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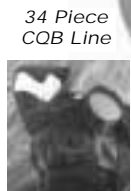


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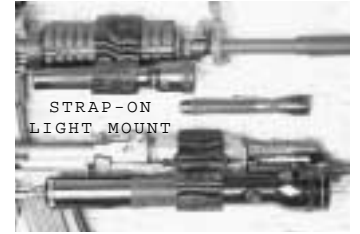


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CALIFORNIA
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ASSOCIATION

1317 N. San Fernando Blvd. #211
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THE Rangemaster

August 2001

The official
publication of
the California
Rangemasters
Association

It's Just Around The Corner!

Are you ready? CRA's 2001 Training Conference Rangemasters Course will take place on September 10-14 at the Burbank Police Range.

Tuition for members is \$300. But wait! The CRA will pay half this tuition (\$150) for all current CRA members. You must be an active CRA member as of July 31, 2001 to receive this discount. Tuition for non-members is \$400.

The following topics will be covered:

- Firearms Training Course Development
- Writing Lesson Plans
- Instructor Civil Liability
- Using Visual Aids
- Your Day In Court
- Presentation Techniques
- Adult Learning Concepts
- Documenting Firearms Training

- Coaching Techniques
- Remedial Firearms Training
- Firearms Training Terminology
- Tactical Use of Laser Sights
- Trouble Shooting Firearms

The goal of this intensive course is for each attendee to develop the skills required to effectively provide firearms training in a classroom and range environment.

Don't miss out. Fill out the registration form on page 2 and return it ASAP!

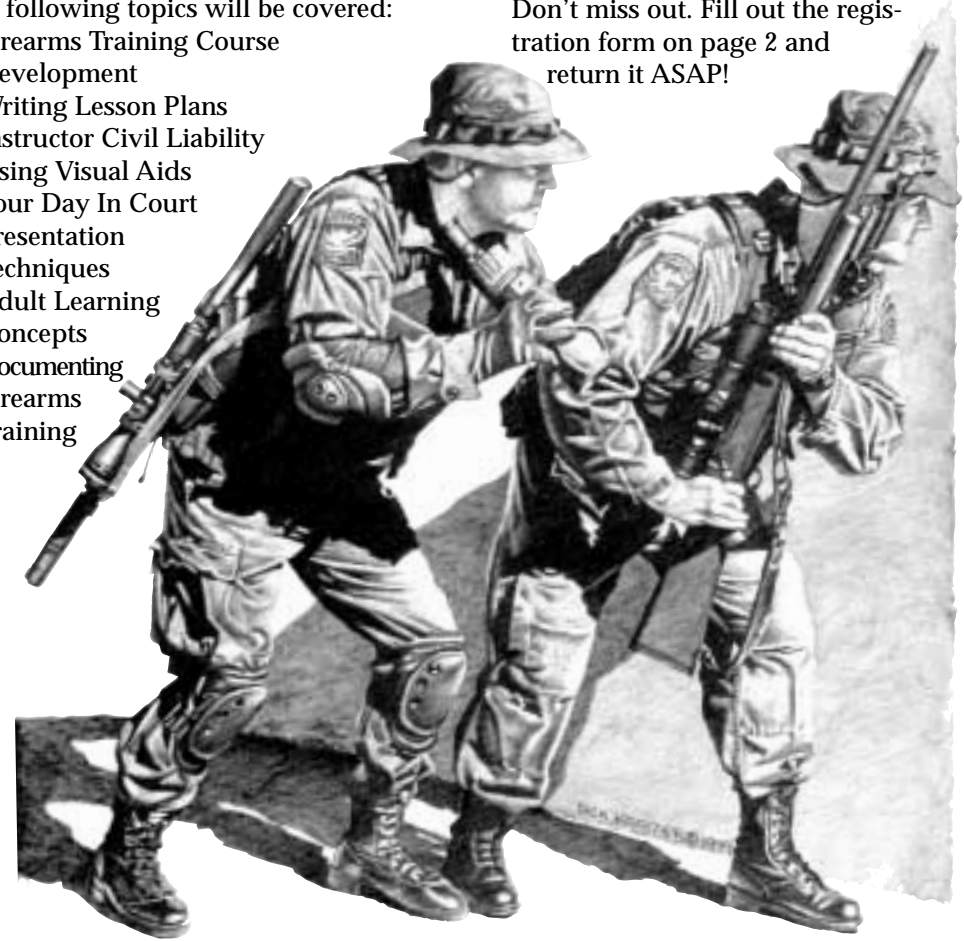
The purpose of the California Rangemasters Association is to promote Peace Officer Firearms Training. Further, to conduct research into:

