

# FIRING PIN STATUS

---

1] The Firearms Act 1968 as amended says:

57 (1D)(c) *A breech block, bolt or other mechanism for containing the pressure of discharge at the rear of the chamber,*

2] A firing pin is designed to discharge the cartridge, it is not “*a mechanism for containing the pressure of discharge at the rear of the chamber*” (opinion).

3] Firing pins can be free floating, held forward by the spring tension of the hammer spring, retracted from the breech face by a return spring where the hammer is designed to rebound, or held forward by the firing pin spring an example a Glock pistol.

4] Where excessive chamber headspace occurs the primer can be pushed back by the ‘explosion’ that takes place in the primer pocket, then quickly re-seated as the cartridge case comes back against the breech face when the expanding propellant gasses begins to push the bullet / shot from the cartridge case.

5] The firing pin is a free floating pin that has a mass (an exception the fixed firing pin on say a Sten gun), the mass of the firing pin can be affected by the movement of the mass of the bolt or breech face.

6] The breech face may be fixed during the firing process, for example a bolt action rifle, or recoil to the rear for example short recoil, or blowback.

7] To test the hypothesis that is is a “*mechanism for containing pressure*” we can look at the indentation in a fired primer.

- 8] Take the case of a firing pin from an SA80 5.56 x 45 mm calibre rifle, we have taken a fired primed case (fired in a SA80 lab exhibit)



Pic 01 Complete L2A2 round and case with unfired primer



Pic 02 Fired primer before test



Pic 03 Reloaded round with fired primer

- 9] To test to see if the primer (indented section) is supported by the firing pin to the extent that the firing pin indent would not remain indented if unsupported, we will fire the cartridge by means other than the use of a firing pin.
- 10] The head of the cartridge case and majority of the surface area of the primer is supported by the breach face part of: *"a breech block, bolt or other mechanism for containing the pressure of discharge at the rear of the chamber"*.

- 11] To fire the cartridge with the fitted fired primer we have selected a 5.56 x 45 mm barrel and fitted a breech face with firing pin hole. We then equipped it with a 5/16 inch Beryllium copper nipple and used a percussion cap to ignite the propellant.



Pic O4 test barrel fixed to test bed



Pic O5 Breech Face with firing pin hole



Pic O6 Breech face fitted to the barrel ready for drilling flash hole



Pic O7 Beryllium Copper nipple fitted



Pic 08 Gun ready to fire



Pic 09 Firing mechanism fitted with a military type percussion cap in place, cartridge case drilled to allow the flash of the percussion cap to ignite the propellant



Pic 10 Action fired

- 12] The firing was successful with bullet traveling at 736.68 metres per second, producing an energy of 1052.80 Joules.
- 13] The firing pin area of the fired primer was unsupported due to the breech being drilled for a firing pin (same diameter as the firing pin hole in an SA80 bolt).

14] Below a comparison of the primer with firing pin indentation before and after firing.



Pic 11 Fired primer before firing in the test barrel



Pic 12 Cartridge case and primer impact marks against the test barrel breech face after firing

15] Note the transfer markings to the cartridge case and primer after firing in the test barrel and the firing pin indentation which remains after firing.

16] This test firing confirms that the firing pin does not contain the pressure of discharge at the rear of the chamber, it is contained across the primer cup by the primer cup itself. Had the firing pin needed to contain the pressure of firing then with the firing pin removed the indentation in the primer cup would have flattened.

17] This shows in the case of a SA80 firing pin that it is not a mechanism for containing pressure and is not a component of a firearm as described in the Firearms Act 1968 as amended Chapter 57. As it is not a relevant component it therefore requires no authority to possess (opinion).