

Print in cover

Provisional Instruction
ON THE
Automatic Rifle, Model 1915
(Chauchat)

No. 8

Translated from the French Edition
of February, 1916

Revised to June 9, 1917, at Headquarters
American Expeditionary Forces
France

FROM COL. J. NO. P. EINLEY, U. S. ARMY
OFFICER IN CHARGE MILITIA AFFAIRS
GOVERNORS ISLAND, N. Y.

Reprinted by the
U. S. ARMY WAR COLLEGE,
January, 1918

WAR DEPARTMENT.

Document No. 732.

Office of The Adjutant General.

WAR DEPARTMENT,

WASHINGTON, *January 8 1918.*

The following pamphlet, "Provisional Instructions on the Automatic Rifle, Model 1915 (Chauchat)," is published for the information of all concerned.

[A. G. O., No. 062.1.]

BY ORDER OF THE SECRETARY OF WAR.

TASKER H. BLISS,

General, Chief of Staff.

OFFICIAL:

H. P. McCAIN,

The Adjutant General.

PART I.

AUTOMATIC RIFLE, 1915 MODEL.

CHAPTER I.

CHARACTERISTICS, DESCRIPTION AND NOMENCLATURE OF THE RIFLE.

I.—Characteristics.

The automatic rifle, 1915 model, is an automatic rifle utilizing the recoil strength. It is classed among the guns of this category acting by long recoil of the barrel.

It fires the French regulation cartridge 86 D. (with modified priming). The feeding is done by clips containing twenty cartridges. This gun can be fired round by round (intermittent firing) or automatically (machine-gun firing).

II.—Description and Nomenclature.

The gun is divided in two principal parts:

- (a) *A nonrecoiling part.*
- (b) *A movable part.*

(a) NONRECOILING PART.

The nonrecoiling part includes:

- 1° The barrel cover guide.
- 2° The receiver.
- 3° The firing mechanism.
- 4° The fittings.

1. The Barrel Cover Guide.—Is made out of steel sheet; is used to protect the barrel and to guide its movements. It is formed of two tubes, fixed together by the front screw collar, and carries at its forepart the flash cover, screwed and set; the front sight carrier, which, by its truncated shape, decreases the internal diameter of the barrel cover guide, constituting some sort of recoil intensifier.

The barrel cover guide is bored at its forepart with eighteen holes, allowing the circulation of the air around the radiator.

On the right, the ejection opening; below, the carrier opening, in which slides the carrier fixed to the movable breech. The slide is hollowed out at its posterior part to allow the mounting

and dismantling of the carrier; at its anterior part to allow the working of the cartridge guiding shuttle.

The back part of the barrel cover guide is ended by the rear screw collar, on which is screwed the plug sustaining the recoil springs.

The plug includes the plug itself, the threading, and the recoil springs guide.

The front and rear screw collar, carry, respectively, an assembling clasp and an eyehole stud, allowing the securing of the barrel cover guide on the receiver by means of the assembling bolts.

The front screw collar has internally a recoil shoulder, on which strikes the forepart of the barrel's sleeve when the sleeve is at its firing position.

On the middle part of the barrel cover guide is fixed the rear sight.

2. The Receiver.—The receiver is formed of two side plates, joined by transoms and fixed at the back on the butt.

On the right side plate are to be seen:

The axis holes of the swivel, of the front assembling bolt, of the connecting rod guide; the holes for the passing of the fixing screws of the middle transom; the axis holes of the trigger, of the safety lock, of the sear lever, of the rear swivel, and of the rear assembling bolt.

The right side plate possesses a hollowed out part for the sliding motion of the operating handle.

On the left side plate are to be seen:

The same axis holes as on the right plate and the holes of the fixing screws of the shuttle transom and of the connecting rod guide.

Holding together the two side plates there are:

The bipod transom, whose anterior part is either threaded or tapped for the screwing of the bipod's axle-bearing head. It holds also the front assembling bolt.

The shuttle transom, which carries:

(a) The barrel lever stop, whose nose, lodging itself in a circular notch of the barrel's sleeve, plays the part of keeping the latter at its firing position. This lever includes the nose, the body, and the toe, a spring, resting on one side on the transom (unmovable point), and on the other side on the toe (movable point), forcing the nose upwards.

(b) The clip support spring, to force off the clip when catch is released.

(c) The cartridge guiding shuttle, pivoting around two trunnions lodged in the side plates, secures the correct introduction

the cartridge in the barrel. This shuttle includes a ramp, on which slides the point of the bullet, pushed in direction of the barrel by the carrier. The shuttle, which, while the gun is working, is to have an elevating and a lowering motion, is operated by the connecting rod through a roller axle.

The shuttle transom is fixed to the side plates by two screws, securing also the connecting rod guide on the right side plate.

The middle transom, at the interior part of which are to be seen:

(a) The carrying handle, fixed to the transom by a screwed rod.

(b) The clip catch, moved by its handle, forced forward by its spring (unmovable point; transom, movable point; hook). The middle transom is fixed to the side plates by two screws.

The butt, on which one can see a steel plate sunk in the wood, and the recess of the plug-stop.

3. Firing Mechanism.—The firing mechanism of the 1915 model automatic gun is fitted on a receiver formed by two side plates and a bottom plate. On the side plates there are the axis holes of the trigger, of the safety lock, and of the sear lever.

On the bottom plate there are the bar spring eyebolt and the hollowed out part for the passing of the trigger tail and of the bar bow.

The receiver is ended at its lower part by the pistol grip covered with wooden plates fixed by two screws.

Fixing together the bottom plate and the grip is the trigger guard. Between the two side plates we have:

(a) *The bar spring* (unmovable point; the eyebolt, movable point; the bar).

This spring forces the bar and the trigger's tail forward.

(b) *The bar*, on which are the eyehole, the rounded part, the body, the inclined plane, the toe.

(c) *The trigger*, with its axle bearing and its tail. The trigger is fixed with the bar by the bar pin.

(d) *The sear*, with its axle bearing, its head and the supports of the sear spring. The sear is fixed to the trigger by a tubed pin.

(e) *The sear spring* (unmovable point bottom plate-movable point, support surface of the sear) forces the head of the sear upward.

