

Aiming

WHEN steering a bullet to the centre of a target, the recruit must aim his rifle perfectly. But he will grasp the lessons of Aiming ONLY if he has mastered the preceding factors of Position, Holding and Breathing. He cannot hope to aim correctly if he has not learned those lessons well.

Many would-be marksmen have been taught the theory that the open sights on rifles are still the best. The open sight is as hopelessly out-dated when compared with the peep sight, as the horse and buggy is in transportation when lined up alongside a supercharged, twelve-cylindrical automobile.

There are many people who have become accustomed to open sights upon early model rifles or upon their favourite sporting weapon. They will brag loudly and lengthily on the fact that they can get better results with their V-shaped or U-shaped back sights than is possible with the peep sight. It is an old and silly argument.

It is possible to do good shooting with the open sight *but you can get a far greater degree of accuracy with a peep sight.*

Reasons for much of this discussion as to the merits of each type, lie in the fact that many people have grown so accustomed to the open sight they have ignored the peep sight and know nothing at all about what it will do. They do not know the mechanics which make it the more accurate sight to use. And although ignorance may be bliss, it is also a very serious rut for any progressive instructor or soldier to get himself into.

The peep sight assures accuracy and increased speed in shooting an enemy. War is an emergency in which arguing over the relative merits of various sights or of using musty or erroneous methods of steering a bullet instead of the logical and natural methods, amounts to a form of sabotage to the war effort. The enemy does not want the Canadians to be crack shots, yet he stresses the musketry training of his own soldiers.

There are hard-to-convince persons, however, who insist that one must look at the back sight, then move the post of the front sight up so that it is in the dead centre of the U-space of the rear sight. Its top must be level with the top of the U. They say it should be right under the bull's eye. But here the law of optics raises a big argument.

AIMING—Continued

Observing the diagram of the eye, shown in Figure 1, opposite, you will note the elliptical or oblong shape of its lens. Now turning to the upper illustrations in Figure 2, it will be seen that the lens assumes a thick shape when the eye is focused upon the back, U-shaped sight which is approximately one-half a yard from the eye.

In the second illustration of Figure 2, the lens becomes thinner when focused or directed upon the front sight which is one yard distant and still thinner when concentrated upon the target which is 300 yards away (third illustration).

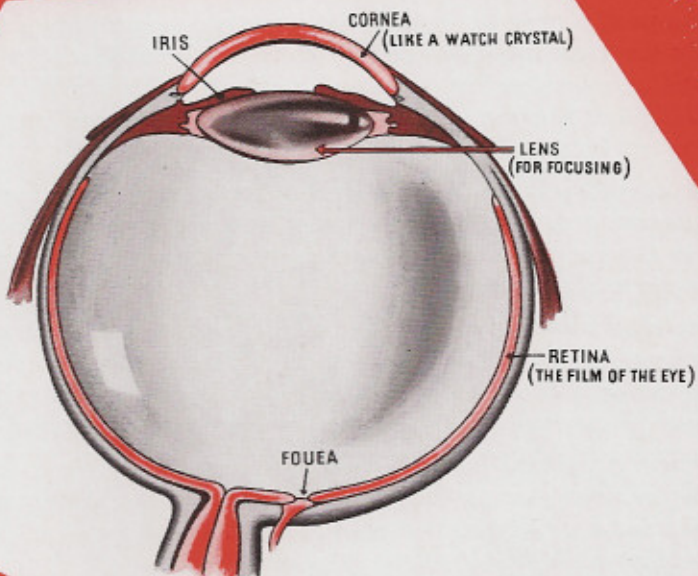
Observing the bottom picture of Figure 3, you will see a composite eye lens embracing all three previously-shown shapes. To the right is a composite view of the back and front sights and the target.

In other words the eye **CANNOT AT THE SAME TIME, FOCUS CLEARLY UPON THREE OBJECTS, ALL AT VARYING DISTANCES.** It is possible to see each one individually without delay in shifting the eye focus from one to the other but the three cannot be seen at one and the same time with the necessary clarity that good aiming demands. Thus, later on, the merits of the peep sight, which overcomes this bit of optical gymnastics, will be discussed.

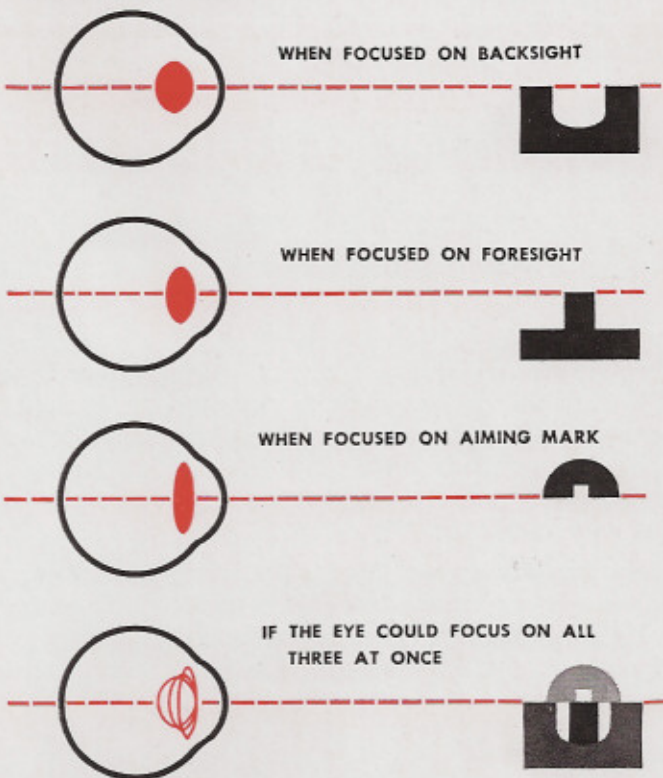
There will be those soldiers who will look through the peep sight and complain that they cannot see the target. This can usually be blamed upon faulty concentration. If the soldier, thus complaining, were to look at some Parisian postcards in the peep machine of a penny arcade, he would see everything portrayed. The closer he gets to that peep hole the more he can see. The farther away from it, he is, the less he can see. Try your recruit looking through a hole in a piece of paper and he will learn the advantages.

In the Army, as elsewhere, there are show off types who will pick up a rifle and because of a special aptitude or skill, place five shots in the centre of a bull's eye and then hand the rifle to a recruit and expect that he will get the same results.

Just because one man wears size eight boots is no reason why the whole Canadian Army should be equipped with that size of footgear. Each rifle must, first of all, fit the recruit as to length of butt. If the recruit then does everything you have taught him to do and finds that his five bullet holes are clustered on the target but not on the bull's eye, his rifle needs some sight adjustment so that it will be fitted to his eyesight. But when that rifle is so adjusted that the recruit can register high scores, his bunk-mate cannot hope to shoot accurately with it—nor will anyone else. Rifles must be fitted to the person and the person to the rifle just like a tailor-made Sunday suit of clothes.



SHAPE OF LENS



AIMING—Continued

In the past, aiming has had all the stress of musketry training. Aiming is actually the least important of the five Basic Principles of good shooting. Trigger Control comes first by being THIRTEEN TIMES AS VITAL TO GOOD SHOOTING as Aiming. Moreover, Position, Holding and correct Breathing are from two to three times as important as Aiming.

If the essentials to good shooting are followed religiously, then aiming will select its own groove with a minimum of teaching, practice and effort. It will come to the recruit as natural as the correct use of the handlebars when learning to ride a bicycle.

There is an amazingly large number of people who suffer from a hallucination or pet alibi that they cannot shoot accurately because they have eyes that are not good enough for precise aiming. These people are guilty of carelessness. If they have been accepted by the Army for service, they can see well enough to shoot.

If they can spot a neatly-turned pair of female ankles at 100 yards, they can certainly see a target's aiming mark. Alibis sound very foolish in shooting because they show lack of a determination to learn.

PERFECT AIMING IS UNQUALIFIED

NOW that all of the ancient, out-moded and less accurate methods of aiming have been discarded from your endeavours to instruct soldiers as expert marksmen, it should be stressed that there is only one kind of aim — PERFECT!

Aiming has no qualifications such as fair, good or better. It is either PERFECT or it is BAD. Your recruit cannot expect that he will get away with much canteen gloating over registering five scattered shots on a target. Bullet holes must ALL be within the centre of the target. The more your pupil is taught that perfection in shooting is the only thing worth striving for, the better shot he will be.

The Canadian soldier is entitled to the assurance that every bullet he fires will register another name on an enemy casualty list and keep his own hide intact. He must gain that assurance by being thoroughly proficient with his rifle, which is still the most effective of weapons. You, as the instructor, will be the means by which he will win that assurance.

LONG FINGERS

SOME recruits have long fingers like those of a pianist or surgeon. In the chapter on Position and under the subtitle "Importance of the Left Hand" the instructor was told to teach his class how to grasp the handguard of the rifle with the left hand, so that the fingers curled upward and over the rifle.

The long-fingered gentry are going to be stymied in aiming, unless those parts of the fingers, which block the line of vision between the two sights, are shifted.

Figure 1, below, shows some of these longer-than-normal fingers around a rifle handguard. Figure 2 shows them now out of the eye's road. The tips are sloping so that they are down on the handguard and pointing slightly toward the butt of the rifle.

This may, in some cases, cause a small space between the handguard and the small and third fingers but this can be overlooked as long as the rifle is resting **UPON THE HEEL OF THE HAND**, while the left elbow is beneath the rifle.



EYES AND AIMING

THE PERSON who uses his right hand more than his left one, usually has a slightly larger right hand than its mate. If a person is left-handed, that one will be the larger hand because of its additional muscular development. It comes to be known as the Master Hand.

Oddly, without the knowledge of most of us, one eye is used more than the other and without borrowing any fancy phrases from the mystery thrillers, it is known as the Master Eye.

To learn which eye is the Master, have the recruit select an object at least 30 feet distant, which can be clearly seen. Then, using a finger ring or similar small circular object, have him hold it up in front of his eyes, at arm's length and pointing toward the distant object.

With both eyes open, while looking through the ring, he will be able to see the object framed inside the ring. Should he close his left eye and look through the ring with the right one he will either see the object inside the ring or it will be outside the frame. By trying the left eye, while the right one is closed, the opposite of what was seen when the right eye was open, should prevail.

The eye that sees a selected object within the ring without the ring having been moved in order that it be framed as it was when both eyes were open, is the one that is "on the beam". It is the Master Eye.

If a baseball pitcher was prevented from playing just because he was a southpaw, the howl of disgust from the bleachers would echo for years. Then, why should a hard, fast rule be applied to marksmanship, that all left-handed people be compelled to shoot right-handed?

And if the Master Eye happens to be the left one, why should the full value of that eye in focussing be lost in such an important duty as shooting the enemy?

As far as good marksmanship—and that is what is wanted—is concerned, if a recruit's right eye is the Master Eye and he is right-handed, he would shoot that way. If he has a left Master Eye and is naturally left-handed, he should shoot as a port-sider.

If, however, the recruit is right-handed and has a left Master Eye (or vice versa) you should use common sense to determine whether he should shoot right- or left-handed. He will quickly learn either way. The test should be: "Which way will most efficiently permit him to kill the enemy?"

Changes may be required in the recruit's shooting habits or in his tendencies to adopt certain habits. He may be imbued with the fact that although left-handed he must shoot right-handed. The instructor should assist the recruit during his first interview. As it is a matter of life and death to him the recruit deserves the kindly help and patient experimentation which you as a coach can give. It may not be necessary for you to explain to him why his shooting habits are being checked but if he is able to acquire a confidence with the shooting side that suits him best he will be a much keener student.



EYES AND AIMING—Continued

No two persons can satisfactorily wear the same glasses or spectacles. Just as glasses are ground to fit the individual whose eyes have been tested for them, so are people's eyes different. One person does not see precisely the same as his brother or neighbor.

When four marksmen of equal ability fire the same rifle at the same target, the bullets of each firer will be clustered in four different zones of the target. Yet, only the bullet holes of the soldier to whom the rifle was fitted, will be parked on the bull's eye. In other words the rifle was fitted to one man and not to the others.

The old-fashioned armourer may adjust a rifle's sights so that they are mechanically perfect but because of the variations in individual eyes, few, if any marksmen can shoot accurately with it. Emphasis placed upon the sameness of normal sight is not only erroneous but harmful. You, the instructor, cannot too severely criticise a recruit's shooting skill if his eyes do not see exactly the same as your own.

Some people cannot close one eye while sighting. Whether their eye lids are just plain stubborn or the eye does not want to miss anything, the lids just will not close, one at a time. When an instructor meets a recruit with this handicap, he should place a card or similar cover over the eye which is not the Master Eye. See the illustration, above.

