CHAPTER II

NATURE AND CLASSIFICATION OF FIREARMS

Specifically, the definition of "firearms" in general has been provided by Section 2(1)(e) of the Arms Act, 1959 as genus of which different types of firearms are considered as species. The Arms Act, 1959 in general and the definition of firearms in particular along with critiques have been elaborated elsewhere in this work. The discussion mainly relates to the firearms under small arms category as weapons of offence or defence, & small Arms include those guns which can be handled, moved and operated by one man. Military small Arms comprise those weapons normally used by the infantry. The present chapter relating to the classification of firearms includes firearms upto sub-machine gun or a machine carbine leaving out other types of guns such as light Machine Gun, Medium Machine Gun, Heavy Machine Gun, Synchronised Gun etc. However all types of air guns are included for the purpose of classification of firearms. The firearms are also subject to the process of constant growth and development. This is the hallmark of our present-day society, where mechanical beauty is apparently doomed to be sacrificed in favour of the new normative graduation: 'Productivity'. Therefore, it may be profitable to discuss something about historical development of modern firearms.

The invention of gunpowder and its use as a propellant in guns had a profound effect upon the world. The origin of
gunpowder is still obscure, however, the composition of gunpowder (a highly combustible mixture of potassium nitrate, charcoal and sulphur) is first supposed to be given by Roger Bacon in 1248 ... although it was Bernard Schwarz, a German monk, who applied gunpowder to the propulsion of missiles in the 14th century and there is no record of use of firearms before 1300. However, some authors are of the opinion that the earliest recorded use of gunpowder seems to have been in the 11th century in China and by the middle of the 12th century the Chinese developed some simple forms of gun. However, Kaushalendra Kumar cites excerpts of a work by Dr. Oppert, G, a German national which tried to show that Indians used gunpowder (a few century B.C.) much before the Chinese could do.

The earliest firearms were devoid of any specifically uniform mechanism; these consisted essentially of a heavy tube closed at one end, with a small vent hole drilled from the top surface to the interior cavity just in front of the closed end. Gunpowder and one or more projectiles were placed in the interior cavity; then more powder was shaken into the vent hole, when fire was applied to the latter, the internal charge would be ignited. There have been three main techniques of ignition: (i) by smouldering match, (ii) by spark from pyrites or flint and steel and (iii) by percussion or detonation. The greatest advances in gun technology became possible once detonating cap, propellant and bullet or shot were combined in the centre-fire cartridge.
A few firearms capable of being carried and fired by one man began to be used in battle in the 1360s. The earliest hand cannon consisted of a tube of metal closed at one end and was loaded with gunpowder and one or more projectiles. The tube had a touchhole, or vent, over the powder and was mounted in a straight spar of wood. The soldier would carry this arrangement in one hand and a smouldering match in the other. He would aim the whole spar at the target and then place the smouldering match in the touchhole, thus igniting the powder charge and throwing the projectile or projectiles with considerable velocity in the general direction of the target. However, the hand-cannon was clumsy, inaccurate and uncertain. Later, the simple expedient of mounting a pivoted lever on the gun stock to convey the glowing match end precisely and at will to the vent solved most of the hand cannon problems. This new weapon, called the match lock, came into being about the end of the first quarter of the 15th century. A man now could use both hands in controlling his weapon; it was less clumsy and capable of better accuracy. It was theoretically possible to make a matchlock pistol light enough to be operated reasonably precise with one hand while on horseback.

These matchlocks fitted with what is generally described as a 'serpentine lock', were first known to have been used in the early 15th century. A member of improvements followed: the barrel tube (a long, hollow cylinder of steel) was closed at the near end with a screwed plug, and the touch-hole was drilled into the side
with a priming pan with a sliding cover set beside it. A more elaborate version of the serpentine lock, in which a spring was used to keep the match from the pan, was neatly recessed into the side of the stock. Gentle pressure on the lever under the stock brought the match onto the powder in the pan. This under-lever, which was liable to be moved up accidentally, was later replaced by a conventional form of trigger (The part of a gun against which finger pressure is brought directly to fire the gun) protected by a trigger-guard (a loop of metal which protects the trigger and sometimes supports the trigger assembly and magazine).