(f) *The sear lever*, on which are to be seen the forepart (axle bearing shaped), the bed of the sear lever tubed pin, the tail. On the forepart of the lever is fixed the stud by the means of the strut-axle.

(g) *The strut*, which includes the head and its rounded part, the lower arm.

(h) *The strut spring* (unmovable point, sear lever movable point, strut lower arm) forces the strut lower arm forward.

(i) *The safety lock* passes across the side plates perpendicularly and includes the lever with its lug and its center punch; the axle, with the lifter.

4. The Fittings.—The fittings include:

(a) *The bipod*, constituted by an axle-bearing head and two tubes ended by points. The tubes are fixed to the axle-bearing head by the means of articulating axle screws.

(b) The swivels, including the rings and the axles on the side plates.

(b) MOVABLE PART.

The movable part includes:

1° The barrel, the breech casing and the barrel recoil spring.

2° The breech and the breech recoil spring.

3° The feeding mechanism.

1. Barrel, Breech Casing and Barrel Recoil Spring.—(a) *Barrel*.—42 centimeters long. At its forepart one can see the screwing allowing the fixing of the barrel nut, which forms a movable partition of the recoil intensifier.

The barrel is covered at its forepart and on three-quarters of its length by an aluminum radiator. This radiator is kept in place on one side by the means of the barrel nut, on the other side by a sleeve screwed on the breech casing, forming itself a butting ring. This sleeve has a circular notch, in which sticks the nose of the barrel lever stop.

The barrel is extended at its back part by the breech casing, fixed on it by the means of threads.

(b) *Breech Casing*.—The breech casing contains and guides the breech mechanism.

There is to be seen on the right the ejection opening at the back, part of which is the disappearance inclined plane of the movable head-stop.

At the lower part the guiding groove, ended at its back part by the slope, which takes support on the strut when the barrel is at its firing position, and the flat surface.

Inside the breech casing and at its forepart are locking shoulders, against which is affixed the posterior surface of the movable bolt head locking lugs, when the bolting occurs.

At the back part of the breech casing is lodged the bushing of the barrel recoil spring.

(c) *The Barrel Recoil Spring* (unmovable point, plug, movable point, bushing) is a spiral spring surrounding a tube fixed on the plug. (Relaxing strength, 26 to 20 pounds.)

2. Breech and the Breech Recoil Spring.—The movable breech is composed of the movable bolt head and of the cocking bolt.

(a) *The Movable Bolt Head.*—To be seen:

At its forepart the hollow face, in which protrudes the ejector with its spring; the locking lugs; the bed of the extractor, with its spring. At its back part the working lugs, the notch for the center punch of the movable bolt head stop.

Internally, the seat of the firing pin.

(b) *The Cocking Bolt.*—On which are fixed the firing pin and the cocking bolt rod. To be seen: the working helicoidal grooves, in which slide the working lugs of the movable bolt head; the bed of the carrier and of its stud.

Placed in the thickness of the cocking bolt and protruding on the right side is the movable bolt head stop.

This stop is ended at its lower part by a center punch which affixes itself in the movable bolt head notch when the head is in the position lugs vertical.

At the forepart of the cocking bolt is the passage of the movable bolt head working lugs.

The rod of the cocking bolt possesses at its rear part a butting ring (movable support of the breech recoil spring).

(c) *The Breech Recoil Spring.*—(Unmovable point, plug movable point, butting ring of the cocking bolt.) It is a spiral spring lodged in the tube fixed on the plug.

The breech recoil spring plays also the part of main spring.

3. The Feeding Mechanism.—The feeding mechanism includes: the carrier and the connecting rod.

(a) *The Carrier.*—Including the arm, the guide ribs of the carrier on the breech casing, the breech hook and the operating handle.

(b) *The Connecting Rod.*—On which is to be seen the S-shaped groove of the shuttle roller and the eye-hole for the stem of the operating handle which keeps together the latter and the carrier.

NOTE.—The feeding mechanism is completed by the clip.

CHAPTER II.

WORKING OF THE GUN.

I.—Barrel and Breech Motions.

Generalities.—In any automatic rifle, it is necessary to secure automatically, at a given time, the separation of the barrel and of the movable breech, in order to allow the execution of the different operations (extraction, ejection, introduction of a new cartridge in the chamber) indispensable to the working of the gun.

In the automatic rifle, 1915 model, the movable whole (barrel, breech) is sent backward by the recoil strength, after which the barrel is brought back to its firing position by its recoil spring, while the breech held backwards cannot come back to its first position until the barrel is at its complete forward position. The separation of the barrel and of the breech is then completed.

Working.—To fire, one must: cock the breech mechanism, then hook the clip under the gun, placing the fore extremity between the bipod transom and the barrel cover, and the back extremity on the clip catch.

When acting on the trigger, the breech mechanism loads the gun and produces the discharge. In the barrel and breech motion of the automatic rifle 1915 model, three phases must be considered:

1st phase. Recoil of the barrel and the breech (the two pieces joined).

2nd phase. Return of the barrel to its firing position.

3rd phase. Return of the movable breech forward.

FIRST PHASE.

Recoil of the barrel and breech. (The two pieces joined.)

Motive power. The gas.

One operation. Cocking.

The first shot occurs, the gas acting on the movable breech sends it backwards. As the breech is bolted to the barrel, this is sent backward, too. The recoil springs are compressed. The movable breech (and accordingly the firing pin) being at its extreme backward position, the breech recoil spring (acting in this case as main spring) being compressed, the cocking is effected.

Maintenance of the cocking.—The maintenance of the cocking is secured by the hooking of the breech hook on the sear head.

SECOND PHASE.

Return of the barrel to its firing position.

Motive Power.—Barrel recoil spring.

Four operations.

1° Withdrawal of the firing pin.

2° Unbolting.

3° Extraction.

4° Ejection.

As soon as the action of the gas disappears, the barrel recoil spring is relaxed and sends the barrel forward.

The barrel going forward forces the movable bolt head, to which it is bolted, to accompany it in its action.

1. Withdrawal of the Firing Pin.—The cocking bolt being held at its backward position by the hooking of the carrier on the sear head, only the movable head can go forward.

