

ARMS AND
THE MAN

THE BERTHIER QUICK-FIRER
SEA-SOLDIERS TO WEAR TRENCH HELMETS
THIRTY YEARS AGO ON THE FIRING LINE

No. 3

LITTLE TALKS ABOUT TEAMWORK
Elevation and Windage

EDITORIALS

and

THE LATEST NEWS OF RIFLE, REVOLVER AND
SHOTGUN, THE ARMY, THE NAVY AND
THE NATIONAL GUARD

VOL. LXII, NO. 3



APRIL 14, 1917

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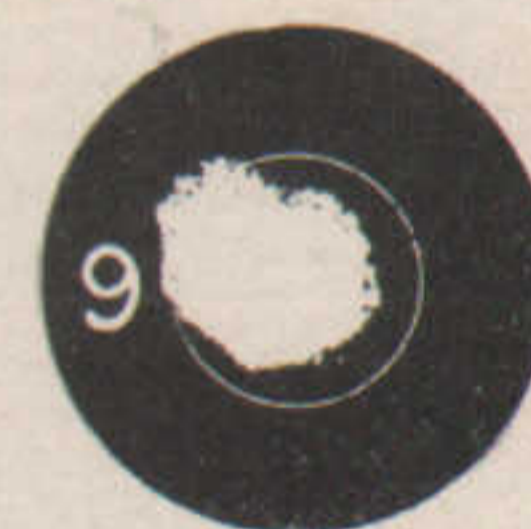
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ARMS AND



THE MAN

The Official Organ of the National Rifle Association of America

Volume LXII, No. 3

WASHINGTON, D. C., APRIL 14, 1917

\$3 a year. 10 cents a copy

The Machine Gun in the U. S. Army

By STEPHEN TRASK

Part 4—THE BERTHIER QUICKFIRER



The new Berthier Quickfirer, now being tested by the Navy Department. Illustration shows the air-cooled type.

WHEN the onrushing hordes of Germany swept across Belgium toward Liege, at the outbreak of the European war, battered down the defences of the city and poured in to occupy, the Pipier Works, where a new machine gun was being manufactured, was abandoned.

Within the factory were blue-prints and working models of the quick-firer. The shops were even then busy constructing jigs, tools, gauges and special machinery for the manufacture of the machine guns for the company owning the patents.

But while the workmen dropped their tools and joined the exodus of citizens, abandoning the new gun to capture, one of the directors of the company came clear through the confusion and peril.

Ultimately he regained Paris. With him he brought a single set of blue-prints and a badly worn working model of the rapid-firer.

Of the other models and working drawings which fell into the hands of the German invaders, nothing is known save that it is believed—but not verified—that from those blue-prints and models were constructed the "one-man" machine gun with which battle rumor says the Kaiser's men are equipped.

From the model which reached Paris—a gun chambered for Belgian ammunition, 40,000 rounds of which had already been fired from it—new guns were constructed, and at the

present time these new quick-firers are being given final trials at the Marine Corps Rifle Range, Winthrop, Md.

The new machine gun is called the Berthier. It is the invention of General Andre Berthier-Pacha, of the French army, who took out patents upon it about eight years ago.

Already in the French service the Berthier quick-firer has been adapted not only to infantry use, but to cavalry use as well, and among the airmen it is known as the *mitrailleuse d'Avion Berthier*. A fourth type, with a steel shield, has been developed for trench use.

After the capture of the Pipier Works at Liege, the Hopkins & Allen Company, gunsmiths, of Massachusetts, made arrangements with General Berthier to take over the sample Belgian gun and the blue-prints which had been saved from the sack of Liege, and to manufacture the quick-firers in this country.

The gun shooting Belgian ammunition was exhibited to the Government officials in Washington, who stated that if the gun could be constructed to shoot the U. S. service ammunition, with its greater chamber pressure than that of the ammunition of European armies, it appeared worthy of the most careful consideration, because of its extreme mobility.

A gun was then designed and built to meet the requirements of the United States Government. The gun functioned so satisfactorily that the Navy Department ordered a lot of five

for test purposes, and since then have placed orders for several hundred additional.

The Berthier quick-firer is offered to the Government purely and simply as the lightest machine gun which has yet actually appeared, the United States model weighing in the neighborhood of only 18 pounds. This extreme light weight and its lack of bulk make possible its handling by a single man, according to the claims of the manufacturers.

The new quick-firer is a gas-operated gun, and has been manufactured in two models. The first and lightest is the air-cooled type, the barrel being protected from overheating by a radiation device similar to those in use upon both the Benet-Mercier and the Colts.

In the water-cooled type, however, a system quite different from that apparent in any of the other types of machine guns has been adopted. As in most other guns, however, the water cooling is, of course, based upon a water jacket which surrounds the

barrel. The water itself is not confined to this jacket, but circulates, under pressure, from a water bag, from which a connection runs to that part of the jacket nearest the breech of the weapon. The circulation of the water, it is claimed, keeps the temperature of the barrel to about 100 degrees Centigrade, and with a supply of 6 litres of water, the gun can fire 2,000 rounds without overheating. Whatever steam is generated in the water jacket passes off through a connection near the forward part of the cooling apparatus, to be taken up in a sponge condenser. This feature of the gun does away with the escape of the steam, which in many instances during the present war has betrayed the location of a machine gun to enemy sharpshooters.

The air-cooled model weighs, it is said, about 18 pounds, while the water-cooled model, with water jacket filled, condenser in position and magazine in place, weighs several pounds more.

While in the general principles of its operation the Berthier gun does not

differ so radically from other gas-operated machine guns, an effort has been made to simplify its mechanism and the gun under test at present possesses a remarkably simple breech mechanism, and in the entire construction of the gun there are but 71 parts. Its 9 major parts, the manufacturers claim, can be taken to pieces in less than 10 seconds and re-assembled in less than 20 seconds.

In the system adapted for feeding the gun, a departure from ordinary methods is apparent. The inventor of the gun has avoided the use of either the clip or the belt, and feeds the breech from a magazine holding either 30, 40 or 50 cartridges, as desired. The maximum rate of fire of the Berthier gun is placed at 600 rounds a minute. The use of the magazine, instead of the clip or the belt, is believed to militate toward the easier reduction of jams, and the time to remove an empty magazine and replace it with a loaded one is fixed at from 1 to 2 seconds.

Grenades and Grenadiers

(From *The Regiment*)

THE trite saying that "history repeats itself" is especially applicable to military history, and the use of the hand grenade as an infantry missile in the present war affords us a striking illustration of its truth. The re-introduction of the grenade and the rehabilitation of the Grenadier arise from very much the same causes which led to their first inception in the armies of the European Powers towards the latter end of the 17th century.

The hand grenade (the name derived from "granada", the Spanish word for a pomegranate, from a fancied resemblance of the projectile to the fruit) was a Spanish invention, dating from the middle of the 15th century, at which period the Spanish Royal Standing Army held the place of the Imperial German Army of yore, facile princes among the armies of Europe. Its use was for long confined to the scientific branches of the Artillerists and Engineers, who were then counted as civilian auxiliaries to the three combatant arms of the service, Horse, Foot and Dragoons. We find the hand grenade mentioned in a military treatise as early as 1472, and meet with occasional mention of its use in siege operations during the course of the 16th and 17th centuries.

Great quantities of glass grenades were used by the Venetians in the famous siege of Candia by the Turks (1667-69), which lasted without intermission for three years, and in the course of which the resources of attack and defense were developed in a man-

ner hitherto undreamed of in Europe.

In the year 1667 King Louis XIV decreed that four picked men in each company of every regiment of French infantry should be trained to use hand grenades. These trained men were assembled for tactical purposes in a provisional company under picked officers, but were mustered and paid in their own companies. This arrangement did not last long, and the Grenadiers of a battalion were soon formed into a permanent company. Some 10 years later Grenadier companies were established in British regiments of Foot. Evelyn in his memoirs speaks of a "new kind of soldiers called Grenadiers, wearing furred caps with coped crowns like Janizaries with long hoods hanging down behind, as we picture fools, their clothing being likewise py-bald, yellow and red."

Grenadier companies were soon instituted in all the infantry regiments of all the armies of Europe, their special function being to act as a forlorn hope in the assaults upon the fortresses which at that time constituted the main objective of an invading army. For this purpose the men carried hand grenades to search out the ditches and covered ways, and hatchets to hew down the palisades which then served the purpose of modern wire entanglements.

The Grenadiers were armed like the rest of the infantry with muskets and bayonets and with short swords, writes Lieut.-General F. H. Tyrrell, in the *United Service Magazine*. There officers and sergeants carried fusils (a

lighter and shorter description of musket) and bayonets instead of the half-pikes and halberts carried by the similar ranks in the battalion companies. Fusilier regiments were so named from their being originally armed with these fusils. When the halbert was discontinued, the sergeants of regiments of foot were armed with fusils. The light infantry regiments of the Madras Army carried fusils up to 1860. A musket was invented with a cup-shaped projection at the end of the barrel from which a grenade might be thrown, but it never came into general use.

In 1678 a troop of Horse-Grenadiers was added to each of the three troops of the English King's Life Guards. They were equipped and armed like the Grenadiers of the infantry, and dismounted to fight, linking their horses and leaving them in charge of some of their men. The second Royal North British Dragoons (Scots Greys) were also made a Grenadier corps, but no further formations of mounted Grenadiers were proceeded with in the French and British Armies.

The improvement in fire tactics, due to the suppression of the matchlock by the flintlock musket, was probably mainly responsible for the abandonment of the grenade, which ceased to be carried by the Grenadier as part of his equipment, and was only occasionally used in siege operations.

It was used with good effect by the British Grenadiers in the combined

(Concluded on page 46)

Sea Soldiers to Wear Trench Helmets

UP at the Marine Corps supply depot in Philadelphia there are being assembled a number of strange machines. In the depot store-rooms there has already been gathered a large supply of chilled-steel plates, rolled to meet certain requirements. The steel plates are fodder for the machines, which within a few weeks, at most, can be put in operation stamping out a sufficient number of bullet-resistant trench helmets to equip the entire corps.

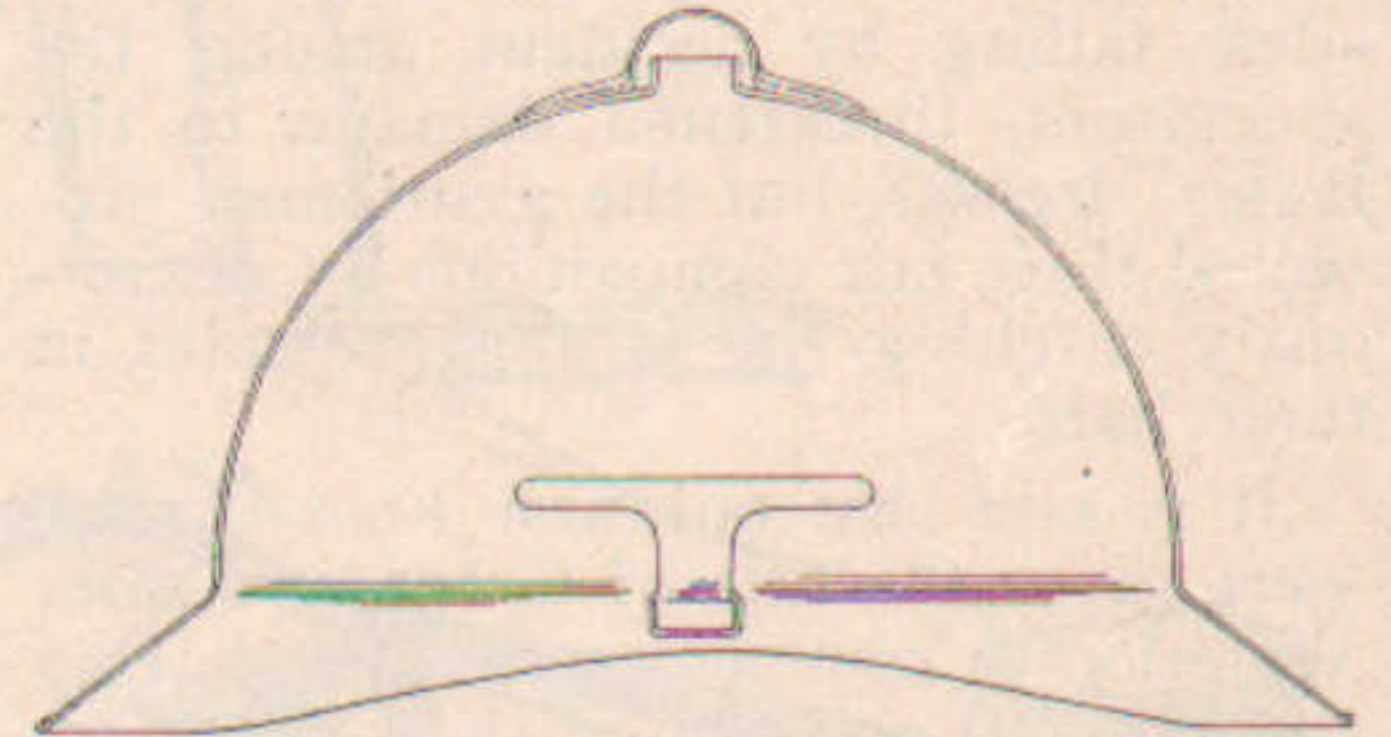
Ever since the European war embattled the Entente against the Central powers, the trench helmet—a modern scion of the armor of medieval armor—has played no small part in the equipment of the European soldiers. The French were perhaps the first of the warring nations to actually equip their men with bullet-proof headgear, and every means was used to obtain the greatest bullet resistance possible. A story was recently told by a well-known ballistic expert of a French helmet which was tested in this country. The particular helmet in question resisted eight steel-jacketed bullets fired at 100 feet from the Springfield rifle, and broke only upon the impact of the ninth missile. This, of course, was an unusual case.

