

RIFLE  
ARMY AND  
NATIONAL ASSOCIATION  
THE MAN  
OF AMERICA

SIGHTS FOR THE AIR DUELIST  
THE PATH OF THE VERTICALLY FIRED BULLET  
THE AMERICAN SOLDIER AND HIS RIFLE  
THE BOWEN LOW POSITION FOR SHARP-  
SHOOTERS  
A SIGHTING BAR FOR PISTOL AND REVOLVER  
BOOK REVIEWS  
EDITORIALS and  
LATEST NEWS OF RIFLE, REVOLVER AND  
SHOTGUN, THE ARMY, THE NAVY AND  
THE NATIONAL GUARD

VOL. LXIII, NO. 9



NOVEMBER 24, 1917



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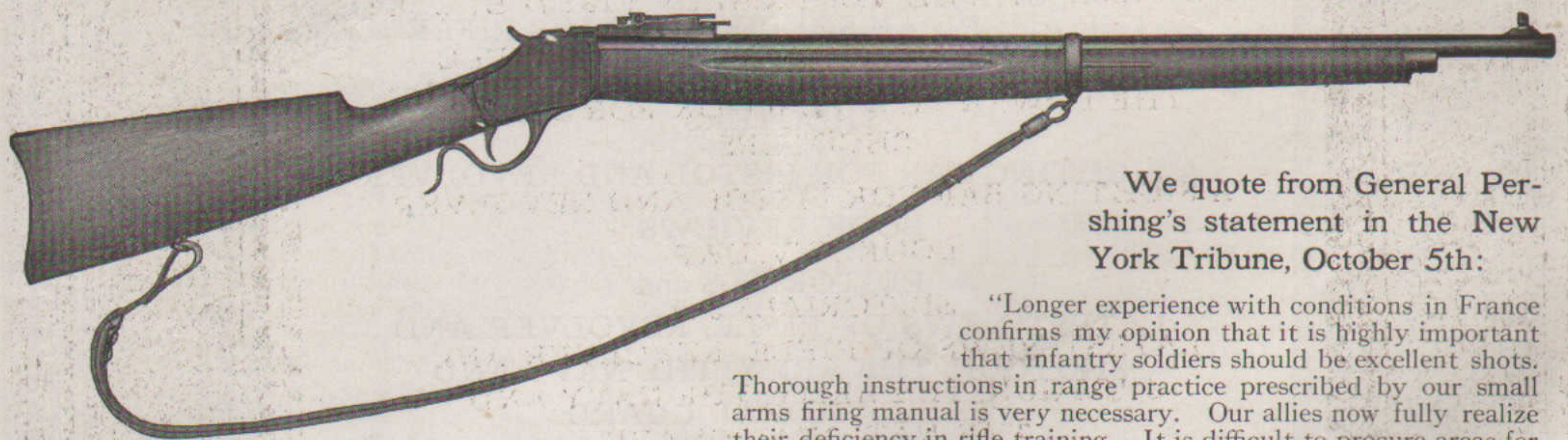
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## General Pershing Urges Rifle Practice



We quote from General Pershing's statement in the New York Tribune, October 5th:

“Longer experience with conditions in France confirms my opinion that it is highly important that infantry soldiers should be excellent shots. Thorough instructions in range practice prescribed by our small arms firing manual is very necessary. Our allies now fully realize their deficiency in rifle training. It is difficult to procure areas for

target range in France even now, when crops are off the ground. Much greater difficulty soon when ploughing begins.

“I therefore strongly renew my previous recommendations that all troops be given a complete course in rifle practice, prescribed in our firing manual, before leaving the United States. Specially, trench warfare instruction at home should not be allowed to interfere with rifle practice nor with intensive preliminary training in our schools of soldiers, companies and battalions.”

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# ARMS AND THE MAN



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## Sights for the Air Duelist

By STEPHEN TRASK

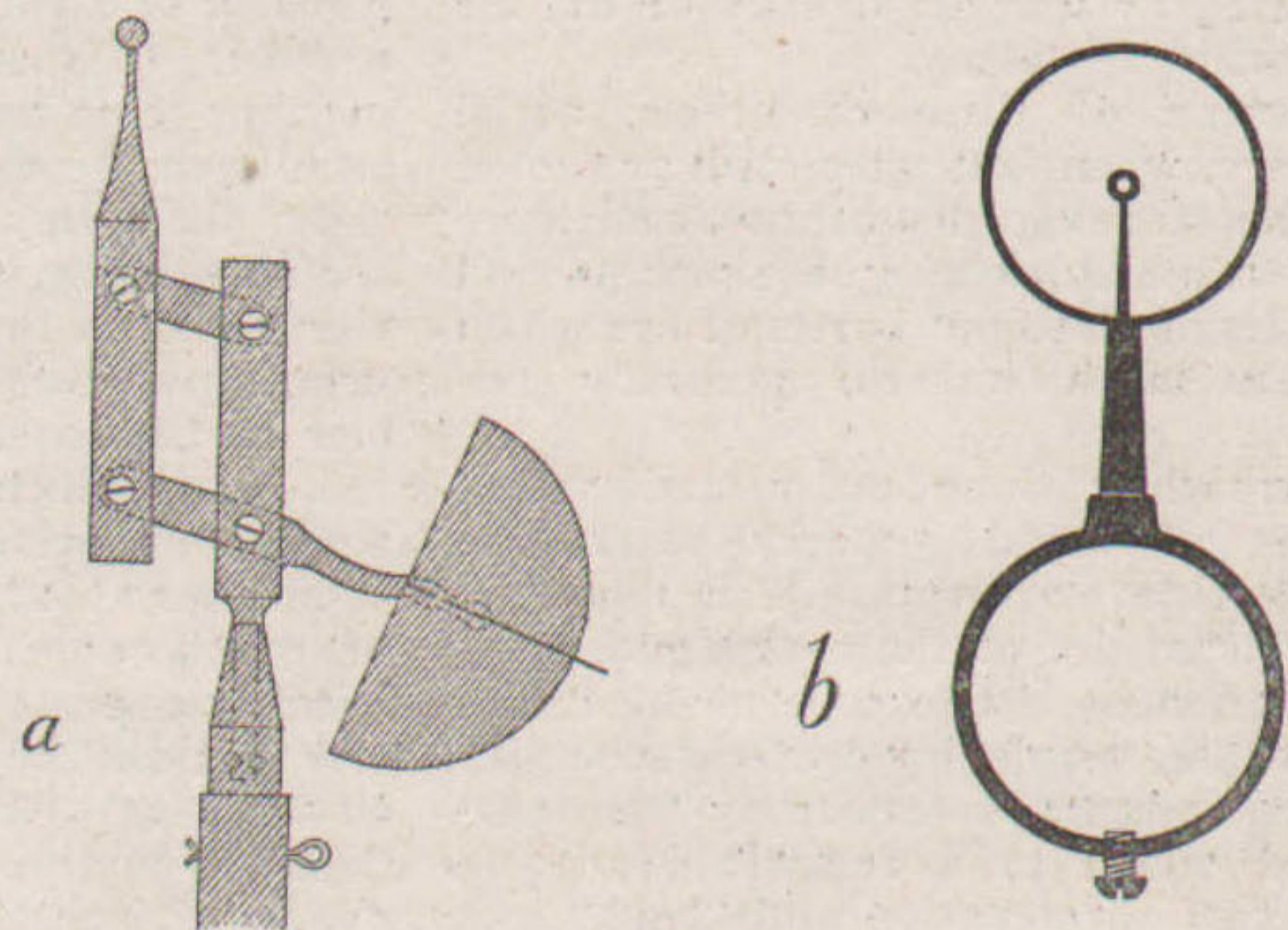
**D**RAWING upon the experience of the Allies during four hard-bitten years of air fighting such as the world has never before known, the Aviation Section of the Signal Corps is endeavoring to provide the best equipment possible for the airmen, who will play no unimportant part in the offensive of this nation against Germany.

It will not be a difficult matter for American genius, given the benefit of all that has transpired in actual sky warfare since the beginning of the European struggle, to determine upon the most suitable structural plans for our battle planes. Concerning the engines which will drive the air fighters at a rate of 100 miles or more an hour, announcement has already been made that the Liberty motor, product of American skill, has been fully developed and found to answer all requirements. As for armament, the best air-cooled machine guns in the world—the Lewis and the Vickers-Maxim—are at the disposal of the United States.

This equipment, plus skilled pilots who are now being trained at a score of schools, would, upon first glance, seem to assure to the United States a fleet of battle planes manned by a corps of aerial duelists which should prove invincible.

Yet there remains to be developed one most important adjunct to successful air duels, where the pilot is charged by an enemy plane and must depend upon his skill as a marksman to escape not alone with his life, but with the important military observations taken at such high hazard. That adjunct is the sighting equipment for machine guns to be used in aerial warfare.

from the speed of the plane from which the shot is fired; and for the jerky motions of the plane, due to unsteadiness of the air, a condition which experts declare usually accompanies air duels fought at an altitude of less than 1,000 feet.



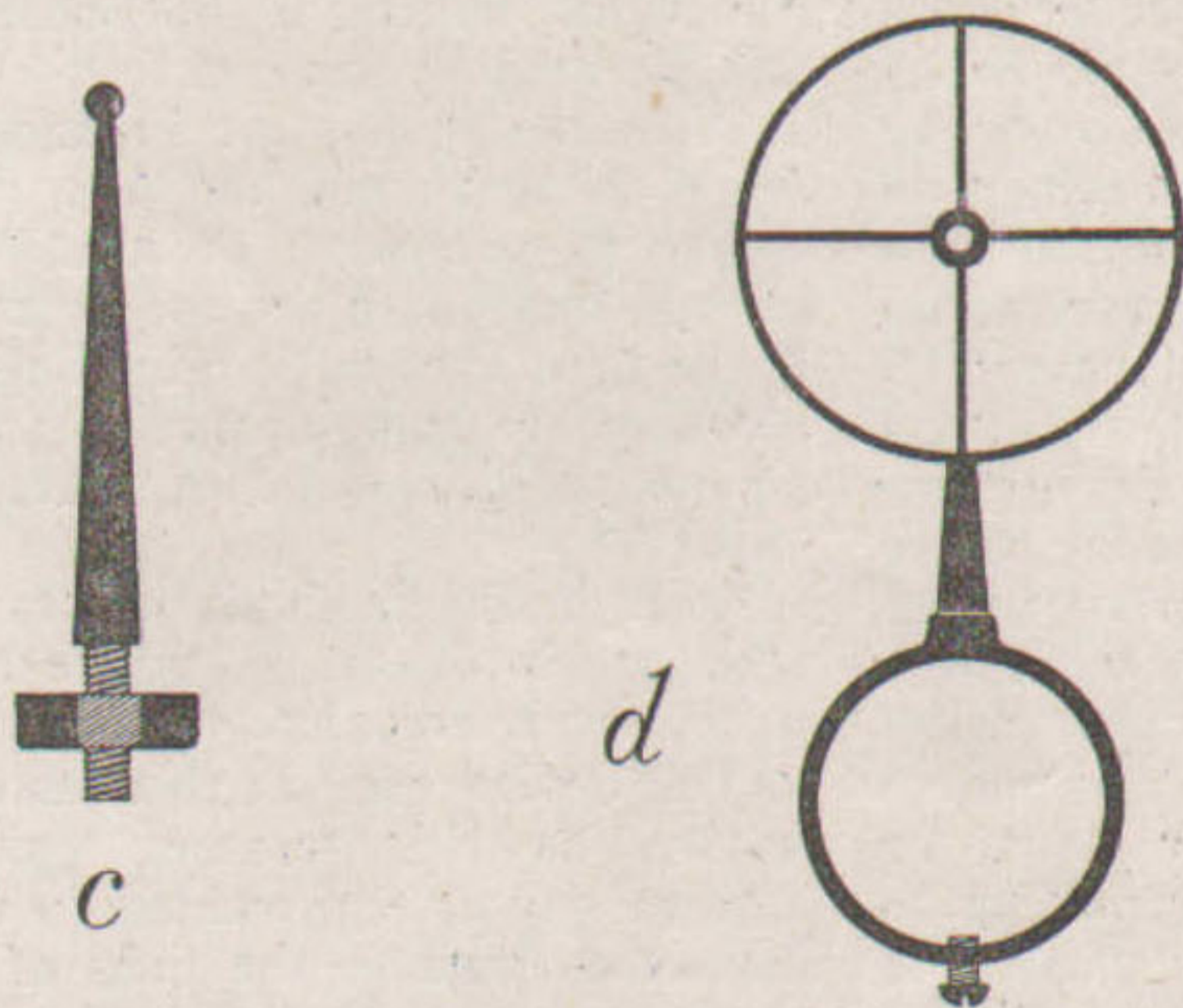
The Wind Vane Front Sight (a) and the Aperture Rear Sight (b) of the Lewis Airplane Machine Gun

This, perhaps, is a great deal to demand of a piece of mechanism—even one which must, of its very nature, be extremely accurate. Much more, however, is demanded of the aerial gunner who is expected to down an enemy battle plane without such appurtenances.

In presenting the case of the aerial gunner and that which is demanded of him, first consider the hypothetical plight of an infantry sniper armed with a rifle which makes no provision for drift, elevation or windage, and expected to pick off an enemy sharpshooter somewhere between 600 and 900 yards distant while a stiff fishtailing wind is blowing. Any experienced shot will declare such a feat an extremely difficult if not impossible performance, since the sniper would be called upon first to estimate the distance, second to estimate the extent he would have to "hold over" his target to get the proper elevation, and third, the amount to "hold off" to counteract the deflecting force of an uncertain, shifty wind.

Consequently there would be three chances of error in his case against one chance—that of estimating the un-predetermined distance—if windage and elevation were provided.

Now consider the case of the aerial duelist, supposing for the moment his machine gun is not equipped with compensating sights. Firing must be done from a moving platform at a moving target. Sometimes the gun is on a fixed base. Sometimes the gun is movable. Primarily, before either type of gun can make a hit under these conditions, it must be



The Bead Rear Sight (c) and the Aperture Front Sight (d) of the Vickers' Airplane Machine Gun

What is vitally needed is an aerial machine-gun sight which, mounted upon a movable rapid-firer, will instantly compensate for changes in position when the gun is brought to bear on a rapidly moving target; for the ballistic interference arising



operated by a gunner trained to hold his weapon steadily in relation to his target, which may be coming at a speed of from 60 to 100 miles an hour head-on, or quartering in or away from either side, diving toward him or ascending.