1. Safety Equipment
2. Law Enforcement Firearms
3. Ammunition
4. The psychological well-being of officers involved in shooting.
5. Developing and promoting new survival shooting techniques.
6. Evaluation of officer involved shootings.
7. To promote the exchange of ideas, training techniques and materials.
8. To emphasize the legal and moral aspects of firearms training.
9. To promote and improve social interaction and welfare among members of the Association.
10. To promote the research and study of Less-Lethal Extended Range Impact Munitions.

To join, please mail completed membership application (on page 7) and your check for \$35.00 to:

CALIFORNIA RANGEMASTERS ASSOCIATION
1317 N. San Fernando Blvd. #211
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For additional information contact CRA President Larry J. Nichols at (818) 238-3320.



lightweight pocket revolvers. Because of its moderate recoil the average person can learn to shoot well with it in a fairly short time, something not true of the larger caliber's.

3. *.41 Smith & Wesson Magnum*

Introduced in June, 1964 along with the Smith & Wesson Model 57 Revolver. There has been much argument as to the need for a police revolver cartridge of greater power than the .357 magnum.

4. *.44 Smith & Wesson Magnum*

Developed by Smith & Wesson and Remington and introduced in 1955. In addition to being the world's most powerful commercial handgun cartridge, the .44 Magnum also has a reputation for superb accuracy, and is favored by a few police officers because of its ability to penetrate. It takes a seasoned handgunner to shoot it well as both recoil and muzzle blast are considerable.

5. *.44 Smith & Wesson Special*

This cartridge was introduced about 1907 and for many years one of our most accurate and powerful big bore revolver cartridges. The .44 Special is still popular for target or field use.

6. *.45 Colt*

Introduced in 1873 by Colt as one of the cartridges for their famous "Peacemaker" single action revolver, both the cartridge and the revolver were adopted by the U.S. Army in 1875. The .45 Colt served as our official handgun caliber until 1892. It was originally a black powder load with 40 grains of FFg powder and a 255 gr. lead bullet, with a muzzle velocity of 810 fps. One of the most famous American handgun cartridge and still a favorite with many law enforcement officers. The .45 Colt is extremely accurate and has as much effect on a target as any handgun cartridge except the .44 Magnum.

C. Rifle

1. *5.56mm NATO (.223 Remington)*

The 5.56x45mm U.S. and NATO was originally developed for the Armalite AR-15 rifle, first tested by the U.S. Air Force as a possible replacement for the M1 Carbine in 1960-1961. The AR-15 later became the selective fire M-16 adopted by the U.S. military in 1964 replacing the M-14 and 7.62x51mm cartridge. The M-16 rifle and the 5.56x45mm cartridge were first combat tested in Vietnam.

2. *.30 M1 Carbine*

In 1940 the U.S. Ordnance Department concluded that a light carbine might have certain advantages over the .45 ACP pistol in many combat situations. The semi-automatic .30 M1 Carbine was officially adopted in 1941. The .30 Carbine cartridge is not very powerful, but it can be a very useful cartridge within its limitation. Its use and popularity in law enforcement has increased considerably in the past few years.

3. *7.62x39mm (M43) Russian*

USSR's principal infantry small arms cartridge originally for the SKS semi-automatic carbine. This cartridge was adopted by Russia in 1943, however, it did not come into general use until after W.W.II. The SKS was replaced by the AK selective fire assault rifle. This cartridge was adopted as the result of

Russian military experience against German assault rifles and the 7.92mm Kurz.