In a short time after actual hostilities

viding its men with adequate protection against the red rain of shrapnel.

The War Department experts of the United States were not slow to read the

of modern warfare, where not only shrapnel but steel-jacketed bullets with velocities of 2,700 foot seconds must be taken into consideration, is not a dupli-



Front and Side View of Design for Marine Corps Helmet

lesson of the trench helmets from the battlefields of Europe. Samples of practically every design used abroad found their way into the Ordnance Department during the first year of the great conflict.

So far the Army has not definitely fixed upon the specifications for a trench helmet for use by the infantry, cavalry and field artillery. It is practically certain, however, that in a short time a type

cate of any of the styles now in use in Europe.

When the officials of the Marine Corps determined definitely upon adding a steel helmet to the field equipment of the men, it was natural that the types already in use and which were regarded by other nations as satisfactory should have been inspected.

From the samples of helmets brought from Europe, the Marine Corps officials selected the British and the French helmets as possessing the qualities both of practicability and bullet-resistance that they desired incorporated in the Marine Corps spitzer-proof headgear.

The British helmet, shallow with a gradually sloping crown to fend off any glancing impact—its lines suggest nothing so much as a cleric's "shovel-brim"—was, after due consideration, deemed a bit too heavy, and was subject to disarrangement which would permit of a more direct impact from steel-jacketed bullets than other types.

The French helmet also had its fault, although it was of far lighter weight than the British helmet.

And so, taking the better points from each of these helmets, the Marine Corps officials set about designing one of its own.

The new Marine Corps helmet follows generally the lines of the French helmet, except that it has been given some of the slope of the British helmet, and some of its brim, to afford greater protection to the ears of the wearer. In weight the Marine Corps helmet is also a compromise between the French and English. In short, the new helmet is designed to follow the conformation of the French type, with the resistance of the British. As a protection to the head, the helmet

(Concluded on page 50)



Left, British Trench Helmet; Right, French Trench Helmet

had begun, England and Germany each followed the lead of the French, the British adopting a wide-brimmed helmet and the German army clinging more closely to the lines of the Crusader's iron headgear. The German helmet, when intended for use by snipers, was reinforced across the brow by a supplemental plate of thin Krupp armor.

And so no pains were spared and no time lost by any of the nations in pro-

similar to that of the English helmet will be given official sanction and their manufacture rushed.

It has therefore remained for the Marine Corps to be the first of the United Services to actually adopt a trench helmet, and to actually prepare for its manufacture.

The Marine Corps helmets, while differing not so greatly from certain of the types accepted as adaptable to conditions

GRENADES AND GRENADIERS

(Concluded from page 44)

naval and military raid on the French port of St. Malo in 1758. As late as 1775 an English traveller who witnessed a review of a Swiss regiment in the service of the King of Naples relates that their Grenadiers performed their exercise with sham paste-board grenades filled with some detonating mixture. Some of these missiles, falling by accident among the spectators, threatened damage to the ladies' dresses, but the gentlemen protected their fair companions by dexterously catching the falling grenades in their hats.

It is said that our first Foot Guards were given the title of Grenadiers after Waterloo to commemorate their having encountered and routed the Grenadiers of the Old Guard in that final ruin of their Imperial Master's hopes and glories.

An officer of the Grenadier company of a Swiss regiment in the service of Napoleon has left it on record in his memoirs that he would have been frozen to death after the passage of the Beresina but for a change of dry

underclothing which he had carried packed inside his bearskin cap.

When a mutiny among the Sepoys of Sir Hector Monro's army in Oude had been suppressed, many of the mutineers were sentenced to be blown from guns. While they were being tied to the guns two of them appealed to the officer superintending the execution, pleading that they were Grenadiers, and therefore claimed the right to be blown from the guns on the right of the battery, and their request was granted.

At one time the Grenadiers had the badge of a bursting grenade on all their appointments, and they wore "wings" instead of the epaulettes worn by other troops. The crescent-shaped wings worn by Grenadier officers were of gilt chain edged with three rows of gold bullion for the captains, with two rows for subalterns. A pair of wings cost more than the coat they were worn on; their price was ten guineas for a captain, seven guineas for a lieutenant or ensign.

The bearskin cap had been discontinued for Grenadiers early in the reign of Queen Victoria, at the same time that it was given to the battalion companies of the Foot Guards, who had until then worn the shako. It had

long been the custom, however, for Fusilier regiments to copy the Grenadier companies in the details of their dress and equipment, and these regiments still retain the caps and the badges peculiar to Grenadiers. The Scots Greys also still wear the bearskin cap to remind us that they were once reckoned as Horse-Grenadiers.

The Grenadier Guards are now the only corps which bears the title in the British Army; there are two Grenadier regiments in the Indian Army, and a regiment of the Canadian Militia has also the title of Grenadiers. In the French Army today the name is obsolete; but the Italian Army has two regiments of Grenadiers, the 1st and 2d Granatieri di Sardegna which are recruited from men of exceptionally fine physique. Russia boasts a whole Army Corps composed of Grenadier regiments, which form an intermediate class between the Guards and the Line.

As the siege warfare of the 17th century evolved the Grenadier, the trench warfare of the present day has evolved the bomb thrower. As the South African War saw the revival of the mounted infantry soldier, so the present war has witnessed the re-employment of the Grenadier.

The Value of Marksmanship

A GOOD many people are under the impression that the machine gun has altogether usurped the place of the rifle in warfare, that today and in the days to come the average rifle shot and even the fine marksman must be ranged as of minor importance in tactics. One expert—a civilian and non-combatant as it happens—has actually committed himself to the statement that the rifle is going the way of the "white weapon," the sword, which is now little more than a symbol of military honor and dignity.

That statement, like the report of Mark Twain's death, is much exaggerated. It represents, no doubt, a too violent revulsion from the old War Office theory, which was the basis of practice before the war, that the machine gun, though necessary, was not really a weapon of first-rate consequence.

The superiority of the Lewis machine gun to the German weapon is two-fold. Like all our guns, big and little, it is a sounder article than its German rival, is less liable to break down, and has a longer life. It is also superior in rate of fire and in power and range.

But, however excellent it may be, the machine gun has not, nor ever will, put the rifle out of count. What the former has actually done as the latter's rival was admirably summed up by a National Rifle Association expert, who said to the writer: "The machine gun may have killed quick firing to a con-

siderable extent; it has certainly not killed quick aiming." That is to say, while the machine gun is more effective than a body of average rifle shots pumping lead against time, it has not superseded the group of good marksmen trained not to dwell upon the aim—capable of that almost instantaneous cooperation between hand and eye which is, in point of fact, the secret of success in all games and sports.

The fine marksman, the product of the Bisley bull's-eye school, makes platoon firing valuable, even if not invaluable. But as a sniper he is, and always will be, quite indispensable.

Old criticisms of the Bisley bull's-eye school of marksmanship were confuted in their day, and are no longer taken seriously. It is true the moving body of a German is a very different mark from the bull's-eye on a target. But experience proves—in particular, experience on the West Front—that the man who could get long sequences of bulls at Bisley and come out high up in the King's Prize or some other great and keenly contested competition is the best sniper obtainable, once he has accustomed himself to the conditions of war's form of big-game shooting. He has acquired the rhythmic harmony between hand and eye, the balance of body, the steadiness of nerve, the decision and the precision, which form the basis of absolutely first-rate marksmanship.

The Bisley super-shot is today easily

the best in the business. He is far better than the German snipers, so many of whom have been game wardens in the great sporting domains, rich in four-footed game, of German and Austrian territorial magnates. Townsman though he be, he is better, if only by a narrow margin, than men who have lived open-air lives in the Canadian prairies or in the Australian back blocks or on the South African veldt. He has made sniping a fine art. So, you see, Bisley has justified its existence handsomely enough.

As a marksman the enemy has never been able to teach him anything. But the old adage, "*Fas est et ab hoste doceri*," has come into play nevertheless. In the earlier stages of the war the Germans at least held their own in the perilous sport of sniping which is being practiced every day and all day along the whole front, from the sea to the boundary of Switzerland. This in spite of their inferiority in quantity and quality of marksmanship.

They were, in the first place, rather more clever and resourceful in finding or making hiding-places. That advantage was but temporary. Today British ingenuity has worked out all sorts of cunning ideas of concealment. The British sniper can hide himself so cleverly that you would not dream of him being there until you tripped over his lair.

But what gave the German practi-
(Concluded on page 50)

Thirty Years Ago On the Firing Line

Being short sketches of men who a generation back burned black powder; hand-loaded their own shells; seated bullets apart from the cartridge which contained the charge; made high offhand scores on the Creedmoor target, and kept alive for posterity, the art of marksmanship.

No. 3—T. J. DOLAN

IN the Spring of 1874, T. J. Dolan, recruit in the 12th Regiment, N. Y. N. G., shot his first match on the difficult Creedmoor Range. At 200 yards he scored only 6 points out of 20 on the old square bull's-eye target, the highest count on which was a four. When he moved down to the 500-yard range, he couldn't find even the rim of the target, and so was rewarded with a string of zeroes.*

But T. J. Dolan persevered, and in this his later victories, which included most of the more difficult rifle competitions of his day, should go far toward encouraging the rank greenhorn of the present generation.

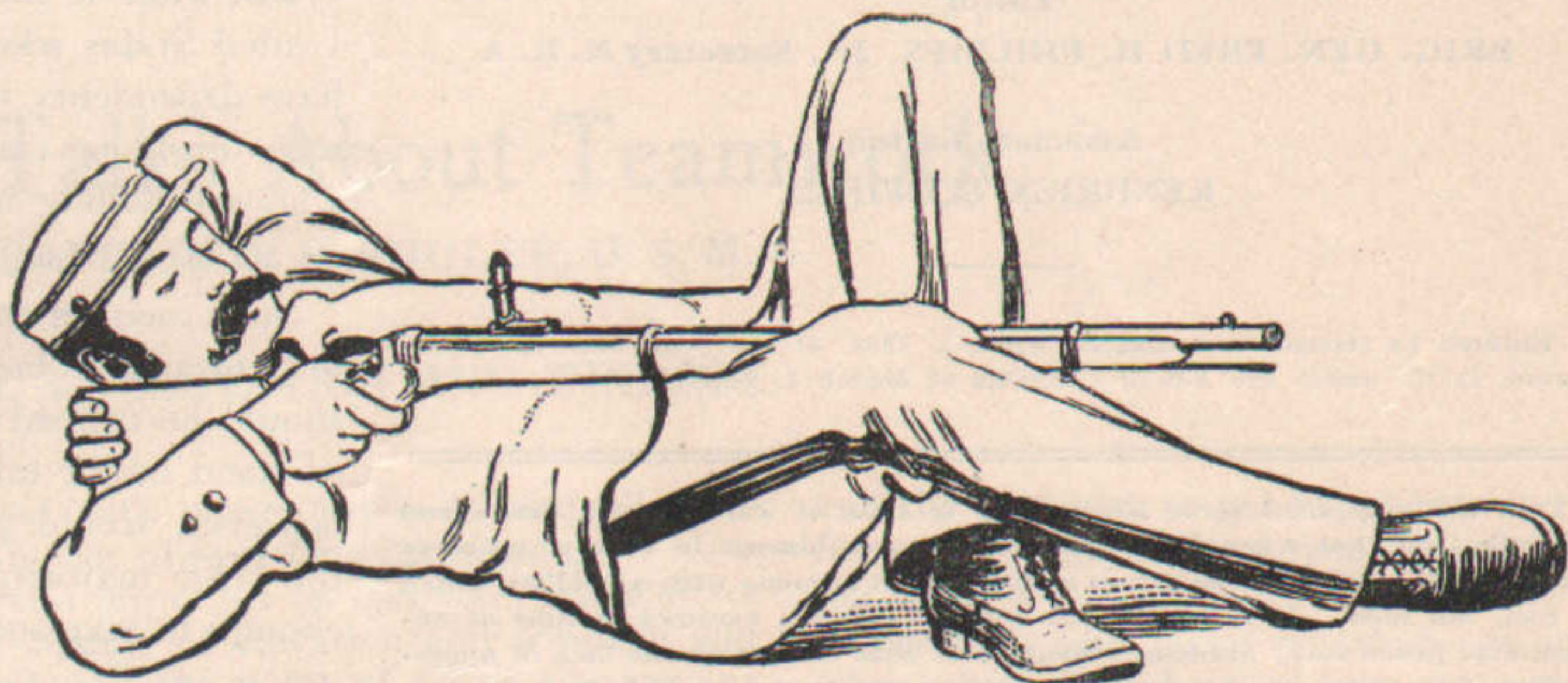
Within three months after his ignominious debut upon the firing line, he had won the Gildersleeve Badge on a score of 29 out of a possible 40, shooting at 200- and 500-yard ranges. This was more than enough as a start for Dolan. He hung to rifle practice doggedly, and when in 1879 the Military Championship United States Match was instituted, he entered against a large field, and finished sixth. The year following he was back again, that time finishing fourth. In 1881 he moved up another peg to third place, dropped out in 1883, and in 1884 won the principal trophy.