EYES AND AIMING—Continued

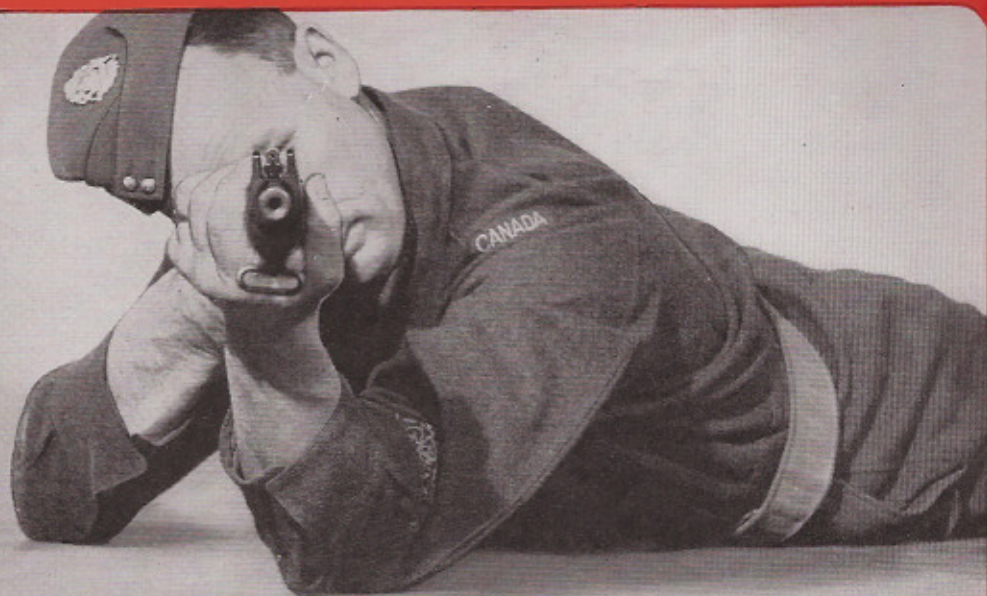
The recruit should then practice with this card until he learns to concentrate along the barrel with his Master Eye. Even if the secondary eye is open behind the card it will not matter. After a recruit learns this factor of concentration he will be able to get along without the card and with both eyes open he can shoot well.

The Master Eye **MUST** be the one used in looking **THROUGH** the rear sight to the front sight.

Keeping both eyes open, in shooting, is no sin. There may have been a time when it was considered the acme of musketry mistakes to keep both eyes open but many of the world's best shots unconsciously have both eyes open by the time the trigger is squeezed. Note the illustration below.

It is not recommended that the recruit be taught to open both eyes, but neither should he be discouraged to avoid keeping them open if he unconsciously does open them. The important thing is that he see clearly through the peep sight.





EYES AND AIMING—Continued

The soldier who shoots right-handed and whose left eye is the Master Eye should not be allowed to push his head over the top of the butt so that he may use his Master Eye. The obvious thing would be for him to change over to left-handed shooting.

A similar change would be required of a left-handed recruit with a right Master Eye. Note the illustration above of the right-hander trying to use his left eye, in sighting. The marksman is apparently uncomfortable. Moreover, in this position he is apt to be hurt when the rifle recoils.

The cancer of musketry is that fear of recoil which causes the recruit to tightly close his eyes, grit his teeth and tense his muscles just before the trigger is squeezed. He acts as if he were setting off a Big Bertha, or about to have a tooth pulled without an anaesthetic.

Yet, this condition, known as flinching, is far too common among would-be marksmen. It is one of the chief causes of poor shooting and it is nearly as hard to cure as cancer, once it develops.

The soldier with fear of recoil suffers from false impressions of what recoil is. He is to be pitied. No one can ridicule him, or get tough, and expect that the fear will be dispelled. He must, instead, be patiently taken back over the phases of Position and Holding and he must be convinced by logic and demonstration of the mechanics that produce and minimize recoil. His fear

EYES AND AIMING—Continued

will melt if the instructor's kindly and patient approach to the problem has been sincere.

In the chapter on Holding, much space was devoted to collarbones, muscle pads, and other aspects of arresting recoil. These things were introduced to help instil in the mind of the recruit that recoil can be controlled. It is the instructor's sacred duty to see that no recruit goes on the range with even the slightest fear of recoil.

This counts most when the first ammunition is fired. If you have failed in your early teaching you may have ruined any chance of your pupil attaining a shooting skill. He has the cancer of musketry and it may develop to the point that, for want of confidence and proper training, he will be killed in battle because he is unable to use his rifle effectively.

Teach and preach recoil control before the recruit reaches the range. Let it become a legend with him that he won't be hurt. Remind him also, that you have been trying from the first to insure against his being hurt. It will produce good results. The illustration below shows "flinching."



THE BACK SIGHT

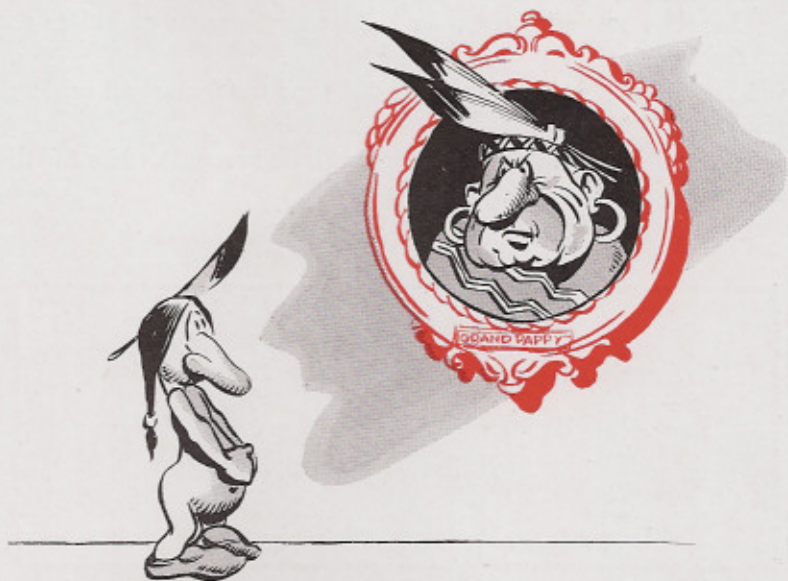
HAVING found the Master Eye, the vision is directed along the top of the rifle's barrel. But the question of how to use the peep sight becomes a factor which frequently changes the whole viewpoint of Aiming. As previously indicated, many people expect the sight to be either V- or U-shaped, like the old, open-sighted rifle. The peep sight thus appears too involved to these persons.

Why has the old type sight been scrapped in favour of the peep sight? It is simply because it was found that better shooting could be assured, if the marksman looked **THROUGH** the sight and not **AT** it.

You will recall how the lens of the eye was obliged to take a fantastic series of shapes in order to focus upon the rear, open sight, the front sight and the target. The peep sight eliminates the first sighting problem because the eye does not look at the back sight but **THROUGH** it.

In your early days, you doubtless looked at fancy pictures of your forefathers. They were tinted up and were usually placed in circular frames of deeply-carved gilt-painted wood. About the only thing those frames ever caught was dust, because the eye always automatically centred upon the stern features of the old beezers. You didn't pay any attention to the frames, at all. The frames merely helped you to find the centre of interest, which was the face of your grandpappy.

So it is in shooting. The peep sight is the frame that helps you to find the centre of interest, which is the fore sight.



THE BACK SIGHT—Continued

Your recruit, having learned automatic alignment and major and minor adjustments for elevation, now raises his rifle so that the front sight is right on the centre of the aiming mark. If he is looking **AT** the rear sight, he only sees a piece of gun metal with a pin-sized hole in it.

But if he looks **THROUGH** it, from a point as close to it as safety from recoil will permit, he will find, with concentration, that a tiny fish scale or disc of light is apparent.

The best way for the recruit to see this would be for him to hold the rifle up to the light as in Figure 1, opposite. The rifle should be reversed so that the butt points to the light and the aperture in the rear sight is completely filled with light from the sky.

The closer he is to that minute hole in the rear sight, the smaller the disc of clearer light becomes. See Figure 2. The farther back from the hole that he locates his eye, the larger the disc becomes until it fades away.

Actually this disc of light is the eye's vision concentrated into a funnel of sight and pointed in its natural and perfectly centered direction. Surrounding it is a halo of haze.

Now that the recruit has found the fish scale of light, let him reverse his rifle to the natural firing position. Then let him find that disc again and having found it bring the tip of the front sight up into it from the haze. See Figure 3.

He will immediately note the sharpening up effect (see Figure 4), as the front sight is in that fish scale of clarity. He will find that it appears to be as sharp as a razor's edge. It will be square. He will see, also, that he does not have to look for the centre of the back sight. He will, instead, find it automatically because now what he seeks is the sharp, square and clear shape of the front sight.

He will know that his vision, the rear sight and the front sight are in perfect alignment.

He will also note that the size of the disc of light is regulated by the distance between the eye and the aperture.

Make sure the recruit understands and uses the Optical Centre of the Back Sight at All Times.

FIG. 1



OPTICAL CENTRE

**WHAT
YOU SEE**

FIG. 2



AT 2 1/2"



AT 3 1/2"



AT 4"

**ITS
USE**



FIG. 3



FIG. 4

THE BACK SIGHT—Continued

The eye looks **THROUGH** the rear sight so that the vision is condensed down to a single, straight stream, directed onto the front sight so that the latter is seen as a clear, sharp, square picture while the target rests in the background of the picture. The all-important factor is in seeing that the tip of the front sight is **SHARP**. Then everything else in Aiming becomes secondary.

The motorist driving down a busy street looks **THROUGH** his windshield. He doesn't look at it, admiring the dust spots or the stickers. If he didn't look **THROUGH** it he would either spend much time in hospitals or more time explaining to judges.

Thus the backsight serves a similar purpose to the windshield. It is something to see **THROUGH**. The Master Eye picks up the disc of light, which is the optical centre of the back sight, with ease. This optical centre when directed upon the front sight serves as a major aid to good aiming because it will always be perfectly in the centre of the rear sight. It will be mechanical because if you look through that sight, the vision is automatically cut down to a tiny pencil pointing from the centre of the back sight to the **TIP OF THE FRONT SIGHT**.

It is therefore essential that if there must be a concentration of vision upon the front sight, there must also be a concentration of mental effort.

The recruit must be encouraged to exclude all distractions and instead, focus upon that tip of the front sight. The eye will assist him in this because if it is focused completely upon one thing it cannot see several others.

Every time the recruit picks up his rifle he does not have to seek out the optical centre. Having once found the fish scale of light and having seen what it does toward making the front sight stand out clearly, square and sharp, he will be able to pick it up automatically. All he has to find is a **SHARP, SQUARE, BLACK, CLEAR FORESIGHT**. When he does that, through sheer force of habit, he has gone far toward aiming perfection.

**Look through it—
Not at it!**



THE FRONT SIGHT

THE FRONT Sight, or Fore Sight, is the one which the marksman must clearly see. Having learned that he is to look THROUGH the back, or peep, sight he finds that the tip of the front sight is the essential point upon which he should concentrate. He now knows that it must be seen sharp, knife-edged and clear. It must be the dominant point upon which the vision is concentrated.

It would be well for the instructor, at this juncture, to impress upon the recruit that the old bogey of concentrating upon the target and to hell with the front sight is wrong and is fatal to good shooting.

When the expert golfer is about to drive the ball down the fairway, he gets his position and then concentrates his vision upon the impact side of that little white ball. He directs all his attention to the tip of the curve. He keeps his vision there so that when the club-head strikes the ball he will get a perfect shot. If he neglects to keep his eye on the ball, he will likely muff the shot and spend most of the afternoon trying to find it in the weeds or rough.

The foresight of the rifle requires similar concentration. The target is secondary. The back sight has become a means only toward seeing the front sight, sharp, clear, black and square.

The unsharpened end of a lead pencil when held up at arm's length and level with the eyes can be seen clearly. Its outline is sharp and square. But if the pencil were brought up close to the eye, its outline would be only a blur. You would know that it was there but the eye would be trying to see around it and would only pick up a hazy blob that was annoying. Similarly the finger shown in Figures 1 and 2, opposite, indicate these focus differences.

Now if the pencil were to be held at arm's length again and pointed toward a small, bright object in the distance and the eye focussed upon that object, and not upon the pencil, the latter would again have that hazy, fuzzy or indistinct outline.

***The front sight is the moving
part in aiming.***

FIG. 1
LOOKING AT
THE
FINGER



FIG. 2
LOOKING PAST
THE
FINGER

THE FRONT SIGHT—Continued

Just to show how the eyes play tricks, place a silver coin on the floor. While standing, bring the fingertips of your two hands together, at arm's length as in Figure 1, opposite and then look steadily at them as you lower them down to a point where the coin appears between two pairs of fingers.

Through the spaces between the joined fingers you will see the coin indistinctly. But now shift your vision to the coin and because of focussing beyond the fingers you will see the coin distinctly but the fingers will appear as sausages. See Figure 2. They aren't sausages and you know it but that is how they appear, because the eye cannot focus on distant and close objects at the same time and see both distinctly. One or the other object will be distinct — but not both.

The student marksman who looks PAST, but not AT, the front sight cannot be assured of perfect aiming. He sees the target clearly but he also sees several indistinct front sight tips so he accordingly uses different ones for successive shots. See Figure 1, below.