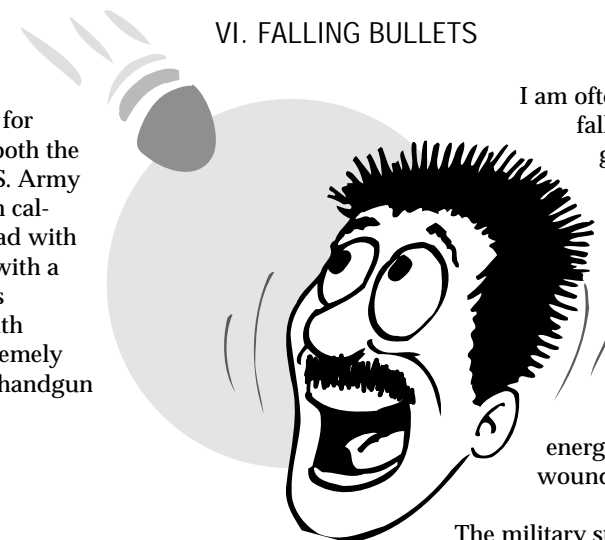
4. *7.62x51 NATO (.308 Winchester)*

Introduced by Winchester in 1952 and adopted as the official U.S. military rifle cartridge in 1954. The M14 semi-automatic rifle and the 7.62x51 NATO cartridge first saw combat service in the early years of the Vietnam war. The 7.62x51 NATO cartridge is extremely popular with law enforcement and military snipers.

5. *.30-06 Springfield*

United States military cartridge adopted in 1906 for the Model 1903 Springfield service rifle. The .30-06 is undoubtedly the most flexible, useful, all-around big game cartridge available to the American hunter. The .30-06 is extremely accurate and still favored by military and law enforcement snipers. For many years it has been the standard by which all other high powered rifle cartridges have been judged. To say that a cartridge is in the .30-06 class means it is suitable for any game in North America.

VI. FALLING BULLETS



I am often asked questions about falling bullets; i.e. "How dangerous can a falling bullet be?" The model I use to answer any falling bullet question is as follows: Will a bullet such as that of a 5.56x45mm, (.223 Remington) if fired at a very high angle, (straight up), return to earth with enough velocity and striking energy to inflict a significant wound?

The military standard for disabling energy, or the amount of energy necessary to produce a casualty is 58 foot pounds, at a striking velocity of 400 feet per second. Bullets returning from being fired upward, whether they start their return trip from 2,000 feet or 10,000 feet or 10 miles, will all come back to earth with the same speed, called terminal velocity. Terminal velocity depends on the weight of the bullet and, to a certain extent, on its shape. A 55 grain 5.56x45mm bullet leaves the muzzle at roughly 3200 f.p.s., and if fired straight up will slow down until it finally stops about 9,000 feet above the earth; then it starts to fall. If it falls point down (not likely) it will return to earth with a striking velocity of approximately 290 f.p.s., and a striking energy of 9 foot pounds or less. If it fell any other way than point down, its fall would be slower and its striking energy less.

The U.S. Army has conducted exhaustive experiments on the subject of falling bullets, and has concluded that falling bullets cannot be relied upon to produce dangerous wounds. Guns are usually fired at only moderate elevation, 30 degrees would be considered a high angle by most people. The bullet will then strike with some speed with which it was fired, with a much higher velocity than that of merely a falling bullet. Falling bullets do not kill, only those fired at moderate degrees of elevation will produce significant wounds.

My Way or the Highway?

As professional instructors, sometimes it's all too easy to fall into a rut, simply going through the motions, doing things the way "they've always been done."

Time to hit the road. Attend another instructor's class. Even hearing familiar subject matter explained in a different manner will add to your arsenal of teaching tools.

There are many opportunities for instructors to freshen up. CRA offers a number of classes throughout the year. Schools such as Tacfire in Ventura offer a variety

of classes every month. Tacfire also offers L.E. only classes for those of us reluctant to be shown up by some show-off civilian student :) www.tacfire.com

World-renowned instructor John Farnam visits our neck of the woods a couple of times a year. CRA will be hosting a class with John early next year. (Just listening to John's experiences is worth the price of admission alone).