The progress of the movable head (8 millim. long) length of the rectilinear part of the working helicoidal grooves, causes the withdrawal of the firing pin from the hollow face.

The unbolting is not yet produced, since the working lugs move in the rectilinear part of the working helicoidal grooves.

2. Unbolting.—In consequence of the tension cause on the movable head by the barrel whose recoil spring is only incompletely relaxed, the working lugs passing in the helicoidal parts of the movable head leave their bed against the support shoulders of the breech casing, hence unbolting.

3. Extraction.—The barrel going on with its run, quits the movable breech. The cartridge case which was in the barrel being, on the other hand, detained by the extractor claw, finds itself pulled out of the chamber, hence extraction.

4. Ejection.—When the distance between the breech and the interior edge of the ejection opening is sufficient, the cartridge case pushed by the ejector pivots around the extractor and is projected to the right passing through the ejection opening, hence ejection.

THIRD PHASE.

Return of the movable breech forward.

Motive Power.—Breeches recoil spring.

Three Operations.

1° Introduction of a cartridge in the barrel and closing up of the chamber.

2° Bolting.

3° Striking.

1. Introduction of a Cartridge in the Barrel and Closing Up of the Chamber.—The barrel being brought back to its firing position the breech casing acting on the firing mechanism sets free the breech. Through the action of the breech recoil spring, compressed at the time of the breech recoil, the latter is sent forward. In this motion the anterior part of the carrier's arm, meeting a cartridge raised up by the clip, pushes it forward and upward in the direction of the chamber.

The movable head lower locking lug acting then on the cartridge, introduces it into the chamber, hence introduction of a cartridge; after which the breech closes the entrance of the chamber.

2. Bolting.—At the end of this first operation, the breech recoil spring is not completely relaxed. In consequence, it forces the breech forward.

As the movable head is stopped by the fact that it takes support on the barrel, only the cocking bolt can go forward. The cocking bolt going forward and being only able to make a rectilinear move, obliges the movable head to turn, owing to the action of the helicoidal grooves on the working lugs of the movable head. The locking lugs get in their beds against the support shoulders of the breech casing, hence bolting.

3. Striking.—The cocking bolt going still forward through the action of the spring, still incompletely relaxed, the working lugs move in the rectilinear part of the grooves, and the firing pin protrudes in the hollow case, hence striking.

Note.

1. Action of the Recoil Intensifier.—The front sight carrier is built in such a way as to play the part of recoil intensifier. For that purpose, it presents internally a truncated chamber in which the gas expands, when the bullet is shot out of the barrel and goes through the nozzle.

The gas acting backward on the fore part of the barrel nut, increases the recoil action it had already caused on the breech at the discharge of the first shot.

2. Action of the Barrel Lever Stop.—When the barrel gets to its firing position, a slight recoil move on the barrel is to be expected on account of the shock of the barrel sleeve butting ring against the barrel cover guide front screw collar.

The barrel lever stop stops this motion. Effectively, protruding above the shuttle transom, the nose of the lever stop disappearing to allow the barrel's passing, pops up again as soon as the latter is at its firing position, and enters a notch on the barrel sleeve.

Any move of the barrel is then impossible.

But as it is necessary that the barrel should be able to get backward through the gas action, the action of the lever stop must disappear before the discharge of the shot.

It is the breech's function. For that purpose when going forward, the carrier arm taking support on the body of the lever stop, forces the nose to lower. The barrel is then freed.

3. Action of the Movable Bolt Head Stop.—The movable bolt head stop's function is to keep the movable head in the position "lugs vertical," when the movable breech is sent forward. For that purpose, the stop has at its lower part a center punch which

gets into a notch prepared at the rear part of the movable head, while the latter is in the position "lugs vertical." Any rotation of the movable head is then impossible as the stop taking support by its higher part on the internal partition of the breech casing, cannot raise itself and allow the coming out from its bed in the movable head notch of the center punch.

But when the movable head is practically in touch with the barrel it is necessary that the action of the stop should disappear, so as to allow the freeing of the movable head which has to turn for the bolting. The stop center punch must at that instant leave its bed in the notch of the movable head.

For that purpose, when the movable head is forced to turn, the action of the notch's inclined edges on the stop center punch, permits the raising of the latter which gets out of its bed in the movable head. This raising up is possible, for when the bolting occurs the high part of the stop protruding in the ejection opening is no longer in touch with the internal partition of the breech casing.

II.—Firing Mechanism.

The automatic rifle, 1915 model, firing mechanism permits two kinds of firing:

1° Automatic firing.

2° Round by round firing or intermittent firing.

The execution of these two kinds of firing is ruled by the position given to the safety lock lifter.

I. AUTOMATIC FIRING.

Position of the Lifter.—Horizontal (the lifter takes support on the strut bar). (Safety lock at M).

A striking has occurred:

The barrel and the breech are sent backward. The breech is detained. The gunner, keeping the action of his finger on the trigger, the strut bar pushed backwards compresses its spring and takes support on the strut lower arm.

It operates in that way, the pivoting of the strut around its axle in such a way that the rounded part of the strut head finds itself in the path of the breech casing. At the same time the strut lever arm compresses the strut spring and takes support on the sear lever.

The barrel coming back to its forward position, the slope of the breech casing guiding groove meeting the strut's head, the latter is pressed forward.

This motion being possible no longer, the strut being in touch with the sear lever there is lowering of the strut axle and consequently lowering of the fore part of the sear lever. Besides

the contact existing between the sear lever and the sear, there is pivoting of the sear around its axis on the trigger, hence disappearing of the sear head and freeing of the breech.

The striking occurs, the barrel and the breech are sent backward. The breech casing receding quits its support against the strut. The sear spring, compressed when the lowering occurs, relaxes, causing the lifting of the sear, whose head is now in position to hook the breech. The sear lifts at the same time the sear lever and consequently the strut, whose head is now placed in the path of the breech casing.

The return of the barrel will cause the same operations as above.

In consequence it is the barrel which by its breech casing regulates in the automatic firing the discharge, the gunner's only task being to keep his finger on the trigger. If one removes his finger from the trigger, the firing stops, barrel forward, breech open.