He gets his bullets strung out high and low on the target. His elevation has been bad. Had he looked at the sharp, square tip of the front sight (see Figure 2) and not past it, he would have grouped his shots in the centre of the target and his elevation would have been excellent.

No marksman can concentrate his vision anywhere else but on the tip of the front sight and expect the best shooting performance. The tip of the front sight must be seen as a clear, black, knife-edged and square object for every shot.

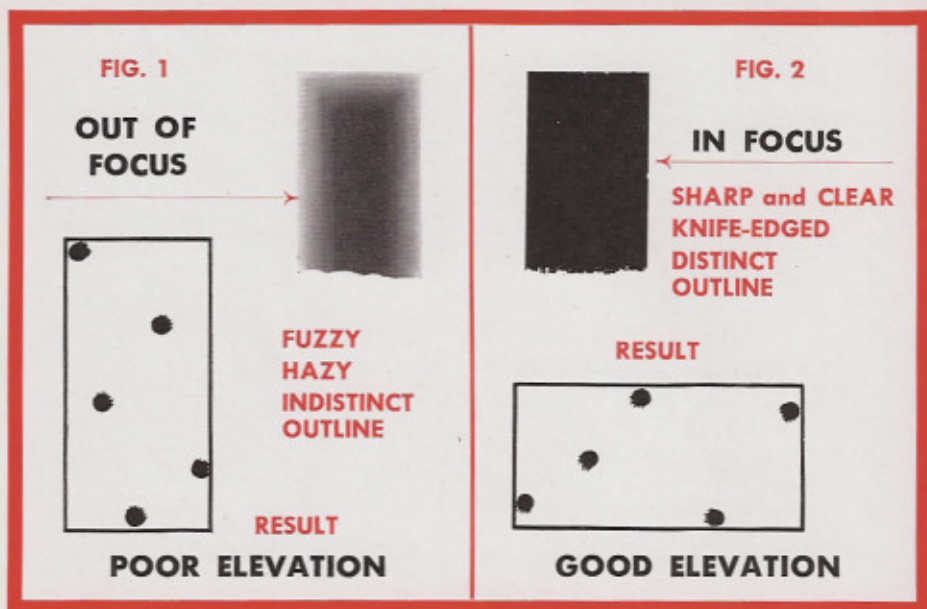




FIG. 1

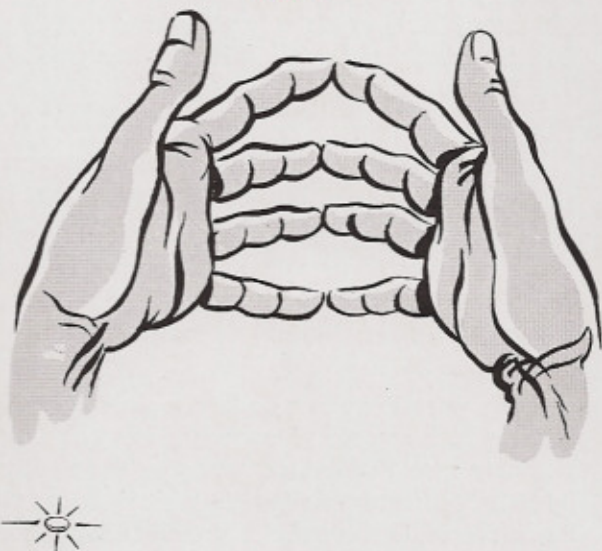
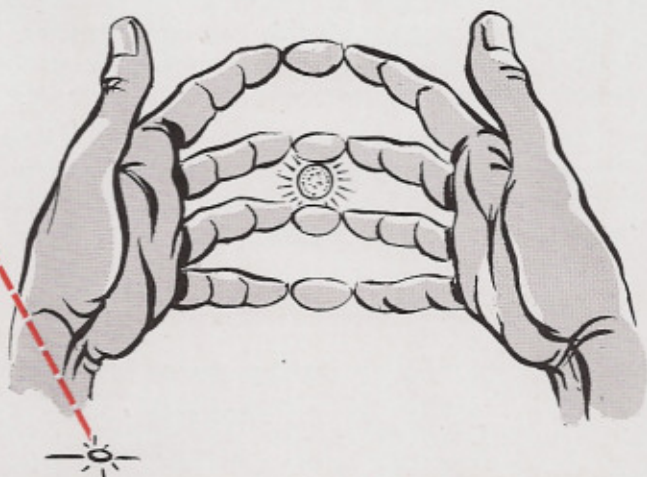


FIG. 2



SIGHT PICTURES

THE preceding sections of this chapter have placed much stress upon the recruit looking at the front sight so that he sees it black and square. The target, so far, has been left in the background, where it rightfully belongs. The feature or centre of interest in the picture which you see is, and must always be, the front sight as seen with the aid of the optical centre of the peep.

Your recruit may say "How can I shoot accurately and not see the target clearly? If I see the front sight sharp and square the aiming mark is only a hazy blob. Maybe my eyesight isn't good enough for shooting."

His eyesight is all right. He cannot be expected to see two objects at different distances from his eye, both at the same instant and see them clearly. It only takes one-fortieth of a second to shift the focus from one focal point to another.

If you were to go to a professional photographer's studio to have your portrait made, he would place you in front of a fancy background. You would probably spend your time admiring the background while he arranged his lights and camera. As the picture was being taken you would be aware that the background was behind you, clear and defined yet when the unretouched photographic proofs were made available, you would see yourself sharp, clear and with every wrinkle, freckle and mole standing out plainly while the background of the picture was hazy and seemingly out-of-focus.

This is all because you were the centre of interest and the background was merely secondary. In shooting, the centre of interest is the front sight and the target or aiming point is the background.

Naturally your recruit will ask how he can be expected to shoot accurately if he cannot see clearly what he is aiming at.

It will be necessary for you to explain to him that if he can clearly see the aiming mark without his rifle impeding his view, he should form a mental picture of it and determine the centre of the aiming mark and just as he is about ready to shoot he should bring the front sight up in line with that mark.

The target doesn't move (and the peep sight shouldn't) so the front sight is the only part of the rifle that is the lining up factor. Therefore you must see the front sight clear, black, sharp and square as in Figure 1, opposite, not hazy or distorted as in Figure 2.

Same sight pictures insure that every shot will count.



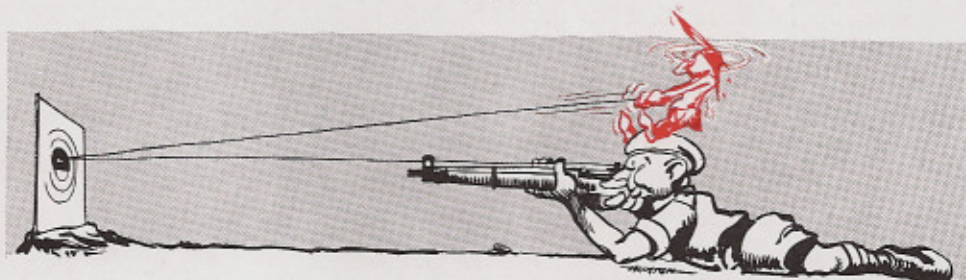
FIG. 1



FIG. 2



FIG. 3



SIGHT PICTURES—Continued

Probably a good illustration would be to assume that a thin wire could be firmly attached somewhere behind the back sight, passed through the peep, then through a specially-drilled hole in the front sight and on to the centre of the bull's eye where it went through the eye of an eye screw. The loose end should be placed so that it can draw the entire wire tight. See Figure 3, above.

The student marksman looking through the optical centre of his peep sight will be able to see the aiming point as represented by the eye screw. As the loose end of the wire is drawn back and tightened, it raises the front sight into the line of vision (lower cartoon of Figure 3). When the wire becomes as

SIGHT PICTURES—Continued

straight as the line of vision, the marksman knows that his rifle is dead upon the aiming point. However, all that he can clearly see is that front sight which he has automatically and unconsciously now chosen to focus upon. The target is still in the background.

It is not suggested that seeing the target clearly is unessential. While it is very necessary to good shooting to see the aiming point, it is nevertheless a fact that having once seen and located it perfectly in the mind's eye, it becomes secondary to the front sight, which is the moving part in aiming.

The secret, therefore, lies in the fact that you first locate your aiming mark and get it clearly established in your mind, even to picking out landmarks and shapes. When you have this perfect mental picture, then bring the front sight up, while your eye is FOCUSED UPON THE AIMING MARK. When the front sight has come right into the centre of that mark you can momentarily shift your eye focus from that distant target to the closer front sight.

The biggest difficulty, the recruit will encounter, will be in not seeing the same sight picture for consecutive shots. He must see exact duplications, as if they were prints from the same photographic negative. Carelessness in not getting precisely the same sight pictures is what leads to serious aiming troubles.

Let us imagine that it could be possible for two cameras to be installed by painless operations, so that one was behind the Master Eye of you, the expert, and the other behind the Master Eye of your recruit. Each camera would be focussed upon the aiming point and the cameras would be loaded with numbered films. The cameras would be electrically operated and synchronised with the trigger (see Figure 1, opposite).

After you had both fired four shots, the cameras would be removed, the films developed and the prints made to correspond with the numbered negatives. You, the expert shot, would have four identical sight pictures. The recruit, who did not exercise extreme care in attaining precisely the same sight picture each time, would have four prints which resemble the selection in Figure 3. Yours looked like the four duplicate pictures in Figure 2. His sight pictures were not like yours. They were merely similar but not the same.

The Oxford Dictionary defines the adjective "same" as being "monotonous, uniform and unvarying". That is exactly what is demanded in your sight pictures when shooting. They must be monotonously uniform and unvarying.

***You MUST see the SAME sight picture
for each consecutive shot!***

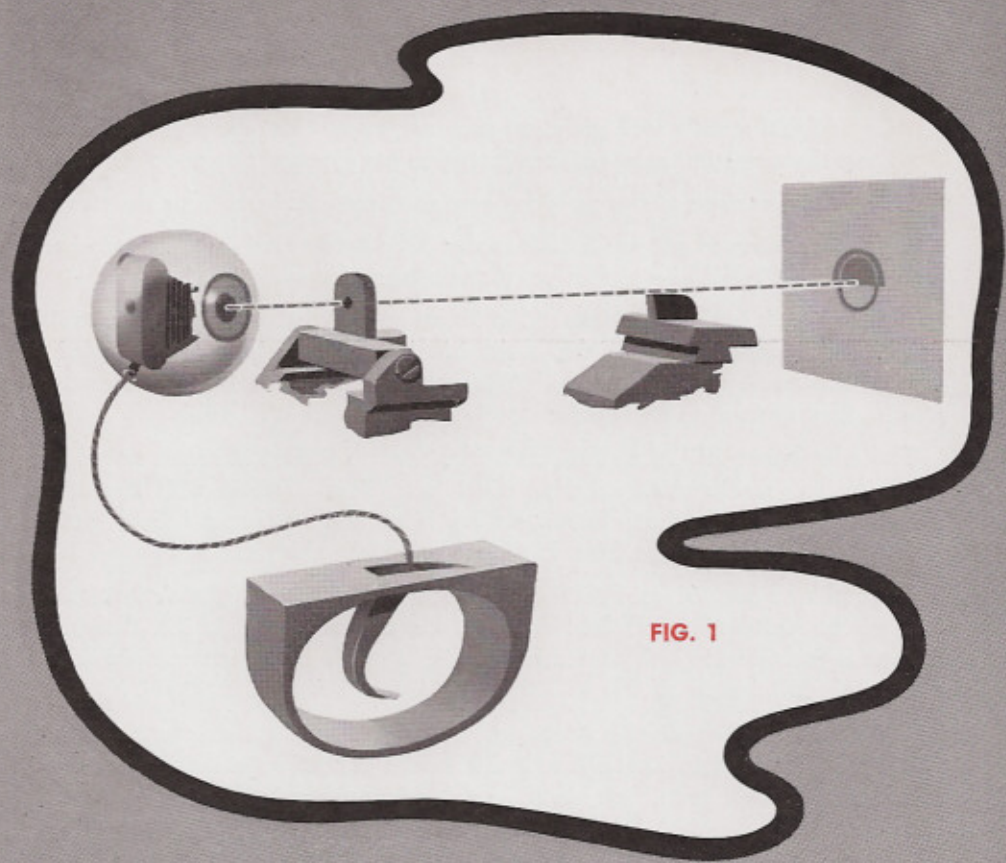


FIG. 1



FIG. 2
UNIFORMITY
OF SIGHT PICTURES



FIG. 3
LACK OF UNIFORMITY
OF SIGHT PICTURES

EYE DISTANCE

TO OBTAIN strictly uniform sight pictures, each time, the marksman must keep the same but safe distance between his eye and the peep sight.

He cannot be close to the peep for one shot, and far from it for the next.

He should learn to get as CLOSE to that little hole as safety from recoil will permit and ALWAYS be at that point of distance for every shot.

He must pick out the features of his target so that the circular frame which contains the optical centre, also embraces the same details of his target in exactly the same way each time. There cannot be even the slightest deviation. Any attempt to be approximately correct is all WRONG.