If the gun is on a fixed mount, in addition to steady holding allowance must be made for the speed at which the enemy is approaching, or receding; for the trajectory of the bullets, or what corresponds to elevation, and from these allowance must be made for "leading" the burst of fire. All this must be accomplished by the instant, accurate, finely trained judgment of the gunner, since tracer bullets—the type whose flight is visible—are not regarded as efficient range finders at extreme distances.

If the gun be on a movable mount, in addition to these calculations allowance must be made for the speed of the gunner's aeroplane, and the jumping motion imparted by unequal density of the air supporting the plane.

Because of these conditions, aerial gunnery, when first attempted, presented an almost unknown quantity, and there have resulted sighting equipments and theories of "leading" bursts of fire which include much hitherto generally unknown.

But while these many and varied phases of aerial gunnery enter into battle-plane marksmanship, it must not be concluded that the aerial gunner of the present is left to cope unaided with all of these perplexing conditions. Sighting equipments have already been perfected which to a remarkable degree take care of elevation and "lead," and which materially reduce the possibility of error. There still, however, according to experts, remains much to be desired.

In starting to develop sighting equipment for guns to be fired from a moving platform at a moving target, the pioneers in controlling the line of fire from battle planes discovered that in shooting from a machine going at 100 miles an hour, at a stationary target, 200 yards distant, the gunner, in order to make a hit with a stationary sighting equipment, would have to aim 44 feet *behind the target*, this allowance being necessitated by the drift imparted to the bullet by the speed of the machine. Among other primary principles of "leading" bursts of fire from battle planes, it was discovered that if the gun used was stationary, and was shooting at a machine going at 100 miles an hour, 200-yard range, the gunner must lead his target 44 feet. Consequently, if the gunner in a machine moving at 100 miles an hour, fired at a plane going in the opposite direction at 100 miles an hour, the machines being 200 yards distant, it would be necessary to lead 88 feet in front of the target.

From these primary principles, and as the result of further exhaustive experiments, confidential tables of the "lead"

necessary under almost every conceivable position which could be taken by enemy planes in attack at various distances were compiled upon the basis of actual experience, and the question of the type of sights calculated to best assist the battle-plane gunner in laying his line of fire was taken up.

At present there have been developed perhaps half a dozen types of sights for aeroplane machine guns. All of them, to a greater or less degree, have reduced the percentage of error by automatically compensating for many of the conditions under which the battle-plane gunner shoots. In fact, what is known as the "wind vane foresight" is credited with having reduced by one-half the lead necessary when using the stationary type of sight, as well as with obviating the necessity of the gunner considering the speed of his own machine.

The stationary front sight, combined with the ring rear sight, is perhaps the simplest of sighting equipments used at present. It is customarily found on the machine guns mounted on a fixed base, such as the heavy Vickers-Maxim. This sight, like most of the others, is adjusted for shooting at a 100-mile speed. The rear sight on the Vickers consists of a tapering post about 3.8 inches in diameter at the base, and surmounted by a red bead, which gives good definition against a moving or hazy target. The sight rises about 4 inches above the line of the bore. The front sight on the Vickers consists of two concentric circles, divided by cross hairs, the outer circle being approximately 5 inches in diameter and the inner circle approximately  $\frac{3}{4}$  inch. When the right sight is placed approximately 40 inches from the eye, the radius of the outer ring, with the bead centered in the inner ring, gives a basis for estimating the lead on an enemy airplane traveling at 100 miles an hour.

The so-called "wind-vane" front sight, usually seen on the lighter guns of the Lewis type, which weapons may be mounted on movable bases, or perhaps on a fixed base on top of the plane and fired by a special attachment, is a much more complicated device. In this type of equipment, the front-sight bead is mounted on a post, which is in turn pivoted by cross arms to a heavier center post anchored around the muzzle of the rifle. On the opposite side is a wind vane which by vertical and horizontal planes acts upon the pivoted arms and moves the front-sight bead up or down or swings it to right or left, according to the position of the gunner's plane. If the plane dips, the bead is automatically lowered, keeping the proper elevation. If the plane swerves to right or left, the proper correction laterally is accomplished. In connection with the wind-vane front sight, a ring rear sight is used, similar to but in some respects smaller than the ring front sight of the

Vickers. In this sight the outer ring is approximately 3 inches in diameter, and the inner about  $\frac{1}{3}$  of an inch. With the use of this sight, the speed of the gunner's aeroplane is automatically allowed for, together with the elevation, no matter in which way the gun chances to be pointed. It is by far the most practical sight yet evolved. From the theoretical standpoint, it has produced groups which are considered remarkable from the standpoints of aerial fighting. Practically, it has worked out extremely well in actual combat. The two chief points against it are its necessary instability, and the fact that it, like other types of aeroplane machine-gun sights, must be adjusted for a fixed speed, and when any different speed is used special allowances must be made on the part of the gunner.

A third type of sight which has been used extensively in Europe is a sight of the telescope type, although the lenses neither magnify or diminish. The sight consists of a tube, containing a glass screen, upon which appears a "sighting circle." Unlike other telescopes, it is possible to look through this tube and obtain a clear definition of the target when the eye is a considerable distance away and off axis. Both eyes, in fact, can be used, and the gunner does not have to center his vision. Two models of this sight are made, one for use on a fixed gun, the other for use on a movable gun.

While sights of these types have enabled the airmen of the Allied forces to down hundreds of Hun battle planes, American genius could make no greater contribution to the war against autocracy than by producing a sighting equipment for aeroplane machine guns which will go even farther than the sights now in use toward reducing error to a minimum and relieving the gunner of the necessity of considering as many as possible of the conditions which, if not compensated, militate against accurate fire.

With the equipment in hand, which, while perhaps not the best that will finally be produced, must still be considered faulty to a greater or less degree, in the light of what is ultimately desired, no pains are being spared to train every airman in judgment of distances and "lead."

One of the methods of training the embryo air duelist in vogue abroad is unusually interesting.

The device used in this instruction is known as the "camera gun." The camera gun is constructed to follow as closely as possible the lines of a Lewis machine gun. It is mounted upon a battle plane, and is used instead of the real weapon in practice air duels, it being possible with the camera gun to check the marksmanship of the aviator and demonstrate exactly wherein his aim and also the handling of a machine gun is wrong. This device, according to experts, does

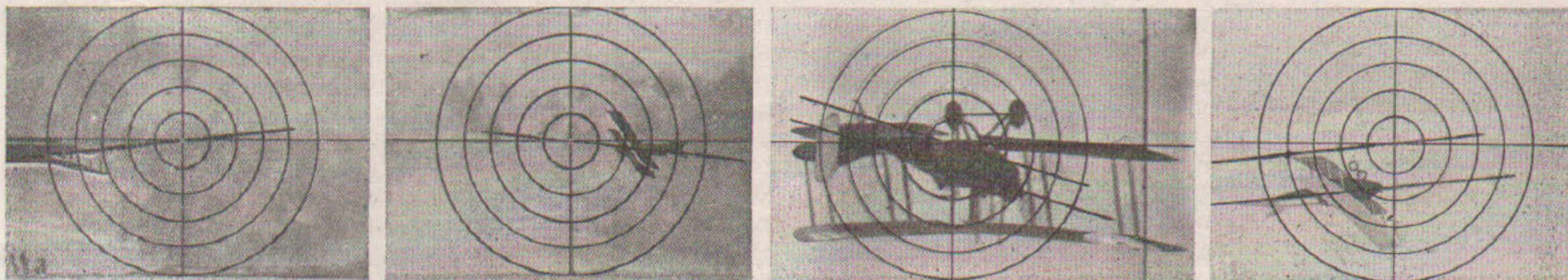


more than anything else to teach the student aviator the proper judgment of distances, leads and sighting.

Midway of the camera gun a film magazine is provided. This is charged

jecting into the magazine punctures the film. If the magazine is properly adjusted, this point is automatically withdrawn when the magazine snaps into place.

chine. The student aims his "camera gun," making all necessary allowances, and pulls the trigger, just as he would do in beginning a burst of fire. The lens takes an instantaneous picture of the



No. 1—A bad shot with the camera gun at a plane going 90 miles an hour.

No. 2—A bad shot at a plane retreating at 40 miles an hour.

No. 3—Good elevation but poor holding on a plane going 90 miles an hour.

No. 4—A good shot at plane going 90 miles an hour.

and locked before the aviator ascends. The aviator is also provided with dummy cartridge magazines for simulating loading, which in the air has to be accomplished with one hand. In the air, the student prepares to engage another student in a practical duel. He fixes his dummy magazine in place. *If the magazine is not properly applied*, a point pro-

The student then pulls back the bolt of the machine gun, just as if he were preparing for a burst of fire. This action brings a film behind the camera lens, in front of which there is fixed a glass etched with a "sighting circle." This circle is composed of concentric rings, each of which represents 20 miles of flight in the speed of an opposing ma-

enemy machine. When the film is developed, the enemy airplane is shown in its exact approach, superimposed upon the "sighting circle." From this print, by reference to charts, the instructor can determine the position of the attacking plane, the speed at which it was coming, and whether or not the burst of fire was correctly aimed.

## The Path of the Vertically Fired Bullet

NOTE:—ARMS AND THE MAN has received several recent inquiries from laymen among the civilian rifle shots of the country as to the behavior of vertically fired bullets. For the benefit of those subscribers who are not conversant with the results of experiments conducted along this line from time to time, this résumé of the subject is published.

N EARLY two centuries have passed since students of ballistics propounded the question: "What is the behavior of a bullet fired vertically into the atmosphere?" From 1742, when Benjamin Robins made what were perhaps the initial experiments in this field, using a smooth-bore musket, until the present, such inquiries have sporadically been conducted.

Little of practical value, however, was learned until an English expert, on behalf of *Arms and Explosives*, approached the subject just prior to the outbreak of the European war, at a time when the possibility of combating aircraft by rifle fire was being considered, and evolved formulæ and tables which resulted in a standardized system for plotting out the successive stages in the ascent and descent of vertically fired bullets.

The conclusions of one American investigator, David Kirkwood, and of several English experts, in connection with this system, have contributed about all there is actually known concerning the vertical flight of bullets.

Kirkwood conducted his experiments nearly 60 years ago, using both round

balls and conical bullets, driven by black powder. The British investigators used modern military rifles, shooting the Mark VI .303 blunt nose and the Mark VII .303 pointed bullets. As a result of all of these tests, a few important generalizations, some specific conclusions and a mass of fantastic, speculative data have resulted concerning vertical velocities, trajectories, and the striking power of bullets returning to the earth.

One of the primary questions asked by the layman is whether a bullet fired vertically returns to the ground at the firing point. Theoretically, a bullet should, "upon the exhaustion of the velocity imparted by the propellant, descend in the same line by which it arose." In fact, this does not follow, bullets recovered in experimental firing always falling from several hundred feet to several hundred yards away from the firing point.

One of the next questions appears to be whether gravity is exerted to the same extent upon a vertically fired bullet as upon one fired horizontally. Generally, bullets fired vertically have the same velocity, suffering the same losses

from air resistance and gravity as do bullets fired horizontally. Velocity curves plotted for vertical and for horizontal firing denote equality for the first 3,000 feet of range, and virtually for the first 4,000 or 4,500. One of the fantastic conclusions which have resulted from these experiments in this connection is that if gravity could be made inoperative, a Mark VII bullet, fired vertically, would attain an altitude of about 17 miles.

As to the position in which a bullet returns to the earth—whether point down or base down—the preponderance of evidence seems to favor the theory that it returns base down. L. R. Tippins, the British expert, has expressed the opinion, after exhaustive tests, that there is a critical stage in the flight of a vertically fired bullet when it is a "toss up" whether it will come down nose or base first.

As to alteration of shape, bullets return to earth showing the marks of rifling, and perhaps the force of impact with the ground, but in no other respect altered as to shape or weight.

Concerning the velocities during dif-



ferent stages of flight, taking as a basis the British .303, it is estimated that about one-half the time it is in the air the bullet is traveling at a very low velocity, its speed rapidly diminishing as the projectile nears the maximum of altitude.

The remaining velocity when a .303 British bullet strikes the ground is estimated to be about 500 feet, comparable to an impact of 86 foot pounds, which is 26 pounds more than that credited to shrapnel. Kirkwood's experiments lead him to believe that the velocity remaining in the flight of a round 12-gauge ball, driven by 70 grains of black powder, could be compared with the initial energy imparted by 8 grains of the same propellant.

The time consumed by a bullet in making a vertical flight, of course, differs with the type of ammunition used. Kirkwood proved quite conclusively that the round ball returned at more regular intervals than the conical bullet. The British experts agree that with the Mark VI ammunition from 52 to 57 seconds elapse in a flight attaining an altitude of about 9,400 feet, and about the same time in the flight of the Mark VII, which attains an altitude of about 9,800 feet.

Into these general conclusions have gone the results of experimental firing with many types of guns, and even machine guns. The machine-gun tests, conducted by Tippins, resulted only in obtaining the time of flight—between 50 and 60 seconds—and the fact that the bullets all fell between 100 and 200 yards away from the gun.

Returning to the earliest record tests—those of Benjamin Robins—the results are found barren of real value, since Robins admittedly did not fix his weapons vertically. However, in seeking to explain why the bullets which he recovered fell a greater distance away from the firing point than the angle of the gun seemed to justify, Robins propounded a theory which has now come to be generally accepted: that while theoretically a bullet fired vertically should descend along the line of ascent, wind currents at the maximum of altitude, and which cannot be detected on the surface, interfere with the projectile.

In 1856 David Kirkwood, of Boston, who was then in Scotland, conducted tests on an island in the Ipswich River. All tests lacked the aid of fine scientific instruments. In reporting the results of his experiments, he said:

"The method I adopted was to hold my guns in the right hand, the butt resting in the palm of my left, and fire them through a knot-hole in the roof of a veranda on the shack where we were living. My first trials were made with an old three-barrel, an assistant standing by to correct the vertical line. My .40-calibre 285-grain ball, with 60 grains of powder, took from 57 to 63 seconds; with 40 grains, 50 to 57 seconds; and with 20 grains, 36 to 42 seconds.