By the middle of the 16th century the matchlock musket was fitted with a barrel about four feet long, and fired a bullet about three quarters of an inch in diameter. The long barrel was fitted to a sturdy wooden stock, the end of which was shaped so that the piece could now be held to the shoulder and an effective aim taken. In place of old fashioned serpentine there was a simple arrangement of levers operated by a trigger situated below the stock which, when pressed, caused the arm holding the match to swing forward and ignite the priming. The musketeer of the late 16th and early 17th centuries carried a light wooden pole fitted with a shaped arm at the top, the rest, with which he could support the musket in the aiming position.

However, there were many shortcomings of the matchlocks. The ignition by smouldering match was extremely inconvenient.
The system was affected by weather conditions as well. Strong gusts of wind could blow out the match; or drift a spark into an uncovered barrel of gunpowder. The need to produce ignition as and when required was apparent. Very early in the 16th century there are accounts of attempts to overcome the problem. This result came into being as the invention of wheellock during the first few years of the 16th century and may have been invented in theory, at least—by Leonardo Da Vinci. It functioned in much the same manner as a cigarette lighter. On pulling the trigger, a spring loaded wheel with a serrated edge spun rapidly, striking sparks from a piece of iron pyrites which was held upon it in a vice-like dog head. The sparks fired the priming powder, sending a flame through the touch-hole to the main charge. The power for the wheel came from a strong V-spring which was connected to the wheel by a chain. A spanner was used to wind up the spring, and the external axis of the wheel was squared off for this purpose. The advantage of the wheel lock was that a gun could be carried loaded and primed for instant use. Also it could be safely carried if the dog-head holding the iron pyrites was moved forward out of contact with the wheel. Another 16th century development in firearms was the rifling of the insides of gun barrels. Rifling is the spiral grooves in a barrel which impart spin or rotation to the bullet to stabilize it in flight. However, because of its cost, complexity, and maintenance problems, the wheel lock never entirely supplanted the matchlock and both types
remained in service side by side until displaced by the flint lock in the late 17th century.

A form of ignition system which dominated firearms from the early 17th century until displaced by the percussion lock in the middle of 17th century is the flintlock. Essentially, the flintlock provided a hammer or cock in whose jaws was clamped a shaped piece of flint. The spring powered movement of the hammer striking the flint against an upright steel frizzen or battery showed sparks into a small charge of priming powder whose flash ignites the main charge through a vent into the barrel. Additionally, the flintlock contained a vertically operating sear as well as a half-cock or safely notch. The flintlock is principally distinguished from its snaphance predecessor by the pan covering being incorporated into the frizzen and being actuated automatically by flint impact upon the frizzen. This earliest version of flintlock—the snaphance—originated in Scandinavia in the middle of the 16th century. Satisfactory as the flintlock proved for most needs, it did have serious drawbacks. It depended on a good flint striking hot sparks into the priming. The priming was itself susceptible to damp or wet weather, and at best there was an appreciable delay between the pulling of the trigger and the firing of the main charge. The answer to these drawbacks was to be found in the application of detonating powders to the firing of the main charge. This system is known as percussion lock.
Rev. Alexander Forsyth of Belhevie in Scotland had succeeded by 1806 in using tiny quantities of detonating powder—a chemical compound named fulminate of mercury—to fire the main charge of gunpowder. His ingenious device consisted of a small magazine fitted to the lock plate, opposite the touch-hole. On being turned a tiny quantity of powder was deposited in a cavity connected by a tube to the touch-hole. On pressing a trigger the hammer, which had replaced the cock, hit the spring-loaded firing pin, detonating the powder and sending an instantaneous flash through to the main charge. Forsyth's detonating lock was patented in 1807 but, although it worked well and moderate numbers were sold, it was expensive and required great precision of manufacture. However, Forsyth's lock has shown the possibilities and it was not long before numerous variations in the use of detonating powder—in pills, discs, tapes, tubes and caps—were being tried out by other gunmakers.