In fact, the bar spring bringing back the bar and the trigger forward has forced the bar to quit its support on the strut, which under the action of its spring, pivots in such a way that its head is no longer in the path of the breech casing, the latter only runs over it lightly without pressing upon it. In consequence no action of the breech casing on the strut when the return of the barrel occurs; in the same way, no action of the strut on the sear lever which itself does not lower the sear. The sear head keeps in touch with the breech hook, the breech is kept backward; hence stopping of the firing.

2. ROUND BY ROUND FIRING.

Position of the Lifter.—Vertical and turned downward; that is to say, the lifter is in touch with the trigger bar. [Safety lock at C.]

The gun has been loaded when acting on the operating handle. The barrel is at its forward position; the breech is detained backward, being hooked on the sear head.

The strut is in touch by its head with the lower part of the breech casing.

If the action of the finger is communicated to the trigger, the bar, sent backward, insures the pivoting of the strut around its axle, and would contribute to producing the lifting of the strut head. This lifting movement is impossible, since the strut is in contact with the breech casing, but it is transformed in a lowering of the strut axle, which produces the lowering of the forward part of the sear lever, and consequently of the sear. The freed breech goes forward.

A striking occurs; the movable whole, barrel and breech, are sent backward. The breech casing quits its support on the strut. Through the action of the sear spring there is a lifting of the sear head, of the forward part of the sear lever, and, accordingly, of the strut axle.

If a new piece does not come in, we have lifting of the strut heads, which takes such a position that it protrudes in the path of the breech casing. As soon as the barrel returns, we should have freeing of the breech; consequently, we would fall back in the automatic firing.

But the safety lock lifter has come in, and when the bar, brought backward, produces the pivoting of the strut—that is to say, the freeing of the breech—the inclined plane of the bar sliding on the lifter, obliges the bar to lower itself. By such means the contact between the bar and the strut disappears, and the strut, under the action of its spring pivots in reverse way, as previously, producing the lowering of its head, which takes such a position that it no longer protrudes in the path of the breech casing. Consequently, the latter, going forward, cannot take support on the strut and cause the freeing of the breech.

If you want to free the breech and at the same time fire the following shot, you must release the trigger, which permits the bar getting forward through the action of its spring, to take place anew against the strut lower arm and the trigger to come back to its normal position, after which renew the action of the finger on the trigger which will bring the pivoting of the strut in the way mentioned above, and consequently the lowering of the strut head.

NOTE.—Safe.—*Position of the lifter*—Vertical and turned upward. (Safety lock at S.)

In this case the lifter taking against the lower part of the sear lever forepart, any lowering of this lever is impossible; accordingly it is the same thing for the sear.

In consequence, the action of the trigger cannot produce the freeing of the breech and at the same time the discharge.

III.—Feeding Mechanism.

The gun being cocked, insert a filled clip.

The first cartridge, held by the ears extending upward from the clip side plates, finds itself in the path of the carrier arm.

If the gunner, acting on the trigger, frees the movable breech, the carrier arm, taking support on the upper part of the cartridge base, forces it to quit the clip, pushing it violently forward. The point of the bullet, meeting the ramp of the cartridge guiding

shuttle, is lifted and the cartridge is directed toward the chamber in which it is fully introduced by the movable head.

The second cartridge, lifted by the clip spring, is forced to take the place occupied previously by the first cartridge, and finds itself in contact with the lower part of the carrier, which limits its lifting.

The striking occurs, the breech being sent backward, the carrier arm, sliding on the cartridge, takes place at the back of the base of the cartridge.

This cartridge can then be lifted, and finds itself in the path of the carrier arm.

If the breech goes forward anew, there will be release of this new cartridge under the conditions mentioned above.

NOTE.—To allow the complete progress of the movable breech, it is necessary to make a way for the carrier arm, which otherwise would strike against the shuttle transom. For that purpose the transom carries a movable shuttle, lowering itself to allow the passing of the arm when the latter, having pushed the cartridge in the direction of the chamber, continues to go forward. The movable shuttle is worked by a roller axle sliding in the connecting rod groove attached to the movable breech.

It must be observed that when the cartridge has not been introduced in the barrel the guiding shuttle is closed.

IV.—Firing Incidents.

The Barrel Does Not Run Back to its Firing Position.

Causes.—1° Exaggerated friction of the whole barrel and breech casing inside the barrel cover guide.

2° Difficult unbolting (exaggerated fouling of the chamber).

3° Difficult extraction (exaggerated fouling of the chamber, imperfect ammunition, chamber's too large diameter).

Effects.—The return of the barrel has not been obtained; hence stop in firing.

Situation.—The barrel is at backward position. There is a cartridge case in the barrel.

MEANS OF REMEDYING THE INCIDENT.

1. Bring the movable whole to complete backward position, acting on the operating handle. This operation often permits the return of the barrel.

2. If the above proceeding gives no result, put the safety lock lever to the position "safety" in front of the mark S, set up the gun vertically, and knock the butt on the ground.

3. If the gun cannot be adjusted by the above-mentioned proceedings, one may also use the ejecting peg or a knife blade, etc.,

taking support on the back of the cover guide ejection opening and pressing on the barrel in order to bring it forward. This proceeding must be used only exceptionally.

BAD PRESENTATION OF THE CARTRIDGE IN DIRECTION OF THE CHAMBER.

Causes.—1° Imperfect clip (ears too wide).

2° Insufficient lifting of the clip follower, and consequently of the cartridge (clip spring too weak or fouled clip).

Effects.—The breech stops before fully closing up; hence stop in firing.

Situation.—The cartridge, pushed by the carrier arm, has struck with its point the high part of the breech casing (in the case, ears too wide), or the shuttle transom (in the case of insufficient lifting of the cartridge). The breech is stopped in the first case by the support of the lower part of the hollow face against the body of the cartridge; in the second case by the support of the carrier on the base of the cartridge.

MEANS OF REMEDYING THE INCIDENT.

1. In the case of too wide ears, change the clip.

2. In the case of insufficient lifting of the cartridge, cock the gun, acting on the operating handle so as to bring it to a complete backward position, and if necessary act upon the clip spring.

MISSED FEEDING.