So head out on the highway. You'll definitely bring back something that can only make you a better instructor.



Rangemaster Larry Nichols gives pointers to firearms instructors at a CRA Training Conference.




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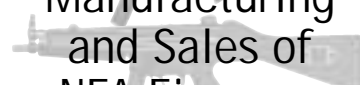

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F.Y.I.

TRAINING DAY CANCELLED
The August 25 training day has been cancelled. It will be replaced by a new quarterly training session. Stay tuned for details.

NRA INSTRUCTOR TRAINING COURSES

The CRA and Burbank PD will be hosting NRA Instructor Training Courses in 2002.

Tentative classes and dates:
Patrol Rifle Instructor
February 4-8, 2002
Tactical Pistol Instructor
August 5-9, 2002

JOHN FARNAM CLASSES

The CRA will be hosting classes with renowned firearms instructor John Farnam early in 2002. Watch for more details in upcoming issues of *The Rangemaster*.

NEW CRA MAILING ADDRESS

Send all correspondence to:

California Rangemasters Association
1317 N. San Fernando Blvd., #211
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Law Enforcement Cartridges

by Larry J. Nichols

I. CARTRIDGE NOMENCLATURE

A. Caliber

1. It is difficult or impossible for the novice to understand self-contained ammunition without some knowledge of cartridge caliber designation.

2. The subject of caliber, regrettably, is full of inconsistencies and confusion. With the majority of American, British or European cartridges the caliber is the first figure given, however, there are exceptions.

3. Caliber may be given in terms of bullet or bore diameter, inches in American, and millimeters in European. May be either land or groove diameter, and is neither accurate nor consistent.

4. The second figure, if there is one, is usually some distinguishing feature such as the case length, powder charge, date of origin or muzzle velocity, i.e.

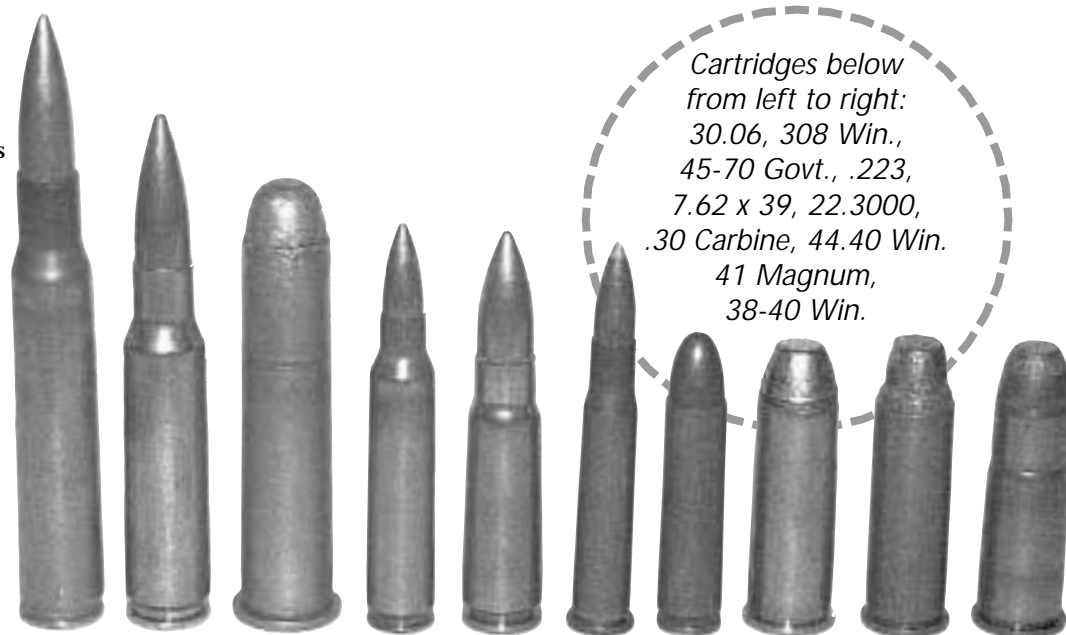
- 5.56 x **45mm** length of cartridge case in millimeters
- .45-70-405 black powder charge weight in grains
- .30-06 date adopted by the U.S. Military 1906
- .250-3000 Savage .25 caliber at 3000 f.p.s. muzzle velocity