The percussion cap, well known even today, was developed perhaps before 1815, yet it did not come into general use until after 1821. Percussion cap is an external ignition device patented by Joshua Shaw in the early 19th century and in wide use by the 1830s, eventually displacing flint ignition models almost entirely by the 1850s. It consists of a thin, soft copper cup containing in its closed end a disc or pellet of (originally) fulminate of mercury. The cap is placed over a cone or nipple containing a
vent leading into the powder charge. When the cap is struck by a hammer, the fulminate detonates and a jet of flame passes through the vent to ignite the powder charge. As there was no appreciable delay, no priming powder to get wet or damp, and misfires were very rare, the system constituted a great improvement on the flintlock.

The system worked well but the problem of muzzle-loading remained requiring double loading the gun, (a) the charge of powder and projectile and (b) the percussion cap. Thus, muzzle-loading gun is any gun with a solid breech which must be loaded through the muzzle by first pouring in a charge of gun powders, followed by a projectile (or projectiles), sometimes with a wad or wads placed both beneath and over the projectile(s). A single cartridge, containing everything, which could be loaded at the breech, was obviously required. A number of types of capping breech-loaders were developed in which a thin paper or skin cartridge was fired by an external percussion cap. Breech is that portion of a gun which contains the action, the trigger or firing mechanism, the magazine, and the chamber portion of the barrel(s).

Amongst the earlier cartridges containing their own ignition to achieve a considerable success were the pin fire cartridge and the needle fire cartridge which came into use in the 1840s. The pin fire cartridge had the percussion cap set aside
and was fired by a pin projected from the rear of the cartridge at a right angle. The needle fire cartridge contained a detonator placed in front of the powder charge. It was fired by a long needle-like firing pin that had first to penetrate the powder charge. About the middle of the 19th century there appeared the rimfire cartridge, which is still used in small calibers. By original definition, caliber is the diameter of the bore of any gun barrel. Before the gunpowder is placed in the shell, a little detonating compound is dropped in; then the shell is spun around rapidly. Centrifugal force distributes the compound all around the inside of the shell rim. No matter how the shell is inserted in the gun, the hammer should strike an area on the rim with detonating compound underneath it. Thus a cartridge which has its primer sealed in and around the rim of its case is a rimfire cartridge and the primer is the small cap fitted in the pocket in the head of a centerfire cartridge case or enclosed in the folded rim of a rimfire case. The primer contains a sensitive explosive compound which, when struck by the firing pin, ignites the powder charge. A centerfire cartridge thus with a percussion cap set in the centre of a metal base was patented in France by Pottet in 1855 and Schneider patented another version in 1858, which replaced all the other types of cartridges and soon became the standard for most types of modern sophisticated firearms.

Rifling of the barrel of a firearm is supposed to be one of the most important characteristic of modern firearms.
Major Angelo Angelucci in his classic coverage of early Italian arms catalogo della Armeria Reale (Catalog of the Royal Armoury) published in Turin in 1890 cites a Turin inventory of 1476 listing "Scolopetus unus ferri factus lumeage", a firearm with spiral grooved barrel. By 1563 spiral grooving was so well known and appreciated in Switzerland that a Berne archive for the year 1563 deals with complaints of shooters about the unfairness of allowing rifled barrels to be entered in shooting competition with smooth bores. Modern firearms may be classified on the basis of different characteristics, such as, \(a\) bore characteristics, \(b\) mechanism characteristics, \(c\) handling characteristics, \(d\) used characteristics, and \(e\) improvised which may in turn be sub-divided into different varieties. The scheme of classification of modern firearm is shown in a tabular form. (Table 2.1) Barring the muzzle loading shotguns, all others are breech loaders. Majority of the modern firearms fire centerfire cartridges and also barring the shotguns and improvised guns, all other firearms are having rifled barrel.