The wheelsman of the assault craft who doesn't keep his vessel steered toward the landmarks of an invasion coast is in deep trouble with the attack naval authorities and beachmasters. He must keep the same sight picture before him in order to perform his troop-carrying mission.

The lad who cannot get into the ball park to see the big game can usually find an unoccupied knothole. He gets his eye right up to that hole, too. In fact, if you were to look at it from the inside of the ball park, you would see a knothole filled with eye.

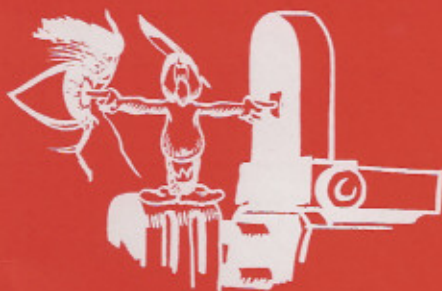
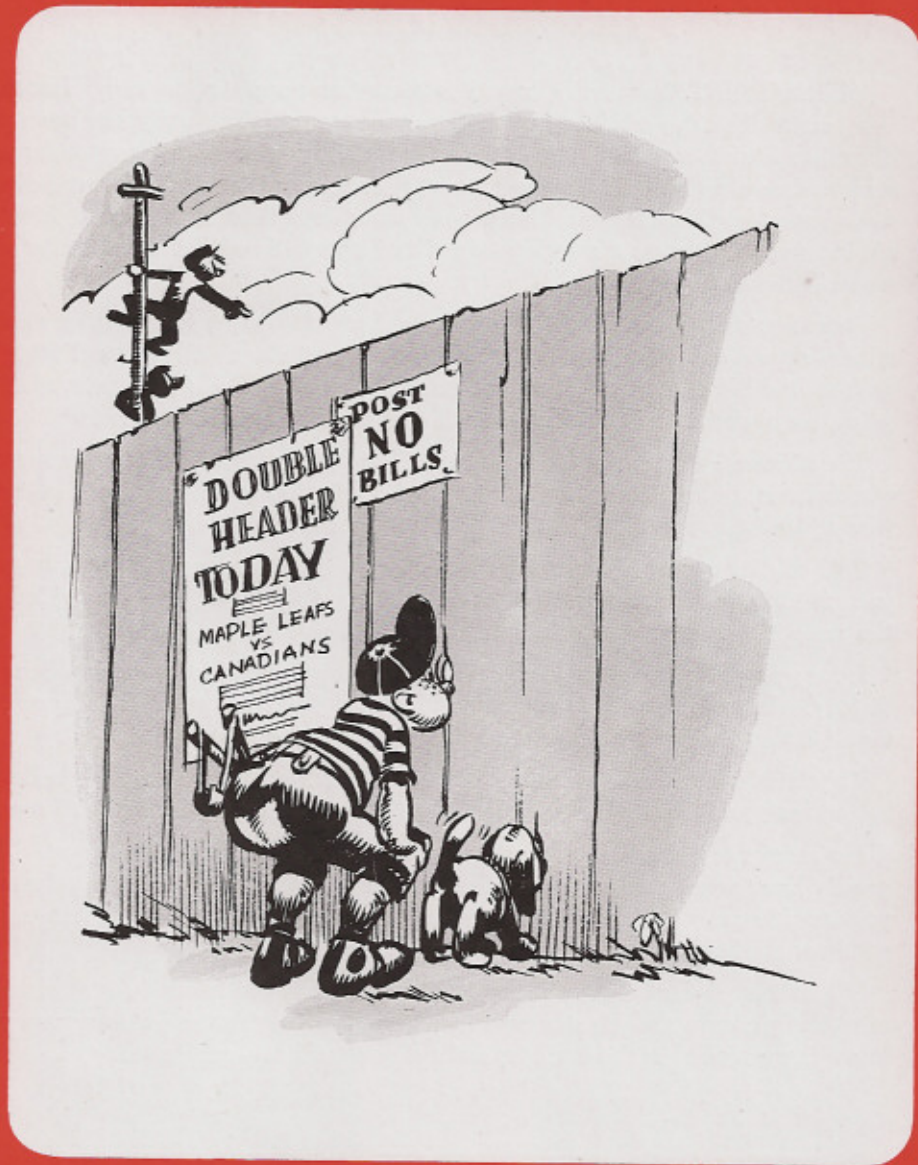
The same thing applies in shooting. The firer must get as close as safety will permit, to that peep hole in order to have a perfect optical centre and yet, at the same time, have a sizeable field of view which will give good sight pictures.

But some recruits will complain that they can see several targets when they look through the peep. This is natural. They should be seen but the recruit's own target, upon which his attention and sight should be concentrated, should be seen best.

The proper placing of the head against and on top of the butt, if carefully practiced so that the eye comes to the correct distance from the peep, each time, will help in maintaining uniformity of eye distance.

Above all, the recruit should practice placing his eye at the same distance so that he will automatically have this distance every time that he picks up his rifle to shoot.

**Get the "feel" of uniform
eye distance.**



MOVING AND SERVICE TARGETS

A COMPLAINT frequently heard is that the peep is too big. Recruits claim they are confused as to their own target. The peep has been deliberately bored its present size because in mobile warfare, with moving targets such as crawling men, lumbering tanks, speeding cars and trucks and power-diving planes, the marksman must have as wide a field as possible. Just try aiming your finger on a moving target and you will see the advantages of a sizeable field of view.

Then again, the poor light of dawn or dusk, fog, rain, smoke from shells, mines, smoke canisters and the confusion of camouflage, all demand that the soldier has the maximum of vision through his peep. He must see what is going on in order to look after himself and retard any enemy efforts.

The rifleman who is lying in a slit trench and who sees before him an enemy, whom he is about to shoot, will want to be able to see other enemy soldiers who might fire upon him.

Our soldier wants to be ready to deal with such emergencies and he can gain much confidence from the fact that a good field of view is provided by the peep sight without sacrificing precision of aim.

It may now appear to your recruit that the instruction is becoming contradictory. In one place it is recommended that the front sight is the point of visual concentration yet in another the field of view is stressed.

Your student marksman must remember that the object to be hit is determined first, and that he has a perfect sight picture of it and its surroundings.

He must not permit his attention to be distracted from that target. If a grizzly bear were coming down the trail at you and you couldn't get away, you would surely keep your eyes on the bear and not be looking around to see how the bolt of your rifle opened and closed.

When the perfect sight picture is assured, then the front sight is brought into that picture, the Master Eye focuses upon the front sight because you know the target is in the background. You then fire—and score.

***Watch for the hidden sniper
alongside the decoy.***

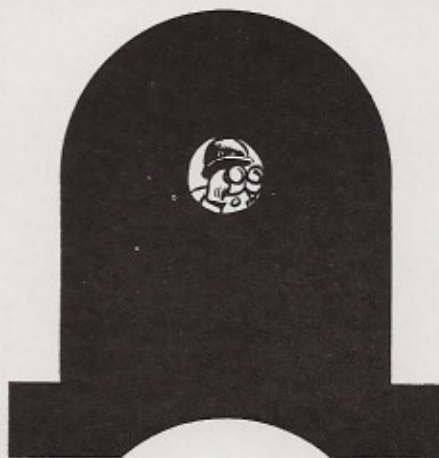


ON THE RANGE

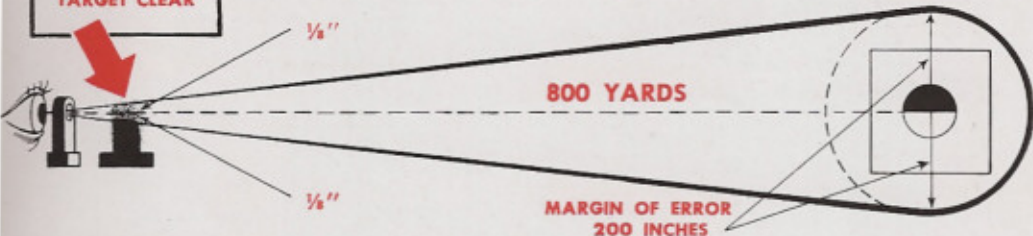
Field of View



IN COMBAT

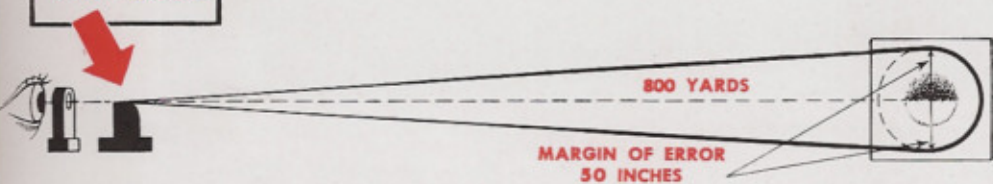


FORESIGHT
HAZY AND
DISTORTED
TARGET CLEAR

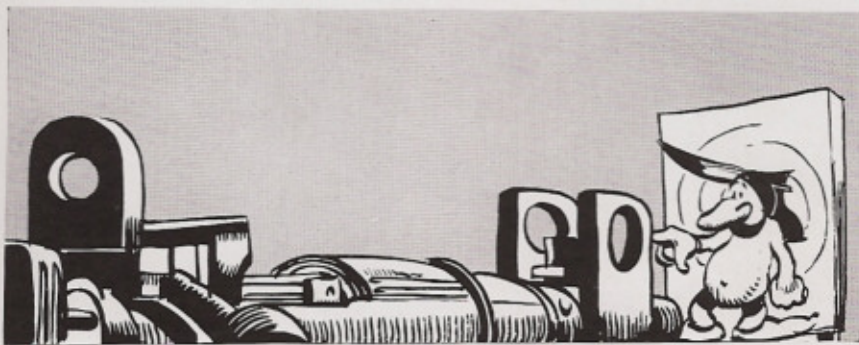


LOOKING *past* THE FRONT SIGHT

FORESIGHT
SHARP, CLEAR,
KNIFE-EDGED
TARGET BLURRED



LOOKING *at* THE FRONT SIGHT



FRONT SIGHT VERSUS TARGET

YOU MUST keep your eye upon the target as you bring that front sight up into position as it rests upon the aiming mark. Your whole attention is concentrated upon that aiming point. Then, as you are about to squeeze the trigger and the slack has been taken up, you shift the focus of your eye in that one-fortieth of a second so that you see the front sight sharp, clear and square upon that aiming mark. You know the aiming point is directly beyond the front sight and you know that your front sight is clear and steady. You then squeeze the trigger.

If we were to observe Figures 1 and 2 opposite, we would note that in Figure 1 we have seen the target clearly. It is perfectly round and sharp. The front sight is hazy, distorted and indistinct. Any aiming we do now must be by guess and a prayer.

Supposing that because of a fuzzy front sight we make an error in aiming of one-eighth inch. That isn't much but we are firing at a target 800 yards distant. Now let us assume that the front sight is one yard from the eye. (It isn't quite that much). The $\frac{1}{8}$ th-inch error multiplied 800 times would send the bullet off the target 8 feet, 4 inches. Or should you shoot $\frac{1}{8}$ th-inch low, you would likely kick up the dust 500 yards in front of you.

If it were possible that the low bullet fired with the highly questionable aid of a fuzzy front sight were to carry on toward the target it would be 8 feet, 4 inches below the aiming mark. In other words, the margin of error, because you were unable to determine the clear outline of the front sight, would be an amazing total of 200 inches or 16 feet, 8 inches. That kind of a margin would provide a fair chance for something over in the next county to be hit.

On the other hand, as in Figure 2, your front sight is sharp, black, clear and square. At 800 yards the aiming mark is a fuzzy and hazy blob of indistinct gray. It lacks definite outline. The trick is to estimate the centre of that blob and shoot with confidence because if your front sight has been clearly seen, your shot will not be more than 10 inches above or below the blob.

Extend that 10-inch margin of error until it encircles the indistinct aiming mark. The blob itself won't occupy a diameter much more than 30 inches when viewed at 800 yards and with 10 inches added above and below the blob we now have a generous area for error with a diameter of 50 inches—

JUST ONE-QUARTER AS MUCH AS WAS POSSIBLE WHEN THE TARGET WAS SHARP AND THE FRONT SIGHT INDISTINCT.

Of the two methods of aiming you will select the one where there is the least margin of error and that is the one where you see the front sight, black, distinct, sharp and square because it assures four times as much accuracy as when the target is clearly seen.

AUXILIARY AIMING MARKS

THE OLD-STYLE bull's eye was a black disc and the trick was to aim at the bottom of that disc and hope to hit the centre of it (see Figure 1A, opposite). In other words it implied that you should aim at one point and try to hit another with your bullet. Just as if you hoped to hit a nail on the head with a hammer and watched the hammer handle instead of the nail-head.

If you were following this method when shooting at the heart of an enemy you would aim at his knee.

Even if the intention had been to aim at the centre of the bull's eye and hit it there, the task was difficult because the farther the object is from the eye, the harder it is to distinguish in detail.