In addition, Dolan on August 11, 1880, at the Empire Club, won the 500-yard Twenty-shot Match on a score of 96, using the Sharp's Military rifle, and shortly thereafter, with a possible score of 100, won the New York State Champion Marksman gold badge, that time shooting the 50-caliber Remington. It was then that Dolan began to come into his own as a marksman.

Dolan was a native of New York, and enlisted in the National Guard when 21 years old. From his rather disheartening start, he held to the military arm instead of the match rifle, and reached the height of his shooting career when in his early thirties, by which time he had become Gunnery Sergeant of the Twelfth New York.

For his off-hand work, Sergeant Dolan assumed a position which kept his right arm as far away from his body as possible. In shooting prone, Sergeant Dolan adopted the so-called "back position," principally because he had discovered even at that early day that the sights on military rifles were invariably too far away from the eye to permit of good work without eye-strain.

In spite of the unpleasant disadvan-



The Back Position Adopted by Sergeant T. J. Dolan
(From an old cut)

tages of a greater recoil, and the time consumed when it was used in the old-time skirmish matches, Dolan was able to train himself so well to shoot in this position that it became almost second nature to him.

Dolan's list of victories is a long one, and many of the scores hung up by him in that long-gone day of black powder were remarkably good records.

On September 3, 1880, he won the first prize in the Duryea Skirmishers' Match, placing all 20 shots on the target and scoring 71 out of a possible 100. The course of fire in this match called for: 10 shots advancing double time; 10 retreating double time; 5 halts each way, 20 seconds at each halt, from 500 to 200 yards. In this match he used the Sharp's military rifle.

On September 9th of the same year he placed 6 shots out of 7 in the bull's-eye at 1,000 yards, making a score of 33 out of 35, and a few weeks later won the Mid-range Match of the N. R. A. at 500 yards, with a possible score.

He won the All-comers' Match, 200 yards, on July 17, 1882, with 3 consecutive scores of 33 each—a total of 99 out of a possible 105.

On November 8, 1884, ten straight bull's-eyes won for him the Remington Military Match, shot at 500 yards, and on June 27, 1885, at the request of Major Shorkley, of the Army, that he break his own previous record, Dolan scored 202 out of a possible 225, shooting 75 consecutive shots, 15 each at 800, 900 and 1,000 yards. During this performance, to which there were many witnesses, he ran a string of 7 "Fives" at 900 yards.

During the fall meeting of the N. R. A. in 1885, Dolan won the Governor's Match, shooting the Hepburn military rifle, with a score of 104 out of 105.

Firing 65 consecutive shots at 200 yards with a .50-calibre rifle—a course which called for marked endurance and consistent holding—he made a score of 282 out of a possible 325 at 200 yards, and in another endurance match of 50 consecutive shots at 500 yards, with a .50-calibre rifle, he totaled 225 out of a possible 250.

WILL "BROWN" SERVICE BAYONET

The service bayonet is no longer to be a glistening blade, capable of reflecting the sun's rays and with bright flashes betraying the movement of troops.

The War Department has ordered that hereafter the knife bayonet shall be given a brown finish such as is used on the service rifle itself.

LUBRICATING BULLET DISAPPROVED

Tests were recently made at the Frankford Arsenal of a lubricating bullet for the service rifle. The bullet, designed to prevent fouling, was seated against a small amount of graphite, which was backed by a fibre wad. The test, according to the arsenal's report, was unsatisfactory.

MILITARY ACADEMIES FOR ALL STATES

A BILL proposing the establishment of a military academy, at Government expense, in each of the States, will be introduced during the extraordinary session of Congress by Congressman Buchanan, of Texas. Under the proposed bill, the academies would be jointly controlled by the State and Federal Government.

ARMS AND THE MAN

1110 WOODWARD BUILDING, WASHINGTON, D. C.

EVERY SATURDAY

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Associate Editor

KENDRICK SCOFIELD

Entered as second-class matter, April 1, 1908, at the post office at Washington, D. C., under the Act of Congress of March 3, 1879.

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.

CUBA ENTERS THE WAR

TO those who have watched the military development of the Republic of Cuba during the past few years, the entrance of the island into the great world conflict did not come as a surprise. It was what might have been expected of a nation which has shown itself not only sympathetic to American institutions, but desirous of modeling its army upon the plan of the American forces.

For the past several years the Cuban army has been drilling with American Springfield rifles, under rules and regulations closely akin to those in vogue in the United States; and until a few months ago, the rifle practice in the Cuban army was carried on under the direction of a former United States Marine.

Because the Cuban army is so closely allied in its organization and aims to that of the United States, the little island republic should prove no inconsequential ally.

WHAT RIFLE PRACTICE CAN CONTRIBUTE

BEFORE many more days have passed, the War Department plan, approved by the President, for the mobilization of the National Army will be upon the statute books. This legislation will unquestionably be supplemented either by the passage of the so-called Chamberlain Universal Service bill in its revised form, or the universal-service bill drafted by the Army War College.

With two such gigantic preparedness plans working in conjunction, the military future, at least, of the United States is practically assured.

Yet, even while these two forces are at work, a great third force of preparedness should not be overlooked. That force may be embodied in the continued and unremitting training of civilians as riflemen.

The bill which has the approval of the President calls for recruiting to war strength of the Regular Army, the Navy

and the National Guard, as well as allied services. It further contemplates the immediate drafting of young men between certain ages, for training along military lines. The recruiting of the regular establishments will provide places for men who desire to volunteer at once. The draft will call out a well-defined group of young men, who will almost certainly be unmarried and without dependents.

But what of the hundreds of thousands of other men in the United States who are either beyond the training age, or who have dependents, who, for this reason, may not be among those who might be classed as volunteers under the first call, yet who are willing to flock to the colors when, under stress of an actual campaign, the country needs them?

Such men, in the event of a protracted war, are subject not only to later voluntary enlistment, but to draft. As such they should be trained now for the eventuality. Of course, many of them might take courses in citizen training camps. That, however, would give them a month's training, at most, and the large majority cannot set aside their responsibilities long enough to take such a course unless the national need is great.

Yet each of these men might be interested in rifle practice and easily fall into the habit of spending spare time on the rifle range. Every hour so spent would fit them for a future usefulness, either as expert marksmen in the first-line trenches or as instructors at schools of musketry.

That is why the Government will make a grave mistake if it hesitates to give rifle practice the same, or greater encouragement, that it has in the past. It is true that both those who voluntarily enlist and those who are called as an increment of any universal training system will be trained in the use of firearms, but the Government will do well to remember that the day may be no very distant one when every able-bodied man, regardless of age limits or dependents, will be welcome in the ranks of the nation's defenders.

A RIFLE CLUB IN SERVICE

AS soon as the President signed the declaration of war, a civilian rifle club in Washington, D. C., went immediately into "active service." This organization, the Home Club Target Association, will probably turn out to be the first to actually undertake a public service in the present emergency. It has incidentally pointed the way in which other communities can make use of civilian riflemen.

When the war clouds were still low upon the international horizon, Government officials in Washington began to take account of the necessity of safeguarding the Government records. Among the Government records which could hardly be replaced and the loss of which could be regarded as nothing short of a public calamity are those of the United States Patent Office. A good many years ago, when the British marched on the Capital after the battle of Bladensburg, the Patent Office was destroyed by fire. The records lost at that time have never been replaced. The Patent Office itself is a veritable fire trap and, once an incendiary blaze got under way, there would be little hope of getting it under control.

With the problem of safeguarding the Patent Office before them, the Government officials were very ready to listen to the members of the Home Club Association, most of whom

are employed in the Interior Department, and who suggested a patrol.

Accordingly, weeks before war was declared, all plans were perfected, and as soon as the proclamation was signed, a day and a night shift of guards drawn from the rifle-club members went on duty.

Thousands of rifle club members will offer themselves for military service during the war. Other thousands will not be wanted under the present plan of organization. There is no reason why men not liable to active military duty should not volunteer to protect the public property, as the Washington riflemen have done.

Little Talks About Teamwork

By CAPTAIN G. K. SHULER, U. S. M. C.

No. 3—ELEVATION AND WINDAGE

THE book says, "In adjusting the sight for elevation at any range, it must be borne in mind that, in addition to the allowance made for variations in the velocity of the ammunition, allowance must also be made for the effect in differences in light, the amount of front sight seen, the effect of mirage on the target, the effect of heat of the gun developed in firing, the condition of bore as to cleanliness, the personal equation of the firer, the peculiarities of individual guns, etc., etc." In other words—nothing to it.

In all the above, the personal equation of the firer is the most important; all the other elements may be perfected, but unless the shooter is on the job, all is lost.

The first thing to teach a man about sight-setting is to demonstrate why sights have to be set. The easiest way to do this is to get a blackboard and some chalk and draw it out for him. Show by a curved line what happens to a bullet after it leaves the gun; show that there are two ways of overcoming the effect of gravity, wind, etc. One is to aim at a point other than the one you wish to hit, and the other is to aim at the objective and change the sights to overcome the difference.

Now give a few simple problems. Tell the squad that you want them to set their sights to fire at two hundred yards, using the peep sight; inspect each man's gun and see that it is set right. Now do the same thing for all the even ranges; then change to the fifty- and twenty-five-yard elevations. The important part of this exercise is the inspection to see that the line through the center of the peep coincides with the line under the figure for the range.

Now go through similar explanation concerning windage; use the blackboard to illustrate the effect of the wind on the bullet at the different ranges; give examples in setting the wind gauge. Now explain that the elevation is not always set at exactly the actual range from which the firing takes place; with some rifles the elevation is set above the range

and with others below it, and all rifles are not always true for windage. Now get a target set up and show what effect a change of elevation and windage will have on the point of hit at the various ranges. Tell them the square rule for changing elevation: that is, at any range a change of one hundred yards makes a change on the target of the square of the range in inches. For example, firing at six hundred yards, sight set at six, raise to seven and the difference on the target will be six times six, or thirty-six inches higher. Explain the quarter-point rule for changes in windage. For a wind crossing the range at right angles to the line of fire, at any range the rule is, range multiplied by the velocity of wind (miles per hour), divided by ten, is the number of quarter points to take. For example, firing at six hundred yards, eight-mile wind coming directly from the firer's right as he faces toward the targets, six times eight is forty-eight; divided by ten gives four and eight-tenths, or five quarter points right wind for the first shot.

A quarter-point windage at any range changes the point of hit that many inches on the target; that is, at five hundred yards a change of a quarter point on wind gauge makes a difference of five inches. These rules are not exact, but plenty close enough for doping the first shot.

Point to places on the target, give the range and have each man make the necessary change on his sight to bring his shots to the center of the bull's-eye; these examples are interesting and a good many may be given without the exercise becoming tedious.

Take those of the squad who have picked up this part quickly and have them help the slower ones. When all have become proficient in this lesson you will have gone about as far as it is possible to go in the theoretical instruction of setting sights. A man should never be allowed to fire the military rifle at the target until he has had some such training as the above. The rest of the sight-setting game is a matter of experience,

and the only way to get experience is to fire at the target under any and all shooting conditions.

The boys will make mistakes—go up when they should go down, go right when left should be taken; but bear in mind that each mistake is just so much more experience.

It is unfortunate that the present sight on the military rifle is such a complicated affair, and about all the praise we can give it is that it might be worse. The fellow who comes across with a better one will surely be a hero.

When a squad advances to the stage where shooting begins, the team captain or the coach—for the first few days, at least—should be right there lying alongside the firer, not permitting him to make a change in his sights unless he can give the correct reason for so doing, for it seems to be human nature to over-dope the shots and over-set the sights.

Teaching sight-setting is hard, tedious work and a part of the game that is often neglected. Don't let yourself neglect it; if you are going to be a team captain be a good one and don't spend all your time shooting or sitting in the chair looking through the telescope.

You don't have to be a crackjack shot to be a good instructor and anyone can spot the shots through the glass.

U. S. ORDERS HOWITZERS

Forty-six 9.5-inch field howitzers, designed for tractor use, and which approximate in power the 11-inch howitzers in use abroad, have been ordered by the United States. The Bethlehem Steel Company will furnish twenty-six and the Midvale Company twenty. They are to be drawn by motor tractors. Department commanders have been ordered by the War Department to report what point under their jurisdiction should be provided with anti-aircraft guns under the authorization for purchase of 130 for continental United States, 8 for the Canal Zone, and 17 for the insular possessions.

THE VALUE OF MARKSMANSHIP

(Concluded from page 46)

tioners a more lasting advantage was this—instead of being liable to be shifted about, as a result of being attached, each man to his battalion, the German snipers formed a separate force, the members of which were retained throughout in the same locality. The result was that each of them got to know his little patch of country by heart, every stick and stone in it, whereas his British opponent was constantly being shifted about and compelled to begin learning a new country again and again.

What this difference of method means can be estimated by the sportsman who now has to act as his own gamekeeper and finds, perhaps for the first time in his life, how hard it is to remember even the salient natural features of, say, a bit of rough shooting. As tenant, before the war, of a boggy tract in the west of Ireland (you never knew what you and your dog would get there, the small bag was always a miscellany), the writer was reminded of this fact. He had forgotten it, in spite of the experiences of several years spent in sparsely settled portions of Western Canada.