A breech action is attached to the barrel at the breech, behind the cartridge, and closes the rear end of the bore and supports the base of the cartridge against the pressure of the gases generated by the burning powder. A shotgun is a shoulder arm having a barrel that is smoothly bored inside, and is intended for the firing of a charge composed of one or more round balls or pellets of shot. Many shotguns are constructed with two barrels, side by side or over and under one another. A musket is a smooth
TABLE 2.1
Classification of firearms

- Bore characteristics
  - Smooth bore
  - Rifled bore

- Mechanism characteristics
  - Loading: Single shot, Double shot
  - Action: Single, Double
  - Automatic, Semi-automatic

- Handling characteristics
  - Handguns
  - Shoulder guns
  - Shotguns
  - Revolvers

- Use characteristics
  - Sporting
  - Military
  - Target

- Air weapons
  - Spring operated
  - Pneumatic gas operated

- Single action
  - Double action

- With outside hammerless
  - Shotguns
  - Ejectors
  - Non-ejectors

- Paradox
  - Sporting
  - Military
  - Target

- Shotguns cum rifle
  - Partly rifled
bored military shoulder arm, usually having a long fore-stock, and usually being arranged to take a bayonet at the muzzle. When rifling was first developed some muskets were made with rifled bores and these were termed rifled muskets. A carbine is a short barrelled musket or rifle having a barrel not longer than about 22 inches for convenient use by cavalry or men on horseback. A sawn-off shotgun is a shotgun of which the barrel has been shortened.

A rifle is a shoulder arm designed to hit targets at a longer distance than is possible with a shotgun or smoothbored musket. The first record that can be authenticated concerning the military use of the rifle seems to be during the reign (1577-1648) of Christian IV in Denmark. The bore of a rifle has a number of shallow grooves cut longitudinally in the surface of the bore. These grooves, instead of running straight from breech to muzzle, are cut with a spiral direction so that the inside of the bore looks like a screw-hole that has been tapped with a very slow pitch or turn. The rifling imparts the bullet a spinning motion and as a consequence the bullet flies much straighter than when it fired from a smooth bore giving a better range and aim based on mechanism characteristics. Following are the most prevalent types (i) bolt action, (ii) slide/pump/Trombone action, (iii) lever action, (iv) Semi-automatic/self loading - (a)(i) direct blowback, (ii) retarded blow back, (b)(i) short recoil, (ii) long recoil, (c) gas operated, and (d) mixed system. However, the most common
type of rifle classification may be referred to as military rifles, sporting rifles, big-game rifles, small-game rifles, and target or match rifles classified on the basis of use characteristics.\textsuperscript{18}

The term pistol is one version of handgun which signifies the smallest general type of a firearm with a short and usually a rifled barrel— a type intended to be fired from one hand, wherein the cartridge or cartridges must be inserted directly into the chamber which is an integral part of the barrel itself. It seems most likely that the term "pistol" derived from the fact that those original pistols, commonly associated with the cavalry, were invariably carried in holsters swung across the "pistalle" (or pommel) of the saddle. Certainly, "pistole" would represent a closer approach to "pistallo" a word any French cavalryman of the day would associate with a pommel of the saddle, than it would to the name of a distant city in Italy (Pistoia) which by no stretch of the imagination could have been the source of the surprise mass of weapons the Ritters used against the French at Renty. Pistol is broadly classified as\textsuperscript{19}: (a) single shot pistols— (i) hinge frame, standing breech, (ii) crane frame, standing breech, (iii) pivot frame, standing breech, (iv) rigid frame, rolling breechblock, (v) rigid frame, falling breech block, and (vi) rigid frame, turning bolt; (b) Double-barreled pistols; (c) Multiple-barreled pistols; (d) Repeating pistols; (e) Magazine pistols, (f) Automatic ejecting pistols, (g) Automatic pistols working on simple blowbacks, blow forward, delayed blowback—hesitation system or locked-breech designs. More truly, the common
varieties of pistols are either single shot in which only a single cartridge is loaded and fired at one time or semi-automatic or self-loading pistol which ejects, reloads, recocks from the magazine and fires its successive rounds in its each successive trigger pull differentiating it from an automatic which does all these actions mechanically in a single trigger pull. The self-loading pistol appears to be an English invention, for as early as March 2, 1664, Sir Robert Moray, F.R.S. reported to the Royal Society, "that there was come to Prince Rupert a rare mechanician who pretended ..... to make a pistol shooting as fast as it could be presented and yet to be stopped at pleasure; and wherein the motion of the fire and the bullet within was made to charge the piece with powder and bullet to prime it and to bend the cock". However, the self-loading principle is essentially a 20th century development. Derringer is the generic term applied to a wide variety of very small, large-caliber, single or double barrelled pistols which may be of either muzzle or breech loading construction.