Later, to improve aiming, the bull's eye was horizontally halved so that it appeared to be a half disc resembling a tin hat or battle helmet, (see Figure 1B). The marksman should thus bring his front sight up to the horizontal, flat edge of the half disc and he would be perfectly on the beam. He would then have a great advantage in being able to place the **TIP OF HIS FRONT SIGHT IN THE CENTRE OF THE BULL'S EYE, EXACTLY WHERE HE WANTED HIS BULLET TO STRIKE.** That would be a case of aiming at what you wanted to hit and not aiming at one point which you didn't want and hoping to hit some entirely different spot.

But black sights, lined up with the middle of the black aiming marks, do not tend toward much accuracy. The blacks are inclined to blend and so precise aiming cannot be assured.

Hence, a small, white square was left in the centre of the horizontal halving line and became known as the **Auxiliary Aiming Mark**, a most useful consideration for recruits. See Figure 1C.

Now it is possible for the front sight to be brought up so as to have that auxiliary aiming mark sitting on top of the centre of the tip of the front sight. The marksman is now assured of the perfect placing of the front sight to exactly coincide with the spot where he wants his bullets to strike—and not somewhere else (see Figure 2).

Similarly in the hour-glass shaped targets (Figure 3) the auxiliary aiming marks have been established. Here again the front sight is brought up to the auxiliary aiming mark. When located there and horizontally centred, the aim is precise.

DEVELOPMENT OF AUXILIARY AIMING MARKS

OLD STYLE

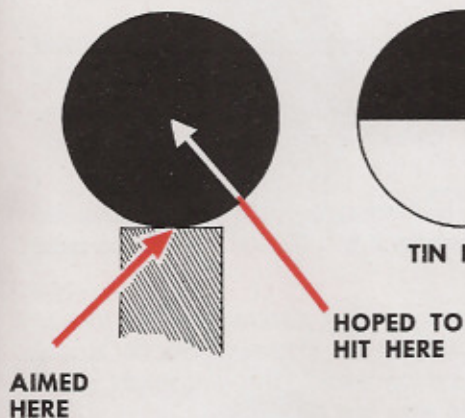


FIG. 1-A



FIG. 1-B



FIG. 1-C

HOW TO USE AUXILIARY AIMING MARKS

9-C TARGET 30X

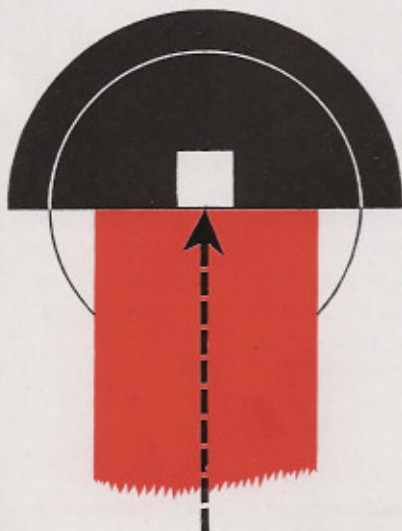


FIG. 2

4' TARGET 100X

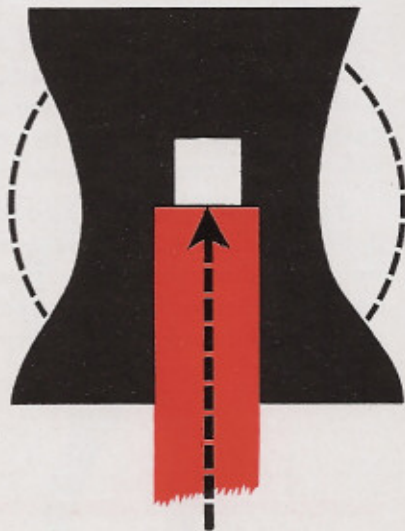


FIG. 3

SERVICE TARGETS AND POINTS OF AIM

THE prime purpose of this teaching is to develop such an expertness that when the recruits, so trained, reach the battlefields, they will possess the utmost of aiming proficiency.

For the sake of convenience, targets on the ranges have been standardized according to the range and the degree of training attained by the class. But when it comes to shooting the enemy on a tricky battlefield, where the conditions are much different than on the well-organized range, many new problems are presented.

It is maintained that if the recruit can be accurate on the range then he can be sure to plant a bullet in an enemy where it will do that enemy the most harm.

If you were to see just the head of an enemy soldier sticking out of a trench or from behind a fallen tree, there would only be the distance from the rim of his helmet to the ground to serve as an aiming mark. But you might shoot high and you most certainly do not want to miss him.

So you use common sense and all the advantages which you can muster. You will be smart, here, if you aim at the bottom of his chin or at the ground level (see Figures 1 and 1A, opposite).

If your shot has been high you will have struck him in the face. If you have shot exactly where you aimed, the bullet may hit the ground just in front of him and ricochet, with an end-over-end spiral, which will cause a far more ghastly wound. Japanese troops were deliberately taught this latter technique.

Now assuming that in addition to his head, his two shoulders are plainly in view. The same method prevails—he is a goner with this sort of aiming. See Figures 2 and 2A.

But should your enemy be standing, you now have enough target with which to become more personal. You can tie his ticket onto a bullet and aim at the centre of his body (see Figures 3 and 3A). Elevation problems will have been taken care of by the zeroing of your own rifle and the enemy will have another name on his casualty list.

If the enemy should be moving along, perfectly oblivious to your designs upon him, the trick will be to aim for the centre of his body but slightly towards the direction in which he is moving. It is just a case of pinning him down with hot lead at a point where the target is large enough to reduce to a minimum the margin of any error in aim due to movement.

ADVANTAGES

FIG. 1



FIG. 2



FIG. 3



DISADVANTAGES

FIG. 1A



FIG. 2A



FIG. 3A



PRECISION OF AIM

FAR too many marksmen are content to belong to the "Ancient and Honourless Order of Almost Righters". This organization is as valuable to the enemy as an elaborate espionage system. It does a terrific amount of harm because its only qualification for membership is that the rifleman must not be precise in his aim. He is permitted to come close to registering precise aim with every shot but an "Almost Righter" is not expected to insist upon his own aiming accuracy.

There are three degrees in the initiation of members. The soldier who regards his shooting as "good enough" gets his first degree with ease. Then the rifleman who is satisfied with "pretty close" aiming is a second degree member. When he can shoot "almost right" and is satisfied with that kind of work, he is a full-fledged member.

ARE YOU AN ALMOST RIGHTER?

For those exacting soldiers who are out to kill the enemy and at the same time save their own lives, there is only one kind of aiming—the precisely correct, perfect, on-the-beam, smack-in-the-centre, ideal kind. Soldiers who shoot this way never get into the "Ancient and Honourless Order of Almost Righters". They do not help the enemy—they kill him.

May we repeat—there is only one kind of aiming demanded by the Canadian Army. It is the accurate, exact, precise, perfect kind. All other kinds of aiming are *Wrong* and perfect shooting can only be attained through perfect aiming. You cannot guess at where your front sight is in relation to the aiming point. You must know where it is in order to steer your bullet right onto that aiming mark.

Precision of aim calls for accurate expression of effort. It must be definitely exact and must scrupulously observe the rules of accuracy. The watchmaker fitting a balance wheel for the sleek, ivory-tinted wrist of a movie actress knows precision because he grinds the gears down finer than a split strand of a spider's cobweb.

Just ask some of the instrument mechanics of the Royal Canadian Electrical and Mechanical Engineers about precision. They talk in terms of one ten-thousandth of an inch, as if it was a mile. They know the meaning of the word "exactness". You would surely howl "Thief!" if your garageman charged you \$50 to fix your car yet left one piston sloppy in its cylinder. He only has to work within 3/1000ths of an inch.

You insist upon perfect precision in the mechanics of your watch and car yet when your own life, against that of an enemy, is at stake, you are willing to take chance? We doubt it.

Supposing you need an operation upon your eye or heart. You get a surgeon whom you know will be utterly exacting in the way he uses the knife and effects the removal of the infected parts. Your life or your eyesight will

PRECISION OF AIM—Continued

be involved so you don't fool. You are dead serious. You want precision right down to the nth degree.

That surgeon, when he first started to learn his profession, knew he had to develop precision. He practiced until he got it down perfectly. Lives would depend upon his skill and he could not afford to be careless.

Are you willing to go onto the range *without* having learned precision of aiming; *without* insisting that you will do it precisely and consistently so that when you stack up against a ruthless enemy you will know that you will get him with one accurately-fired shot?

Teaching precision of aim is a classic in the field of musketry headaches. Many recruits just hate to admit that they are not precise—exact—on the beam. They want to blame the rifle, the coach, the weather, the ammunition, the cook, their eyes and even the unit mascot. They will not tolerate for a moment that they were not precise.

Sure, they did just what the instructor ordered. But has the instructor overlooked the fact that he does not see through the eyes of his pupil? Each eye sees differently and the recruit must solve his own aiming problems by satisfying his own conscience and proving it with accurate target groups.

Possibly the most difficult marksmanship factor to get across to soldiers is this business of accurate sighting and aiming. It is difficult, not because the various steps toward good aiming are hard to explain but because the precision required for perfect results is hard to demonstrate. Only an excellent shot can appreciate the absolute precision necessary in aligning the sights, if obscure or distant targets are to be hit.

Practice, patience and determination to shoot accurately are the prime needs of the recruit. The coach can get blue in the face trying to demonstrate what is wanted but if the recruit sees an entirely different picture than the coach, how can he be expected to aim exactly as the coach?

If you will refer back to the two sets of "prints" taken on the imaginative cameras (Figures 1, 2 and 3, Page 105) you will see that the expert saw the same sight pictures for every shot. He was precise. His shooting, if consecutively aimed at the ground level of the barn door, would have placed four shots there. Just where the recruit's precisionless aim would have parked his bullets, no one can guess, but the windmill, mail box and lightning rods would doubtless have been hit.

Don't be an almost righter—Be a PRECISER.

BLACKENING SIGHTS



YOUR attention is drawn to Figures 1A, 1B and 1C below. Figure 1A shows a front sight that is dirty. It is smudged with lint, grease and Heaven knows what else. It cannot perform its functions in giving accurate aim if its outline cannot be seen clearly, sharply and squarely.

On the other hand, a polished front sight as in Figure 1B, so clean that it shines like a prim spinster's nose, cannot be clearly distinguished either. Your eye cannot cope with the glare.

The ideal sight is one that is clean, dull, jet black as in Figure 1C. It must give a clear, sharp outline and yet carry neither dirt nor glare.

To attain this kind of sight condition, wipe all grease and dirt from the sight (see Figure 1, opposite); place the butt on the floor with the muzzle pointing upwards at approximately an angle of 65 degrees with the sight on the under side of the barrel. Hold a match or cigarette lighter (as in Figures 2 and 3), so that the tip of the flame will play upon the sight. It will soon be covered with a clean, even, sooty coat of dull lampblack, provided of course you were careful to first remove all oil or grease.

Similar treatment of the back sight is of equal assistance in aiming accuracy.