Now that the British sniper is attached to a particular bit of country which he learns to know like a book, he is much more successful than the German practitioner on the other side of No Man's Land. Moreover, any little thing that happens there is remembered for his benefit. A German head is seen somewhere—well, there is a chance it will happen again, because it saves time to risk exposure thus, or for some other reason, and the phenomenon and the precise spot are noted for the sniper's benefit. And the net result of all this systematic common sense is that his victims outnumber the German sniper's by ten or

even twenty to one. This is but one example of the way in which our New Army has been made one of the most exquisite machines of scientific warfare which has ever been seen.—*The London Times*.

FISKE DESCRIBES TORPEDOPLANE

Rear Admiral Bradley A. Fiske, U. S. N. retired, who in 1912 patented a "torpedoplane", described his invention recently before the Aero Club. The device is intended to launch a torpedo from an airship against a warship. Admiral Fiske's address was printed in "Flying".

"I have seen it stated in print several times," said Admiral Fiske, "that Captain Alessandro Guidoni, of the Italian navy, tried out the scheme two or three years ago, and hit the target nine times out of ten at a distance of 3,000 yards. Not having an aeroplane large enough to carry a heavy, long distance torpedo, he used a light, short distance torpedo suitable for the size of the airplane. I received private information from Europe about a year ago that a lieutenant in the British navy made four flights over the land into the Sea of Marmora in an airplane under which a Whitehead torpedo was secured and sank four Turkish vessels, using 14-inch torpedoes, weighing 731 pounds each. For this service he was given the Distinguished Service Order. A short time ago, I got a verification of this news from a wholly different source, and I also received further information which is of absolute reliability that one of the belligerent countries is taking means to use this plan on a large scale.

"I have talked about the scheme to many naval officers and many aviators. The naval officers agree with me that it would be very difficult indeed for the guns of a ship to hit a torpedoplane. Besides in a contest between a torpe-

doplane and a ship, the ship if she is struck is disabled, if not destroyed; while the torpedoplane can be shot full of holes without much damage, unless hit in a vital place. The aviators tell me that they see no practical difficulties whatever in doing their part of the work.

"For an attack on battleships such as might approach our coast, the large size torpedo, weighing about a ton, would be best, and this can be fired successfully from a distance of five sea miles or more. But battleships are not the only ships that would be sent against us. Destroyers, colliers, ammunition ships, scout cruisers and transports, are lightly built and have thin sides; so that light torpedoes would be thoroughly effective. I believe that our national security could be brought up to quite a hopeful condition by establishing say fifty torpedoplanes at each of the ten important naval districts, and on airplane mother ships, which would go with the fleet. Such an act would give us a quickly made and inexpensive weapon for defense. I was advised that the Aero Club of America and the National Aerial Coast Patrol Commission are making plans for developing the torpedoplane in a practical way. I feel confident that we will have torpedoplanes for the defense of our coasts in the near future."

MARINES GET HELMETS

(Concluded from page 45)

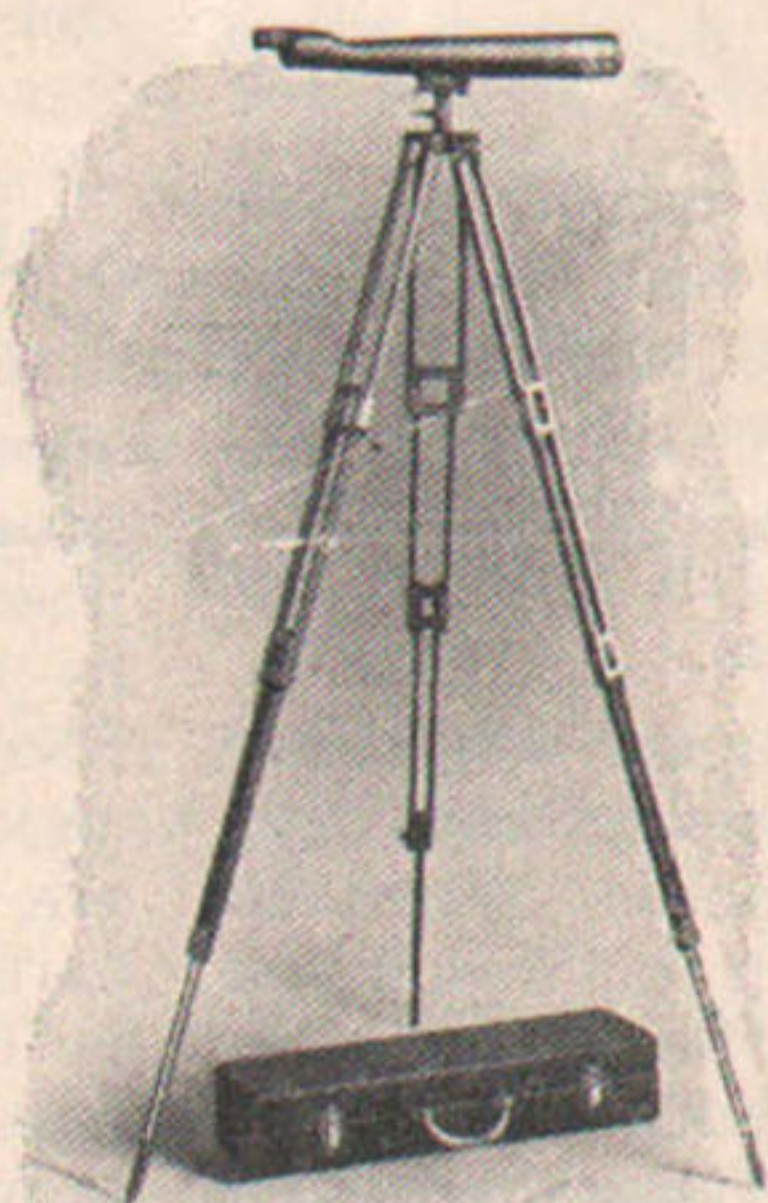
The present design, which has been approved and the manufacture of which can be begun at almost a moment's notice, conforms to the size and shape of the average head. The helmet can be more snugly fitted to the head by the adjustment of a cloth cap inside the steel shell. The helmet may be stamped from a single piece of steel, thereby avoiding weakening junctures, by the use of dies which are already prepared.

Prism Terrestrial Telescope

Specifications

Objective—clear aperture...2 inches
Powers—two eye pieces....25 and 50
Length of telescope.....21½ inches
Weight of telescope.....2½ pounds
Weight of tripod and alt-azimuth mounting.....4 pounds
Weight complete with carrying case.....12 pounds
Dimensions of carrying case, 24 x 6½ x 4½ inches.

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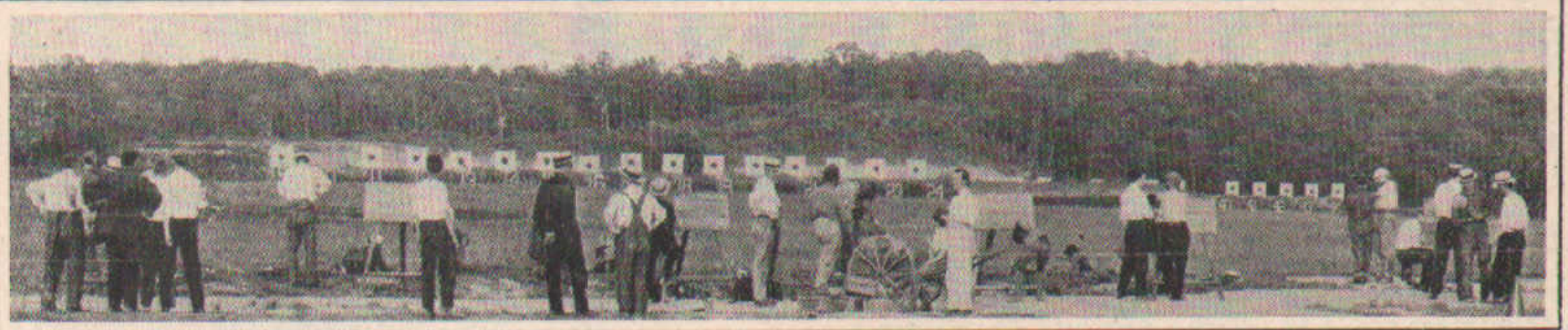
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AT THE TARGETS!



West Virginia Makes Perfect Score in Tenth Match

By PARALLAX

It has come at last. With the extraordinarily good shooting which has marked the N. R. A. gallery competitions, it seemed inevitable that somewhere along the line five men would forge to the front and hang up just one perfect score—1,000 points out of a possible 1,000. Most of the consistent high scores have come from the ranks of the civilian clubs, the highest score up to the shooting of the tenth match having been that of the Pierre, S. D., boys, who put across a total of 998 in the seventh match. Of course, there have been unusually creditable scores scattered through the entire shoot, but it remained for the team of the University of West Virginia to register The Possible. More than that, this team in the tenth match put over a sixth perfect target, backed up by a seventh totaling 196, an eighth totaling 193, a ninth totaling 189, and a tenth totaling 186. As only the five high targets counted, the sixth possible was wasted, so far as the aggregate is concerned. But six possible targets out of any ten men comes pretty near to being perfect shooting, especially as the average of the other four ran about 191. In all of the competitions, the boys apparently made desperate eleventh-hour efforts to put over good scores.

In the civilian competition, three teams tied on their totals with 997 points. On the Creedmoor count the Park Club, of Bridgeport, Connecticut, was given first place; the Quinnipiac Club second, and the Pierre, S. D., boys, who made the 998 in the seventh match, third. The scores of the Park and the Quinnipiac clubs include three possibles each. The score of the Pierre club sports two perfect targets and three 199's.

The final official aggregate scores were not announced this week by the National Rifle Association, inasmuch as the targets will be carefully scrutinized before the official scores are published.

Team Scores In Tenth Match

<i>Civilian Clubs</i>		(5) <i>Salt Lake, Utah, Rifle and Revolver Club</i>	(9) <i>Glendale Rifle Club, Bedford Ohio</i>	
(1) <i>The Park Club, Bridgeport, Conn.</i>		O. A. Lee..... 199	Charles Woodyatt 200	E. B. Clark..... 198
R. D. August..... 200		J. H. Ray..... 199	L. H. Scott..... 198	R. Francis 197
H. E. Griffin..... 200		William Stokes 199	W. E. Martin..... 198	C. O. Morn..... 197
A. L. Birks..... 200		R. B. Harkness..... 198	Wm. C. Miller..... 197	Club total..... 988
H. L. Harper..... 199		C. T. Letchfield..... 198	B. T. Wright..... 197	
A. B. Gully..... 198		Club total..... 993	Club total..... 990	(14) <i>Bangor, Maine, Rifle Club</i>
Club total..... 997				C. P. Allen..... 200
	(2) <i>Quinnipiac Rifle and Revolver Club, New Haven, Conn.</i>		(10) <i>Washington, D. C., Rifle Club</i>	A. Shaw 198
S. A. S. Hammar..... 200	M. Standish 200		W. R. Stokes..... 199	L. W. Somers..... 197
C. S. Charles..... 200	J. Kelly 200		J. J. Andrews..... 198	G. A. McLaughlin..... 196
F. J. Rohloff..... 200	H. Marshall 199		Robert M. Morris..... 198	John W. Treat..... 196
W. H. Richard..... 199	H. H. Bennett..... 197		R. Alderman 198	Club total..... 987
W. B. Donnell..... 198	L. F. McAleer..... 197		W. C. Robertson..... 197	
Club total..... 997	Club total..... 993		Club total..... 990	(15) <i>Watertown, N. Y., Rifle Club</i>
	(7) <i>Peters Rifle and Revolver Club, Kings Mill, Ohio</i>		(11) <i>Corvallis, Mont., Rifle Club</i>	G. A. Abbott..... 199
(3) <i>Pierre, S. D., Rifle and Revolver Club</i>	B. H. Buchanan..... 199		W. H. Christoffersen..... 199	Claire Larson 197
Charles Staugh 200	William Hines 199		Hans Christoffersen 199	C. R. Pearson..... 197
F. A. Lucas..... 200	A. D. Rothrock..... 198		C. M. Barnes..... 198	H. C. Pearson..... 197
P. J. Murphy..... 199	Henry Feinerer, Jr..... 198		J. N. Ashby..... 197	E. D. Lacy..... 197
H. M. Derr..... 199	John Ennis 198		Hans DeYoung 196	Club total..... 987
E. G. Smith..... 199	Club total..... 992		Club total..... 989	(16) <i>Springfield, Mass., Rifle Club</i>
Club total..... 997			(12) <i>Marion, Ohio, Rifle Club</i>	L. Carlton 200
	(8) <i>Bucyrus, Ohio, Rifle Club</i>		Z. A. Meredith..... 200	V. H. Wesson..... 198
(4) <i>St. Augustine, Fla., Rifle Club</i>	C. L. Mader..... 199		Fred. Morrison 199	M. P. Ryder..... 197
H. M. Snow..... 200	William Hranick 199		A. R. Sammons..... 197	C. Hamilton 197
H. Davies 200	C. H. Croneis..... 198		Roy Williams 197	D. Burlingame 195
F. J. Paffe..... 199	J. I. Miller..... 198		M. E. Carroll..... 196	Club total..... 987
L. J. Capella..... 198	J. W. Sharrock..... 198		Club total..... 989	(17) <i>Auburn, N. Y., Rifle Club</i>
B. M. Hall..... 197	Club total..... 992		(13) <i>Lynn, Mass., Rifle and Revolver Club</i>	C. E. Shapley..... 198
Club total..... 994			W. T. Hill..... 198	J. H. Stebbins..... 198
			C. Richardson 198	J. H. Cole..... 198
				L. A. Wheeler..... 196
				F. W. Walts..... 196
				Club total..... 986