"A .38-calibre, 255-grain ball, with 40 grains of powder, took from 45 to 50 seconds; with 20 grains, 30 to 36; then a .44-calibre, 470-grain, conical patched bullet, with 75 grains of powder, took 56 to 63 seconds."

One of these bullets Mr. Kirkwood recovered from the roof of the shack, where it had been stopped by a shingle, which it only dented.

"Here," said Kirkwood, "was food for reflection. The bullet, having been gone on its errand for 60 seconds, had traveled a distance of 1,080 yards, provided it came down in the same time it went up. This should give it a final velocity of 960 feet per second, or enough to drive it through several shingles even if it 'key-holed.'" In this comment Kirkwood seems to have at least been on the track of the present return-velocity theory.

The difference in time taken for the flight, by bullets of similar calibre, driven by similar charges, lead Kirkwood to the opinion that better results might be gained if round balls instead of conical were used. In subsequent tests made with round-ball weapons, a 28-inch, 12-gauge, 3-barreled "Paradox" and a 26-inch, 12-gauge smooth-bore were used. Of these tests Kirkwood says:

"The round ball from the smooth-bore, with two drams of powder, gave me 27 seconds; the Paradox, 27 to 29 seconds. The smooth-bore with 1 dram giving 22 or 23 seconds and with 2½ drams, 28 seconds. It will be noticed that there was more regularity in the return of the round balls from the smooth-bore, which must undoubtedly be attributed to the absence of the slight amount of grooving on balls fired from the Paradox, and which conflicted with the atmosphere when coming down. With the conical balls, weighing nearly the same as the round—570 grains—and a charge of 2½ drams, 28 to 33 seconds would elapse, showing still more the increased time required by the irregular-shaped projectile in coming back."

During the firing Kirkwood recovered one ball from the smooth-bore, fired with 70 grains, and one from the Paradox, fired with 3 drams. Both had penetrated the soft, fibrous ground within 20 inches of each other, the smooth-bore to a depth of 24 inches, and the latter to a depth of 22 inches. Experimental firings, beginning with 15 grains of powder, showed Kirkwood that to duplicate the penetration he need only use 8 grains of powder, the muzzle held 20 inches from the ground.

Upon this point he says: "It seemed somewhat of a revelation that before me lay the evidence that 62 grains of powder in one case and more than that in the other had been used up in battling with the elements up and down of the bullets' flight."

Kirkwood also made comparative vertical tests with bullets of pure tin and pure lead.

Among other Americans who experimented to determine the flight of vertically fired bullets was the late Dr. F. W. Mann, who made many tests with the Krag rifle, but abandoned them in disgust, never having been able to recover a bullet or mark its return.

The very valuable contributions of the British experts Captain J. H. Hardcastle and L. R. Tippin, while contributing a great deal to the fund of general knowledge concerning the vertical flight of bullets, did not assume their true worth until they were made the basis of mathematical computation by an expert working on behalf of *Arms and Explosives* and whose findings were published about four years ago over the signature "H." "Ballistica," another British expert, contributed some interesting data on the vertical flight of the .22-calibre miniature bullet.

Captain Hardcastle in 1909 published accounts of his experiments with the Mark VI .303 bullet. He found that this bullet occupied from 52 to 57 seconds in reaching its maximum altitude and returning to the earth. These results checked calculations which he had previously made with the aid of ballistic tables. Having so checked his results, he calculated that the bullet, which started with a velocity of about 2,440 feet, reached a maximum height of 9,400 feet, returning with a velocity of 500 feet.

Taking the detailed results of Captain Hardcastle's investigations, and also those of L. R. Tippins, who experimented also with a Maxim machine gun, "H" set about evolving a formula to show the velocities at different stages of the flight. Without going into the intricate system of calculations he used, it can be said that the results of his formula have been accepted by ballisticians as being correct.

His calculations dealt with both the Mark VI and the Mark VII ammunition.

Taking as a specific instance the vertical flight of a Mark VII bullet, according to "H's" theory the projectile which left the muzzle of the rifle at a velocity of 2,240 feet a second rises to an altitude of 9,800 feet and returns to earth in 50½ seconds. Of this time, 19½ seconds is consumed in the ascent, and 31 seconds in the descent.

Of the velocity during the ascent, "H" found that by the time the bullet had reached an elevation of approximately 7,900 feet, or roughly ¾ of its altitude, which took 9.43 seconds, its velocity had fallen to 400 feet a second, the remainder of the flight, occupying 10.07 seconds, being accomplished at rapidly diminishing velocities.

Of the velocities during the descent, occupying 31 seconds, "H" found that, starting with zero, at no time did the velocity gained exceed 500 feet—the

(Concluded on page 170)



# The American Soldier, and His Rifle

By JOHN S. BARROWS

ONE of the most inspiring and encouraging expressions that has come from the discreet lips of General Pershing, since he entered on his great duties in the war, is: "You must not forget that the rifle is distinctly an American weapon," and also this: "I cannot too strongly impress upon the War Department the absolute necessity of rigid insistence that all men shall be thoroughly grounded in the school of the soldier."

No man is a soldier who bears a rifle, unless he knows how to use his weapon, and that not alone as a handle to the bayonet, but as a weapon of offence at long distances. It is customary to believe that the Americans are natural marksmen. So the early Americans were, but we have received so much blood from everywhere, including those localities and from those people to whom the rifle or gun is an unknown and forbidden weapon, that it is absolutely necessary to teach an American army how to shoot; for it is very probable that out of the levies of young men for the army, not one-tenth know how to use a rifle intelligently, and the number who never fired a gun would be appalling if published.

This lack of education should not be laid against them as a fault; rather it is their misfortune. Environment today of the majority of citizens prevents knowledge of fire-arms, and in many communities the mere possession of them is a crime. Now that men from such conditions are called to bear arms, and to bear them as soldiers, it is of greatest importance that more time and instruction should be devoted to the instruction in rifle use, than almost any other part of the School of Soldier; for a soldier who can not use his rifle effectively is of no earthly use on the firing-line; better that he be at once delegated to hew wood and draw water, than be a nuisance to his comrades and no injury to the enemy. Therefore the sooner the instruction in marksmanship can be begun at the training camps, the better for the cause of Liberty.

Ever since the beginning of the nation, the fire-arm has been a very valuable aid to progress and civilization. In the hands of the pioneer an ax and a gun were the two implements of securing a foot-hold and a living. The match-locks of the Pilgrim Fathers accomplished more with the aborigines than all the diplomacy of that band. It was the gun in the hands of the American pioneer in the British service that decided at Quebec

that the continent of America should be English-speaking and not French; Protestant and not Romanist. Again in the Revolution, it was the gun in the hands of men who dared to wait till they could see the whites of their enemies' eyes, that decided that America's thirteen colonies should be free and united. In all these cases it was the gun of smooth bore, the fowling-piece and the Queen's Arm, that did such good work, for the rifle was not an American weapon at that time.

Extensive as was the knowledge and use of fire-arms in the American colonies down to the time of the Revolutionary War, the rifle had not been common, and it was not till Peter and Heinrich Leman, from the German Tyrol, in 1732 brought to Lancaster, Pa., their tools for making rifled fire-arms, that the manufacture of this form of weapon began in this country. Once it started, it could not be stopped. The demand for rifles spread like wild-fire, and the necessities developed improvements till the American rifle was a high-grade fire arm.

America is indebted to Germany for the rifle, and now is the opportunity to show how thoroughly that appreciation has been treated, by the proper use of the weapon. Gen. Pershing said: "I want to see it employed. There surely will be plenty of opportunity for its use, and if you are unfamiliar with the weapon you will lose those opportunities. Bayonets and bombs are all right and very valuable, but rifle fire still has a place in modern war."

General Pershing is right. The present war developed its form of contest by mistakes. It was not the intention of the Germans to fortify and fight over entrenchments. They expected to sweep the country, and that could be accomplished only by rapid engagements, field artillery and infantry rifle-fire doing the work. The Battle of the Marne drove the Germans under ground, consequently the alternative of similar campaigning was left to the Allies. Now comes the American soldier, who fights in the open, and if he can force the Germans out of the trenches, the end will soon come, for the American soldier with the good rifle in his hands, is a proposition that no other nationality in the world has faced with success. The American rifle must and will end the war—if it is used in American fashion.

In order to use it American fashion, intelligent training and conscientious practice at the various ranges and all

kinds of targets under varying conditions of light is absolutely necessary, and every cartridge used on the range should mean so many less cartridges needed on the battle-front. Leave it to the machine guns to spit bullets rapidly and in all directions, but for the real, clean fighting the man behind the gun, and the gun an American rifle, are the factors that make war according to the way Americans have been accustomed to make it.

It was so at Concord and Bunker Hill; at Lundy's Lane and New Orleans; at Palo Alto and Chapaultepec; at Antietam and Gettysburg; on the Arickarre and the Little Big Horn; at Kettle Hill and San Juan Hill, and countless other instances, where the guns of the American soldiers have barked steadily, regardless whether the odds were with or against them. Once inspire the present legions of young Americans in the mobilization camps that the cause of Liberty depends on the way they will use the rifles that will be given them, and no doubt will exist but they will prove themselves lawfully entitled to the heritage of marksmanship transmitted through many generations.

They must be taught that nothing but "bull's-eyes" count. It will be either a hit or a miss when they come to face the German hordes, and no man will have time for "sighting-shots," nor can he wait for a "marker" to put up a disk to tell him of his shot. He must make "Fives" every time. It will be no case of "qualifying, in some class." The American soldier has formerly qualified in a class that sweeps his enemies away by his incessant and accurate fire; and since he will have a rifle that will fire twenty-five shots a minute, and put them where the rifle is aimed, the soldier of the 100s and the 300s regiments must be ready for the test. The time is passing rapidly; every range should be resounding with the crack of the rifle, until every rifle-armed soldier becomes a lover of his rifle, wedded to it in a noble union for the war.

By and by the Germans will run from their lines. The American soldier should understand that the 150-grain bullet will run faster after them than he can; in fact it can run 2,700 feet a second; and kneeling on one knee, his elbow resting on the other knee, he can chase Germans with that bullet, overtake them and stop them—if he practices faithfully at the ranges now while he has an opportunity.



# ARMS AND THE MAN

1110 WOODWARD BUILDING, WASHINGTON, D. C.

EVERY SATURDAY

Editor

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That the man shall serve his country in time of war is noble, brave and patriotic; but that a man shall properly prepare himself in time of peace to serve in war is all of these things and more. It is noble with a nobility which is real, not ideal. It is brave with a bravery which assumes in time of unemotional peace many burdens, among them that of bearing the lack of appreciation of those who do not consider military preparation or training necessary.

## THE CASE OF THE TRAINING CAMP GRADUATE

**F**OLLOWING a period of considerable uncertainty as to the fate of a large percentage of the officers graduated from the second series of training camps, the Secretary of War has set at rest all rumors as to the policy which will be followed in granting commissions.

It now appears that every man who proves himself competent to command, by passing the prescribed tests, will receive his commission. The results of this decision will undoubtedly prove that this course is a wise one.

If the present war continues for any appreciable length of time, these young officers will prove of value to the service. The fact that they are commissioned will keep them available; a point worthy of consideration since the services of every one of them will probably be needed before the war against autocracy is ended.

When the matter of commissioning the student officers graduated at the second series of camps was considered, the statement was made that places could not be found for the entire graduating class, and it was predicted that a large percentage of the men, even though they passed the prescribed tests, would be returned to civil life.

This prophecy, fortunately, has not been fulfilled. The men who entered the training camps practically without exception, severed all business connections. They entered training with the understanding that if they prepared themselves to become officers, and passed the tests prescribed, they would be taken into the service for the duration of the war. Every graduate of the training camp course has kept his end of the contract. It is no more than fitting that the government should keep its promise.

There is another phase of the matter which further justifies the action of the War Department in determining to commission these officers. Now, more than ever in the history of the United States, it is imperative that the enthusiasm of every man connected with the service should be kept at its highest. To have returned these men to civil life would not only have disheartened them, but would have been reflected in the attitude of other student officers who may be called upon to follow these men into other

training camps if the conflict proves a long one.

In fact the War Department could go much farther than it has already gone in determining to commission all training camp graduates, and still be serving best the interests of the nation. Every graduate of an officers' training camp should at once be put on active duty.

If there is no room for them in the line, they might well be detailed to aid in instruction at the cantonments. In this way not alone would the young officers be performing a service valuable to the government, but each would steadily be enhancing his value by gaining experience.

The presence of such assistant instructors in every division would make possible a wider selection to insure competent company commanders when that division goes to the front, and those left behind would form the nucleus of a corps of instructors for the second National Army if such a force is ever organized.

While the government is putting forth every effort to mobilize its man power to the fullest extent, it would be a mistake either to send back into civil life men qualified to command, or to commission them and retain them on the inactive lists. In the first instance the government would be losing what might later turn out to be efficient personnel; in the second, it would be causing hardship to the men who have already put behind them their civil vocations, and who would find it difficult to re-establish themselves in business while subject to call for military service.

## THE MARINE CORPS AND RIFLE SHOOTING

**T**HE annual reports of the Marine Corps, just submitted, show that of the entire personnel of this branch of the service, 61.9 per cent are qualified riflemen. Perhaps this explains why the "Leatherneck" usually obtains an opportunity to make good the slogan of the Corps—"First to Fight" and when the affair has ended it is found that the soldiers of the sea have given a good account of themselves.

A generalization of the figures relating to marksmanship in the Marine Corps shows that during the past year there were 2,744 officers and men entitled to the rating of expert riflemen; 4,293 officers and men entitled to the rating of sharpshooters and 12,079 officers and men rated as marksmen. This is a good showing and from the standpoint of percentage would seem to put the Marine Corps in the lead among the service branches so far as rifle shooting is concerned.

## RIFLES FOR THE HOME GUARD

**T**HE publication of special regulations to govern the issue of arms and equipment to Home Guard Organizations, definitely limits the companies to be so equipped to those organized officially by the Governors of the different States, and actually performing service in connection with the protection of property.