FIG. 1A

FIG. 1B

FIG. 1C



CLEANING and BLACKENING SIGHTS

FIG. 1

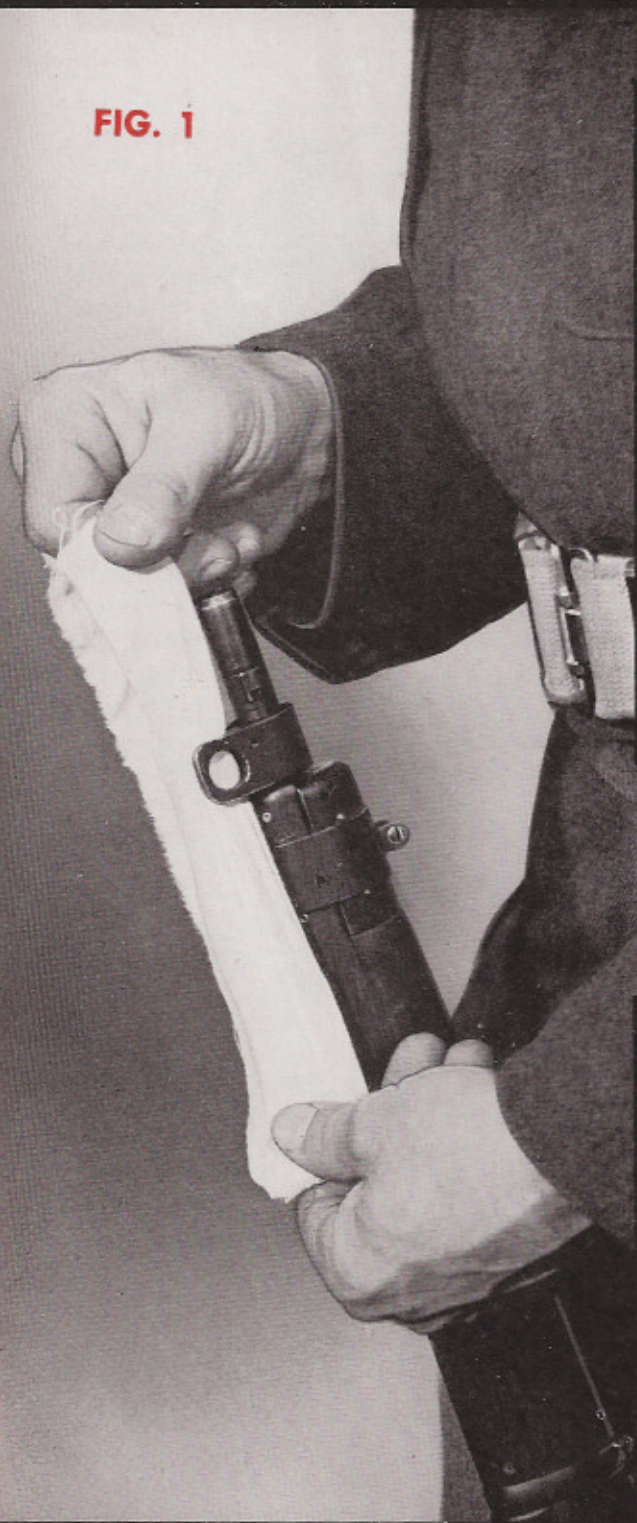
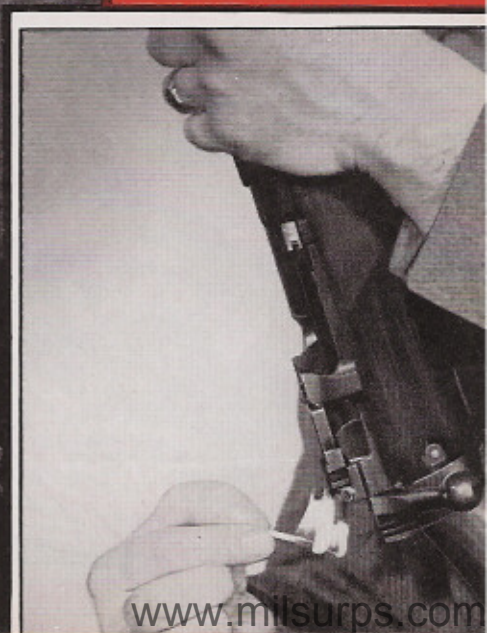


FIG. 2

FIG. 3



"WHY SERGEANTS GET GRAY"

BY
Little Chief Wildshot



THE EQUIPMENT OF AIMING

YOU have impressed your recruits that eyes are different; that no two people can see exactly the same things under the same conditions. You have also impressed upon each recruit that precision of aim has a top priority.

But soldiers will argue strongly, their aiming is perfect. If their shots go wrong, their rifle is to blame, it hasn't correct sights, the barrel is rusty or one of a score of other mechanical defects prevail. No sir, the recruit never makes mistakes. He is just like the typist who blames the typewriter for spelling errors. His pride, his ego, or whatever you want to call that human defensive trait, just won't let him admit a mistake.

You, the instructor, have the responsibility of sending those soldiers out to look after themselves on the battlefield. You are therefore going to make certain that every lad in your class does aim accurately. You are not going to take his excuses, his bluff nor his alibis. You are going to check his accuracy. And if he finds that he cannot get away with claims of accuracy which are not well founded, he will know that he is open to ridicule. He may know that you won't be too severe about it but his classmates will be able to flatten his boasts of perfect marksmanship.

In order that the coach may check upon the recruit's aiming accuracy, several sighting devices have been designed. They are somewhat different in construction, one from the other but they all perform the same job. Moreover they are foolproof and will impress upon the recruit the precision of aim required, so that when he gets onto the ranges he will know exactly what to look for.

***Aiming Equipment,
if used,
produces marksmen.***

THE AMERICAN SIGHTING BAR

THE American Sighting Bar, specifications for the construction of which are shown in the accompanying sketches (opposite), is valuable in teaching aiming to recruits. It consists of a strip of wood, one inch wide, two inches in depth and fifty-four inches long, on one end of which a black piece of sheet metal has been solidly and squarely fixed. This is called the eyepiece. A small hole has been drilled in this metal, one half-inch from the top. This hole should be centred in the metal strip.

Twenty-eight inches beyond the eye-piece a slot is cut and into it a metal plate, similar to a backsight, can be inserted. This sheet of metal should have a hole the size of a 25-cent coin centred in its upper half. This is known as the aperture.

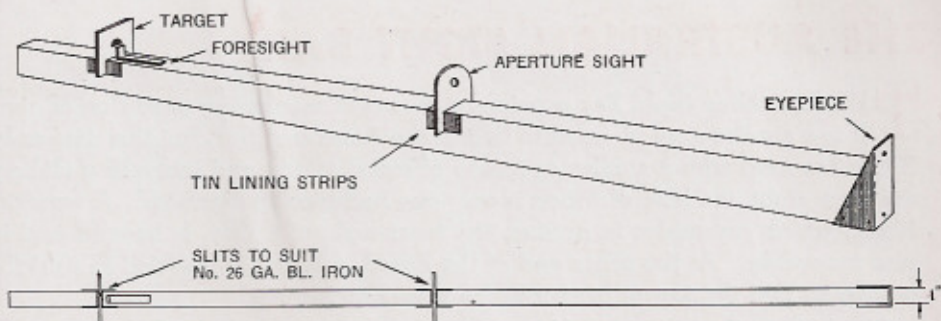
Continuing 20 inches farther, a right-angled piece of metal is placed so that a short, upright end will approximate, or resemble, a rifle's front sight. One half-inch beyond, a slot should be cut into which a "tin hat" aiming mark or half-disc black target card can be inserted.

The idea is for the hole in the eyepiece, the aperture, the upright "sight" and the centre of the aiming mark to be brought into strict alignment. The precision this requires should impress itself upon the recruit.

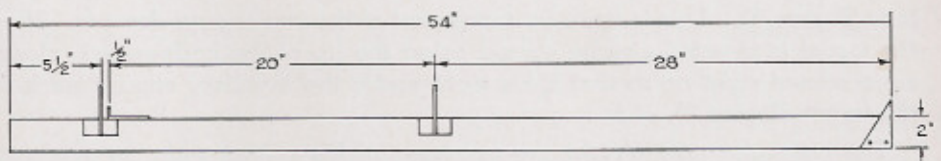
As the recruit looks through that little hole, which is the eyepiece, he should see the two-bit sized hole (the aperture in the upright metal plate). Next he should see the sharp, clear, square outline of the front sight (see Figures 1 and 2, respectively). Then as the target is inserted in its slot he should be able, by adjustment of the target card, to bring the tin hat aiming mark directly into line with the front sight so that the flat side of the target's shape appears to sit on top of the tip of the sight and dead in the middle of the vertical centre of the aperture (Figure 3).

This exercise can best be worked out by the recruit looking through the eyepiece while the coach has most of the bar resting upon his shoulder. The coach's back should be toward the recruit so that he may adjust the target card in response to the directions of the aimer. The coach can thus watch the preliminary approach of the recruit toward precision of aim.

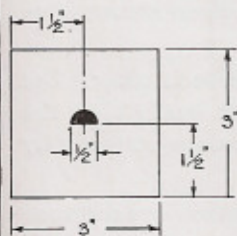
**ACCURATE AIMING IS
UNQUALIFIED.**



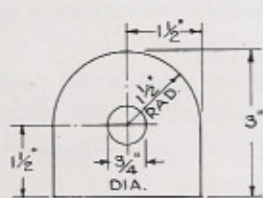
TOP VIEW



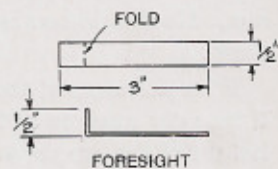
SIDE VIEW



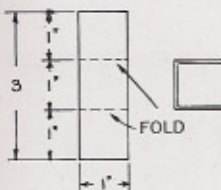
TARGET



APERTURE SIGHT

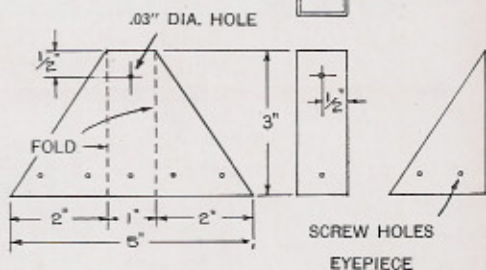


FORESIGHT



TIN LINING STRIP

NOTE:
TARGET, APERTURE
SIGHT & EYEPIECE
TO BE OF 26 GA.
BL. IRON



SCREW HOLES
EYEPIECE

FIG. 1



FIG. 2



FIG. 3



THE AUSTRALIAN SIGHT BAR

THE Australian Sight Bar provides a means of measuring precision of aim. It is a similar strip of wood to that of the American Bar, but this time only 39 inches long with a similar eyepiece of metal at one end but with a sliding aperture sight, the hole of which is only one half-inch in diameter. A wooden block, which resembles in outline, the front sight of a rifle, is beyond and is also moveable. At the other end of the board, a target is inserted in upright guides so that the target card may be raised or lowered.

The recruit, this time, should be permitted to first look through the eyepiece and thence through the aperture sight. See Figure 1, opposite. Then he should be permitted to bring the front sight into the dead centre of that aperture (Figure 2). This is done by movement of the two sliding devices. Now the target is inserted and he should bring the tip of the knife-edged, clear, square front sight up so that it fits right under the auxiliary aiming mark of the target (Figure 3).

The instructor now checks the accuracy of his recruit's aim by marking the point at which the front sight rested on the wooden bar. This is done without the knowledge of the recruit, who is then given another chance to aim. He should be able to demonstrate his aiming precision three consecutive times.

If he is exacting, the three pencil marks will be on top of each other. But if he only guesses at the precision of his aim, then you can easily alter the height of the target and keep exercising him until he becomes consistently accurate at any target height.

The recruit will find that if the aperture is always at the same eye distance his sight pictures will improve and he will see the value of precise aim.

Note the specifications and operation plans shown on the opposite page.



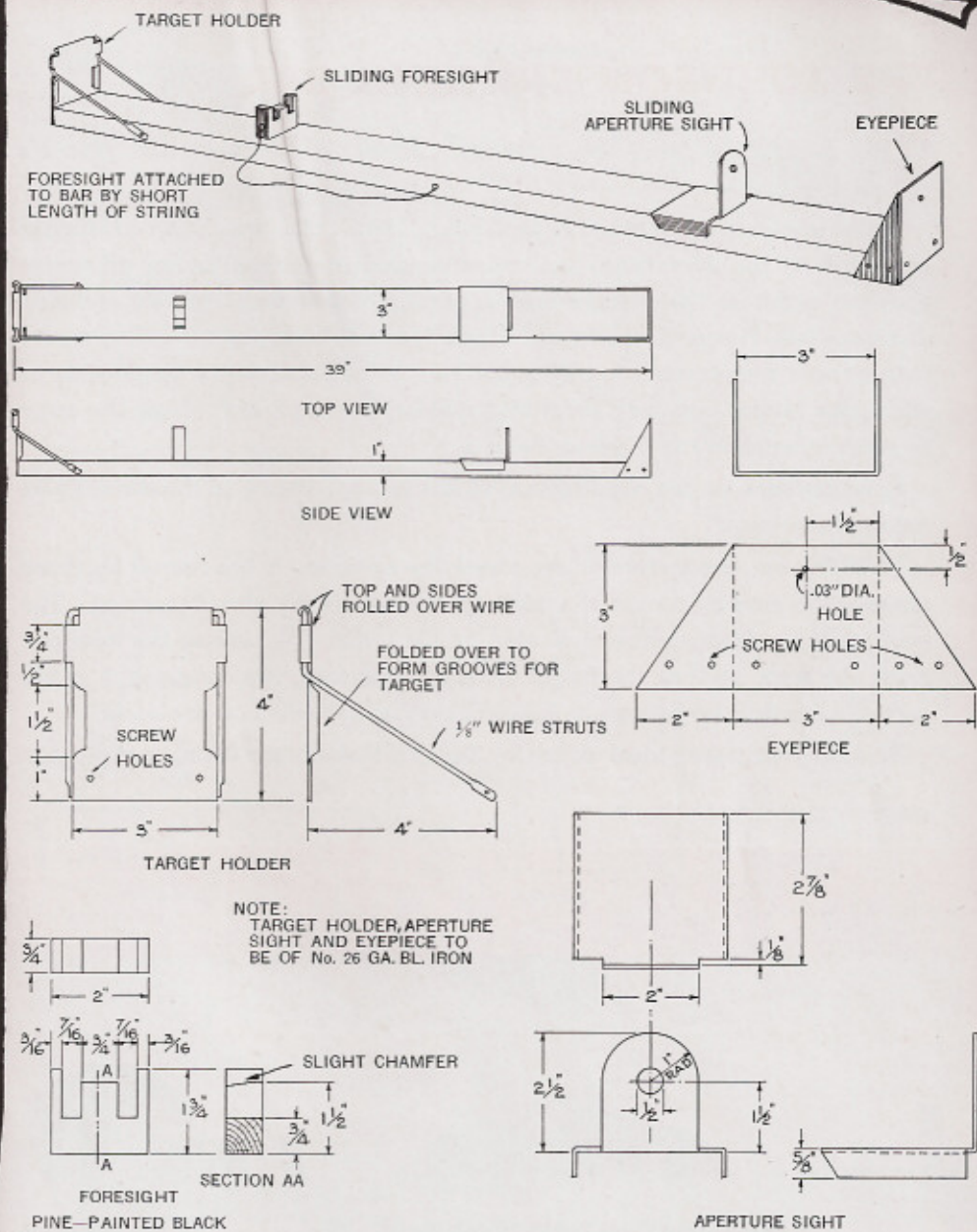
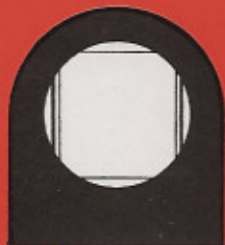


FIG. 1

FIG. 2

FIG. 3



THE JOHNSON SIGHTING BAR

THE Johnson Sighting Bar provides a further check upon the recruit's aiming accuracy.