(18) <i>Ft. Harrison Rifle Club, Terre Haute, Ind.</i>		E. R. Herrmann 195	(37) <i>Main Line Rifle Club, Berwyn, Pa.</i>		R. H. Johnson 192
H. J. Mueller 200	C. S. Deily 195	Charles Johnson 196	Percy E. Matthes 194	Dr. G. E. Wenton 192	
W. E. Conner 199	Al Fuhbodt 193	John G. Dillin 194	S. M. Kufauver 193	R. Lincoln 190	
L. S. Reintjes 197	Club total 978	Horace Justice 192	Club total 967	Club total 962	
G. H. Deusner 196	(28) <i>Dayton, Ohio, Civilian Rifle Club</i>	Club total 967	(38) <i>Hoosier Rifle Club, Indianapolis, Ind.</i>	(47) <i>The Gisholt Rifle Club</i>	
A. O. Van Gilder 193	David Tott 200	(39) <i>Middletown, N. Y., Rifle Club</i>	Loder 195	C. E. Swanson 198	
Club total 985	J. R. Moser 197	Loder 195	C. W. Horton 194	H. W. Woodstock 193	
(19) <i>Hopkins, Minn., Rifle Club</i>	Arthur Shwell 194	Dr. Moore 194	Dr. Moore 194	Al Geiger 193	
A. Hamilton 200	C. A. Dillen 193	Clemson 192	H. S. DeWitt 192	E. H. Lamp 192	
P. Sundguist 199	M. R. Guinmesey 192	Club total 967	Club total 967	L. W. Brown 186	
H. Snavelly 199	Club total 976	(40) <i>Sidney, Ohio, Rifle Club</i>	Fred Schulz 195	Club total 962	
R. Theitten 194	(29) <i>Paterson, N. J., Rifle Club</i>	George Ehrhardt 194	George Ehrhardt 194	(48) <i>Gunnison, Colo., Rifle Club</i>	
H. Metzold 193	Ralph Ryder 199	Charles Rostron 193	William Rostron 193	E. G. Palmer 196	
Club total 985	Elvin Ryder 197	Ben D. Higgins 192	Ben D. Higgins 192	A. W. Lindsley 193	
(20) <i>Atlanta, Ga., Rifle Club</i>	Nathaniel McGurk 195	Club total 967	Club total 967	D. B. Likens 191	
J. E. Oxford 199	Edwin C. Nichols 194	(41) <i>Helena, Mont., Rifle Club</i>	O. H. Koch 195	M. B. Herrick 191	
C. C. Smith 198	Theo. P. Nichols 190	O. H. Koch 195	C. E. Mumpe 194	F. B. Osborne 190	
Dr. J. C. Wright 197	Club total 975	Elmer Keith 193	Elmer Keith 193	Club total 961	
W. T. Spratt 196	(30) <i>Guthrie Center, Iowa, Rifle Club</i>	D. W. Jacobus 193	D. W. Jacobus 193	(49) <i>Mound City Rifle Club, St. Louis, Mo.</i>	
J. W. Boone 195	C. C. Kennedy 199	A. Angstman 190	A. Angstman 190	George C. Olcott 199	
Club total 985	C. D. Weeler 197	Club total 965	Club total 965	J. G. Westerman 197	
(21) <i>Chicago, Ill., Rifle Club</i>	T. W. Leach 196	(42) <i>Milwaukee, Wis., Rifle and Pistol Club</i>	Emil Teich 199	Henry C. Westerman 194	
John Turner 199	S. W. Aldrich 192	Emil Teich 199	H. W. Mansfield 193	L. C. Niedner 194	
Geo. L. Nichols 199	C. D. Porter 191	H. W. Mansfield 193	A. E. Gaartz 193	C. W. Fulgraf 177	
E. L. Marmaduke 196	Club total 975	A. E. Gaartz 193	N. E. Dahm 190	Club total 961	
B. B. Bulawa 196	(31) <i>Brooklyn, N. Y., Rifle Club</i>	N. E. Dahm 190	John Kline 190	(50) <i>East Orange, N. J., Rifle Club</i>	
P. F. Zinke 194	H. Otto 198	John Kline 190	John Kline 190	A. A. Reimer 195	
Club total 984	L. I. King 195	Club total 965	Club total 965	R. M. Roper 193	
(22) <i>Kiowa Shooting Club, Des Moines, Iowa</i>	F. W. Dearborn 194	(43) <i>Niskayuna Rifle Club, N. Y.</i>	E. G. DeFrate 200	J. F. Cross 192	
A. T. Carter 199	C. Gebhard 193	E. G. DeFrate 200	H. D. Mairs 197	A. A. Fisher 191	
W. E. Kessler 197	P. F. Lahm 193	H. D. Mairs 197	C. C. Sliter 191	J. G. O'Keeffe 188	
L. W. Scott 196	Club total 973	C. C. Sliter 191	E. A. Reynolds 188	Club total 959	
Ed Fines 195	(32) <i>Fitchburg, Mass., Sportsman Rifle Club</i>	E. A. Reynolds 188	F. T. Marks 187	(51) <i>Minneapolis, Minn., Rifle Club</i>	
P. Nichols 194	J. C. Farwell 199	F. T. Marks 187	F. T. Marks 187	Con Schmitt 192	
Club total 981	H. A. Hill 195	Club total 963	Club total 963	L. P. Crevier 192	
(23) <i>Jacksonville, Fla., Rifle Club</i>	T. Williams 195	(44) <i>Bureau of Engraving and Printing Rifle Club, Washington, D. C.</i>	S. E. Beach 200	T. W. Breckleimer 192	
G. W. Gray 197	B. W. Farrar 194	S. E. Beach 200	H. C. MacFate 194	C. W. Stoufer 191	
A. R. Reynolds 196	G. T. Mack 190	H. C. MacFate 194	H. S. Chick 191	H. E. Winslow 191	
F. Yerkes 196	Club total 973	H. S. Chick 191	H. H. Leizear 190	Club total 958	
William McNamee 196	(33) <i>Manchester, N. H., Rifle and Pistol Club</i>	H. H. Leizear 190	J. H. Windsor 188	(52) <i>Birmingham, Ala., Athletic Club Rifle Association</i>	
C. W. Birchwood 195	R. G. Lang 198	J. H. Windsor 188	J. H. Windsor 188	T. K. Lee 200	
Club total 980	R. P. Farmer 196	Club total 965	Club total 965	O. Garl 193	
(24) <i>Detroit, Mich., Y. M. C. A. Rifle and Pistol Club</i>	E. A. Hayes 194	(45) <i>Pacific Service Rifle Club, San Francisco, Cal.</i>	R. A. Monroe 198	Mrs. Garl 191	
F. H. Mears 198	J. H. Farrell 192	R. A. Monroe 198	S. E. Carpenter 195	Roy Shelnut 189	
H. L. Baxter 197	C. H. Carleton 192	S. E. Carpenter 195	L. H. Patty 192	Captain Flinn 185	
F. A. Hearn 195	Club total 972	L. H. Patty 192	W. B. Mel 191	Club total 958	
J. Petric 195	(34) <i>Rifle and Revolver Club of New York</i>	W. B. Mel 191	E. N. Murphy 187	(53) <i>The Gisholt Rifle Club, Madison, Wis.</i>	
Dr. W. H. Honor 193	A. P. Lane 196	E. N. Murphy 187	E. N. Murphy 187	C. Swanson 197	
Club total 978	J. A. Baker, Jr. 196	Club total 963	Club total 963	H. Woodstock 196	
(25) <i>Corinna, Maine, Rifle Club</i>	J. A. L. Moller 195	(46) <i>Portland, Ore., Rifle Club</i>	Norman Schmitt 194	E. Lamp 195	
E. B. Holt 199	C. H. Halevy 194	Norman Schmitt 194	Chas. A. Myers 194	G. Boya 186	
W. E. Ireland 197	G. F. Hoffman 191	Chas. A. Myers 194	Club total 956	Al Gergen 183	
W. H. Mower 196	Club total 972	Club total 963	Club total 957	Club total 957	
N. F. Burrill 193	(35) <i>Towanda, Pa., Rifle Club</i>	(47) <i>Portland, Ore., Rifle Club</i>	(54) <i>Ridgeville Rifle Club, Evanston, Ill.</i>	W. L. Cocroft 194	
C. A. Rogers 193	D. R. Smith 197	Norman Schmitt 194	W. L. Cocroft 194	B. Peterson 194	
Club total 978	M. B. Wheeler 196	Chas. A. Myers 194	B. Peterson 194	Charles Davis 192	
(26) <i>Newport, R. I., Rifle Club</i>	F. W. Reuter 194	Club total 963	Charles Davis 192	H. A. Clauson 189	
R. F. Hay 199	F. D. Montanye 193	(48) <i>Portland, Ore., Rifle Club</i>	H. A. Clauson 189	E. J. Moberg 188	
F. R. Spooner 195	F. L. Van Horn 192	Norman Schmitt 194	E. J. Moberg 188	Club total 957	
H. I. Chase, Jr. 195	Club total 972	Chas. A. Myers 194	Club total 957	(55) <i>Toledo, Ohio, Rifle and Pistol Club</i>	
J. D. Chase 195	(36) <i>Manhattan, N. Y., Rifle and Revolver Club</i>	Club total 963	Club total 956	Bruce C. Wilson 196	
A. R. Anthony 194	D. J. Gould, Jr. 196	(49) <i>Portland, Ore., Rifle Club</i>	Norman Schmitt 194	H. G. Affleck 195	
Club total 978	LeRoy Latham 195	Norman Schmitt 194	Chas. A. Myers 194	G. D. Carpenter 190	
(27) <i>Stanton Government Rifle Club, Nebraska</i>	Alfred Seely 194	Chas. A. Myers 194	Club total 956	J. W. Taylor 188	
C. H. Hoff 199	Clinton Walker 193	Club total 963	Club total 956	H. S. Crawford 187	
J. C. Hoff 196	J. E. Silliman 192	Club total 970	Club total 956		

(56) *Citizens' Rifle and Revolver Club, New York*

F. C. Sherman	195
C. B. Spraker	195
J. L. Mathews	190
W. W. Lewis	188
L. D. Slade	187
Club total	955

(57) *Albion, Ind., Rifle Club*

Albert Black	193
George Leatherman	192
Milo D. Snyder	191
Harry Black	190
John W. Green	188
Club total	954

(58) *Greenwich, Conn., Rifle Club*

H. A. Bayles	199
C. Yost	195
P. Raymond	192
H. Raymond	184
J. Rivers	184
Club total	954

(59) *Detroit, Mich., Rifle and Revolver Club*

H. L. D. Smith	195
C. R. Neigebauer	193
H. E. Lyon	188
A. J. Walrath	187
B. D. Parker	187
Club total	950

(60) *Altoona, Pa., Rifle Club*

L. C. Douglass	192
S. T. McDowell	192
S. H. Owens	191
C. M. Kerns	188
W. M. Esnminger	184
Club total	947

(61) *Hydraulic Rifle Club, Cleveland, Ohio*

J. Patterson	199
F. Gruber	197
E. Gruber	196
J. Singer	188
A. J. Fenner	167
Club total	947

(62) *Shawnee Rifle and Revolver Club, Lima, Ohio*

Guy Sproul	195
J. J. Anderson	188
G. Myers	187
G. T. Cleming	187
L. F. Blank	187
Club total	944

(63) *Covington, Ky., Rifle and Pistol Club*

R. L. Trimble	191
J. J. Pontuis	190
W. W. Britt	189
C. A. Schroetter	186
L. C. Corcoran	185
Club total	941

(64) *Ridgewood, N. J., Rifle Club*

H. S. Willard	196
J. E. Sowter	191
A. P. Coburn	187
W. S. Carroll	183
F. A. J. Hering	183
Club total	940

(65) *Grand Forks, N. D., Rifle Club*

J. H. McNicol	191
H. G. Woutat	190
S. S. Caswell	188
H. L. Wood	185
W. C. Allen	184
Club total	938

(66) *White Motor Rifle Club, Ohio*

James Garton	193
J. H. Selfridge	190
F. G. Klinite	187
F. H. Squires	186
J. S. Akeroyd	181
Club total	937

(67) *Lakewood, N. J., Rifle Club*

Earl Sherman	190
Daniel Jensen	190
Stratton Norcross	189
Pierce Sheeley	184
Augusta de Forest	183
Club total	936

(68) *Scott, Ark., Rifle Club*

Walter Alexander	189
W. O. Scott	187
R. L. Pemberton	186
H. W. Brown	185
H. Thibault	186
Club total	933

(69) *Santa Fe Rifle Club, New Mexico*

H. S. Le Duc	196
O. L. Wood	188
T. H. Parkhurst	185
A. R. Avery	183
B. H. Gibbs	179
Club total	931

(70) *Ft. Wayne, Ind., Rifle and Revolver Club*

George Gawehn	191
Foster Houck	189
J. W. Patch	187
Robert Orff	182
O. E. Archibald	180
Club total	929