Had the War Department undertaken to equip all Home Guard organizations with military arms, regardless of status and character of service, unfortunate consequences might have followed.

Even though a hard and fast rule has been established which in operation will limit to a minimum the number of



Home Guard units equipped with military rifles, the wisdom of issuing high power weapons to any citizen unit doing duty in thickly populated section, can be questioned.

As we have pointed out previously, a rifle which lets loose a bullet that is dangerous two or three miles away from the firing point, is not the proper weapon for a man unlearned in its use, nor can the issue of such rifles to the untrained be justified on the ground that nothing else in the way of suitable equipment can be obtained. The riot gun, which will scatter nine buckshot pretty freely over all ranges up to 80 or even 100 yards can be obtained quite as easily as rifles of military type. These guns have been designed for just such service as home guards are called upon to perform. They have long been in use as the armament of prison guards, and many have been issued in the Philippine constabulary. There is little question but what the riot scattergun is much more effective in opposing a mob than high power rifles would be, and a pump gun of this character would be quite as rapid a loader as a service rifle in the hands of an untrained man.

A résumé of the order fixing the conditions under which service rifles will be issued to Home Guards reads:

"The War Department has issued special regulations (No. 37) governing the issue of rifles and ammunition to home guards under the provisions of the act of Congress of June 14, 1917, authorizing the organization of such commands.

"Only such Home Guards as have the character of State police or constabulary, or such other Home Guards as are organized under the direction of the governors of the several States and Territories and the commissioners of the District of Columbia, rendering actual services of the following character, may receive equipment, and to the extent that available supplies will permit. The services to be performed will be the protection of the property of the United States, or the protection of supplies in the course of manufacture for the United States, or the protection of transportation lines where necessary, including rights of way of railroads, bridges, etc. These guards must be subject to the command of the governors of the several States or Territories or the commissioners of the District of Columbia; they must receive regular military instruction, and such portion as may be necessary shall be available at all times for duty."

## The Bowen Low Position for Sharpshooters

By SNIPER



The "Bowen Low Position," Side View



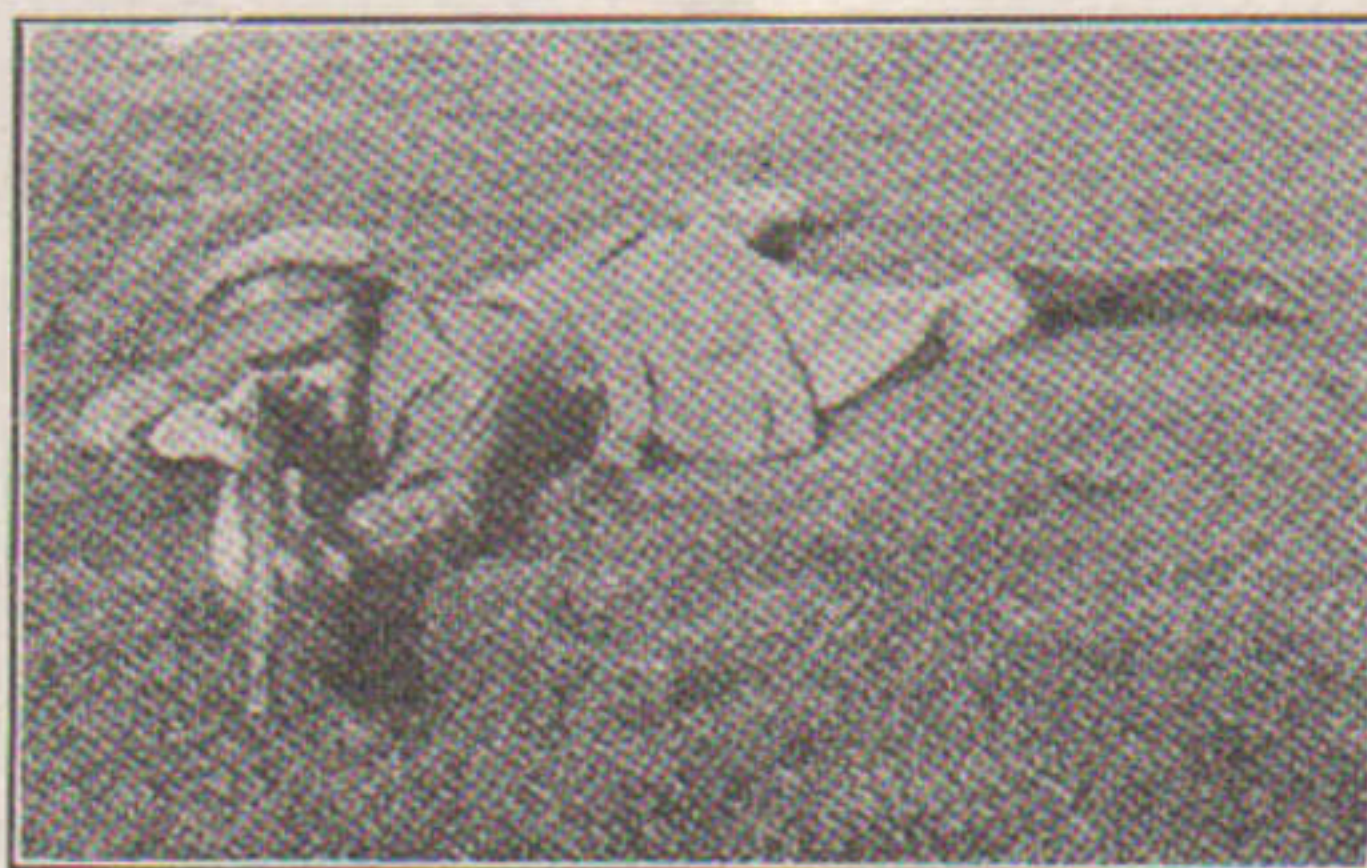
The Prone Position of the United States Soldier

FROM time to time rifle enthusiasts in the United States seeking the steadiest positions from which to shoot the military rifle, have brought up the question of assuming a prone position wherein the butt of the rifle touches the ground.

No such position has ever been countenanced in the military shooting game so far as it is practiced in the United States. It is said, however, that a similar provision has long been in vogue among English long range shots.

Now comes the Canadian contingent, who, in training their snipers have adopted a prone position wherein the butt of the rifle not only rests upon the ground, but is firmly seated in a hole made by driving the heel of the butt into the earth.

Although this innovation apparently demands less steadiness of hold on the part of the rifleman who shoots in the prone position prescribed by the firing regulations of the United States Army, it undeniably permits the



The "Bowen Low Position," Front View

shooter to hug the ground closely, make his body less of a target, and consequently add to his chances of concealing himself from enemy sharpshooters.

The prone posture as adopted by the Canadians, is known as "The Bowen Low Position for Sharpshooters." The position is assumed by lying prone, legs apart, chest against the ground, arms extended outwardly, sling over elbow of left arm, butt of rifle on the ground, top of butt in contact with the muscle of the lower part

of the upper right arm. The official directions for assuming this position read:

"Grip the rifle tightly with the left hand, chucking toe of the rifle butt against the ground, making a hole. If the ground is too hard, use knife to make hole. Grip rifle at pistol grip with the right hand which brings rear peep sight close to the eye when discharging the rifle. The recoil goes into the ground. Rifle then becomes a vice. The left hand holds the rifle perfectly steady on the target, leaving the right hand free for loading. Body remains prone.

"After the sharpshooter fires ten or twenty shots as the case may be, he throws down his sights, raises his body and shoves the rifle between his legs, with strap of rifle exposed, lays butt of rifle on the left inner leg, throws the right leg over the butt, making a toe-lock, squeezing knees in tightly on the rifle which protects the sights; grasps the rifle tightly with



right hand below first rifle band, and with left hand at end of the stock, makes his body, arms and neck rigid and rolls over, throwing the body from the ground by spring from rigid elbow. When using this position it is almost impossible to locate a sharpshooter in long grass, and a man can be trained to roll almost as fast as an ordinary man can run."

It is said that Lord Roberts inspected this position as early as 1910 and heartily favored it.

The position was devised by Lieut. J. R. Bowen, who holds the King's Colonial Long Service medal for 21 year's continuous service in the Canadian Militia. Lieutenant Bowen is recognized as one of the crack shots of Canada. Among some of his victories of the range may be mentioned the winning of the Bisley sweepstakes on the 1100-yard range, where he introduced his low position for firing. Lieutenant Bowen is the instructor of rifle and machine-gun sighting and firing at the training camp for recruits in Canada.

It would seem that even if the Bowen low position does not appeal to the American riflemen as a sporting proposition in match shooting, that its benefits might be utilized in sharpshooting whenever the lay of the land might permit so low a position to be

assumed without interfering with the line of sight.

The American riflemen who attended the Olympic Games are familiar with the low position shooting. It was during those matches that an official protest was made against its use. The protest, however, was not entertained by the officials of the games.

The system of instruction in use in the Canadian camps, where Lieutenant Bowen had charge of the school, includes not only sighting drills by tripods, but also the use of a "sighting disc," as preliminaries to actual work with the rifle.

The sighting disc is so constructed as to give the student riflemen the same benefits as those produced by the "sighting bar" familiar in American Army camps. In this case, however, the device is a metal case, with a circular opening in the center, under which is slipped a target.

Through the use of a piece of metal, proportioned like the front sight of a rifle, and placed in the case in relation to the bull's eye, the student is taught the proper appearance of front sight and target when looking through a peep. The metal representing the front sight is movable, and illustrations of incorrect sighting can be given.

## NEW STATE GUARDS ORGANIZED

Armed with a miscellaneous collection of weapons, ranging from modern high-power sporting rifles and the Canadian Ross military rifle to the old black-powder "Forty-five Seventy," State Guards are rapidly being organized throughout the country to take the place, in matters of internal defense, of the National Guard drafted into the National Army.

Care is being taken to keep the character of these organizations that of State militia, since if they were organized as National Guard contingents they would automatically become subject to the draft.

New York was one of the first of the States to set about organizing troops. This lead has already been followed by several States—Ohio, Tennessee, and the District of Columbia among them.

When Adjutant-General Charles H. Sherrill, of New York, was confronted with the problem of obtaining arms for the newly organized force, he undertook to obtain, and succeeded in obtaining, 10,000 of the Canadian Ross rifles which were discarded not very long after the European war was declared. These rifles were purchased by the State of New York from the Canadian Government.

The Ross rifle, as those who recall the discussion which preceded its abandonment will remember, had many features to recommend it, but, when used in the trenches, was found subject to jams. It is said that the men who were armed with these rifles threw them away whenever opportunity arose to obtain an Enfield, since the less intricate breech and bolt mechanism of the English rifle withstood the mud and dirt of trench fighting much better than did that of the Canadian arm.

The Ross rifle, however, for service where trench conditions do not exist, will undoubtedly prove a satisfactory substitute for the American service arm.

## The Path of the Vertically Fired Bullet

(Concluded from page 166)

speed with which the bullet returned to the ground.

Commenting upon "H's" conclusions, in regard to the changes in velocity, at the time his findings were published, *Arms and Explosives* said:

"Gravity as a deterrent to the flight of a vertically fired bullet is well known to the scientific man for the bogie it is, but some answer must be found for the confused imaginings which possess the lay mind. Compensation for the extra task set the vertically fired bullet is provided by the fact that the atmosphere through which it passes becomes progressively more rarefied. But the two elements—gravity and tenuity—can only be properly compared quantitatively. If air resistance were abolished, a bullet with 2,297 foot pounds muzzle energy would climb to a height of 92,800 feet.

"The following rule may be propounded: A vertically fired bullet can only lose through gravity the energy it acquires due to altitude. 'H' makes his bullet rise 9,816 feet in the air. Its energy of altitude is thus its weight in pounds multiplied by this height, or 244 pounds. The muzzle energy is 2,297 foot pounds; hence the energy available to

promote descent to earth is 10.6 per cent of the muzzle energy. By the proposition above submitted, this particular bullet, fired vertically, utilizes 90 per cent of its energy in overcoming air resistance and 10 per cent in overcoming gravity. In the early stages of the upward flight, air resistance accounts for a greater proportion of the lost energy and gravity for correspondingly less."

"Ballistica," the English writer upon matters of interest to marksmen, following the experiments of Captain Hardcastle and Tippins and the deductions of "H," published some data regarding the vertical flight of the .22-calibre bullet with a muzzle velocity of 1,100 feet—such as are used by the small-bore riflemen.

According to his table the bullet reaches an altitude of approximately 1,000 yards, taking nearly 10 seconds to reach this height. In its return to earth, the little bullet takes about 23½ seconds, so that the time of the complete flight is something more than half a minute. The velocity with which the bullet reaches the earth is about 165 feet, a striking energy of only 2½ pounds.

It was during a more or less secret conference in Washington early last spring, just before war was declared. Many prominent men were present, both from the North and from the South. The newspapers naturally were anxious to get opinions first hand from the members of the different committees, but found it a hard job.

One reporter finally fairly cornered a courteous Southerner—an elderly man of the "old school."

"Mr. Blank," said the reporter persuasively, "I would like to have your opinion of the war."

"Well, sah," said Mr. Blank very courteously, "I haven't thought of it much lately, but I've always been of the opinion, sah, that Lee should *not* have surrendered. Good evening, sah."

And he left behind him a thoroughly dazed reporter.—*Journal A. M. A.*



## More About English Deer Stalking

FROM time to time Walter Winans, the big-game hunter, has reported his experiences in "market shooting" for the hospitals of England. "Hoverer," in a recent discussion of the subject in *The Shooting Times and British Sportsman*, throws additional light upon the situation which has led to the wholesale killing of deer and consequent thinning of the deer forests in Great Britain.

According to this writer, under normal conditions probably the most expensive sport of all, as regards shooting, is deer stalking; not that the sport is expensive in itself, but the rent paid for a forest capable of affording first-rate stalking often runs well into four figures. What it costs to shoot each deer of a season's bag I do not care to average, but it is a tall sum. Before the war came to trouble us it was common report that deer stalking had ceased to be satisfactory, or (shall I say?) "satisfying," and several reasons for this were advanced. A stalk is valued first for the difficulty of bringing it to the required issue, for it can be no delight to a real sportsman to deal with a deer which simply waits to be shot, as a sheep would. What he requires is to pit his skill against the fully developed instincts of a truly wild animal, which acknowledges in the slightest trace of men's presence supreme danger, and if such a trial is not to be had the stalk loses all its fascination. Before the war it was freely remarked that deer in our northern wilds had grown too tame, were too easily approached, and that it required little of the stalker's art to succeed in grassing a stag. That there was truth in these assertions is only too correct, and I believe the war will act as a remedy.