Another handgun, revolver, signifying a weapon intended to be fired normally with one hand, and in which the cartridges are inserted in individual chambers in a cylinder mounted behind the barrel that it can revolve to bring cartridge chambers successively in line with the firing pin at the rear and the barrel at its front end and in which the bullet must jump a gap from the chamber in the cylinder to the barrel, embraces the following types:
(I) Solid-frame, swing-out cylinder, hand-ejector, (II) solid-frame, swing-out cylinder, hand ejector, Gas-check, (III) Solid-frame, fixed cylinder, rod-ejector, (IV), Solid-frame, fixed cylinder, non-ejector, (V) hinged-frame, tip-down barrel, barrel latch, (VI) hinged-frame, tip-down barrel, barrel latch and Thumb latch, (VII) hinged-frame, tip-down barrel, stirrup breech latch, (VIII) automatic and (IX) miscellaneous. However, the most common classification of revolver is based on action characteristics and these are single-action or double-action types. A basic mechanical difference between these two is that single-action revolvers rotate the cylinder through a hand or pawl connected to the foot of the hammer, while double-action designs do it through a hand or pawl attached to the rear of the trigger. Thus a double-action cocks and drops the hammer to fire the gun by a single pull of the trigger. Guns and pistols with multiple revolving barrels or several chambers and a fixed barrel date back to the 16th century. The first percussion revolvers were of the type known as the "pepperbox", in which several barrels rotated round a central spindle. Many variations of this type of revolver were produced between 1825 and 1835, where colonel Samuel Colt patented his well-known type of revolver. The first Colt revolvers differed from the "pepperbox" types in that a revolving set of cylinders and a single fixed barrel were used which paved the way for the modern design of revolvers.  

A shoulder arm may be defined as a submachine gun when it meets the following requirements.
It must be a weapon designed to fire pistol ammunition automatically, so long as the trigger is held back (some models incorporate a mechanism to permit semi-automatic as well as automatic fire), and to be fired primarily from the shoulder and held with both hands.

It must also have provision for containing more than one round, usually in a detachable box or drum magazine, so that mechanical loading becomes a normal phase of the functioning (operational) cycle.

The extraction and ejection phase of the functioning cycle must be mechanical.