(71) *Tacoma, Wash., Rifle and Revolver Club*

A. G. Kellenberger	187
C. R. Weiner	187
H. Schofield	186
Ed Morris	185
Carl Coon	183
Club total	928

(72) *Franklin, Pa., Rifle Club*

W. H. Shaffer	187
F. E. Cather	187
C. H. Bronson	186
W. Mackey	185
C. S. Boswell	183
Club total	928

(73) *Cazenovia, N. Y., Rifle Club*

H. C. Thorne	193
R. D. Mæoe	186
F. D. Holdridge	182
G. L. Woodworth	181
C. F. Huttleston	180
Club total	922

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(74) *Princeton, N. J., Athletic Club Rifle Association*

H. M. Peach	188
A. Hammann	186
Z. H. White	184
E. C. Hunt	183
C. A. Rule	180
Club total	921

(75) *Premo Industrial Rifle and Revolver Club, New York*

F. C. Sherman	198
E. Goff	189
Vccosborn P. Voelcke	181
V. Osborn	177
J. H. McKenny	175
Club total	920

(76) *Washington Marine Draftsmen Rifle Club, District of Columbia*

A. B. Campfield	189
J. W. Webb	188
J. F. Hecking	185
S. A. Sanders	179
L. T. Hewins	175
Club total	916

(77) *Salem, Ore., Rifle Club*

J. Mapes	189
C. Mullen	187
B. W. Macy	185
H. V. Doe	179
George Keucher	175
Club total	915

(78) *Saginaw, Mich., Rifle Club*

Carl Vogt	194
Howard Vogt	189
R. McIntosh	183
A. Lynch	178
Joseph Trimbley	168
Club total	912

(79) *Second Team, Joliet, Ill., Rifle Club*

Ralph Buch	188
W. H. Spurgin	184
Arthur Gray	179
C. T. Buell	178
Carl McKee	178
Club total	907

(80) *Middleboro, Mass., Rifle Club*

Henry Pember	190
A. E. Jenney	186
R. G. Bowen	176
S. L. Brett	176
R. P. Jenks	176
Club total	904

(81) *Bureau of Chemistry Rifle Club, District of Columbia*

J. J. Huff	188
F. J. Swingle	186
D. A. Teller	179
J. A. McLaughlin	177
F. C. Lucas	174
Club total	904

(82) *Durham, N. C., Rifle Club*

Hames Rose	187
T. S. Geaves	182
R. G. Hershey	179
Ed Norris	178
D. K. Lockhart	177
Club total	903

(83) *Reo National Rifle Club, Lansing, Mich.*

F. M. Hill	188
K. S. Hart	182
Floyd Werts	180
H. S. Applegate	172
G. M. Ferris	171
Club total	893

(84) *First Team, Joliet, Ill., Rifle Club*

E. J. Lewis	181
H. Grose	180
J. C. Kimball	176
J. M. Large	172
C. W. Barber	167
Club total	876

(85) *Duluth, Minn., Spanish War Rifle Club*

L. F. Chapman	179
Ed Blackwood	176
George Sherman	174
F. W. Bordeleau	174
H. G. Hepler	172
Club total	875

(86) *Davy Crockett Rifle Club, San Antonio, Tex.*

H. C. West	180
Paul Lindgren	179
C. A. Harner	167
S. Freeborn	167
W. C. Reuter	166
Club total	859

(87) *Louisville, Ky., National Rifle Club*

J. Fischer	183
A. Groeschel	181
W. C. Waters	167
V. C. Beckhart	164
V. Fields	162
Club total	857

(88) *Highland, Cal., Rifle Club*

W. H. Nye	173
R. Crawford	169
Frank Sherman	169
E. I. Barnes	168
G. W. Fitzgerald	158
Club total	837

(89) *Litchfield, Conn., Rifle Club*

S. L. Coe	182
J. J. Moraghan	173
G. E. Sawyer	166
W. Butler	158
G. Guion	153
Club total	832

(90) *Lamar, Colo., Rifle Club*

K. A. Shanner	183
W. C. Weager	162
John White	158
J. E. Brownlee	151
H. D. Applegate	147
Club total	801

(91) *Varnum Continentals Rifle Club, East Greenwich, R. I.*

Walter O. Barber	174
Henry D. Banks	164
H. V. Allen	156
Chas. L. Phillips	154
Harry E. Nichols	152
Club total	800

(92) *Torrington, Conn., Rifle Club*

E. J. Martin	171
W. L. Miller	167
F. J. Simmons	159
C. E. Bennett	153
V. W. Allen	144
Club total	794

(93) *Bedford, N. Y., Rifle Club*

W. Vallance	171
W. Baily	169
H. Rogers	151
T. Meyers, Jr.	148
J. Rice	147
Club total	786

College Teams

(1) *West Virginia University, Morgantown*

D. A. Christopher	200
A. M. Miller	200
A. K. Carroll	200
C. W. McDowell	200
K. L. Marshall	200
Club total	1000

(2) *University of Tennessee, Knoxville*

C. R. Morse	198
G. M. Carroll	198
C. E. Hollister	197

C. C. Cassetty	196
L. B. Corbett	195
Club total	984

(3) *Michigan Agricultural College*

R. D. Kean	197
S. W. Harmon	196
R. A. Pennington	196
R. M. Shane	195
E. H. Pate	195
Club total	979

(4) *Columbia University, New York City*

R. E. Pickett	200
W. A. Fogg	196
J. F. Conden	196
A. F. Richardson, Jr.	193
J. J. Furin	190
Club total	975

(5) *Norwich University, Northfield, Vt.*

J. F. Loughlin	197
M. H. Greene	193
C. A. Shinquin	192
H. S. Howard	192
P. M. Martin	190
Club total	964

(6) *University of Vermont, Burlington*

G. C. Stanley	196
A. W. Stanley	189
J. W. Meachen	189
R. E. Wilcox	184
W. R. Erickson	183
Club total	941

(7) *Notre Dame, Ind., University*

Leo Vogel	190
George Reinhardt	190
Rodney Cullen	189
W. Navin	187
Jack Young	185
Club total	941

(8) *Massachusetts Agricultural College, Amherst*

F. H. Canlett	193
J. P. Davies	188
H. M. Rice	188
E. F. Parsons	187
A. B. Loring	184
Club total	940

(9) *State University of Iowa, Iowa City*

Lyman E. Case	192
Horace Hinkley	188
E. W. Harper	187
Fred Cox	186
Don Price	185
Club total	938

(10) *University of Pennsylvania, Philadelphia*

B. V. Abbott	190
E. H. Ten Broeck	189
Arthur Murray	186
S. R. Campbell	186
R. L. Watkins	183
Club total	934

(11) *Bowdoin College, Brunswick, Me.*

P. Johnson	198
Richard Schlosberg	190
Edwin Call	182
Lewis Burleigh	177
R. Tillson	177
Club total	924

(12) *Cornell University, Ithaca, N. Y.*

K. N. Ehricke	188
T. J. Ryan	186
J. N. Spaeth	184
G. Rickard	183
B. H. Carroll	180
Club total	921

(13) *United States Naval Academy, Annapolis, Md.*

Grimm	189
Rathburn	186
Olswang	185
Richard	183
Reaves	177
Club total	920

(14) *Iowa State College, Ames*

L. G. Wilhelm	182
H. G. Goldschmidt	181
C. W. Methfessel	180
H. B. Nowlin	179
F. P. Hanson	178
Club total	900

(15) *Massachusetts Institute of Technology, Cambridge*

G. R. Brad, Jr.	190
H. H. Ben	186
H. J. Donald	177
H. S. Mcbank	174
H. M. Wolke	167
Club total	894

(16) *Worcester Polytechnic Institute*

H. P. Crane	182
A. M. Holton	180
A. Bredenberg, Jr.	177
E. B. Janwrin	176
W. V. Sessions	175
Club total	890

(17) *University of Illinois, Urbana*

H. C. Turner	181
H. C. Geselbracht	180
O. G. Brain	177
H. Weller	173
L. H. Kingsley	172
Club total	883

(18) *Clark College, Worcester, Mass.*

Wiler	185
Livermore	183
Dunham	178
Anderson	169
Bullard	167
Club total	882

(19) *New York State College of Forestry*

F. N. Phillips	191
H. N. Meloney	191
Gibson	169
S. Mort	167
Wessell	161
Club total	879

(20) *University of California, Berkeley*

B. S. Hayne	180
H. Hardison	175
C. I. Howell	171
E. K. Schulze	170
H. P. Detwiler	169
Club total	865

(21) *University of Nebraska, Lincoln*

E. T. Reutzel	184
L. A. Wilson	173
E. T. Kelly	171
W. W. Kositzky	170
H. E. Gribble	166
Club total	864

(22) *University of Michigan, Ann Arbor*

H. Waterbury	188
M. Cutting	169
J. L. Bateman	168
H. P. Nicholson	167
F. S. Hayck	165
Club total	857

(23) *Ohio State University*

R. P. Tappenden	180
T. E. Holman	176
R. C. Bohannon	172
J. Morkey	165
J. W. Boges	162
Club total	855

(24) *Princeton, N. J., University*

J. Horne	181
J. S. Warren	174
G. F. Hasslacher	173
W. B. Harris	169
H. N. Odell	151
Club total	848

(25) *Kansas State Agricultural College, Manhattan*

Archie Hinzy	178
H. Fairman	178
M. Commerseh	174
R. McGonough	173
J. C. Morton	138
Club total	839

(26) *Pennsylvania State College*

G. D. Musser	172
A. W. Mattern	170
G. W. McCool	165
W. W. McMillin	164
R. E. Tucker	161
Club total	832

(27) *Oklahoma Agricultural and Mechanical College, Stillwater*

E. L. Chase	184
R. R. Spencer	174
Morgan Walker	167
O. D. McNeely	149
Claude Rouse	143
Club total	817

(28) *Williams College, Williamstown*

Lindsay	171
Smith	167
Wilson	163
Swain	154
Peterson	153
Club total	808

(29) *Connecticut Agricultural College, Storrs*

A. W. Miller	168
E. W. Crampton	160
H. P. Averill	150
L. L. Crosby	150
C. N. Burnham	150
Club total	778

(30) *Dartmouth College, Hanover, N. H.*

W. S. Ross	175
C. L. Phillips	171
H. F. Small	136
A. B. Street	133
W. Levy	98
Club total	713

Military Teams

(1) *Tennessee Military Academy, Sweetwater*

Cadet Sergt. Jones	196
Cadet Lieut. Sanderson	195
Cadet Sergt. Gillespie	190
Cadet Lieut. Fogg	190
Cadet Pvt. Boughton	188
Club total	959

(2) *New York Military Academy, Cornwall-on-Hudson*

W. Elliott	192
J. H. O'Brien	192
S. D. Kilmare	190
N. Sibley	190
R. A. Childs	190
Club total	954

(3) *St. Johns Military Academy*

Cadet Craig	194
Cadet Strahlan	193
Cadet Leidgen	191
Cadet Russell	189
Cadet Nixon	179
Club total	946

(4) *Bordentown, N. J., Military Academy*

Chois	187
Lauchin	182
Harris	176
Terry	167
Finn	164
Club total	876

(5) *Culver, Ind., Military Academy*

J. C. Root	178
Charles Denby	176
W. P. Inman	171
W. N. Greenway	169
J. W. Colley	167
Club total	861

(6) *Kemper Military Academy, Boonville, Mo.*

Corpl. Dew	176
Lieut. Phillips	170
Lieut. Wootten	168
Capt. Stevens	162
Corpl. Fox	159
Club total	835

(7) *Miami Military Institute, Lima, Ohio*

Merrill	160
Dohme	150
Giffen	148
Carlile	138
Kirby	136
Club total	732

(8) *Shattuck School, Faribault, Minn.*

J. B. Carleton	150
H. R. Ogden	147
E. H. Johnson	146
F. H. Woodcock	143
L. A. Gluck	131
Club total	717

(9) *Hitchcock Military Academy*

Laird Williams	148
Oscar Losey	146
Loyd Erixon	144
Robert Campbell	136
C. P. Meussdorffer	134
Club total	708

(10) *Mt. Tamalpais Military Academy*

A. Pollock	153
F. V. Shaw	139
R. Calles	134
E. Cornell	131
R. B. Carr	128
Club total	685

(11) *Columbia, Tenn., Military Academy*

Adams	151
N. Rogers	136
Allen	135
F. Pearce	123
Shofner	103
Club total	648

(12) *Bingham School, Asheville, N. C.*

Johnston	131
Estill	125
I. Buie	121
Denny	120
Underwood	116
Club total	613

High School Teams

(1) *Iowa City, Iowa, High School*

Otis Darner	199
John Dondore	199
Percy Osborne	198

J. Kelleher	197
Robert Meardon	197
Club total	990

(2) *Placer Union High School, California*

L. Hamilton	197
L. Schuster	196
R. W. Conroy	196
J. H. Robinson	195
V. Downs	195
Club total	979

(3) *Central High School, District of Columbia*

Walter Stokes	195
Ralph Day	193
Robert Morris	191
Ralph Stokes	182
Fred Harbough	179
Club total	940