Deer stalking is very arduous sport, entailing considerable exposure, and necessitating health and hard condition on the part of the man indulging in it. The reader will appreciate this when he realizes that occasionally the sportsman is obliged to crawl on all-fours along the bed of a shallow, tumbling mountain stream, as the only means of reaching undetected his prey. A long crawl over cold, wet ground is an ordinary occurrence. A man cannot indulge in this kind of sport all his life, and generally feels compelled to relinquish it with advancing years. Therefore, he places the greatest value on his trophies, which are forever proof of his prowess in the days of his youth. These trophies are the preserved masks and antlers of the finest deer which fell to his rifle, which adorn the walls of his "ancestral halls," and to which he points with evident pride. Each one is the subject for a long, descriptive discourse on "how I did it." However, for years the trophies had been growing poor and poorer, all because each year the bearers of the finest antlers had been assiduously killed off.

Deer stalking has practically come to a temporary end, no forests being let under fresh leases, and those sportsmen who already have leases being too busily engaged otherwise to indulge in what they describe as a "right royal sport." What is now happening in the deer forests is utterly contrary to the rules and regulations surrounding such places, but I feel strongly that it will all work for future good. Deer could not be allowed to accumulate in the forests as the result of no shooting, for the majority were already stocked to their fullest capacity, and to permit an increase would be to subject the whole herd to partial or complete starvation. The meat supply of the country was short, and owners of deer forests feel that each one should be made to contribute its quota to the common supply. So shooting has proceeded, but it has been very different shooting to that practiced under ordinary circumstances.

Actual stalking disturbs a deer forest very little, but when the deer come to be shot regularly under the driving system the reverse is the case. I believe that the larger percentage of deer killed recently have been driven to the rifle, and other methods were followed not a whit less alarming to a herd. If this goes on, the most exacting stalker will have no cause to complain that deer are no longer sensible of and on the qui vive for danger. They will be wild enough, and two stags a day will for the future mean much skill and arduous work. Stalking will no longer be a simple parade, at the end of which the biggest blunderer gets his deer. As for trophies, they too will improve, for the finest specimens are being allowed to survive to perpetuate their kind. A deer with a fine pair of antlers is no longer the object of the sportsmen or those who are killing the deer, and the stalker on his return will have superb heads from which to select.

Nearly all the venison killed in the northern forests is sent to hospitals, or is carefully and cleanly dressed and exposed for sale in the open market at a price which, considering its value as food, compares most favorably with the cost of other meat. Here, again, sportsmen have done good work which will never be acknowledged, even if it is ever realized. The taste for venison had all but disappeared, and I wonder if it will be revived by the supplies now being disposed of from park and forest? There is no richer or more nourishing fare, and a venison pudding is far in advance of the beefsteak article. Invariably the mistake is made of not cooking venison sufficiently, for it requires what the cook describes as "long coddling." A long boil, or a long bake in a slow oven, is necessary to the development of tenderness and rich flavor, and, lacking it, the meat is hard and flavorless.

The skins provided by the numerous deer now being killed must be of the greatest value under present circumstances, for the leather they yield affords material for the finest military equipment. There was a time, at the pipe-clay period, when the numerous showy cross-belts the infantry wore were all made of buckskin; but the leather to-day has to be dressed so as to render it less conspicuous. I believe buckskin leather, as being the toughest article of its kind, is now much used for making the studded covers for motor tires, which protect them and add to their durability. Some of it may be in use at the front in that form. Does and hinds yield a much softer leather, which is employed on riding garments, where they are subject to the greatest wear. Every vestige, down to the covering skin of the slender legs of deer, is utilized in one way or other.

The usual appeal for game for hospitals is being made, and, notwithstanding the exceedingly shabby way in which sportsmen have been treated, there will be a hearty response. We are not sportsmen if we cannot overlook ill and undeserved treatment. Strange to say, those making the appeal have thought well to state that, although feathered game is greatly appreciated, rabbits are the most welcome. This statement will lead to plenty of rabbits being received, for I know several people who would have despatched rabbits in regular supplies had they realized that such were required. They hesitated to do so because they thought a few couples of rabbits would make but a poor show beside the handsome baskets of game richer neighbors were able to bestow. Now they learn that rabbits are actually preferred, and will act accordingly. After all, a rabbit is very easily prepared, can be cooked in so many different ways, and is always appetizing. To many of our wounded a rabbit would appeal as a very homely dish.

Even the poorest can do something for the hospitals if they wish, for everything of an eatable nature which reaches such an institution is carefully utilized. Blackberries are to be had in most localities for the picking, and a blackberry pie is another homely article of food which appeals to the wounded. Even hazel nuts are welcome, for they, too, are nourishing, and the cracking of them helps convalescents to pass time away. And what about mushrooms? "Poor food for invalids," I seem to hear some one say; but wounded men are not invalids, and generally have their digestive organs in excellent condition. Mushrooms are real, luscious delicacies, very savory, and I know that few reach the hospitals. Even when it is impossible to use them as staple articles of food they are of the greatest value for flavoring other dishes, and for this they are indeed welcome. If the mushrooms cannot be sent, trans-



form all you can into ketchup, and despatch that. It is an awfully good addition to soup.

Game for a hospital should always be despatched fresh, for the eating of high game is a cultivated taste, and exceedingly repulsive to those who have not acquired it. A rabbit, above all things, must be thoroughly fresh. When packing game, fill the receptacle in with the colored autumn fronds of bracken, and the nurses will use every bit to adorn the wards. Sprays of scarlet hips from the hedges are also appreciated, and colored leaves, especially those of the barberry. Do not put in ears of grain, for, although these are pretty and ornamental, it is waste. Such simple things as these appeal to the country soldier far more than costly hothouse blooms, and conjure up memories and thoughts which assist him along the hard and often painful road to recovery.

### THE FRENCH FOREIGN LEGION

Interesting facts concerning the French Foreign Legion are contributed to the Army and Navy Journal by Bruno Heyne, now a corporal of the 19th Company, G. S. I., Fort Logan, Colo. He says:

"Since the beginning of the war Americans have joined the ranks of the Foreign Legion of France in ever increasing numbers. This body called specifically, La Legion Etrangère (The Foreign Legion), made itself famous in Algiers and in the Crimea. A few lines on this famous and perhaps somewhat notorious organization may be of interest at the present time. Foreign legions were employed by the French kings in medieval times. A number of them were formed during the Revolution and under the first empire, of which one has been maintained to the present time.

"In the late years it has been a colonial organization, with headquarters in Sidi-Bel-Abbes, and Saida, Algiers, in North Africa. Some 18,000 foot troops were maintained, the enlistment being for five years, with no administration of oath, the men merely signing a contract. The writer had the honor of serving in the first regiment of the legion (1893-1898) when it was commanded by Colonel Villebois de Marueill, who later fell in the Transvaal for the cause of the Boers. The Legion was then and probably is still one of the most heterogeneous bodies of troops of its kind in the world. In those days this modern Babel was an excellent school for the students of languages, and human nature. The ranks were filled with men of all civilized nations; deserters from many lands, men who suffered shipwreck on the high sea of life, and men who had committed crimes found

refuge in the Legion. Men in whose breast stirred the atavistic germ of the nomad, some of them forever sick of civilization, buried themselves in the obscure throng of these masses. Many of the most distinguished houses, including some of royal lineage, after searching the earth in vain, have finally found the lost sheep of their family serving as a common soldier in the ranks of this Legion of Strangers. Frenchmen who had slipped a cog in the wheel of life enlisted in it under an assumed nationality and obtained their rehabilitation after faithful service. Discipline in an organization of this type is essentially of the strictest and punishment follows swiftly on the heels of every offense.

"Expeditionary battalions are now stationed in nearly all the French possessions, and soldiers of the Legion have taken a very active part in the acquisition of the French Colonies. Legionnaires have carried the tricolor of France to the most distant parts of the globe. Legionnaires are resting in the soil of Algiers and Morocco, Senegal and Soudan, Dahomey and Madagascar. Tonkin and Annam have demanded a good many of these soldiers of fortune, in fact they have fought and died for France in all parts of the world excepting Australia. The brilliant achievements of these men will forever remain an unique example of cosmopolitan heroism.

"Paix aux Legionnaires mort."

### BIG GUNS FOR THE FRENCH

Fifty-two centimeter guns have been used for some time in the French Artillery, although the fact that such weapons played an important part in the Verdun fighting has been kept secret until this time.

A recent despatch, passed by the censors, gives the details of the new armament. The despatch reads:

First official confirmation of the fact that the French artillery is equipped with the largest caliber guns in the world has come through the release in Paris motion theater of the government film entitled "The Military Power of France in the War." The new gun is still larger in caliber than the 42 centimeter—or 420 millimeter Skoda howitzer, which the Germans sprung on an astonished world at Liege in August, 1914.

The fact that France had devised, constructed, and perfected a weapon four inches larger in caliber than the greatest German piece has been kept a profound secret, even the soldiers at the front being unaware of the exact bore of the monstrous cannon.

The "520" was used in the great Verdun surprise attack of August-September last and again in General

Maistre's operation along the western end of the Chemin des Dancs in the neighborhood of Laon. Its great projectiles raining down on the quarries where the enemy reserves were ensconced, wrecked the entrances to these underground positions and prevented the men inside from debauching to aid the first line troops actually engaged. Two shells from a "520" made debris of Fort de Malmaison which the Germans had reconstructed into a supposedly impregnable position.

Obviously the mammoth 22-inch gun is too massive for ordinary use. Roads, bridges, railways, and other transportation lines have to be specially constructed to bear even the weight of carrying up projectiles for the weapon. Smaller shells are able to accomplish the necessary work of demolition against German field positions, trenches, "pill boxes," and blockhouses.

The sphere of the "520" is reserved to itself and limited to such operations as smashing in quarries or other great natural strong points which the Germans have consolidated into fortified positions.

The action shown in the film wherein, for the first time also is officially revealed the fact that French storming troops carry steel shields, is more stirring than that in any other "war picture" presented.

One of the most thrilling scenes is General Petain's review of the troops of General Guillumat's army which recently drove back the Crown Prince's forces.

It has come at last!

A letter was recently received from one of the newly appointed officers in the Reserve Corps. From the text, it would appear that the young man was not making as high scores as he would like to make in rifle practice. Therefore he requested official permission to ship his rifle to the Springfield armory, there to have it star gauged "so that it would shoot better."

A Marine Corps sergeant, who is stationed at the League Island, Philadelphia camp, is peeved.

The sergeant weighs 360 pounds. Recently, he sent two khaki uniform blouses to the laundry that were returned to him unwashed, and with a notation on the laundry slip, which read: "We don't launder wall tents."

A British gunner who had successfully passed a blacksmith's course was home on a furlough, wearing the hammer and pincers on his arm, when he was accosted by a civilian, who asked him what the decoration was for. "Oh," replied Tommy, "I'm an army dentist." "I see," said the civilian. "Of course, the pincers are for extracting teeth. But what is the idea of the hammer?"

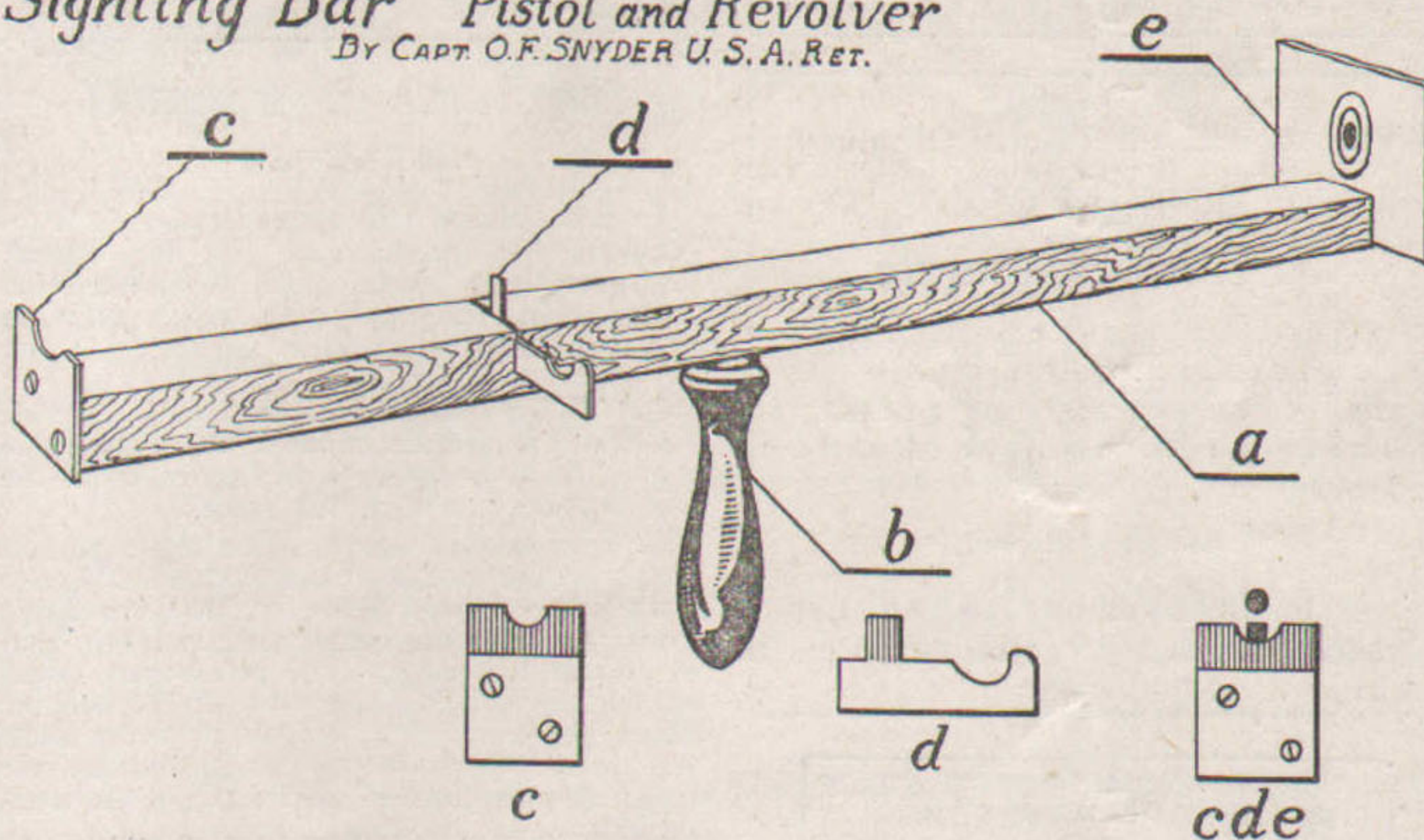
"Well, you see, it's like this: some of the chaps are a bit nervous, so we use the hammer to chloroform them," was the reply.—*Journal A. M. A.*



# Off Hand From the Clubs

## Sighting Bar Pistol and Revolver

By CAPT. O. F. SNYDER U. S. A. RET.