The first widely-used submachine gun evolved during the First World War. This weapon was the cumbersome but popular Revelli, named after its designer. It was often referred to as the "Fiat" or the "Villar Perosa (V.P.)". Both of these names come from the factories which produce the Revelli. Developed by General John T. Thomson and the Auto Ordnance Corp., the popular Thomson sub-machine gun made its first public appearance in earlier form in 1919 in the United States of America. The sten gun took its name from the initials of its designers (Sheppard and Turpin) and Royal Arms Factory at Enfield and is a form of sub-machine gun. The basic sten gun was developed at Enfield by R.V. Sheppard and H.J. Turin, and its name is derived from the first letters of their last names and the first two letters of Enfield.
It has been seen that there has been an increasing number of crime cases involving improvised firearms in our country. These are indigenous homemade weapons, also known as zip guns that lack any sophistication but can be as deadly at close range as the most expensive hand gun or rifle. The poor quality of these firearms are due to non-standard raw-material, lack of expertise and facilities and outdated implements. Irontubings of different sizes, sanitary pipes, bicycle frames are need for manufacture of barrels, metal strips for action body and frame, wood pieces for butts, and cheap quality nails for firing pins, and at times, jute or cotton threads are used for assembly. These guns are very dangerous to use and there is a great likelihood of blowing up while being fired. Different types of peculiar and serviceable improvised firearms which endanger lives when fired properly are shown in the photographs (Figures 1 to 20).

The place of air-weapons as firearms from the legislation point of view is very peculiar. Air-gun legislation has been discussed elsewhere in this work with a critique in the appropriate part. However, it seems to be quite relevant to provide a brief descriptive summary of air-weapons considering them to be a particular type of firearm. The term "air-gun" is loosely used to mean any and every long arm in which the bullets or missiles are projected by compressed air. Precisely, the term air-gun means a gun with a smooth, non-rifled barrel in which the peopellant is compressed air. An "air-rifle" can be described as an air-gun with
the barrel rifled, the number of rifling grooves may vary from two to thirty. An 'air-pistol' is a weapon designed to be aimed and discharged with one hand, and can have either a rifled or a smooth-bore barrel. However, most modern air-gun barrels contain rifling to spin the projectiles. Basic actions of the air-guns may be classified as: (i) break barrel, (ii) underlever or swinging fore-end, (iii) side lever action, (iv) lever action, (v) top-lever action, (vi) break action (break-butt, break-frame or break-grip), (vii) slide action, pump-action or longitudinally moving block, (viii) push-in barrel, (ix) lifting or pivoting barrel, (x) bolt action, (xi) backstrap lever, (xii) pull-trigger action, (xiii) reciprocating or sliding rod (push-pull rod), (xiv) thumb-cocked hammer, and (xv) crank-wound, push-lever and other systems.

The true air-gun operates on one of two systems - (i) spring-piston principles and (ii) the pneumatic or pump-up version although there is a third category also called gas operated weapons. The earliest known record of any such weapon was of a "Windbüsche" made by Guter of Nuremberg in 1530, and it is therefore probable that Guter could be named as the true inventor.

A spring-operated air-weapon is one in which the air is compressed at the moment of discharging the arm. Nearly all such weapons, irrespective of whether they are guns, rifles, or pistols, consist essentially of a smooth-walled cylinder containing a
well-fitting piston, driven by a powerful spring. Provision is made by suitably arranged levers to push or draw this piston backward thus compressing the spring where it is held by the sear. When the trigger is pressed, the sear is disengaged from the piston, which is driven forward violently. This results in the air which is contained in the cylinder in front of the piston being compressed and escaping down the barrel of the arm, thus projecting the pellet, slug, or dart with great force. It is important that the air be released rapidly, thus building up force quickly if it is to launch the pellet or ball down the barrel and toward the chosen target with velocity as much as 800 feet per second. These spring-operated air weapons usually are quieter, more accurate, more efficient and offer greater velocity.

As opposed to operation of the spring-piston type of air-gun, the so-called pneumatic gun used a charging piston mechanism to force air into a storage chamber where it is held until released by a valve for driving the projectile. Modern pneumatic guns are of two types - (i) the pump type and (ii) the single-stroke pneumatic. The typical pumping method in a pump-type involves repeated swings of a pump lever under the barrel. In either form, each stroke causes the piston to force a little more air through a valve mechanism and thus into the storage chamber. Air remains in this storage chamber until trigger releases a spring-driven hammer. This, in turn, trips open an exhaust valve that
allows the air to escape and act upon the pellet.33