5. European cartridges are, almost without exception, designated by caliber first and then case length in millimeters; 9 X 19mm (same as 9mm Luger/Parabellum)

6. Obsolete American cartridges, or any that had a black powder origin, are designated by caliber and powder charge; or caliber/powder charge/bullet weight the last two in grains, i.e. .44-40-200 (44 caliber/40 grains of black powder/200 grain bullet)

7. However, again there are exceptions as the second figure may represent the original smokeless powder charge as in the .30-30 Winchester (.30 caliber/30 grains of smokeless powder), or caliber as in the .38-40 Winchester (38 grains of black powder, .40 caliber, 180 grain lead bullet)

8. The truth of the matter is that the "system" of cartridge nomenclature really is not a system, it's a code, and can only be learned through reading and experience.



II. CARTRIDGE CLASSIFICATION

A. Two Major Classifications

1. Centerfire

a. The centerfire cartridge has a replaceable primer located in the center of the case head.

b. Centerfire cartridges are subdivided into two types based on the primer, Berdan or Boxer.

2. Rimfire

a. The rimfire cartridge has the priming compound distributed around the entire inside of the rim's outer diameter.

b. Striking any point around the rim will fire the cartridge.

B. Primer

There are two classifications of centerfire primers:

a. Boxer - The Boxer primer used in the United States is completely self-contained with the anvil as part of the primer. The Boxer primer was invented by Col. Edward Boxer of the British Army in 1867, and is preferred by reloaders.

b. Berdan - The Berdan type does not contain the anvil, this is provided by a small projection in the bottom of the primer pocket. It is the easiest and cheapest to manufacture. The Berdan primer is used throughout Europe, Asia and England, and was invented by Col. Hiram Berdan of the United States Army in 1866.

III. GUNPOWDER

Two Types of Gunpowder

1. Black Powder

a. Black powder is the original propellant and was developed in China as early as 700 A.D.

b. Black powder is a mechanical mixture of potassium nitrate (saltpeter), charcoal and sulphur. Various proportions have been used, but 75-15-10 mixture is about standard for modern black powder.

2. Smokeless Powder

a. Smokeless powder is a chemical compound based on nitrated cellulose.

b. Smokeless powder is made by the chemical reaction of concentrated nitric and sulfuric acid on cotton or other cellulose fiber.

c. Smokeless powder was developed a little over a hundred years ago and its adaptation as a universal propellant for all types of firearms somewhat less than that.