IT is quite as easy to use a sighting bar for instructing the novice in pistol shooting as to the proper relation of sights and targets, as it is to make use of this device to prepare the untrained shot for target practice.

The use of the sighting bar in connection with rifle practice has again and again proven of value. If once the tyro can visualize the lining up of sights and bull's-eye, he can go to the range and comprehensively undertake to reproduce the impression which has been made upon his brain by working with the peep, the front sight and the target. After that, the problem of teaching him to shoot becomes a matter of training him to hold, to squeeze the trigger, and to make sight adjustments to meet specific conditions—the latter a necessity which can be supplied only through actual experience on the range.

Applying the same principle as that involved in teaching the novice in rifle shooting, the sighting bar has proven perfectly practical in pistol and revolver instruction. The bar can be devised so that it is possible to hand one to the tyro, tell him to hold it nearly at arm's length, in the same manner that he would hold a hand-gun, and put before him a concrete illustration of how his sights should look.

The sighting bar for the pistol or revolver is every bit as simple in construction as that for the rifle. It is made as follows:

A strip of wood (a) about 1 inch square and 2 feet long is used to represent the pistol.

About the center of the bottom of this bar is nailed a handle (b) about 1 inch in diameter by 4 inches long.

To one end of the bar (a) is tacked an open Rear Sight (c) of tin or cardboard 1 inch by 1½ inches, projecting ½ inch above the bar, with a U-shaped notch, ½ inch wide by 3/16 of an inch deep cut in the center of the top.

A fine narrow slot about ½ inch deep is cut across the top of the bar about 8 inches from (c) into which is inserted a front sight (d) of tin or cardboard about ¼x1 inch, projecting about ½ inch above the bar.

A thin board or cardboard about 2x4

inches (e) is tacked to the end of the bar. A bull's-eye target, with ½ inch bull's-eye is pasted or tacked on this board (e) so as the bull's-eye, when looking through the sights, will appear to rest on the top of the front sight.

All pieces of tin or cardboard used and the top of the bar should be carefully blackened.

The purpose of the sighting bar is:

To show how the bull's-eye should appear when looking through the sights of the pistol or revolver;

To show how to align the sights properly on the mark;

To teach uniformity in sighting; and

To discover and demonstrate errors in sighting. The errors are shown by manipulating the front sight (d).

The Normal Sight—when looking through the rear-sight notch at the bull's-eye, the top of the front sight should be on a line with the top of and in the center of the rear-sight notch and aligned upon a point just below the bull's-eye or mark. (See Figs. C, D, E.)

The best results in firing can be obtained only when the same amount of front sight is taken each time, and this can be done only by using the normal sight as shown in Fig. C, D, E above.

### The "1917" at Wakefield

Major Charles S. Armstrong, assistant Chief Inspector of Small Arms Practice, U. S. Ordnance Department, visited the Wakefield, Massachusetts, range a few weeks ago and demonstrated the workings of the new U. S. Rifle, Model 1917 to the civilian riflemen who were there on that occasion.

An account of the demonstration published by the *Boston Herald*, said:

A score of crack shots who were at the navy rifle range at Wakefield yesterday afternoon participated in tests of the new United States 1917 model army rifle, which was being tried out by Maj. Charles S. Armstrong, assistant chief inspector of small arms practice, United States ordnance department.

It was the unanimous opinion of the riflemen that the new arm, which is pat-

terned on the famous English Enfield rifle, is superior to the old Springfield. Despite the fact that it is not well suited for target work, the men made good scores at 300, 500 and 600 yards. Among these scores were several of 23 out of a possible 25 at 300 yards, made by Maj. Armstrong, Maj. John M. Portal of Massachusetts, and Capt. James H. Keough of Wakefield, former national individual champion. At 500 yards, Maj. Armstrong and others made 48 out of a possible 50. With the old Springfield rifle, which is better adapted for target work, such scores would be excellent.

The new rifle has a 26-inch barrel, two inches longer than the Springfield and a sighting radius of 31¾ inches, as against 23 inches on the Springfield. This feature makes it more rapid and accurate for battle work. For target practice, the absence of the wind-gauge used on the old United States rifles makes it more difficult for the marksman to combat wind conditions, but authorities do not consider this of consequence with regard to shooting in actual warfare, as less time is taken for sighting and less attention paid to wind conditions.

Although declining to express an official opinion, Maj. Armstrong expressed himself well pleased with the work of the rifle yesterday.

Major Armstrong also demonstrated the rifle at the Field Day of the Governor's Foot Guard of Connecticut, held on the State range near New Haven. Many of the riflemen present were permitted to shoot the new weapon. Without any preliminaries, Major Armstrong fired 13 shots at 500 yards, and kept all of them in a comparatively small group, well within the bull's-eye.

### Sporting With the Twenty-Two

One of the best features of the small-bore rifle in connection with the equipment of rifle clubs, in addition to the cheapness of ammunition and the accessibility of ranges, is the fact that the little .22 is a splendid weapon for small game in autumn days like these.

The "game getting" feature of the small-bore has not only appealed to the riflemen of the United States. It has also found favor among the members of the miniature rifle clubs of England. "Akeriman," musketry officer, has something to say about this phase of miniature rifle shooting in *The Rifleman*. Of the conditions surrounding game shooting with the .22 in England, he says:

It is a relief sometimes to get away from target practice and use the rifle for shooting something more interesting than a piece of cardboard or canvas. Happy is the man who possesses the shooting rights of a piece of ground well stocked with game or rabbits, or can get permission to shoot those belonging to someone else. The writer's experience is that such permission takes some getting, but is worth much trouble to obtain. Next to deer stalking, probably there is no more fascinating sport than rabbit stalking. Some sportsmen—in fact, most of them in England—go after rabbits with a gun and ferrets; but to the keen rifle shot the fact of using a rifle is the main thing about the sport, and the best form of it is to go out by oneself, armed with nothing but a rifle and one's own wit and cunning to pit against the infinitely finer senses of the wily bunny.

According to the catalogues, the .22 long-rifle cartridge is "good for small game up to



200 yards." This is rather a stretch of the imagination of anyone but a cartridge manufacturer, but certainly no man ever lived who could make sure of a rabbit at 200 yards.

The rabbit is a beast which requires considerable study in order to understand his constitution and habits. To start with, his hardihood and tenacity of life are such that, unless hit in the right place, it is almost impossible to "stop" him except by so smashing him up that he is unfit for the table afterwards; and it should be remembered that the first tenet of the sportsman is that game must be killed, and not maimed and allowed to get away. Nothing is more distressing than to see a rabbit or any animal hit in the hind-quarters or other non-vital spot crawling away out of reach. For this reason in the running deer shoot at Bisley points are deducted for a hit outside the vital area.

To be effectually stopped, a rabbit must be hit either in the brain or through the fore-shoulder or heart. The target in the first case is no larger than an inch bull, and in the latter perhaps an inch and a half. All the remainder of the body should be regarded as non-existent, for a hit will have no effect beyond sending the quarry down the nearest hole before he can be got at.

Thus very accurate shooting is necessary, and it is seldom that the hunter is justified in taking a shot at more than 50 yards. Up to 25 yards the head should be aimed at, and beyond that the foreshoulder.

Now the "smashing power" of the .22 long rifle is not great, nor is its trajectory very flat; but in the hands of a good shot possessed of good judgment it is sufficient. Probably the best cartridge for the purpose is the .297/.250 center fire, and the .300 Rook is also good; but both these cartridges damage the game more than is necessary if the correct spot is hit.

With the .22 the best sight elevation to adopt is 50 yards. An aperture backsight with fairly large aperture and blade foresight with ivory or white paint tip are, in the writer's opinion, the best combination. With 50 yards' elevation the rise of the bullet at 30 yards is about an inch, and this allowance must be made in aiming at the shorter range.

The most important part of the sport, given good shooting, is the stalking. In some country where rabbits abound one can sit or lie behind a bush and wait for them to come out; but on moorland, where the rabbits live not in holes, but in "runs" in the undergrowth, and are much scarcer, it is necessary to "stalk," and a very difficult job it is.

One must go out either in the early morning just after dusk—the best time—or late evening, before sunset. In the morning the rabbits are generally busy feeding, and in the evening they may often be caught sunning themselves on a fine day before going in for the night. A rabbit can see a man approaching hundreds of yards away if he walks upright, and on a still day the noise he makes is quite sufficient to drive the rabbits away before he sees them. The best time is during fairly windy but fine weather. In a wind the stalker can make a little noise without being heard, and rabbits will stand quite a considerable noise without moving away so long as they do not see him. Immediately they spot the hunter off they go, but generally stop, sit up, and listen before going out of sight. The stalker's only chance, then, is to "freeze"—keep perfectly still for several minutes. If there is no movement, the rabbit will often start feeding again, and then the stalker can stealthily resume his business of getting closer, bending close to the ground, keeping behind bushes or grass, until close enough for a shot. But it takes a great deal of practice to do successfully.

Probably there is no better training in the world for a scout than rabbit stalking. It takes very highly-trained eyes to pick out the



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rabbit from its surroundings at any distance until it moves, and then it is usually too late!

Of course, the best form of .22 ammunition to use is that with hollow-pointed bullets. It is at present forbidden, under the Defence of the Realm Regulations, to sell hollow-pointed ammunition; but a good substitute may be made by drilling the bullets of the ordinary ammunition with a small metal drill, forming a hole about 3/16 in. deep in the nose. If carefully done, this does not affect the accuracy in the least, and the results are excellent.

In conclusion, a word of warning to those who have not previously had to do with game shooting. Remember that the exemption from the necessity to buy a gun licence enjoyed by members of clubs affiliated to the Society applies only to rifles used for target

shooting on club ranges. To use a firearm for any purpose in any other place, one must buy a gun licence, price 10s., at the postoffice.

Of course this licence does not entitle one to shoot game, in the legal sense of the word—a game licence, price £3 3s., is required for that. But rabbits are not classed as game, and may be shot without a game licence; but not without a gun licence.

## INQUIRIES OF GENERAL INTEREST

In this column will appear excerpts from requests for information and for official interpretations, made to the National Rifle Association, the replies to which may be of a generally informative nature.

Q. Will a bullet from the Springfield rifle penetrate a greater number of white pine boards at a distance of 12 inches from the muzzle than it will at 100 yards?

A. Penetration figures upon these precise distances are not at hand. It would seem from other figures, however, that the bullet would not have the penetration at 1 foot that it does at 100 yards. The penetration tables on the Springfield show that at 50 feet the bullet penetrates 33.5 inches of white pine, and at 100 yards 46.7. This is because the bullet, at a distance of 50 feet from the muzzle has not settled down into its flight.

Q. Please tell me what I should use for blacking the sight of my rifle?

A. Camphor gum is used a great deal. When ignited it produces a heavy smoke. Hold the sights in the smoke and all glint will be removed.

Q. What is meant by "drift" in fire-arm ballistics?

A. When a bullet reaches the muzzle of the rifle it revolves about its axis say 1,000 times a minute and a point on its exterior side surface will have an axial velocity of about ninety feet per second. This in connection with the resistance of the air produces a lateral drifting of the bullet in the direction in which the grooves turn. This is known as drift. Drift is greater in the descending than in the ascending stage of the bullet's flight. Our present Army rifle has a drift of about one foot to the right at 1,000 yards.

Q. Are commissions in the Quartermaster Corps still open to civilians upon application and examination as they were at the beginning of the war?

A. Commissions in the Quartermaster Corps are no longer obtainable until the applicant has undergone training in an officers' training camp.

Q. Some weeks ago a preparation called "Leadene" was mentioned in an article in ARMS AND THE MAN. Where can this preparation be obtained?

A. The only dealer who we know has this preparation is O'Hare, 33 Bruce Street, Newark, N. J.

Q. When the only available space for a rifle range measures 77 feet, is there any expedient which can be adopted so as to give a full 75-foot range in this space?

A. About the only way this could be accomplished would be to erect a shooting shack on the outside of the wall facing the targets, pierce the wall with port holes and shoot from inside the shack. This would leave two feet of clearance for the installation of the bullet stops.





Four 4-shot targets (exact size) shot at 75 feet by Charles H. Kelley of the Boston Rifle and Revolver Club, using the new U. S. .22 N. R. A. Long Rifle Lesmok Cartridge

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## ALONG THE FIRING LINE

man—F. A. Nelson, 160; R. M. Bush, 159; C. H. Cushman, 157; E. A. Peters, 152; H. H. Howells, 150.

Corporal Sterling, of the Lewis Machine Gun Company, qualified as a marksman with a score of 153.

Johnny Siefert won the Crossman trophy for G. L. Wotykn recently at the range of the Los Angeles, California, Rifle and Revolver Club, by insisting on making only 17 in the kneeling position to 37 for Mr. Wotykn, and so letting the said Mr. Wotykn take the third and final leg. Inasmuch as Mr. S. was high at both offhand and prone for the twain—both having two legs apiece on the trophy—it appeared that either Mr. Siefert had a change of heart about wanting the trophy, when he got the kneeling stage, or else he's very little accustomed to that position.