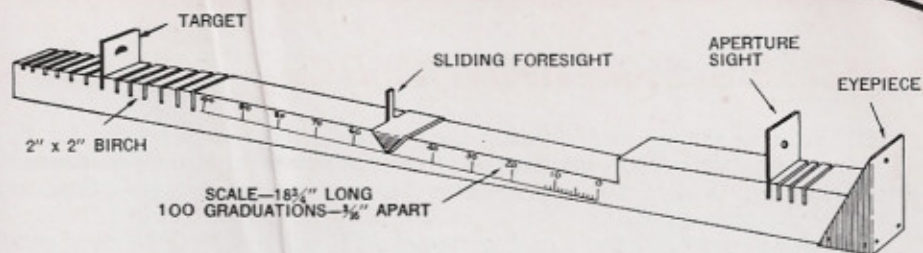
This bar consists of another 39-inch long, 2 by 2-inch piece of wood, similar in design to the Australian bar but with graduated slots for an off-centre aperture sight, so that it may take a variety of positions, heights and eye distances (see Figure 1, opposite). There is also a front sight which is moveable upon a scaled elevation slope and a graduated series of target slots in which the target card may be moved sideways in each slot. Note the steps in sighting as shown in Figures 2 and 3.

Specifications for the construction of this bar are shown in the drawing on the opposite page.

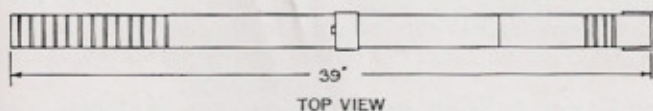
With this bar, the instructor can check the accuracy of the recruit for three consecutive aims by means of a scale on the side of the elevation slope. The position of the front sight is indicated on the scale. By moving the aperture sight, the front sight or the target for additional tests, the consistency of the recruit's aim will be proven by his accuracy as recorded on the scale.

This bar provides an ideal means for Tests Of Elementary Training of aiming.

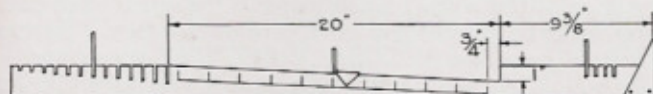




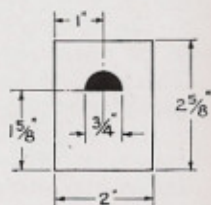
SCALE—18 $\frac{3}{4}$ " LONG
100 GRADUATIONS— $\frac{3}{4}$ " APART



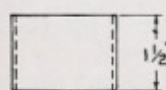
TOP VIEW



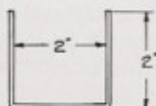
SIDE VIEW



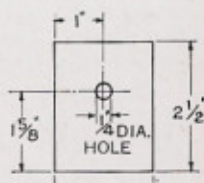
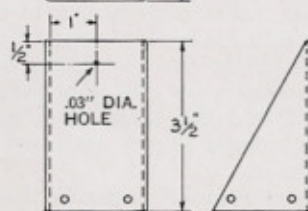
TARGET



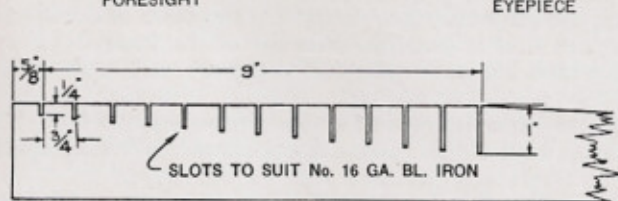
FORESIGHT



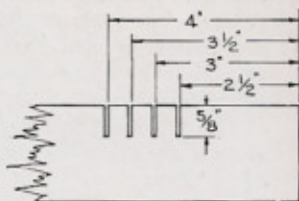
EYEPIECE



APERTURE SIGHT



DETAIL OF BAR



NOTE:
TARGET, FORESIGHT, EYEPIECE AND
APERTURE SIGHT TO BE OF
No. 16 GA. BL. IRON. TARGET TO BE
PAINTED WHITE

FIG. 1

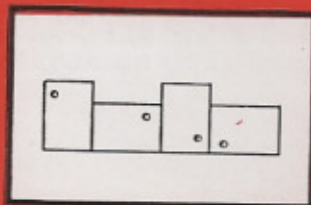


FIG. 2



FIG. 3



WINTER'S SIGHTING DEVICE

THE various aiming and sighting bars provide the ground work for the recruit in determining his degree of accuracy which precise marksmanship demands. But to tie the rifle into the picture the Winter's Sighting Device is recommended.

This can be constructed at a cash outlay of a 75-cent bevelled mirror of good quality, a few pieces of lumber and some nails. A carpenter, or anyone who can saw straight and hammer a nail, can quickly make the device. The specifications are shown on Page 133 and the operation shown on pages 130 and 131.

The Winter's Sighting Device is NO triangulation gadget. If precision is to be attained in marksmanship there isn't room enough for even triangles. The points of correct aim must be piled right on top of each other. Hence the Winter's Sighting Device provides ACCURACY DOTTING exercises.

Its use permits the rifle which has been firmly attached to the device to be naturally gripped by the right hand while the cheek and head have properly fallen into correct position over and upon the butt and the heel of the butt is against the recruit's muscle pad where it belongs.

An adjustable eyepiece must be attached to the rifle so that the eye will come right up to it, always in exactly the same position when looking through the sights. Thus the vision is directed through the optical centre of the back sight to the sharp, square, clear front sight—all in perfect alignment.

The mirror, however, reflects an image of the aiming mark of any target that is desired. This aiming mark is placed on one leg of a giant-sized clothespin or yoke which straddles the recording board. The recruit is able to manipulate the target which he can see only through the mirror. This is done by the left hand and the target can be moved around so that its reflection in the mirror comes to rest squarely upon the tip of the front sight for a perfect sight picture.

When this accuracy is attained, a pencil is inserted into a hole. This hole will only accommodate a pencil which is finely pointed. It is in the leg of the yoke that is used for moving the target leg into position. The point of accuracy is marked with a fine dot (all that is possible because of the finely-tapered pencil hole) upon a paper which has been attached to the recruit's side of the recording board.

The yoke is then moved aside and the recruit is ready to repeat the test. He should practice this accuracy until he can place three consecutive dots upon each other.

The student using this device is able to prove that he can aim consistently with accuracy and that he cannot bluff his way out of this test. He knows that he can now master accuracy with his own rifle and even before he reaches the ranges he has the necessary confidence that there is nothing wrong with his aiming ability. He and his classmates should be encouraged to practice on this device and, if they wish, engage, in a bit of friendly competition with it. As a game it beats snooker pool.

The device is virtually fool-proof, can be made for either the prone, sitting or standing positions and is easily adopted for checking Bren gun or pistol sighting.

It will work as well indoors as out and will accept miniatures of every target type and size. The mirror's slope can be altered in two different ways by manipulation of the wing nuts behind the springs which hold it in place. This permits an average-sized class to use one score card on the recording board



**MODEL OF THE WINTER
SIGHTING DEVICE**

WINTER'S SIGHTING DEVICE—Continued

as the mirror can be shifted each time a new recruit commences a test and thus no two recruits will work on exactly the same spot.

Three separate exercises may be performed on the Winter Sighting Device. The instructor can explain and demonstrate each exercise and then have the men perform each of them. Instructors should closely supervise the exercises on the first go-around. After that they should leave it up to the men.

EXERCISE No. 1—CORRECT SIGHTING AND ADJUSTMENT OF EYEPIECE.

The instructor shows the assembled students a series of prepared cards which illustrate correct sight alignment. These should be drawn by the instructor to show first a picture of the peep sight; secondly the peep and front sights properly aligned; thirdly the peep, front sight and aiming mark all correctly in line.

He then demonstrates how to mount the rifle on the Winter Sighting Device and cautions the men that the clamps must be set up tight so the rifle will not shift its position when the shoulder is placed against the butt. The recruit must see the same sight picture each time he looks through the rear sights. This is the time of stressing the necessity of holding the eye exactly the same distance from the rear sight for successive shots when firing on the range.

The instructor explains next that the rifle is pointing into the mirror at the end of the bar and that the mirror will reveal the sight picture through the eyepiece. He indicates how the sights appear in correct alignment by moving the adjustable arm of the eyepiece. The instructor should then have each

WINTER'S SIGHTING DEVICE—Continued

pupil in turn, at this point, set up his rifle in the device, attach the eyepiece and adjust it for alignment.

EXERCISE No. 2—AIMING EXERCISE AND DOTTING PRACTICE.

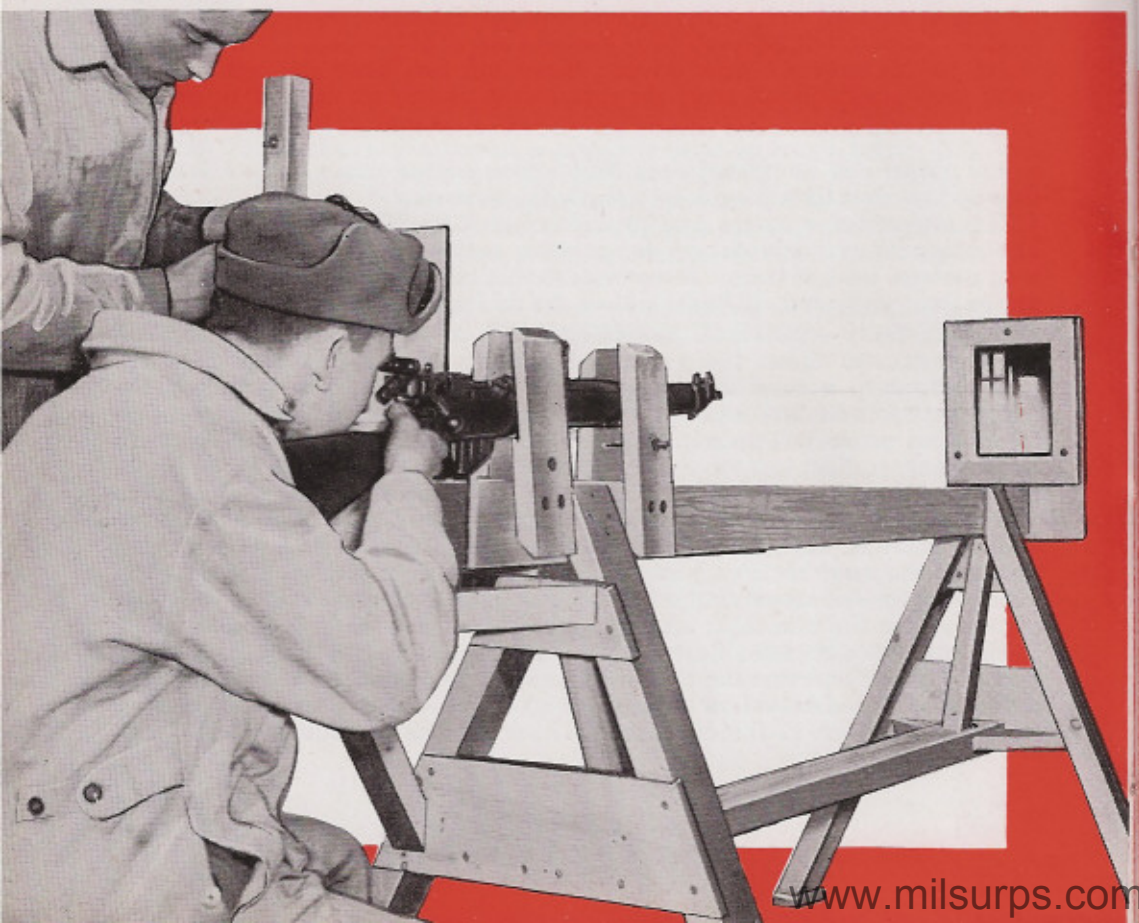
The instructor next introduces the target into the sight picture by moving the yoke which controls the target. It is so moved that the target is brought into the mirror's field of view. He should draw attention, verbally, to the fact that he keeps adjusting the yoke until he can place the target so that its reflection rests upon the front sight, as seen through the optical centre of the peep sight.

