



## MAINTENANCE & ZEROING (I)



### Aim

Zeroing describes the method of ensuring that the point of aim and the point of impact is the same for a given range. The aim of this guide is to provide practical guidance on maintaining and zeroing rifle equipment to ensure:

- ◆ operational safety, and
- ◆ consistency of accuracy.

This guide assumes that rifles are in good condition to start with.

### Servicing

The condition of a firearm is important. Rusted, damaged or blocked barrels may be unsafe and fouling or corrosion may cause mechanisms to fail. If there is any doubt as to its condition, the firearm should not be used until it has been properly checked and repaired.

Allowing small amounts of fouling to build up in the rifling will reduce the consistency of accuracy.

- 2 Ensure rifles are serviced annually by a competent gunsmith.

### Cleaning frequency

- 2 All rifles not in daily use should be stored in a clean and lightly oiled state. The oil must be removed from the barrel before being brought into use. Failure to do so may cause damage to the barrel.
- 2 A rifle 'in daily use' should be thoroughly cleaned at least once a week or after every 15 to 25 shots.

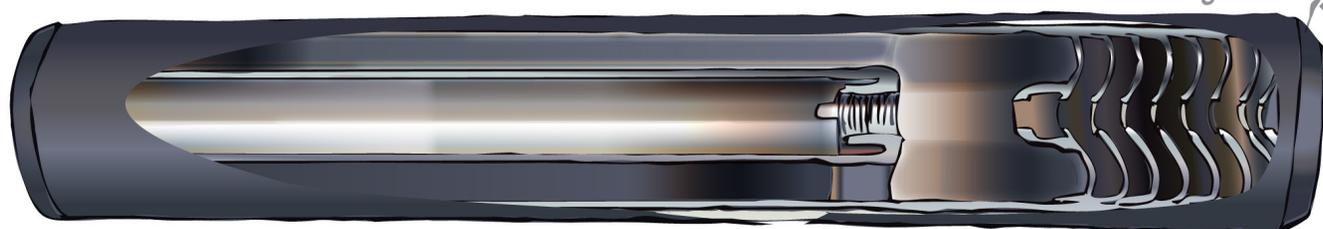


- 2 At the end of each day's outing, a cotton patch should be put through the bore.
- 2 A rifle 'in daily use' should be cleaned and thoroughly dried after any wet outing.

### Cleaning equipment

Having the proper cleaning equipment for use with specific calibers of firearm is essential. Cleaning kits generally include:

- ◆ Plastic coated or quality solid steel rods of the correct size and as short as possible for the barrel length;
- ◆ A good quality bore guide (prevents brushes and jags from damaging the throat of the barrel and keeps the rod aligned all the way down the barrel, protecting the rifling. Also prevents solvents and debris entering the magazine or trigger mechanism);
- ◆ Spear tip jags and good cotton cut patches sized to fit down the bore;
- ◆ Specialist copper solvents. Ammonia-based solvents should not be left on for long periods of time as they can etch the surface of stainless steel barrels;



(above) the inside of the moderator and (right) the crown of barrel



- ◆ Good quality bronze brushes with a brass core;
- ◆ A small stiff brush e.g. toothbrush;
- ◆ An action cleaning kit including chamber rods, industrial-type tissue paper and dental rolls.

## Cleaning programme

### General

- 2 Ensure the bolt and ammunition are removed from the firearm before cleaning and ensure all ammunition is stored securely away from the cleaning area.
- 3 Remove muzzle accessories such as sound moderators or muzzle brakes prior to cleaning.
- 2 Check barrel for rusting, pitting and dents. If any of these found, seek advice from a gunsmith.
- 2 Do not put damp firearms into gun cabinets, as rusting will start immediately, especially if there are any traces of blood left on the metal work.
- 3 If wet or cold, dry the outside of the rifle thoroughly with a clean, dry rag. Let rifle stand for an hour in a secure place or within sight, to adjust to indoor temperature and allow condensation to dispel.

### Barrel

- 3 1. Using a bore guide, push a patch soaked in copper solvent through the barrel.
2. Leave the solvent in for the time stated by the manufacturers and patch out with clean tight cotton patches.
3. If the patches have blue copper deposits push a brush with solvent through the barrel and completely out of the muzzle.
4. To maintain the quality of the solvent, do not dip the brush into the solvent bottle as this will contaminate the solvent inside.
5. Use roughly one cleaning stroke per shot since the last cleaning, this is normally around 15 to 25 strokes. Ensure the brush has exited the barrel completely if changing direction of the stroke. This will prolong the life of the brush.

6. Clean out the barrel with clean, dry patches. Do not withdraw the patch back through the barrel.
7. Repeat task if the patches are still coming out blue or copper coloured. If two attempts at brushing do not remove the copper then seek advice from a gunsmith.
8. When patches are coming out clean, remove the bore guide and swab out the chamber with some tissue paper on a jag or chamber stick to remove dirt and excess solvents.
9. Ensure that all cleaning materials have been removed from the bore and that the bore is free from obstruction.
10. Lightly oil the surface of the barrel with gun oil.

### Muzzle brakes and sound moderators

- 3 Always remove muzzle accessories prior to cleaning and after each shooting session. Large amounts of fouling will build up on the crown and should be removed in order to prevent corrosion. Condensation can also gather, causing rusting. Muzzle accessories should be maintained as per their manuals.
- 3 Use a phosphor bronze bore brush and copper solvent to remove fouling and oil lightly.
- 3 A small amount of grease should be applied to the threads prior to refitting the brake or moderator.
- 3 Neoprene covers should be removed and dried.
- 3 Lightly oil the moderator or muzzle brake according the manufacturer's recommendations.

### Chamber cleaning

- 3 Wrap industrial-type tissue around a bore brush, push it into the chamber and gently turn to remove surplus solvents or foreign material after cleaning the barrel.

continued in Maintenance & Zeroing(2)