(4) *McKinley Manual Training High, District of Columbia*

H. Stiles	192
F. Johnston	188
J. Byler	187
I. Roberts	181
Grogan	181
Club total	929

(5) *Cedar Rapids, Iowa, High School*

Barton Pope	196
John Agner	189
Allen McArthur	182
Walter Moeller	181
James Harned	178
Club total	926

(6) *Erasmus Hall High School, Brooklyn, N. Y.*

Bernal Abel	184
Marshall Grout	183
Harrold Brownell	179
Stanley Duncan	170
William Edwards	167
Club total	883

(7) *Jamaica High School, Long Island, N. Y.*

Harry Van Allen	182
Helmer Borden	175
Clement Kellogg	173
B. Marsters	171
Arthur Wehle	168
Club total	869

(8) *Baltimore, Md., City College*

Mulliken	184
Reinhard	180
Bernard	172
Wilkins	172
Whalen	157
Club total	865

(9) *Burlington, Iowa, High School*

Beard	184
Bigler	171
H. Horton	167
Yoke	166
Calvis	165
Club total	853

(10) *Dixon, Ill., High School*

Edgar Hoff	182
Raymond Worsley	173
Earl Shepherd	169
David Barton	164
Lee Builta	163
Club total	851

(11) *Central High School, Michigan*

Robert Bloomer	178
Alan Spraker	172
Willis Vandenberg	168
Kenneth Rindge	166
Russell Gish	166
Club total	850

(12) *New Haven, Conn., High School*

Ryan	178
Nolan	169
Halper	169
Squires	147
Wright	145
Club total	808

(13) *Northfield, Vt., High School*

Fay S. Hubbell	169
Earl Hutchins	162
R. Warner	155
Albert Elic	151
E. Smith	150
Club total	787

(14) *Western High School, District of Columbia*

Willis	168
A. Hastings	163
G. Hastings	160
Shoemaker	148
Hancock	122
Club total	761

Norwich Wins Team Match in M. R. A. Contest

THE rifle team of Norwich University won the five-man team match, the feature event of the second annual indoor Spring tournament of the Massachusetts Association of N. R. A. Clubs, at the Bay State School of Musketry, Gainsboro street. The team scored 975 points out of a possible 1000.

The Boston Rifle and Revolver Club was second with 963 and the Lynn Rifle and Revolver Club, with 961, was third.

James F. Loughlin of the winning team, was the star, scoring 29 consecutive tens and his 30th shot counted for nine. It was a four-target match, to score a possible 200.

H. S. Hatch, Waltham, was tied for second, with L. J. Fische, Lynn, with 198.

Loughlin is a resident of Stoneham and since 1913 has been a member of the Massachusetts State Rifle Team.

The tournament, which attracted nearly

300 entries, was the largest ever held in New England.

The individual club match had F. H. Collett of the Massachusetts Agricultural College scoring 184 out of a possible 200. Greene and Shequin, Norwich University, tied for second and third places with 179.

The two-man team match at 25 yards was won by Anselmo, Boston English High School, and Skinner, Dorchester High. The former scored 199 out of a possible 200, while the latter got 196, their aggregate scores being 395. Martin and Loughlin, Norwich University, with scores of 196 and 197 respectively for a total of 393, were second, Edward Parsons and F. H. Collett, Massachusetts Agricultural College, were third, 198—194—392.

In the No. 1 school match at 25 yards, Boston English High scoring 957 out of a possible 1000, took first, Dorchester was

second with 942, and Brookline, third, 936.

The two-man team school match was won by McCabe and Beal, Brookline High, their joint efforts being 386. F. Holmes and A. Sawyer, Boston English High, finished second, with 384, while S. W. Reid and Chase, of Dorchester High, with 374, were third. The individual match for school boys was won by S. Bolton, Brookline High, with 192. Skinner and McCabe, Dorchester High, tied for second, with 190.

About a dozen women took part in the individual match at 25 yards, slow fire, 15 shots (three targets). Miss Carlisle won, getting 138 out of a possible 150. Miss Gardner was second, scoring 134, and Miss Dodd finished third, 133. The women's team match was won by the Misses Gardner, and Brown, their aggregate efforts showing 372. Miss Dodd and Miss Pearl Hatch were second, with 256.



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EVERY boy instinctively loves a gun. Most fathers have had to listen to the plaintive appeal "Dad! I want a gun!"

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SUGGESTIONS ON GUN CABINETS

SO long as a newly initiated sportsman or target shooter has but one or two guns, he can usually find a place for them in any convenient cupboard or bureau drawer. Gunitis is, however, a progressive disease and it does not take long for the enthusiast to accumulate a varied assortment of shotguns, rifles and revolvers. Just about this time the lady of the house enters strenuous objections to plugging up her domain with that which she usually terms "junk."

If the sportsman has a few dollars to spend he can pick from a number of different gun cabinets one suited to his taste and pocketbook. The amateur carpenter usually proceeds to construct a cabinet of his own.

Whatever the design employed, the main purpose of a gun cabinet is to have a place for every firearm, all the accessories and the ammunition. One of the neatest designs I have seen recently is a built-in cabinet which occupies one corner of a shooter's room. It not only economizes space but is easy to construct, for only front doors had to be built. The converging walls which form the back of the cabinet, make an ideal place to put a rack for shotguns and rifles and little wooden pegs on which to hang the short arms. The bottom of the cabinet will take care of cleaning accessories, such as a supply of cloth patches, nitro solvent oil, bristle brushes, joined rods, etc., and a triangular shaped drawer underneath the floor of the cabinet, which should be raised about a

foot or eighteen inches above the floor of the room, can be utilized to store ammunition.

If located in the upper part of the house the cabinet can be made with glass doors, but if placed in the lower hallway should certainly have wooden doors to remove temptation from the path of the tradesman's boy.

Frequently it is desirable to place the cabinet in a corner of the room where the light is not particularly good and gun cranks with a mechanical turn of mind will be sure to fit a small electric light in the top of the cabinet operated by dry cells or storage battery and which lights when the doors are opened.

Aside from the convenience of having all of the firearms in one place, a gun cabinet is a real advantage because it prevents sudden changes in the temperature of the firearms and of the air surrounding them, something that happens frequently when the windows are open at night. These sudden changes are often the cause of rust, since they are very liable to leave moisture on the surface of steel.—A. P. Lane.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912.

of ARMS AND THE MAN, published weekly at Washington, D. C., for April 1, 1917.

District of Columbia { ss.

Before me, a notary public in and for the State and County aforesaid, personally appeared Fred H. Phillips, Jr., who, having been duly sworn according to law, deposes and says that he is the editor of

the ARMS AND THE MAN, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 443, Postal Laws and Regulations, printed on the reverse of this form, to-wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, National Rifle Association, Washington, D. C.; editor, Fred H. Phillips, Jr., Washington, D. C.; managing editor, Fred H. Phillips, Jr., Washington, D. C.; business managers, Executive Committee, National Rifle Association.

2. That the owners are: National Rifle Association of America (no stock issued); Lieut. Col. William Libbey, president, Princeton, N. J.; Maj. Wm. C. Harlee, first vice-president, Washington, D. C.; Maj. S. W. Brookhart, second vice-president, Washington, Iowa; C. C. Crossman, third vice-president, St. Louis, Mo.; Lieut. Col. David M. Flynn, treasurer, Princeton, N. J.; Brig. Gen. Fred H. Phillips, Jr., secretary, Washington, D. C.

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FRED H. PHILLIPS, JR., Editor.

Sworn to and subscribed before me this 31st day of March, 1917.

(Seal) KATHERINE A. MULLEN.

My commission expires March 10, 1919.

Off Hand From the Clubs

Blowing Up Some More Guns

By E. C. CROSSMAN

IN the issue of March 8 there appears an outbreak by my fellow-criminal, Gloomy Linder, of the Limpy Club of San Francisco, taking on Brother Lane over the compressed-air theory as the reason for blown-up barrels. In this outbreak, Brother Linder calls me into court to stand by his side when the return bricks begin to fly.

I come, both because he's got something on me, and because he's right. Otherwise, being of a peace-loving and retiring disposition, I'd keep out of this prospective hair-pulling match.

Being habitually lazy and preferring a typewriter with its cover on to one being patted on the back by my own fair fingers, I am cutting from an article of mine in the *Sporting Goods Dealer* for May, 1916, on blown-up guns, a couple of paragraphs embodying the air-theory so far as I am concerned.

I don't think there is a thing in this air talk, despite the trials of the field with their pressure plugs along the barrel. I note a human weakness in most experimenters in being able to make results jibe with previous belief, unless they go at the matter with unusually open mind, while a Britisher is the hardest person in the world, outside of a German, to make acknowledge that he's wrong.

Brother Linder has summed up the matter so well that there's nothing left to say, outside of adding my own "moral and physical support."

Some years ago a regular bolt action row broke out in this British paper as to just what burst gun barrels, the Field, using pressure gun and plugs, vowing that compressed air between obstruction and shot or bullet did the damage, Rigby and F. W. Jones, the great powder expert, insisting that the burst came from wave action, set up by the sudden check to the rushing powder gases. It may be that both are right. It is certain that the air theory must fail when we look over some burst rifle barrels, in which the pressure required was too terrific to admit of anything else than some freakish action of the powder gases which nearly approach the effects of a detonation of a charge.

The Field, setting pressure plugs along the barrel, proved that the great pressure came between obstruction and missile, which of course could come only from compressed air, not from gas action, which would show behind the missile, not between it and the obstruction.

Two or three years ago I spent an evening in Utica, with Pascal De Angelis, of the Savage plant, one of the brightest men in the gun business, and Jack Pederson, works manager of the Remington plant and the inventor of the Remington pumpgun and trombone rifle.

The question of bursts came up. Pederson told of some of the trials of the new and fine Remington pump, and their trials of various types of actions under overloads and obstructions. They, of course, blew up barrel after barrel.

"You can take it as gospel," said Pederson, "that bursts come from wave action set up in the powder gases, not from any compression of the air, and that bursts are caused by actual weight in the obstruction, the old sealing the bore theory is all bunk. You can seal the bore all you choose if the seal has

not weight enough effectually to check the speed of the bullet or shot charge, and you won't do any harm, but put an obstruction in the barrel, sealed or not sealed, enough to check up the progress of the bullet or shot, and you get a burst behind the bullet or shot."

This Pederson person has the earmarks of the man who knows whereof he speaks, his experience is as great as that of the British upholders of the compressed-air theory, and our own experiments went to show that sealing the bore amounts to not one whoop in effect; there must be considerable resistance. Air can be compressed just so much—we can liquify it without anything wonderfully strong in the way of machinery—while there is practically no limit with gun-barrel strength to the force exerted by expanding powder gases against resistance. The actual work that can be gotten from a pound of Schultze, fired in a closed chamber, where it has to exert all of its energy, is over 19 feet tons. That is enough to raise 19 tons a foot in the air!

Sighting Shots

The Veterans' Rifle Club of Fort Sam Houston, Tex., is one of the largest in the state, having a present membership of ninety. The club is expecting to pass the 100 mark within the next few weeks.

That it pays to advertise is the firm conviction of the members of the Honolulu, Hawaii, Rifle Club.

The members of this organization had for more than a year been without a range, owing to lack of co-operation on the part of the army. With no place to shoot, the members got together and inserted a display advertisement in a local paper, setting forth the fact that "One hundred loyal American citizens who believed in military preparedness" desired to learn to shoot the rifle accurately, but were prevented by lack of a range. The day after the advertisement appeared, George P. Castle, a wealthy resident of Honolulu, came forward and offered the club the use of a tract of land abutting on Diamond Head, and signified his willingness to build the boys a club house.

William N. Beardsley, of Bridgeport, Conn., is interested in the Swiss sight mentioned in a recent article of Crossman's on the Camp Perry shoot. He says:

"The article was very interesting, and there are others as well as myself who would be glad to learn what kind of an open sight was used by the Swiss riflemen to obtain such uniform shooting at 300 yards while exposed to weather conditions of light and shade. Was the rear sight a long flar bar with a 'V'? or was the notch shaped like the 'U'?"

Members of the Shoshoni, Wyo., Rifle Club are interested in the formation of a state association.

Eighty citizens of Poughkeepsie, among whom are several members of civilian rifle clubs, have for the past several months been organizing a Provisional Military Company. This organization is contemplating organizing as a rifle club.

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. How much must the front sight of the 1906 Springfield be raised to shoot point-blank at 200 yards?

A. One one-hundredth of an inch change in the height of the front sight will make a change at 200 yards of $3\frac{1}{4}$ inches. Determine, by experimental firing, how much too high or too low the hits are made. Divide this amount in inches by $3\frac{1}{4}$ and it will give the number of hundredths of inches change necessary to make in the height of the front sight. Front sights are furnished by the Ordnance Department in various heights. The height of the sight is stamped on the side of the sight. By referring to this indicator, it is possible to order the sight desired.

Q. How clearly defined should a target appear through a 5-power telescope sight? Should the white circles in the black bull be visible? The best results I can obtain through the sight I have does not clearly define the bull at 75 feet, and the cross-hair reticule seems to fade away, leaving a sort of haze.

A. The telescope is evidently out of adjustment, as the bull's-eye should appear to be only one-fifth of the actual distance away and the counting rings should be seen distinctly.