IV. COMPONENTS OF A CARTRIDGE

Four Component Parts of a Cartridge

1. Cartridge Case

- a. Brass
- b. Steel
- c. Aluminum
- d. Plastic

2. Bullet

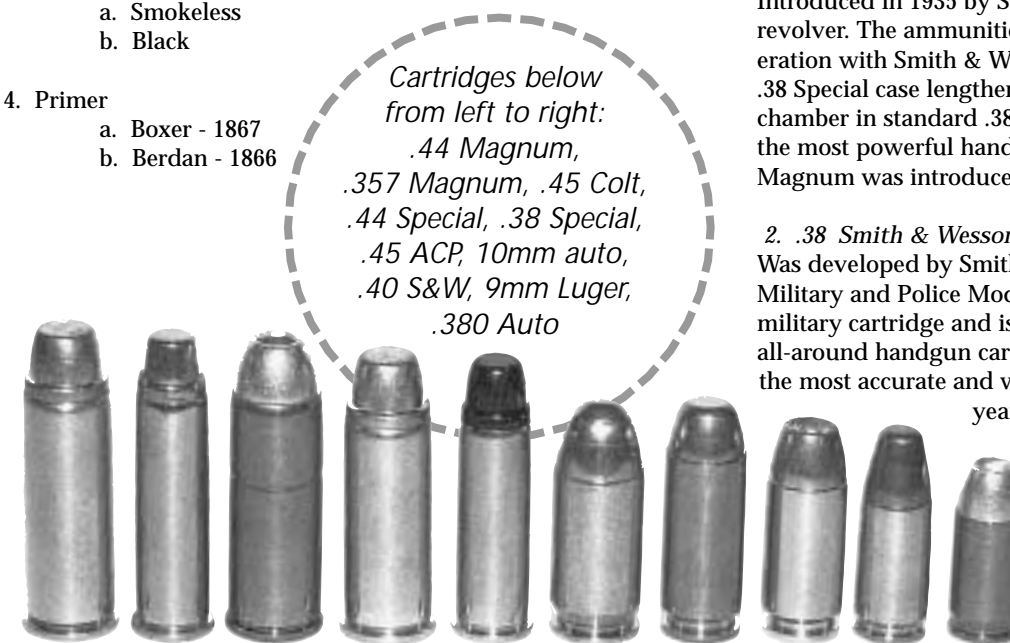
- a. Several types and designs
- b. Lead
- c. Jacketed
- d. Plastic
- e. Frangible
- f. Weight in Grains

3. Powder

- a. Smokeless
- b. Black

4. Primer

- a. Boxer - 1867
- b. Berdan - 1866



V. COMMON LAW ENFORCEMENT CARTRIDGES

A. Semi-Automatic Pistol

1. 9 x 19, 9mm Luger, 9mm Parabellum

Introduced with the Model 1902 Luger automatic pistol, and adopted by the German Navy in 1904, then by the German Army in 1908. In 1985, the 9mm replaced the .45 A.C.P. as the official United States military pistol cartridge.

2. 9mm Kurz (.380 Automatic)

Designed by John Browning and introduced in Europe by FN of Belgium in 1912 as the 9mm Browning Short. The .380 Automatic was added to the Colt Pocket Automatic line in 1908.

3. .45 ACP (Automatic Colt Pistol)

Developed by John Browning in 1905 and adopted by the United States Ordnance Department along with the Colt Automatic Pistol in 1911. The .45 ACP is the most powerful military handgun cartridge in use today. The .45 ACP has been proven in combat all over the world. The .45 ACP was replaced in 1985 as the official U.S. military handgun cartridge by the 9mm Parabellum.

4. 10mm Auto (Bren Ten)

Introduced in 1983 as the cartridge for the Bren Ten Semi-automatic pistol manufactured by Dornaus & Dixon Enterprises, Inc. of Huntington Beach, California. The 10mm Auto was loaded by Norma with a 200 gr. full jacketed bullet with a truncated cone shape. Muzzle velocity was listed as 1200 fps and energy at the muzzle as 635 f.p.s. The gun and cartridge are the brain children of Jeff Cooper and associates. The 10mm Auto was intended primarily for law enforcement and self defense use.

5. .40 Smith & Wesson

Introduced in 1990 by Smith & Wesson for their new 4006 semi-auto pistol. This cartridge was developed by Winchester in cooperation with Smith & Wesson. Probably the most popular law enforcement handgun cartridge in the United States for police work.

B. Revolver

1. .357 Magnum

Introduced in 1935 by Smith & Wesson for their heavy frame revolver. The ammunition was developed by Winchester in cooperation with Smith & Wesson. The .357 Magnum is based on the .38 Special case lengthened about 1/10 of an inch so it will not chamber in standard .38 Special revolvers. The .357 Magnum was the most powerful handgun cartridge in the world until the .44 Magnum was introduced in 1955.

2. .38 Smith & Wesson Special

Was developed by Smith & Wesson and introduced with their Military and Police Model revolver in 1902. It was originally a military cartridge and is considered one of the best balanced, all-around handgun cartridge ever designed. It is also one of the most accurate and widely used for match shooting. For many years the .38 Special was the standard police cartridge in the United States. It has about all the power required for police work and at the same time is usable in

Continued on page 6