proficient at providing gunfit advice and to make/repair gun stocks to factory standards
11. Works with cross functional teams to support the development of new/alternative technologies including manufacturing, repair and assembly processes
12. Produces Standard Operating Procedures for manufacture, repair or alterations

Knowledge

A Gunsmith knows and understands:

- How to safely handle, store, buy, sell, import and export firearms in line with current legislation and guidelines.
- How to effectively use personal protective equipment (PPE) to minimise risk of accidents in the workplace (apron, safety glasses, earing protection, gloves etc) and work with health and safety methods in mind.
- How to inspect a gun to ascertain if it meets expected safety (CIP) standards by using relevant gauges and visual inspection.
- How ballistics work and are calculated with a variety of weapons in relation to the use they are intended.
- How to cost a job based on time, material and market pricing etc.

How to use a variety of machinery, hand tools and finishing methods such as; Computer Aided Design (CAD), Computer Numerical Control (CNC), lathes, milling, grinding, sanding, polishing wheels and bench drills, heat treatment of various metal types/grades and various welding techniques.

A broad history of the Gun trade and the evolution of guns and how to read and interpret technical drawings from various eras to understand the terminology used within them.

Skills

A Gunsmith must be able to:

Stocking

Carry out inspection of a gun stock and identify any cracks or flaws in the makeup of the material that may lead to failure, items such as previous repairs, imperfections in the grain of the wood and signs of adjustment.

Raise dents in various locations on a stock blank and repair cracks or other imperfections as they arise with the focus always being on strength and visibility of the work (naked eye) post repair; to re-finish partially or in total a variety of stock formats.

Checker and Re-cut worn checkering on wooden gunstocks to a standard that can be expected from a newly produced gun.

Provide gun fitting in relation to a client using a fully articulated 'try gun' and also take measurements from a gun stock to obtain required adjustments in terms of length of pull (to centre, to heel and to toe), drop/bend (at comb, face and heel) and cast (at comb, face, heel and toe). Bore and balance a stock to give a gun the desired balance in hand to suit clients needs; also to include sporting rifles in relation to eye relief from scope/sights.

Fit of a variety of stock extension pads, comb raisers, ovals and finish off to a factory spec standard in regard to finish and quality of fitting.

Carve walnut to create gun stocks and forends of a variety of stock formats (Over & Under or Side by Side).

Barrels

Inspect barrels to identify barrel dents, pitting and buldges. Then raise dents, pitting and buldges within gun proof guidelines.

Strip and relay shotgun and double rifle ribs (Top & Mid) on both side-by-side or over-and-under using both braising and soldering method of fixing; also adjusting for optimum barrel convergence.

Prepare and black/brown barrels and other gun parts using both rust and caustic methods and the making up of any required solution based on water PH levels.

Fit of a variety of barrel lumps. Types include: chopper, shoe, monoblock, dovetail.

Sleeve barrels that are out of proof using either barrel lining or tubing and also chamber and rim barrels within gun proof guidelines.

Re-joint a variety of barrel types to their respective actions using a variety of methods such as spray welding or full re-manufacture taking into account the relationship to the barrel loop and forend hook. Also adjust timing of action drop/ejector release and the gape required when guns are opened.

Manufacture/fit extractors/ejectors to a variety of sporting guns and regulate taking into account correct timing and force.

Adjust and fit of barrel chokes (multi and fixed) and bore/lap barrels to achieve optimum or desired ballistic characteristics working within gun proof guidelines.

Re-barrel bolt action rifles and regulate within gun proof guidelines.

Action

Service a variety of shotguns and rifles with particular attention to the various safety mechanisms and test of safe operation of all firearms.

Manufacture, re-manufacture and repair of a variety of locking mechanisms work; top lever, under lever, side lever, rising bite, dolls head, Greener bolt.

Manufacture, re-manufacture and repair of a variety of trigger mechanisms work; selectors, bob weight, Turner, open gate/blitz.

Behaviours

The required behaviours are:

1. **Personal responsibility, resilience and ethics.** Comply with health and safety guidance and procedures, be disciplined and have a responsible approach to risk, working diligently at all times, accept responsibility for managing time and workload and stay motivated and committed when facing challenges. Comply with any organisational policies/codes of conduct in relation to ethical compliance
2. **Teamwork.** Integrate with the team, support other people, consider implications of actions on other people and the business
3. **Effective communication and interpersonal skills.** Open and honest communication, communicating clearly using appropriate methods, listening to others and having a positive and respectful attitude
4. **Focus on quality and problem solving.** Follow instructions and guidance, demonstrates attention to detail, follow a logical approach to problem solving and seek opportunities to improve quality, speed and efficiency
5. **Continuous personal development.** Reflect on skills, knowledge and behaviours and seek opportunities to develop, adapt to different situations, environments or technologies having a positive attitude to feedback and advice

Qualifications

Apprentices without level 2 English and Maths will need to achieve this level prior to taking end-point assessment. For those with an education, health and care plan or a legacy statement, the apprenticeships English and Maths minimum requirement is Entry Level 3 or British Sign Language qualification are an alternative to English qualifications for whom this is their primary language.

Duration of Apprenticeship

Typically 48 months

Professional Recognition

Achievement of the standard is designed to be recognised by relevant Professional Engineering Institutions such as the Institute of Engineering and Technology (IET) at the appropriate level of professional registration (EngTech).

Level

This is a Level 3 standard

Review

This apprenticeship standard will be reviewed after 3 years.