At first use a tin hat or half-disc type of target of sufficient size to give the appearance of being actually 200 yards distant when viewed through the mirror and rear sight.

When correctly aligned the instructor demonstrates the Dotting Exercises. The recording board is prepared for this exercise by mounting a piece of paper or light card upon the side of the board nearest the operator. Thumb tacks will do the trick but Scotch or adhesive tape is much better in attaching the paper to the board.

The instructor now inserts the point of a finely sharpened pencil into the tapered hole in the near leg of the yoke. This causes a dot to be made upon the paper thus registering the correct alignment of sights and target reflection.

He then swings the yoke out of position thus moving the aiming mark out of



WINTER'S SIGHTING DEVICE—Continued

alignment with the front sight. Now he brings it back again, into perfect alignment with the front sight and makes a second dot. Before making that second dot, however, the instructor should stress the necessity of aligning the sights to the target **IN EXACTLY THE SAME MANNER EVERY TIME A SHOT IS FIRED.**

He then states that the second and each successive dot will demonstrate whether or not the recruit is attaining precision of sight pictures because if he aligns his sights upon the aiming mark in exactly the same way each consecutive time, the dots will be superimposed upon each other.

Five tries should result in some superimposed dots.

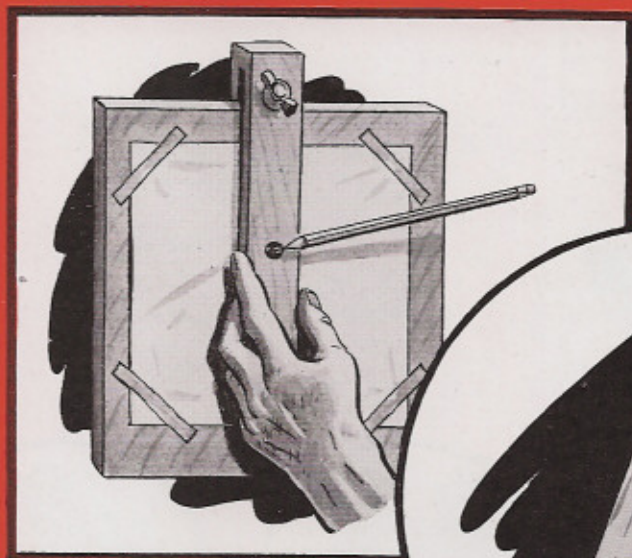
The exercise should be repeated until there are five consecutive dots superimposed upon the recording board. **NO ERRORS** will be permitted.

The pupils then carry on the exercise, the size of the cluster of each man's work giving a picture of his aiming ability.

EXERCISE No. 3—BATTLE PRACTICE.

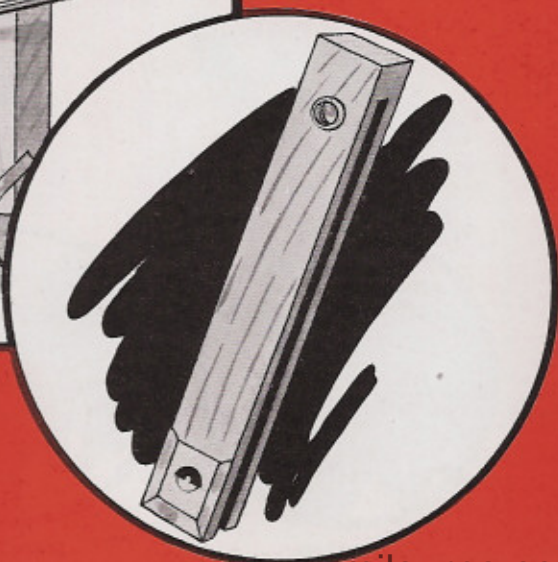
Using the No. 4 rifle with the eyepiece and the battle peep sight, have the recruit practice under the instructor's supervision correct sighting and aiming at suitable combat targets fitted to the device to simulate combat targets up to a range of 300 yards; a man crouching behind a bush at 200 yards or a kneeling man at 300 yards.

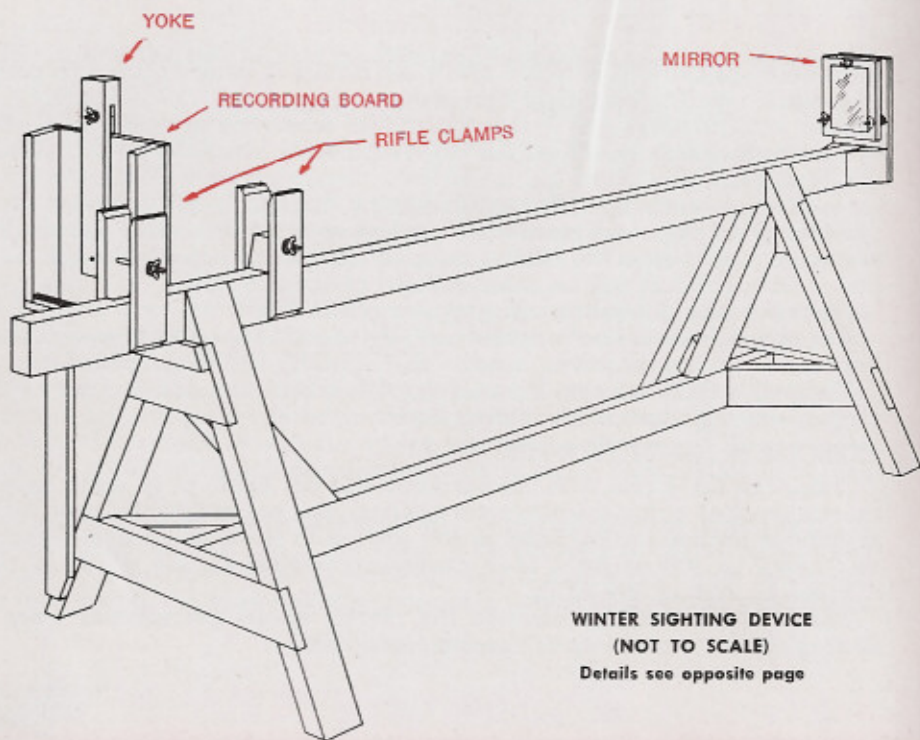
The instructor will be satisfied the recruit knows correct aim when his dotting cluster is made up of superimposed dots.



RECORDING
BOARD

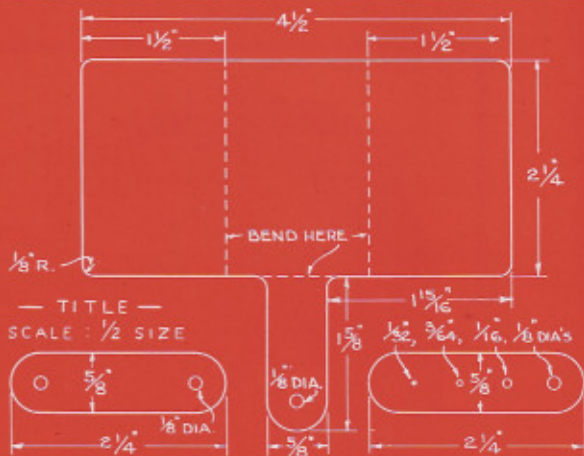
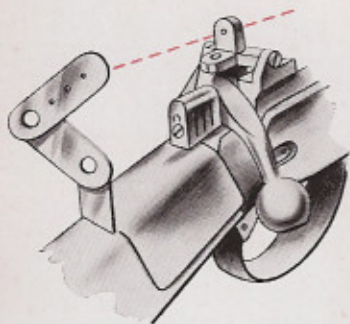
THE YOKE





WINTER SIGHTING DEVICE
 (NOT TO SCALE)
 Details see opposite page

MacLEAN EYEPIECE



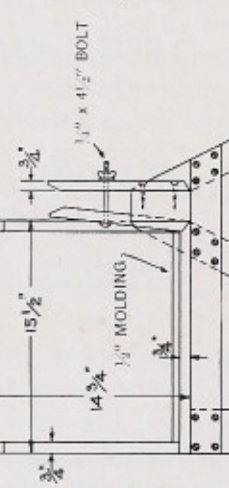
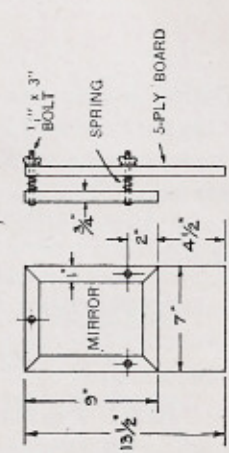
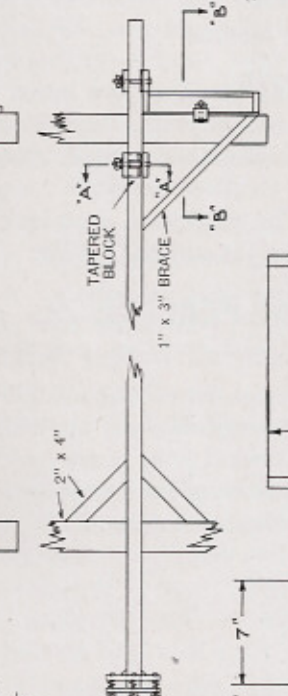
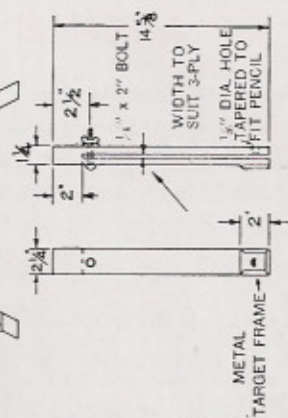
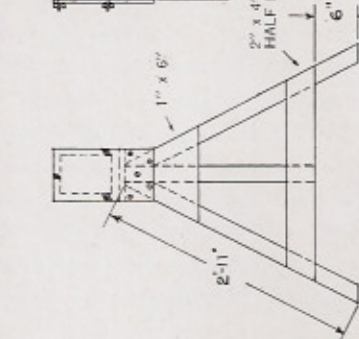
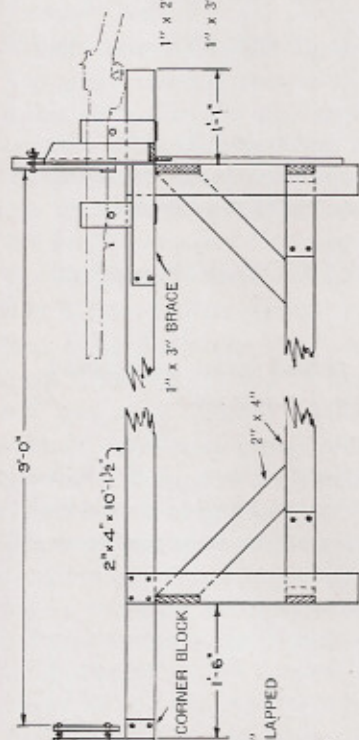
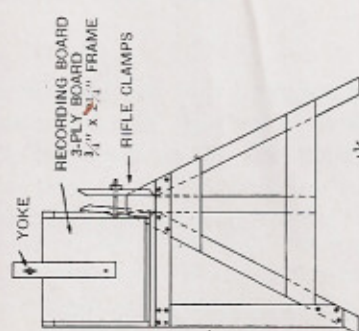
APPLEYARD EYEPIECE



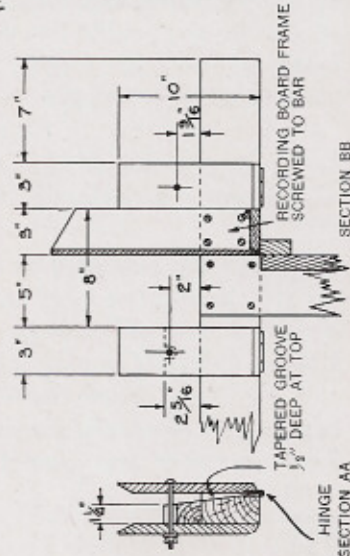
SPRING CLIP EYEPIECE



WARREN EYEPIECE



WINTER SIGHTING DEVICE



NEW RULES OF AIMING

AIMING a rifle has been a phase of good shooting that has been over-emphasized and kicked around a great deal, in the past. The arguments that have raged over the merits of various methods will not be dusted off for review here. The methods which have been outlined in this chapter will produce Aiming PRECISION providing the following rules are followed religiously:—

FORESIGHT—The tip of the front sight must be placed upon the point which the recruit wants his bullet to strike.

SIGHT PICTURE—The marksman must ALWAYS see the SAME sight picture.

OPTICAL CENTRE—The eye must automatically find the Optical Centre of the back sight and then focus its vision upon the knife-edged, square, clear tip of the foresight.

APERTURE—The marksman must look THROUGH the aperture of the back sight and NOT AT it.

PRECISION and PRACTICE—The recruit must understand precision of Aim and then practice it religiously.

Mr. Instructor you have a grave responsibility resting upon you. You must teach every member, of every class you are called upon to train, that thoroughness of aim and drive toward even more precise shooting is paramount just as even an ace golfer dreams of the day when he will be so expert he can tour an 18-hole course with 18 holes-in-one.

