

# Finishing gun parts “Armour Bright”

by John Osborne HFA MG DTT PhD FSG

If a forged Ferrous gun part is to be finished armour bright, the fire must be clean, and the hammer and anvil must have smooth faces, free of dirt and scale. The metal must also be cleaned of dirt and scale with a file before it is worked.

After forging to shape. Complete all the fitting and heat treatment before polishing the metal. If you have several pieces to finish armour bright, you will save much time and labour by making a ‘pickle’ of five parts water to one part of sulphuric acid which will remove all the scale, including mill scale, from the metal.

The pickle must be mixed in a bath which will not be corroded by the acid. It is important that the water is put first into the bath and the acid added to it, otherwise there is a danger of an explosion due to the rapid generation of steam. The piece should then be taken out of the acid bath and brushed with steel wire until all the scale has gone, rinse it first in cold water, then in sulphate of ammonia to destroy any acid that remains, and then in cold water again.

Finally dry, and stress relieve in an oven. Stress relieving or ageing is a process to reduce internal residual stresses in a metal object by heating the object to a suitable temperature and holding for a proper time at that temperature. This treatment may be applied to relieve stresses induced by casting, forging, machining, cold working, welding, quenching, hardening, normalising or just use.

Remove all coarse file marks with a fine file or by draw filing. Clumsy or deep file marks give an uninteresting machine-like surface and are the commonest faults of armour bright work.

The piece is now ready for polishing, it is much less laborious to use a power polishing machine, but if you work by hand use very fine dry emery cloth / paper. After polishing take care not to handle the work with bare hands if it is to be lacquered, otherwise the fingerprints will show through the lacquer.

Armour bright work is often lacquered to preserve the finish for external use. Lacquering will last much longer if properly stoved. Cold lacquering is practicable but the air temperature must be at least 18°C and the atmosphere free from dust.

Most internal parts of a gun are finished armour bright and being enclosed inside the lock or frame only need to be lightly oiled or waxed.