Causes.—Fouled clip or clips spring too weak or out of shape.

Effects.—The clip follower has not been brought up. No cartridge is in the path of the carrier arm, which goes forward without pushing any cartridge in direction of the chamber.

Situation.—The fire stops, breech closed up. There is no cartridge in the barrel.

MEANS OF REMEDYING THE INCIDENT.

1. Cock the gun. This will, perhaps, permit the raising up of the follower.

2. If necessary, act on the clip spring to force its relaxing.

NOTE.—If the gunner cannot remedy the above-mentioned incidents, he should not lose any time and must take another clip.

The last two incidents being caused by the clips, the gunner's attention must be brought to the imperative necessity of keeping the clips in a perfect state of preservation and order.

CHAPTER III.

DISMOUNTING AND ASSEMBLING OF THE GUN.

I.—Dismounting.

The dismounting of the gun must be done as seldom as possible. It must only be done for a complete cleaning or in case of necessity for its examination.

The gun must always be taken to pieces slowly and without abruptness.

1. *Uncock.*—After being sure the gun is unloaded and that the safety lock is not on the mark "Security," uncock the gun by pressing the trigger, bringing the operating handle with the hand to its forward position in order to avoid a rough relax of the spring and consequently a possible breaking of a piece.

2. *Unscrew the Plug.*—To do so, push down the plug stop and unscrew it, pushing it constantly forward in order to avoid damaging the threads and to prevent, at the end of the unscrewing, the hurling out of the plug through the sudden relaxing of the spring. Take off the plug and the two recoil springs; separate the three pieces. The bushing of the barrel recoil spring comes out with the latter or falls down itself when taking out the breech.

3. *Separate the Barrel Cover Guide from the Receiver.*—Place the fore extremity of the barrel cover guide on any sort of thing; bring backward the operating handle; lower the handle of the anterior assembling bolt and take off the posterior assembling bolt by pushing it to the left, after having raised its stop; hold up the back part of the barrel cover guide and separate from the receiver by lowering it and pushing it slightly forward, so as to disengage the connecting rod from the guide.

4. *Dismount the Breech Mechanism.*—Pull the operating handle until complete recoil of the movable part in the barrel cover guide, so as to place the carrier in the back hollowed out part of the carrier opening; raise up the carrier so as to separate it from the movable bolt; pull out the latter from the breech casing; separate the movable head from the cocking bolt.

5. *Pull Out the Barrel and the Breech Casing.*—Lower slightly the back part of the barrel cover guide and receive the barrel and the breech casing, which slides without help.

NOTE.—Never dismount the pieces composing the receiver or fixed on it (transoms, trigger mechanism). These pieces, difficult to get together, are fixed to the brackets by screw bolts, so that a repeated unscrewing would wear them out, and whose loss would so be facilitated.

The cleaning does not necessitate the dismantling of these pieces.

II.—Assembling.

The assembling is done in reverse way to the dismantling. Take care to strain nowhere, putting all pieces in position without force. Complying with following instructions will avoid loss of time:

1. Place the barrel and breech casing in the barrel cover guide, sliding it once or twice; direct properly the guiding groove and bring its back part in coincidence with the back part of the hollowing of the barrel cover guide slide.

2. Introduce the assembled breech in the breech casing; place it in such a way that the carrier bed on the cocking bolt be in the hollowed out part of the breech casing; fix the carrier on the breech; work and bring back the operating handle toward the middle part of the barrel cover guide.

3. Fix the barrel cover guide on the receiver. For that purpose place the barrel cover and support it at its back part, as for dismantling, but in such manner that the operating handle be directed upward and on the right.

Present the receiver flat after having directed the handle of the front assembling bolt to its dismantling position. Introduce the roller of the cartridge guiding shuttle into the connecting rod groove; press the receiver upward and force the front assembling bolt into its axle head.

Close this bolt and get into place the rear assembling bolt. Press upon the trigger and push the breech mechanism to its closed position.

4. Place the two springs on the plug; fit the barrel recoil spring with its bushing and introduce the whole into the barrel cover. Compress the spring and screw tightly the plug, taking care to push forward in order to avoid damaging the threads.

5. Cock and uncock the gun, holding the breech with the hand, with a view to making sure of the good working of the whole.

CHAPTER IV.

PRESERVATION OF THE GUN AND OF THE CLIPS.

I.—Gun.

The gun must be kept in the best state of preservation. After each firing it must be cleaned and oiled, using for that purpose good lubricating oil; if possible, Russian mineral oil (Oleonaphtha).

The use of kerosene helps considerably in the cleaning of the very fouled parts, but it is necessary to wipe carefully after using it and before greasing; otherwise all the parts put in kerosene would easily oxidize.

In the automatic rifle, 1915 model, the part that gets dirty, generally, is the barrel nut, especially after a firing of certain length. It will be necessary to obtain a perfect cleaning of this part of the gun.

The gun being dismantled, wipe thoroughly with a dry rag all the pieces. Sponge the barrel cover carefully, taking care to clean perfectly the interior of the front sight carrier. Pass the rag inside of barrel and oil abundantly.

See to the great cleanliness of the breech casing, especially at its forepart and at the posterior edge of the barrel. The support shoulders of the movable head lugs must be in a perfect state of preservation. Use to that effect a soft wooden scraper.

The cleaning of the barrel nut must be done in the following manner: Soak the nut in kerosene; then use the special scraper. For that purpose introduce the axle of the apparatus into the muzzle and scrape by pivoting the scraper around its axle. Scrape lightly, taking care not to whiten the metal.

It must be remembered that any dismantling of the transoms and of the fitting system is forbidden. For cleaning, use the rag and the scraper.

In case of attack by gas, oil entirely and abundantly with Russian mineral oil. It gives a six hours preservation.

II.—Clips.

(a) The clip is part of the gun-feeding mechanism. It must be consequently in a perfect state of preservation.

After each firing, the clips must be completely and properly oiled.

(b) The gunners must take care of the state of the spring of each clip.

To be good, the spring must, when it is taken out of the clip, have the shape of an incompletely closed crown.

The interruption between the two ends of the spring must not exceed four fingers.

In case of greater spacing, increase the spring's strength by opening with the hand the angles having the vertex on the internal circumference of the crown.