Immediately thereafter Mr. Wotykn insisted on putting up the trophy for three more wins by the gentleman able to score them first, and so the trophy becomes the Wotykn Trophy with the minor proviso that he can shoot for his own prize.

The feature of the day was the poor shooting, particularly offhand, and then with the kneel a close second. High man, ineligible, had but 105, high man whose score counted, but 104, whereas high score at the last shoot was 121.

Ed Neff of Pasadena ran second, and two points more would have put him high man and postponed to some future date the win by Mr. Wotykn, the logical winner from the first.

Members of the Montclair, New Jersey, Rifle Club and the Montclair Battalion shot for two merchandise prizes presented by Lieutenant Macdonald, of the staff on November 17. One prize was an ash receiver made from a shrapnel shell, the other a paper cutter made from a Russian bayonet. The conditions of the match called for ten shots on the D target at 200 yards, the time taken to fire the ten shots being a factor, as well as the score. The match was well contested by a number of the experts, and was finally won by Sergeant G. F. Hewitt, Jr., of Company A, who made 46 in thirty-seven seconds, which gave him a quotient of 1.24. Second prize went to Captain M. W. Huttenloch, Lewis Machine Gun Company, who fired his ten shots in thirty-three seconds, but only scored 39, making his quotient 1.18. The third highest score was made by the donor, Lieutenant H. P. Macdonald, staff, who scored 40 in thirty-four seconds, giving 1.17.

The target boys match caused no end of discussion before hand as to which one would be champion. The honor fell to the lot of I. M. Benjamin, who put up the fine score of 24 out of 25 in five shots on the B target at 200 yards. E. Taylor pushed him very hard for first place and gave him no chance for a slip, as he made 23 in his five shots. W. Madi-

son came in third with 20, and Verbank fourth. In the class B, Danielson was first with 19, A. Seigel second, with 18; R. Seigel third, 17, and M. Parker fourth, 16. The club presented bronze medals for the four highest scores in each class.

The following members of Company A, Montclair Battalion, have qualified since last report: Experts—Corporal W. L. Conwell, 151; Corporal C. O. Heydt, 146; Private E. W. Robinson, 142; Private Lubin Palmer, 145.

Sharpshooters—Private, H. R. Ahrens, 153; Private L. J. Bevan, 154; Private J. A. Chambers, 162; Sergeant F. J. Hutchison, 155.

Marksmen—Corporal H. J. Porter, 151; Private F. W. Budelman, 151; Private L. M. Conant, 157; Private D. H. McKean, 165; Private K. P. Moore, 156; Private W. H. Swenarton, 153; Private H. R. Sherman, Jr., 158.

Company B members who qualified are: Sharpshooters—Private J. J. Sinclair, 159; Lieutenant A. M. Torrey, 150. Marksmen—Private O. H. Blackman, 155.

Those who qualified from Company C are: Marksmen—Corporal H. M. Best, 151; Private J. G. Wright, 150.

Following are the members of Company D who qualified: Expert—R. F. Arnott, 142. Sharpshooter—R. F. Arnott, 151. Marks-



The scores: Pan American target, 300 yards, 5 shots standing, kneeling and prone, possible 150 total.

	Stand- ing	Kneel ing	Prone	Total
E. C. Crossman	27	35	43	105
G. L. Wotykn	27	37	40	104
E. D. Neff	24	42	36	102
J. F. Siefert	37	17	42	96
F. Payne	30	24	26	87
E. C. Price	22	22	31	85
Tom Jordan	14	26	42	82
Mrs. Crossman	20	15	44	79
B. C. Lembke	8	17	38	63

The Toronto, Canada, Revolver Club defeated Montreal A.A.A. in their second match of the season by the score of 998 to 987.

Each man has ten shots each at two targets. Five more matches remain to be shot off. Toronto won the first two. The scores:—

Montreal A. A. A.			
K. D. Young	92	77	169
A. M. Green	85	82	167
J. H. D'Aigle	75	90	165
F. Dumfries	79	84	163
S. Allen	77	86	163
D. E. Sanders	80	82	162
Total			989

Toronto Revolver Club			
A. Rutherford	90	84	174
J. P. White	84	89	173
W. J. Medforth	87	80	167
T. G. Margetts	79	83	162
R. Clarke	75	86	161
M. P. Rose	86	75	161
Total			998

## RICOCHETS

On a rifle range strange to them, the five-man team of the soldiers stationed in Anaconda, Montana, were defeated 130 points by the squad of the Anaconda Rifle club recently. Seven men shot for each side, the high five scores for the team counting in the match.

The rifle club members have been practicing during the summer, and their victory is attributed to advantage in facilities for range shooting. The figures for 300, 500 and 600 yards, slow fire:

SOLDIERS			
Gasaway	41	42	45-128
Richards	40	35	24-99
Borland	39	34	26-99
Wright	32	39	28-99
Kitchens	38	33	25-96
Team total			521

RIFLE CLUB			
Griffing	44	49	44-137
Sweeney	43	45	44-132
Davidson	43	49	38-130
Vestal	46	44	38-128
Fisher	44	42	38-124
Team total			651

Five members of the Davenport, Iowa, Rifle Club have qualified as expert riflemen. They are: J. J. Rohlk, 218; J. LeRoy Vosburg, 215; C. G. Schlegel, 214; Lester Dau, 210, and Harold Jacobson, 210.

Burt LeRoy Cole, on a score of 113 won the Members' Match Shot November 11, by the Kennewick, Washington, Rifle Club. Thirteen members participated in the match.

On a score of 122, R. P. Farmer won the Members' Match of the Manchester, New Hampshire, Rifle Club shot recently. Twelve

members participated. Two other competitors made higher scores than Farmer, but were not eligible to win the medal. They were R. J. Smith and S. P. Dodge.

H. I. Sohner and J. J. Huff, of the Bureau of Chemistry Rifle Club, Washington, D. C., tied for winning place in the Members' Match of that organization, shot October 31, on the Congress Heights Range. Both men made 117. In the shoot-off Sohner made 19 against Huff's 13, and has been declared winner of the competition.

Thirteen marksmen qualifications have been made by members of the Schuylkill Haven, Pennsylvania, Rifle Club. The men and their scores are: W. E. Stine, 180; R. Jacoby, 173; W. Quinter, 173; G. Umbenhauer, 171; Joe James, 166; H. Raudenbush, 162; C. Shadler, 162; J. F. Gehrig, 160; Harvey Heim, 160; S. Buehler, 158; J. M. Ebling, 155; J. O. Lessig, 152; P. Collier, 152.

Marcus P. Sawtelle, of Albuquerque, New Mexico, won the Members' Match of the Duke City Rifle Association, shot October 28, in which fifteen members participated. Sawtelle made a score of 143.

L. H. Knox, of the Ridgeville, Illinois, Rifle Club, has qualified as a marksman with a score of 180. The score was shot on the Naval

Range at Great Lakes Training Station, Illinois.

The Members' Match of the Capital City, Rifle Club of Sacramento, California, was shot October 28. The contest was rendered difficult by a gusty wind. W. G. Hanson won the shoot with a score of 138, having made a possible at rapid fire. A. D. Gaskins made a possible at 500 yards slow fire.

Ten expert riflemen, nine sharpshooters, and twenty marksmen have been qualified by the San Francisco Telephone Rifle Club.

The experts are: C. T. Blanck, 233; A. L. Sawyer, 220; S. W. Forsythe, 221; L. E. Way, 213; R. W. Mastick, 213; A. C. Rogers, 211; C. A. Turner, 210; C. W. Linder, 225; F. Prince, 212; A. L. Scoville, 212.

The sharpshooters are: L. J. Crammer, 205; G. F. Comstock, 204; B. W. Hellings, 203; L. A. Searight, 201; F. M. Norton, 194; E. Hoesl, 193; E. A. Lhuillier, 193; J. Brincard, 193; B. A. Swartz, 190.

The marksmen are: J. E. Heller, 188; C. E. Rogers, 187; H. A. Ahlff, 187; A. E. Dyberg, 183; L. A. Kistler, 179; J. Gooch, 179; R. A. Bellinge, 179; P. W. Blanck, 177; R. H. Ajard, 175; P. P. Leininger, 173; E. B. Sweeney, 171; C. E. Michaelis, 171; R. C. Newman, 170; H. U. Linkins, 168; J. G. Lescollett, 167; W. H. Fairbanks, 167; R. W. Laverty, 164; E. Volmer, 163; H. F. Ellenor, 162; L. T. Thompson, 165.

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**WANTED**—Colt Automatic Pistol, cal. .22. State exact condition and price in first letter. R. S. Tichenor, Princeton Rifle Club, Princeton, Indiana.

**FOR SALE**—Star Gauged Springfield in new condition. Ideal reloading tool complete. New sling strap, quantity of empties; service, reduced and gallery loads, \$30.00. Also Stevens 486 Telescope, fine shape, very brilliant, mounts and blocks, complete \$15.00. C. B. Spraker, 250 Pinnacle Road, Rochester, N. Y.

**WANTED**—Two New Springfields, \$25.00 each. Ship subject to inspection. Must have checked butt plates and triggers. Action in good condition. Also want 1000 empty '06 Government shells, 1c each. F. A. Williams, 302 Whitney Ave., Detroit, Mich.

**FOR SALE**—Stevens No. 404 .22 Long Rifle, perfect shooter, and condition. Extra Lyman Tang sight, price \$27.00. W. B. Worstall, Zanesville, Ohio.

**FOR SALE**—Krag, very fine, special selected barrel, sling and 180 shells, \$20.00. Leonard J. Miller, 102 South Oxford St., Brooklyn, N. Y.

**WANTED**—25 to 100 .256 Newton Shells, made from 30 U. S. G. shells by necking down. Must not have frayed edges nor enlarged pockets. State price. M. de W. Hemmeon, Guipboro, North Carolina.

**FOR SALE**—One Krag Rifle, first class condition, with muzz'e cover and sling. Price \$15.00. J. R. Ziegler, Webster City Rifle Club, Webster, Iowa.

**FOR TRADE**—A used M. J. Kalashen, Silver Plated, B Flat Cornet in Plush Lined Case, for 22 H. P. 30-30 Carbine or 38 Special Revolver. Ray Stow, Webster City, Iowa.

**FOR SALE**—.22 cal. Target Rifle. Ballard action, Andrews special hand-made barrel, adjustable globe sights, perfect condition, accurate shooter. C. O. Clark, 13317 Claiborne Road, East Cleveland, Ohio.

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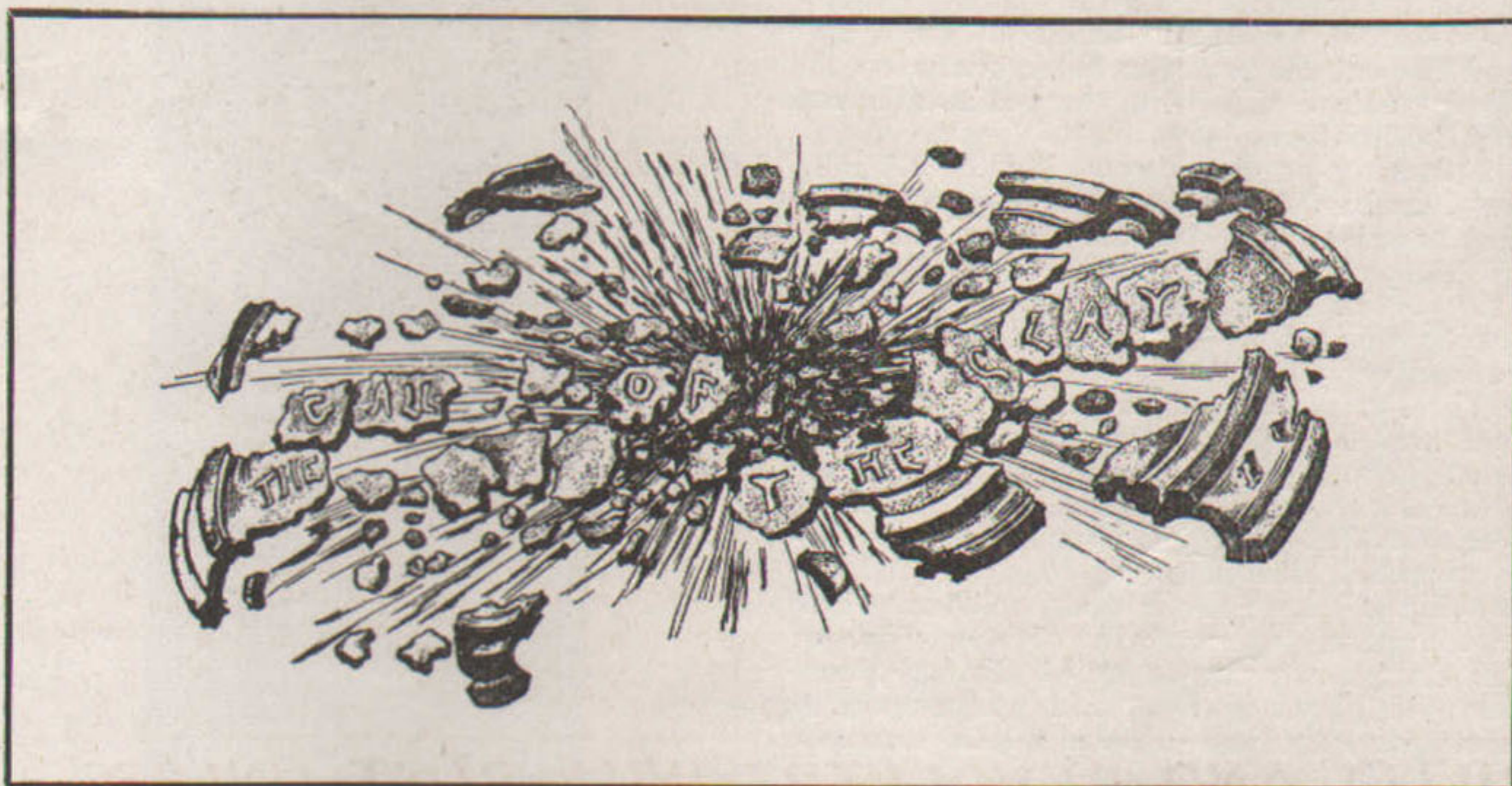
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## Chicago For Sixth Time Gets the Grand American

As in 1917 the Trapshooting Classic Will Be Shot Over the Traps of the South Shore Country Club—Contestants Will Wear Numbers and 100 Prizes Will Be Given if More Than 350 Entries

By PETER P. CARNEY

CHICAGO will be the scene of the Grand American trapshooting tournament—the blue-ribbon event of trapdom—in 1918. The place of action will be the South Shore Country Club, where the 1917 tournament was conducted.