One distinct advantage of the pneumatic pump-type gun is its variable power. Two or three pumps normally will produce muzzle velocities ranging from 300 to 400 feet per second. However, loading of this type of gun cannot be rapid, since pumping, cocking the air-release hammer and loading, all are separate operations. Also, the discharge noise of the pneumatic often is quite loud and the air valve can become a serious service problem. The single-stroke pneumatic was born several years ago in Ulm, Germany, when Walther introduced their Model LP-II. This is an air-pistol that uses an efficient lever system attached to a piston, compressing air into a tiny storage area. A single stroke of the lever charges the unit with enough pressure to produce match velocities. The power cannot be varied in this system. However, the velocity remains quite consistent from shot to shot, which is an important factor for accuracy.

The father of gas operation is regarded as the Frenchman, Paul Giffard (1837-97), whose first designs appeared in the 1860s. In 1872, Giffard patented a compressed air gun in Great Britain and patents were issued in 1889 covering arms that use liquified carbon di-oxide (Co₂) gas as propellant. Originally, such gas-rifles were provided with a small detachable gas cylinder, generally located underneath and parallel to the barrel. These cylinders when empty were intended to be exchanged by the makers
or their agents for full ones. Later American made gas-rifles had the gas reservoir as an integral part of the rifle and a small supply cylinder sold with the rifle containing sufficient gas for many complete charges. The supply cylinder had to be exchanged where exhausted for a full one. Gas-operated weapons are usually repeaters in that one charging of gas will fire many shots, but normally the pellets or bullets have to be loaded one at a time, by hand. However, difficulty in obtaining CO$_2$ rifles, occasional jamming of the feeding mechanism by pellets, plus the introduction of low-priced German spring air-rifles helped hasten the demise of the Giffard in England.

Although not a firearm in its strict sense, blowpipes are technically pneumatic weapons, as they depend on the storage of a volume of air in the mouth and lungs and the sudden release of this air under compression. They are used chiefly with poisoned darts, for killing small animals and birds of the forest, but are also used for shooting fish, large animals, and sometimes against human beings. Such weapons are common in South America, Southern India, Borneo, Assam, Madagascar, Java, and other parts of South-East Asia. They vary in length from the short tube about two feet long to others nearly twenty feet in length. The usual length, however, varies between six and ten feet.
A simple and succinct description of the modern small Arms with reference to weapons of offence or defence during commission of crimes including a short treatise on the historical evolution and development of firearm leading to its modern form have been discussed above leaving out other firearms like machine guns, anti-air craft guns, ballistic missiles, anti-tank guns etc. from the purview of the present discussion which are not supposed to have any direct nexus with the object of study.
Foot-notes to Chapter- II

1. infra Chapter 4.

2. Small Arms Ammunition, SAA Series, Ammunition Maintenance Instructions for Army Ordnance Services, Published and distributed by The Controller of Inspection (Ammunition), Kirkee, India, 1974 at pp. 1-2.


9. Richard Akehurst, Supra note 4(ii) at p. 6.

10. Frederick Wilkinson (Introduction by) Supra note 4(i) at p.6.

11. Richard Akehurst, Supra note 4(ii) at p. 8.


13. Richard Akehurst, Supra note 4(ii) at p. 10.

14. George C. Nonte, Jr., Supra note 12 at pp. 187-188.

15. James E. Serven (Ed.), Supra note 7 at p. 74.

16. Richard Akehurst, Supra note 4(ii) at p. 10.


20. Her Majesty's Stationery Office, Supra note 3(i) at pp.95-96.

21. Joseph E. Smith (updated by), Supra note 19 at pp. 43-51

22. Her Majesty's Stationery Office, Supra note 3(i) at pp.86-87.

24. Ibid, at p. 15.


28. Kaushalendra Kumar, Supra note 5 at pp. 182-186.

29. Infra Chapter 4


32. Ibid at p.3.


34. L. Wesley, Supra note 31 at p.6.

35. Ibid at pp. 19-24.
REFERENCE CHAPTER II

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FIGURES 1 TO 20