If, in spite of this operation, the spring remains weak, it must be replaced.

PART II.

AMMUNITION.

I.—Cartridges.

The automatic rifle, 1915 model, uses the cartridge 1886 D model (with modified priming), placed twenty in the clips.

II.—Clips.

The clip is made out of sheet steel. Its shape is that of a segment. It is composed of two side plates and two bottom plates, forming a transom. One of the side plates is full; the other is bored through, allowing a view of the internal part of the clip.

Ribs secure the stiffness of the clips and the guiding of the cartridges.

One of the ends is closed with a stop plate (used as a support for the spring). The nose of the plate, protruding externally from the clip, is used to fasten the clip on the receiver. The other end is open to permit the passing of the cartridges.

Two ears, extending the side plates, make it impossible for the cartridges to come out from the clip unless they are forced to do so by pressure on the cartridge base.

Inside of the clip there is a follower, whose part is to push the cartridges continuously toward the hole.

This follower is moved by a double bow spring, having its movable support on the clip stop plate.

III.—Loading of the Clip.

To load the clip, lower the follower with the hand a distance equal to the thickness of the cartridge.

Engage a cartridge, the base first; let it lie down on the follower; lower this one anew and go on with the loading, lowering progressively the follower, so as to permit the passing of the cartridge to be engaged. The clip is filled up when it contains twenty cartridges. (Usually eighteen gives the best result.)

To empty a clip, push gradually on the base of the cartridges, in the same manner, the carrier arm would do in working.

NOTE.—It will be found advantageous not to keep the clips filled up without necessity, so as not to strain the spring.

IV.—Seating of the Clip on the Gun.

To seat the clip on the gun, cock the gun, seize the clip with the right hand, and curve downward, the follower backward.

Place the stop plate, the nose directed upward, between the bipod transom and the shuttle transom. Then force the clip home until it engages the clip catch.

To disengage the clip, bring the operating handle to extreme backward position, to secure the hooking of the breech. Press forward the handle of the clip catch, and take off the clip with the hand. The clip would, without this precaution, fall down by itself under the action of the clip support spring.

PART III.

OUTFIT.

The outfit of the automatic rifle, 1915 model, is placed in a small cleaning kit, which may be carried either inside the sack or above it by the means of the sack straps.

The outfit carried in this kit is:

- One three-pieced ramrod.
- One barrel sponge.
- One cleaning rod.
- One barrel cover guide and breech casing sponge.
- One socket extractor, 1907 model.
- One ejection peg.
- One oil can.
- One kerosene can.
- One barrel nut scraper.
- One screw driver.

PART IV.

GUNNER'S EQUIPMENT AND ARMAMENT.

I.—Gunner.

(a) **Equipment.**—The gunner's equipment permits the carrying of 160 cartridges (clips of 20).

It is composed of two pouches, containing each two clips and a bag for the carrying of four clips and a cleaning kit pouch.

The pouches are carried on the front of the belt, the curve inside. They are held by the hooks of the suspenders.

At the back the gunner carries a flat cartridge pouch, containing an automatic pistol.

The gunner carries, besides a shovel, a bag containing reserve supplies, a canteen and a tent cloth. With a view to firing while marching, he is provided with an extra hook for suspending strap and with a metallic triangle for the rifle sling.¹

(b) **Placing of the Clips.**—1. In the bag.—Place the four clips, the ears toward the bottom of the bag, the convexity turned upward, then the cleaning kit in the remaining space above.

2. In the pouches.—Place the two clips in each pouch, the curve toward the bottom of the pouch.

(c) **Armament.**—Beside the automatic gun placed in a cover and carried by the sling, the gunner carries an automatic pistol (caliber 7mm. 65) and three clips of nine cartridges, two in the pouch and one in the pistol.

II.—First Carrier.

(a) **Equipment.**—The carrier's equipment is organized in such a way as to permit the carrying of 480 cartridges.

It is composed of a bag and haversack arranged to avoid the clips getting out of shape.

This haversack can be put on and taken off rapidly. It has

¹The suspending strap hook is fixed to the left shoulder strap by means of a hole punched about 5 centimeters from the highest part of the shoulder. The hook point, bent outward, must be slightly curved forward in order to facilitate the hooking on of the triangle. The metallic triangle consists of a 7-mm. wire, bent in the shape of an equilateral triangle, each side being 55-mm. (inside measure). The triangle is then brazed or soldered. The interior angles are rounded off with a rat-tail file.

straps allowing the external stowing of a camping article, if necessary.

The cartridge bag is slung across the left shoulder and fixed besides by three loops to the sword belt.

The carrier has no suspenders. He carries a shovel, a bag, a canteen and a tent cloth.

(b) **Placing of the Clips.**—In the haversack and at the bottom a packet of sixty-four cartridges, on the top 8 clips, superimposed in a parallel way, the convexity turned externally. A strap fixes the whole inside the sack and prevents the jolting.

(c) **Placing of Cartridge Packets.**—In the cartridge bag, four packets. If the cartridges are unpacked, take care to close the opening of the bag with the straps so as to avoid any loss.

(d) **Armament.**—As the gunner, the first carrier, carries an automatic pistol (7mm. 65). He has three clips of nine cartridges, two in the pouch and one in the pistol. This pistol is carried in a pouch fixed to the belt.

III.—Second Carrier.

Carrier No. 2 carries 400 cartridges for making up the ammunition supply.

He is provided with the ordinary equipment but carries a special haversack. His haversack contains four packets of sixty-four and four loaded clips, a fifth packet is divided between his three cartridge pouches. The loading of the haversack consists of:

At the bottom, two tiers of two packets each placed on edge.

On top, the four clips placed above one another. Their convex part facing the outside. The load is kept tight by means of the inside strap of the haversack.

Carrier No. 2 is armed with a rifle. If called upon to use his weapon, he takes the cartridges carried in his cartridge pouches.

Badges.—The three gunners receive a special badge worn on the left arm.

PART V.

SERVICE OF THE AUTOMATIC GUN.

I.—Staff.

The gun is served by three gunners, one gunner, properly speaking, and two carriers.