The Interstate Association—the national body of trapshooting—and the target breakers in general appear partial to the Windy City when it comes to making a selection for the trapshooting classic. This will be the sixth Grand American in Chicago in 19 years. It was first staged in Chicago in 1907 and played return engagements in 1909, 1910, 1915 and 1917.

And the greatest of all tournaments was the one of 1917. There is no better spot in the world to stage such a tournament as the Grand American than at the South Shore Country Club, and when the Chicago organization made a request for the 1918 tournament there was no one to say them no.

There will be a few changes in the handling of the 1918 tournament—all for the better. There will be no professional matches each day, as in the past. The professionals will shoot down the line with the amateurs on the opening day of the tournament—in the introductory event at 18 yards—and the one who makes the high score will be hailed as the professional champion of 1918. This shooting will wind up the professional for the week. As time goes on less is seen of the trapshooting professional in competition.

The shooters will be numbered, too. Trapshooting is about the last sport to take to the numbering of its contestants, but the reason for this is that no one suggested the idea before. It will be easy to understand just

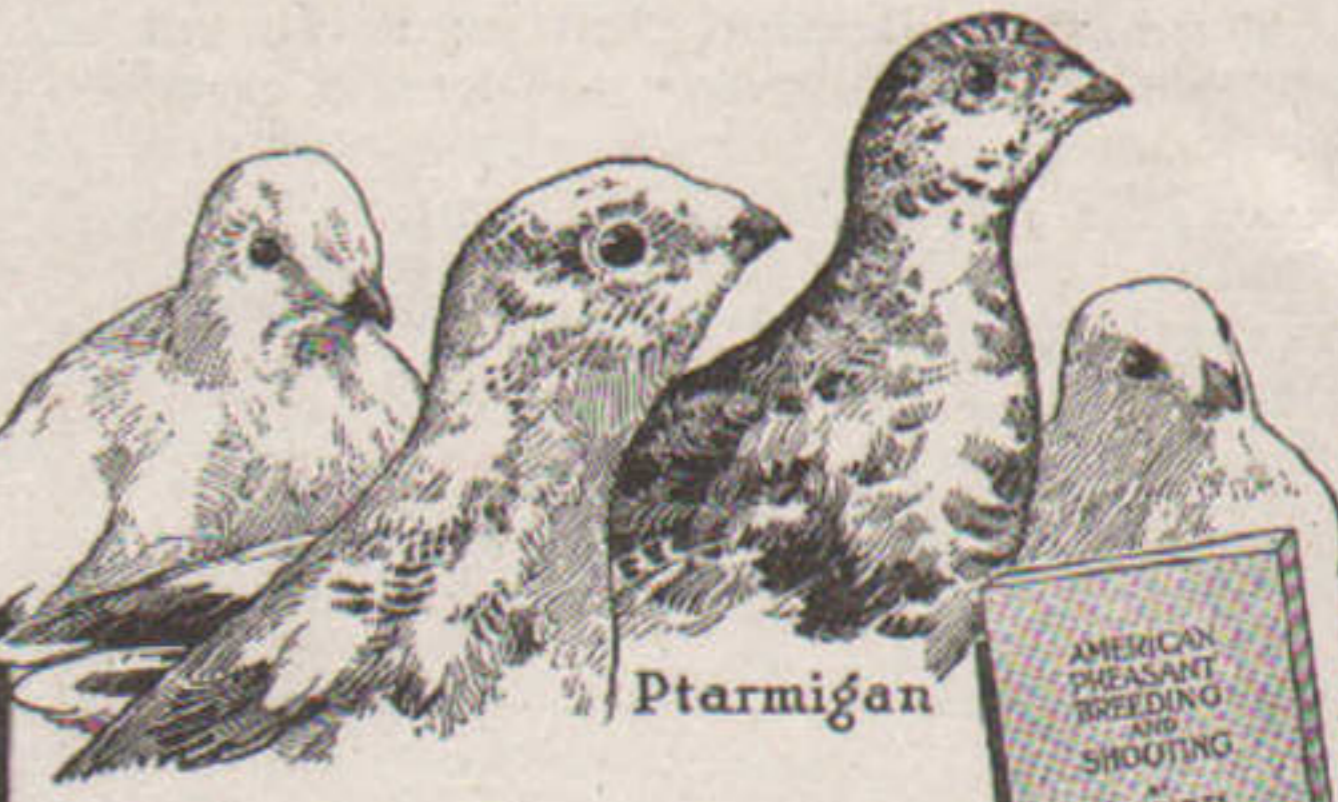
how much of a benefit it will be to the spectators to have the shooters numbered and a program to tell them who is who when 100 or more men are at the traps at one time. It will make it easier for every one to get acquainted.

These numbers will be furnished by the South Shore Country Club, and the program, showing handicaps of all entrants, where they are from, etc., will be distributed by the Interstate Association. This idea will bring the spectators in closer touch with the sport. The scheme might be carried through in all State championship tournaments, too; in fact, in every shoot where there are more than 25 competitors.

A change that interests every trapshooter was that of making 100 prizes if the entry list exceeded 350 in the Preliminary or Grand American Handicaps. If the number of entrants falls short of 350, then the prize list remains as it is now—50 places. For the past five years, however, the entrants have exceeded 500.

There was no end of important happenings at the annual meeting of the Interstate Association, the most important being the abandonment of the subsidiary handicaps for 1918. In place of the Eastern, Western, Southern and Pacific Coast Handicaps, the Tournament Committee was delegated to find ways of conducting a handicap event at each of the 46 State championship tournaments. The money that was given to the four subsidiary handicaps will be given the handicaps conducted by the State associations.

This move is a radical one, but it was the opinion that the subsidiary handicaps did not promote trapshooting as it was thought they



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would, and the association thought a change was necessary—and thought this was the time to make the move.

In connection with every one of the amateur State championships there will be a professional championship. The professionals who reside in the State will be allowed to shoot along with the amateurs, and the professional who makes the highest score will be regarded as the professional champion of that State.

The 1918 policy of the association will be the same as in 1917, outside of the fact that the number of registered tournaments in some sections may be cut down. There is a feeling that in some sections there are too many registered tournaments, and the Tournament Committee was instructed to delve into the matter with the State associations and work out an equitable plan for every State.

### Traps Installed at Flying Schools

Following the decision to train aviators in snapshooting with the scattergun, plans have been made for the installation of traps at the cantonments and aviation schools.

The following letter addressed to the gun and ammunition interests by the aviation section of the Signal Corps bespeaks the government attitude:

"The importance of shooting from an airplane is brought home to us every day from the European front. It is the intention of the aviation section of the Signal Corps to give the candidates for flying instruction as much practice as possible with the shotgun, rifle and machine gun.

"In order to accomplish this in the most desirable way we have reached the conclusion that the shotgun would be the best adapted for our purpose, and this instruction can be obtained readily at the fields.

"If possible, we would like to obtain the names of men competent to act as instructors, near the following mentioned flying schools, so that the instruction can be given without unnecessary expense or delay.

"The schools are located at San Diego, Cal., Houston, Tex., Rantoul, Ill., Waco, Tex., Essington, Pa., Fairfield, Ohio, Hampton, Va., Dallas, Tex., San Antonio, Tex., Mineola, L. I., N. Y., Winchita Falls, Tex., Mt. Clemens, Mich., Belleville, Ill., Fort Sill, Okla., Memphis, Tenn., Lake Charles, La."

That the government fully believes that the



shotgun and buckshot will be useful in the preliminary training for this war is evidenced by the erection of traps at the cantonments at American Lake, Wash.; Quantico, Va., and Kansas City, Mo. Professionals are at each of these camps giving instruction in the breaking of the clay targets, the holding and firing of the shotgun.

Traps have been placed in position at all of the aviation schools in America, and a number have been installed in the camps of the American aviation forces and behind the lines of Pershing's army in France. Eighty-six traps in all have been purchased by the government. The traps sent to France are to be used for recreation purposes, while the ones installed in this country are for instruction purposes only.

In due course of time traps will be placed at every cantonment, and there will be instructors to teach the proper method in shooting at clay targets. In taking up trapshooting the government gives voice to the opinion that men who can handle the shotgun, and trapshooters, are of material aid in warfare.

With 86 traps in operation untold quantities of clay targets will be needed. The first order placed was for three million (3,000,000) equally divided between America and France. The clay target makers have a standing order for 1,000,000 clay birds each week, to be distributed among the various schools and cantonments.

The action of the government in adopting trapshooting will have a beneficial effect on clay target shooting when the war is over. Making trapshooting part of the instruction at the cantonments and aviation schools shows that there is something back of it besides sport—that it has a real foundation.

Government approbation will make trapshooting a major sport.

## Scattering Shot

**G**OVERNOR THOMAS E. CAMPBELL was a participant in the recent Arizona State tournament.

More than 150 automobile, golf and country clubs have installed complete trapshooting equipment during the past year.

The Wilmington, Delaware, Trapshooting Association has just taken possession of its clubhouse "de luxe" and the Wilmington Country Club, not to be outdone, has contracted for the erection of a shooting lodge.

C. O. Hedstrom, inventor of the Indian Motorcycle; W. S. Harley, president of the Harley-Davidson Motorcycle Company, and former Governor Foulke, of Missouri, became devotees of trapshooting at the Atlantic City school during the summer.

The Philadelphia Trapshooters' League has done away with the Lewis Class System and installed a class system of its own, the classes being made up by the secretary.

Hundreds of women are taking to trapshooting. There are as many women trapshooters now as there are women golfers.

R. H. Bungay, of Venice, Cal., is doing remarkable work at the traps. In a recent tournament at Los Angeles he broke 390x400 and at Venice later he broke 395 out of 400.

There were big men, fat men, lean men, short men, tall men, rich men, poor men, millionaires, laboring men, and all other kinds of men not mentioned in the Grand American Handicap—all meeting on common ground. In no other sport is the spirit of democracy shown as in trapshooting.

Two State championships have been decided lately. H. P. De Mund won the title in Arizona and R. A. Hall in Virginia.

In a recent shoot at Venice, Cal., a squad composed of Pfirman, Mellus, Bungay, Dodds and Whitcomb, broke 477x500 targets, each man shooting from 20 yards. This is more than likely a record for 20 yards squad shooting. Pfirman and Mellus each broke 93; Whitcomb, 94; Dodds, 96, and Bungay, 97.

### EARLY BREECH-LOADERS

"The discoveries of genius alone remain" was written by Buckle about 60 years ago, and formed the text for observations on the fleeting nature of political changes and the rise and fall of individuals.

Enlarging on this theme, Mr. F. Nicholls, in "Chambers' Magazine," referring to the fact that breech-loaders date back before the times of Napoleon—indeed, far back—he says in 1809 a Paris locksmith invented a breech-loader which was submitted to the Emperor and his officers.

The Paris locksmith had a journeyman who had been a pupil of Berthollet, one of the most distinguished chemists of the French school, who, born in Savoy, 1748, settled in Paris in 1772. Berthollet rendered great services to the Revolution in preparing and improving saltpetre on French soil, of which there was a great scarcity. He was one of the savants who accompanied General Bonaparte to Egypt in 1798, and was a man of great modesty and unostentatious manners. He died in Paris in 1822.

The journeyman, Dreyse by name, betook himself to Prussia in 1827, and settled there as an engineer, and soon afterwards he offered the Prussian government a Zundnadelgewehr, or needle-gun, which was loaded from the muzzle. The peculiarity of his invention was in the absence of gun-powder in the propulsion of the bullet. The needle, propelled by a hammer, struck a bullet to which a fulminate was affixed. In 1828 Dreyse had improved on his invention; his needle was now propelled by a spiral spring.

The needle-gun was not immediately adopted; but the subject attracted the attention of the Crown Prince of Prussia, afterwards King Frederick William the Fourth. From 1829 to 1836 a variety of experiments were tried, and at length a gun was invented which was loaded from the breech, and the bullet was propelled through rifled grooves. The two conditions of rapidity and accuracy of flight were thus secured. Trials determined the value of the weapon, and in 1841 sixty thousand of the breech-loading rifles were served out to the Prussian army. The Prussian government, delighted with the new invention, declared it to be the perfection of military arms, "and a special dispensation of Providence for the strengthening of the national resources," and a hope was expressed that "the system might be kept secret until the great part which it was destined to play in history might couple it with the glory of Prussian arms and the extension of empire." It could not be altogether kept "secret," but the dullness and stupid conservatism of other nations served Prussia's cause well. These breech-loaders were used by the Prussian troops successfully in putting down an insurrection in Rhineland in 1849. A patent was taken out in 1807 by a clergyman, the Rev. Mr. Forsyth, for percussion caps, but it took the War Office thirty-one years to change flint muskets to percussion rifles, and General Anson, of the Ordnance Department, gave his opinion that the Prussians had been too hasty in adopting the breech-loader, and he was satisfied that British troops with the arms they had would be found superior to any other soldiers in the world, and it was ridiculous to suppose that two armies could fight at a distance of 500 or 600 yards.—*Exchange.*

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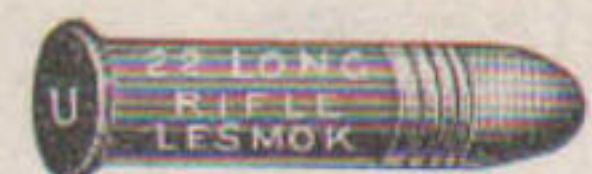
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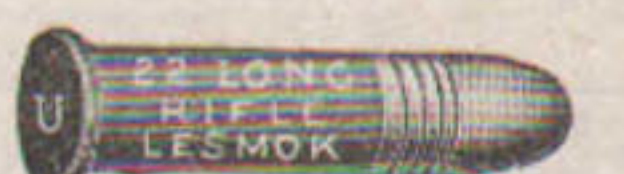
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