The power of your scope is all right, although the B-5 is not considered as good as some other models which the same people put out, yet it should get you a clear definition of the bull. One trouble may be that you are placing your eye too close to the eye-piece lens, as the normal distance, when the scope is mounted on the gun, is from four to six inches. First try looking through the scope with your eye about five inches away, then if still hazy, try to focus by turning adjustment on front end of scope first one way and then the other. If this does not get results, the best thing to do is to return the scope to the factory for adjustment.

Q. Does any firm make a bead sight for the .45 Government automatic pistol?

A. No. If you expect to shoot in any of the Government matches I would suggest that you do your practicing with the regular sights, for they are the only ones allowed in the matches.

Q. What should be done when a club member is dropped for non-payment of dues, and has in his possession a rifle purchased through the club and transferred to him upon qualification?

A. There is nothing to be done. When a rifle-club member qualifies and receives title to a rifle, the weapon becomes his personal property and the club ceases to have any control of it or interest in it.

Q. Is it necessary or advisable for a rifle club to incorporate?

A. There are only a few clubs among those affiliated with the National Rifle Association that have found incorporation necessary.

Incorporation simply tends to give the club a better standing in its community and permits it to make transactions, such as the purchase of property.

Clubs Admitted to N. R. A. Membership During the Past Week Include:

CIVILIAN

Connecticut.

Darien Rifle & Pistol Club—Stanley Baker, secretary; J. E. Williams, president; McDougal Hawks, vice-president; George M. V. Schlichting, treasurer; Martin J. Shaughnessy, executive officer. Membership, 23.

District of Columbia.

U. S. Department of Agriculture Rifle Club—A. G. Rice, secretary; Carl Vrooman, president; R. M. Reese, vice-president; S. A. Postle, treasurer; A. McC. Ashley, executive officer. Membership, 25.

Idaho.

Rockland Valley Rifle Club—T. J. Lawson, secretary; Frank Cook, president; P. O. Sheer, vice-president; T. J. Lawson, treasurer; R. I. Ewing, executive officer. Membership, 27.

Indiana.

Goldsmith Rifle Club—F. E. Watson, secretary; Everett L. Bunch, president; S. M. Cotton, vice-president; W. C. Hinkle, treasurer; S. A. Porter, executive officer. Membership, 35.

Kansas.

Fort Scott Y. M. C. A. Rifle Club—A. B. Adams, secretary; J. Ralph Ingham, president; Claude Brant, vice-president; A. B. Adams, treasurer; R. F. Edwards, executive officer. Membership, 15.

Michigan.

Ann Arbor Grotto Rifle Club—D. C. McLachlan, secretary; Chas. M. Oldrin, president; Roland Schlittler, vice-president; Erwin C. Brann, treasurer; C. L. Petrie, executive officer. Membership, 19.

Missouri.

Atlas Rifle Club of Joplin—R. T. Butler, secretary; Freeman Bull, president; LeRoy Clayton, vice-president; R. C. Robinson, treasurer; Fred L. Owens, executive officer. Membership, 42.

New Jersey.

Cranford Rifle Club—Robert E. Crane, secretary; Robert S. Marshall, president; George C. Moon, vice-president; George M. Hendricks, treasurer; A. V. V. Hibson, executive officer. Membership, 147.

Long Hill Rifle Club of Passaic Township—Theodore W. Bebout, secretary; Gilbert M. Cornish, president; August Arata, vice-president; Charles Kutcher, treasurer; Raymond A. Alland, executive officer. Membership, 12.

West Orange Rifle Club—Gordon Grand, secretary; Farnham Yardley, president; Everett Colby, vice-president; H. S. Haskins, treasurer; H. Lloyd Folsom, executive officer. Membership, 47.

New York.

Jackson Heights Rifle Club—P. L. Anderson, secretary; E. C. Alsop, president; W. H. Blandford, vice-president; F. G. Randall, treasurer; W. C. Betsch, executive officer. Membership, 62.

Seventeen Ninety Rifle Club—William L. Sayers, secretary; George W. Burleigh, president; Louis Hays Dos Passos, vice-president; Howard T. Kingsbury, treasurer; Paul G. Thebaud, executive officer. Membership, 311.

Thiels Rifle Club—Harry C. Storrs, secretary; Louis E. Bonnard, president; Howard H. Hill, vice-president; T. William Raymond, treasurer; Arthur Jones, executive officer. Membership, 40.

White Plains Rifle Club—William E.

Tolyansen, secretary; George Drury, president, Edward Tolyansen, vice-president; Fred Drury, treasury; Elbert Friese, executive officer. Membership, 16.

North Dakota.

Dunn Center Rifle Club—A. C. Diehl, secretary; C. J. Doherty, president; C. A. Barton, vice-president; Grover E. Tollefson, treasurer; E. W. Boyd, executive officer. Membership, 23.

Dunseith rifle Club—J. Dwight Hargreaves, secretary; Hokan Christianson, president; A. J. Horsman, vice-president; C. E. Webster, treasurer; D. Lemieux, executive officer. Membership, 35.

Souris Rifle Club—H. W. Bervig, secretary; J. C. Jirikowic, president; G. W. Kirkeby, treasurer; C. A. Kirkeby, executive officer. Membership, 22.

Texas.

Brownsville Rifle Club—H. L. Thomas, secretary; T. A. Kinder, president; H. B. Moler, vice-president; Oscar C. Dancy, treasurer; Joseph K. Wells, executive officer. Membership, 28.

Capitol City Rifle Club—Ben F. Wright, Jr., secretary; A. W. Struve, president; A. W. Heath, vice-president; David Harrell, treasurer; Read Granberry, executive officer. Membership, 20.

San Antonio Big Dandy Rifle Club—G. V. Richter, secretary; L. Irvin, president; D. Cappelletti, vice-president; V. P. Salling, treasurer; A. Wurzbach, executive officer. Membership, 25.

Wisconsin.

La Grange National Rifle Club—Harvey W. Saunders, secretary; J. L. Duffin, president; Parker Dow, vice-president; John Renner, treasurer; F. C. Taylor, executive officer. Membership, 25.

STATE ASSOCIATION

New Hampshire State Rifle Association—N. H. Roberts, secretary; George C. Wilkins, president; Jas. W. Laughton, vice-president; Roy E. Marston, treasurer; C. H. Carleton, executive officer.

COLLEGE CLUBS

Massachusetts.
Northeastern College Rifle Club—N. G. Thomas, secretary; Elisha S. Hudson, president; A. C. Watson, treasurer; Marcus F. Pinkham, captain. Membership, 50.

North Carolina.

Davidson College Rifle Club—B. D. Roddey, secretary; A. C. Woods, president; L. M. Currie, treasurer; H. B. Fraser, captain. Membership, 50.

HIGH SCHOOL CLUBS

California.
Gridley High School Rifle Club—Cecil J. R. Buckler, secretary; Walter Harkey, president; Wade Rowse, treasurer; Dewey Serene, captain; G. T. Kern, N. R. A., judge. Membership, 10.

Wyoming.

Cheyenne High School Cadet Rifle Club—Ira Trotter, secretary; Frank Mullen, president; William Woolston, treasurer; Wilmer Stevens, captain. E. A. Walker, N. R. A. judge. Membership, 37.

BOYS' CLUB

New York.
Elton Boys' Brigade Rifle Club—Arthur Lamm, secretary; John Haggerty, Jr., president; James Patterson, treasurer; Arthur Keller, captain; G. H. Lamm, N. R. A. judge. Membership, 25.

LIFE MEMBERS

George H. Johnson, Los Angeles, Cal.
R. G. Rodman, Cherokee, Iowa.
D. B. Wesson, Springfield, Mass.
George R. Doty, Rochester, Minn.
A. E. Boric, New York City.
Edw. C. Delafield, New York City.
Lt. Col. John Ross Delafield, New York City.
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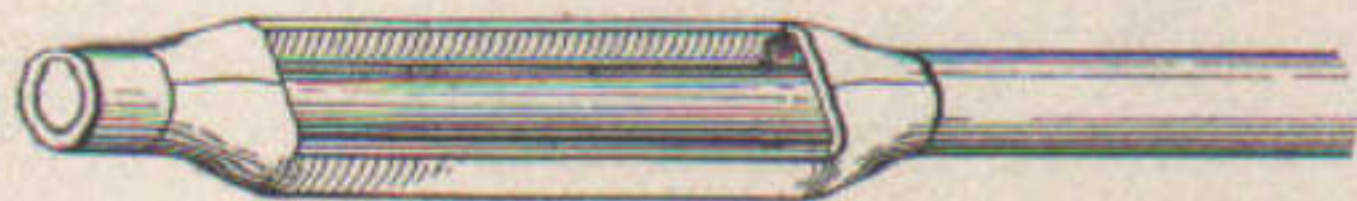
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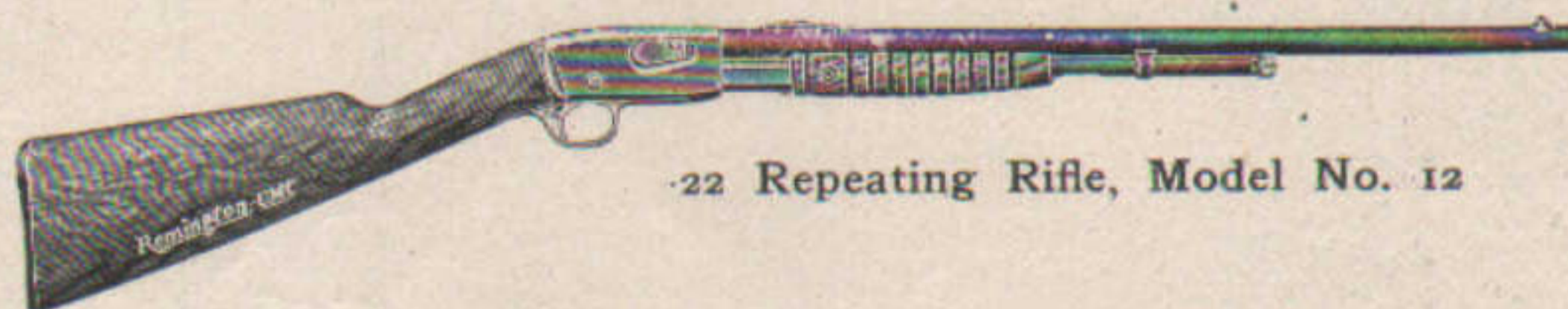
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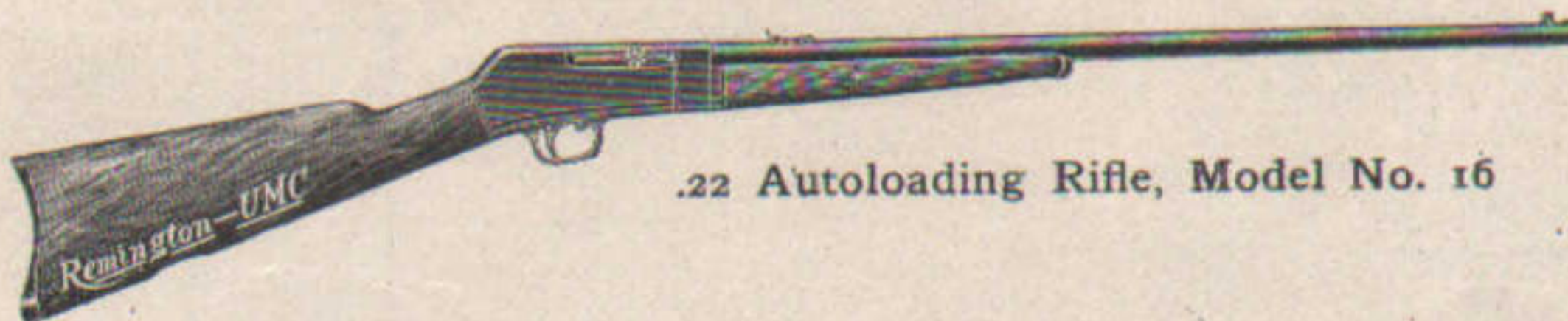
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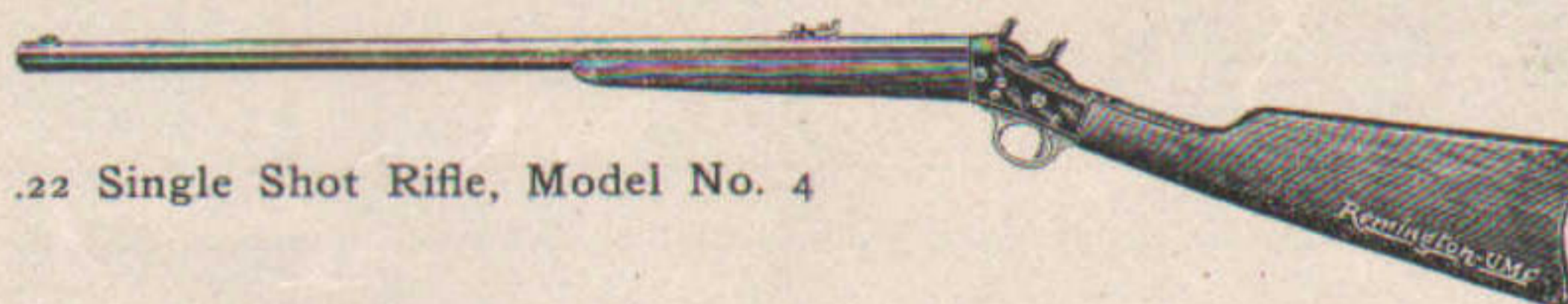
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