These gunners must be chosen among vigorous, intelligent men, having excellent sight and sharpshooters.

Never take left-handed men.

The gunner and the two carriers receive the same education. In case of necessity, one carrier only can secure the service of the gun.

II.—Firing.

During the march the gunner and the first carrier carry alternately the gun in the sling; the gun is covered with a sheath whose object is to preserve it from the rain or the dust.

As soon as an engagement is threatened, the gunner takes the gun in the hand during the whole advance in skirmish order. As a rule he only takes out the gun from the sheath when firing. (The empty sheath is placed on the gunner's belt.)

During the advance the carriers conform to the gunner's movements. The three men lie down upon arriving upon the assigned or chosen position, the two carriers on the right of the gunner. (This position is not absolute, the carriers occupying, according to the circumstances, the most favorable place.) The carriers take off their haversacks.

After having chosen the place to lay his gun, the gunner pulls the gun from its sheath, unfolds the bipod and disposes the gun in the enemy's direction, as a rule on the bipod or eventually on any sort of support. He takes position to make the aiming as easy as possible. Regularly, the position lying down must be the same taken for the ordinary rifle, the body slightly oblique to the gun, and resting on the elbows brought together, as much as possible, the gun held by the right hand on the pistol grip, the left hand under the butt.

To use or to better a shelter, keep in mind the necessity of avoiding the touching of the barrel cover guide to the ground as anything getting between the barrel cover and the radiator interferes with the firing.

During the different above-mentioned operations, the first carrier opens his haversack, takes a clip and hands it to the gunner, after which he places his open haversack by the gunner's hand. The gunner having set his rear sight, cocks the gun and engages a clip under the gun in the way mentioned in part two (Part II). He sets his safety lock at the rear position if he wants to fire round by round, or at the vertical position if he wants to fire automatically, in front of the marks C (round by round) or M (automatic).

To execute the round by round firing, the gunner presses on the trigger and lets it go after each shot fired; he renews the finger's action on the trigger when he wants to fire a new shot. In this sort of firing, the gunner lays his gun anew after each shot; he only fires when he is sure of his aim.

For the execution of the automatic firing, the gunner keeping the finger's action on the trigger, must strive to keep his line of sight on the chosen target.

He stops the firing if necessary to lay his gun anew.

The good execution of the firing depends upon the gunner's coolness and ability.

The firing must be sharp. The gunner aims at the target foot. In case of target changing, stop the firing, lay the gun on the new target and start firing only when the gun is properly laid.

When the clip is empty, the gunner brings fully backward the operating handle, so as to secure the hooking on the sear of the breech hook. Then, pressing the handle of the clip catch, he receives the clip in the right hand, which falls down through the action of the clip spring.

The empty clip is placed on the haversack flap, so as to keep it out of the dirt, and a new clip is placed in the gun.

During the firing, the carriers reload the empty clips given them by the gunner.

They use, for that purpose; the first carrier, the cartridges carried in his cartridge bag; the second carrier uses the packet carried in the haversack, then those contained in the second carrier's pouches and calls the attention of the chief to the fact that ammunition is required.

All favorable circumstances must be used during the fight to make up again the ammunition stock of the gunners.

For the execution of a rush or a change of position, the gunner prepares to carry his gun; he folds the bipod and when it is necessary leaves the clip on the gun, the carriers replace rapidly their clips or their cartridge packets in their haversacks, tying the interior strap, closing their sacks and putting them on the back. The gunners are then ready to rush on.

The use of the clips carried in the pockets is generally as follows: if the beginning of the fire must be immediate, the gunner will use his clips before using those carried in the haversacks. In the contrary case, the clips carried in the pouches should be considered as a reserve for the gunner.

In the first case the gunner must do his best to replace this reserve by filling up his pouch with new clips.

A perfect understanding must exist between the three men called to use the gun. The gunner's initiative must tend to obtain the best efficiency in governing the rapidity of fire, according to orders given, or the importance of the result which should be obtained, remembering that the firing is always efficient at short distance, and in a way to avoid the wasting of ammunition and the exaggerated overheating of the gun.

To be sure of the good working of the clips, the gunner must give very special attention to avoid getting them out of shape and allow nothing to get inside.

It may be good, when the gunner is called to lie down or to crawl, to push backward the clip pouches.

The pouches can be held in that position by tying them behind with a strap, a string, or any other thing. If during the advance the first carrier disappears, the gunner has four clips in his bag, with which he can fire without touching his reserve clips.

If the gunner be disabled, the first carrier must take the gun, and take his place, since he possesses six clips in his haversack.

The second carrier will see constantly that no clip is left on the field.

The firing can also be executed while marching.

The firing while marching is done either by order, or on the gunner's initiative.

It is generally executed, round by round, and in critical moments by short rafales, exceptionally by long rafales. It is of great use during the advance of a wave, it allows the latter to reach the assigned objective without immediate danger, the enemy finding himself under the necessity of keeping intrenched to avoid the intensive firing of the gunner.

A well trained valorous gunner, can, by marching on the parapet parallel to the trench or the communication trench, help considerably in the cleaning up, by holding under his fire any enemy who might have some resisting power.

Firing while marching is performed as follows:

The weapon is kept horizontal by means of a metallic triangle fixed to the suspending strap hook and by the right elbow pressing on the butt, the length of the rifle sling is regulated accord-

ingly, the right hand clutches the rifle by the pistol-grip and the left hand holds up the rifle by the carrying handle.

In the round by round firing the gunner acts on the trigger when the foot strikes the ground.

The rate of fire is accelerated by increasing in rate of the march.

The firing dispersion is corrected by making slight horizontal or vertical movements of the barrel until the target is struck.

To change clips, cock with the right hand, push forward the handle of the clip catch with the thumb of the left hand. Receive the clip in the right hand, hand it to the first carrier, take a new clip with the right hand and introduce it into the gun without losing sight of the target. Take the position indicated above to continue the firing. The clips must be placed and taken off without stopping.

The first carrier must stand by the side of the gunner so that the latter will not be obliged to lose sight of the target when turning back to ask for new clips in replacing the exhausted ones.

NOTE.—The gunner may also use the marching fire attachment while moving forward by rushes before or after firing.

Hang the weapon on the suspending strap hook, the triangle bearing against the front swivel, and keep it, the clip in the rear, between the body and the left arm with the left hand placed on the back part of the receiver, or on the carrying handle. The gunner may thus lie down on his right side without having his gun in contact with the ground. He can place his rifle in firing position without unhooking it. He has only to lay the weapon horizontally by causing the strap to slip through the triangle.

PART VI.

SUNDRY REFERENCES

1.—Numerical References.

WEIGHT OF ARMAMENT AND EQUIPMENT.

(a) *Gunner:*

Pouch with pistol and 3 clips.....	2.9 lbs.
Gun with sheath.....	20.0 "
Clip pouches (4 clips).....	8.8 "
Belt	0.9 "
Bag (with 4 clips and a cleaning kit).....	10.3 "

(b) *1st Carrier:*

Pouch with pistol and 3 clips.....	2.9 "
Haversack with 8 clips and a cartridge packet.....	24.0 "
Bag with 4 cartridge packets.....	17.9 "
Belt	0.9 "

(c) *Carrier No. 2:*

Rifle and equipment with one packet distributed in the cartridge pouches.....	7 k. 550
Haversack with 4 packets and 4 clips.....	12 k. 950

Cartridges carried:

By the gunner.....	160
By carrier No. 1.....	480
By carrier No. 2.....	400
	1,040

2.—Nomenclature of the Pieces of the Automatic Rifle, 1915 Model.

UNMOVABLE PART:

Barrel cover guide:

- Front screw collar with assembling clasp.
- Rear screw collar with assembling stud.

- Plug.
 - Carrier dismounting opening.
 - Front sight carrier.
 - Ejection opening.
 - Carrier opening.
 - Rear sight.
 - Barrel recoil spring.
 - Breech recoil spring.
- Receiver:*
- Plug stop.
 - Roller axle of the cartridge guiding shuttle.
 - Clip catch.
 - Butt.
 - Bipod transom.
 - Middle transom.
 - Shuttle transom.
 - Right side plate.
 - Left side plate.
 - Connecting rod guide.
 - Bipod.
 - Axle-head of the bipod.
 - Barrel stop lever.
 - Nose.
 - Body.
 - Toe.
 - Carrying handle.
 - Front swivel.
 - Rear swivel.
 - Spring of the plug stop.
 - Clip spring.
 - Barrel lever stop spring.
 - Clip catch spring.
 - Fore assembling bolt.
 - Rear assembling bolt.
 - Cartridge guiding shuttle.
- Firing Mechanism:*
- Strut bar.
 - Bow.
 - Eye.
- Inclined plane.
 - Toe.
- Guard Group:*
- Right side plate.
 - Left side plate.
 - Bottom plate.
 - Trigger guard.
 - Pistol grip.
- Trigger:*
- Axle-head.
 - Tail.
- Sear:*
- Sear spring support.
 - Axle-head.
 - Head.
 - Strut axle pin.
 - Bar pin.
 - Tubed pin triggers and sear axles.
 - Tubed pin sear lever axle.
- Sear lever:*
- Axle-head.
 - Fore part.
 - Tail.
- Safety lock:*
- Handle.
 - Lifter.
- Strut:*
- Rounded part.
 - Head.
 - Lower arm.
 - Bar spring eyebolt.
 - Bar spring.
 - Sear spring.
 - Strut spring.

MOVABLE PARTS.

Barrel and Breech Casing:

Breech casing.
 Bushing.
 Barrel.
 Barrel screw nut.
 Notch.
 Ejection opening.
 Sleeve.
 Inclined plane.
 Radiator.
 Slope.
 Guiding groove.

Movable Bolt Head:

Movable bolt head stop.
 Higher part.
 Center punch.

Operating Handle:

Rod.
 Tulip.
 Cocking bolt.
 Carrier seat.
 Movable bolt head stop seat.
 Seat of the carrier's, assembling stud.
 Working lug grooves.
 Ejector.

Extractor.
 Firing pin.
 Ejector spring.
 Extractor spring.
 Movable bolt head.
 Hollow face.
 Notch.
 Seat of the ejector.
 Seat of the extractor.
 Locking lugs.
 Working lugs.
 Cocking bolt rod.
 Butting ring.
 Threads for butting ring.
 Feeding mechanism.
 Carrier.
 Breech hook.
 Arm.
 Guide ribs.
 Assembling stud.
 Connecting rod.
 Eyehole.
 Connecting rod grooves.

Clip:

Stop plate.
 Follower.
 Clip spring.

INDEX

PART I.—Automatic Rifle, 1915 Model.

CHAPTER I.

I.—CHARACTERISTICS	3
II.—DESCRIPTION AND NOMENCLATURE.....	3
<i>Non recoiling part:</i>	
1. Barrel cover guide.....	3
2. Receiver	4
3. Firing mechanism	5
4. Fittings	6
<i>Movable part:</i>	
1. Barrel, breech casing and barrel recoil spring.....	6
2. Breech and breech recoil spring.....	7
3. Feeding mechanism.....	7

CHAPTER II.

WORKING OF THE GUN.

1. Barrel and breech motions.....	7
2. Firing mechanism.....	11
3. Feeding mechanism.....	13
4. Firing incidents—The barrel does not run back to its firing position.	14

CHAPTER III.

DISMOUNTING AND ASSEMBLING OF THE GUN.

1. Dismounting	16
2. Assembling	17

CHAPTER IV.

PRESERVATION OF THE GUN AND OF THE CLIPS.

1. Gun	17
2. Clips	18

PART II.—Ammunition.

1. Cartridges	19
2. Clips	19
3. Loading of the clip.....	19
4. Seating of the clip on the gun.....	20

PART III.—Outfit.

Outfit	21
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PART IV.—Gunner's Equipment and Armament.

1. Gunner	23
2. First carrier.....	23
3. Second carrier.....	24

PART V.—Service of the Automatic Gun.

1. Staff	25
2. Firing	25

PART VI.—Sundry References.

1. Numerical references.....	29
2. Nomenclature of the pieces of the automatic rifle, 1915 model.....	29
FIG. I.—Full view.	
FIG. II.—Taken apart.	