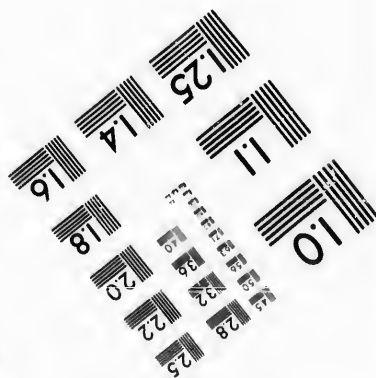
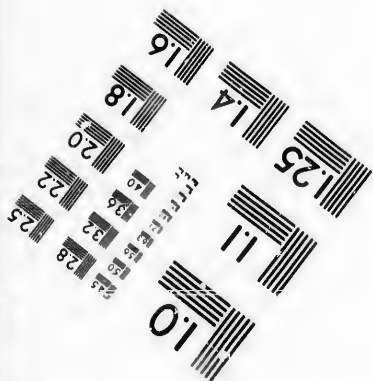
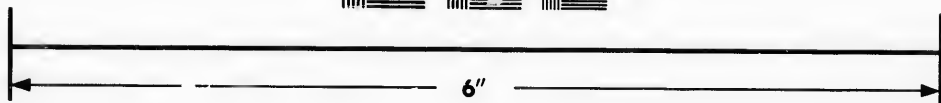
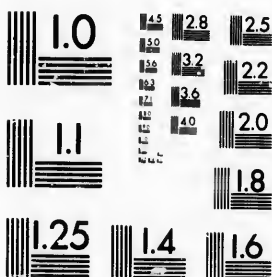


**IMAGE EVALUATION  
TEST TARGET (MT-3)**



**Photographic  
Sciences  
Corporation**

23 WEST MAIN STREET  
WEBSTER, N.Y. 14580  
(716) 872-4503

14 16 18 20 22 24 26 28

**CIHM/ICMH  
Microfiche  
Series.**

**CIHM/ICMH  
Collection de  
microfiches.**



Canadian Institute for Historical Microreproductions / Institut canadien de microreproductions historiques

11 10

**© 1986**

Technical and Bibliographic Notes/Notes techniques et bibliographiques

The Institute has attempted to obtain the best original copy available for filming. Features of this copy which may be bibliographically unique, which may alter any of the images in the reproduction, or which may significantly change the usual method of filming, are checked below.

L'Institut a microfilmé le meilleur exemplaire qu'il lui a été possible de se procurer. Les détails de cet exemplaire qui sont peut-être uniques du point de vue bibliographique, qui peuvent modifier une image reproduite, ou qui peuvent exiger une modification dans la méthode normale de filmage sont indiqués ci-dessous.

- |  |  |
|--|--|
| <input type="checkbox"/> Coloured covers/<br>Couverture de couleur   | <input type="checkbox"/> Coloured pages/<br>Pages de couleur   |
| <input type="checkbox"/> Covers damaged/<br>Couverture endommagée  | <input checked="" type="checkbox"/> Pages damaged/<br>Pages endommagées  |
| <input type="checkbox"/> Covers restored and/or laminated/<br>Couverture restaurée et/ou pelliculée  | <input type="checkbox"/> Pages restored and/or laminated/<br>Pages restaurées et/ou pelliculées  |
| <input type="checkbox"/> Cover title missing/<br>Le titre de couverture manque   | <input checked="" type="checkbox"/> Pages discoloured, stained or foxed/<br>Pages décolorées, tachetées ou piquées   |
| <input type="checkbox"/> Coloured maps/<br>Cartes géographiques en couleur   | <input type="checkbox"/> Pages detached/<br>Pages détachées  |
| <input type="checkbox"/> Coloured ink (i.e. other than blue or black)/<br>Encre de couleur (i.e. autre que bleue ou noire)   | <input checked="" type="checkbox"/> Showthrough/<br>Transparence   |
| <input type="checkbox"/> Coloured plates and/or illustrations/<br>Planches et/ou illustrations en couleur  | <input type="checkbox"/> Quality of print varies/<br>Qualité inégale de l'impression   |
| <input type="checkbox"/> Bound with other material/<br>Relié avec d'autres documents   | <input type="checkbox"/> Includes supplementary material/<br>Comprend du matériel supplémentaire   |
| <input type="checkbox"/> Tight binding may cause shadows or distortion<br>along interior margin/<br>La reliure serrée peut causer de l'ombre ou de la<br>distorsion le long de la marge intérieure   | <input type="checkbox"/> Only edition available/<br>Seule édition disponible   |
| <input type="checkbox"/> Blank leaves added during restoration may<br>appear within the text. Whenever possible, these<br>have been omitted from filming/<br>Il se peut que certaines pages blanches ajoutées<br>lors d'une restauration apparaissent dans le texte,<br>mais, lorsque cela était possible, ces pages n'ont<br>pas été filmées. | <input type="checkbox"/> Pages wholly or partially obscured by errata<br>slips, tissues, etc., have been refilmed to<br>ensure the best possible image/<br>Les pages totalement ou partiellement<br>obscurcies par un feuillet d'errata, une pelure,<br>etc., ont été filmées à nouveau de façon à<br>obtenir la meilleure image possible. |
| <input type="checkbox"/> Additional comments:/<br>Commentaires supplémentaires:  |  |

This item is filmed at the reduction ratio checked below/  
Ce document est filmé au taux de réduction indiqué ci-dessous.

10X	12X	14X	16X	18X	20X	22X	24X	26X	28X	30X	32X
				✓							

The copy filmed here has been reproduced thanks to the generosity of:

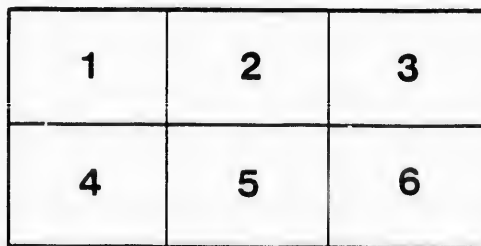
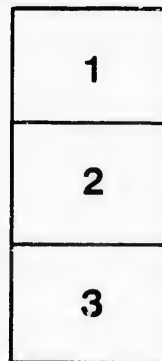
D. B. Weldon Library  
University of Western Ontario  
(Regional History Room)

The images appearing here are the best quality possible considering the condition and legibility of the original copy and in keeping with the filming contract specifications.

Original copies in printed paper covers are filmed beginning with the front cover and ending on the last page with a printed or illustrated impression, or the back cover when appropriate. All other original copies are filmed beginning on the first page with a printed or illustrated impression, and ending on the last page with a printed or illustrated impression.

The last recorded frame on each microfiche shall contain the symbol  $\rightarrow$  (meaning "CONTINUED"), or the symbol  $\nabla$  (meaning "END"), whichever applies.

Maps, plates, charts, etc., may be filmed at different reduction ratios. Those too large to be entirely included in one exposure are filmed beginning in the upper left hand corner, left to right and top to bottom, as many frames as required. The following diagrams illustrate the method:



L'exemplaire filmé fut reproduit grâce à la générosité de:

D. B. Weldon Library  
University of Western Ontario  
(Regional History Room)

Les images suivantes ont été reproduites avec le plus grand soin, compte tenu de la condition et de la netteté de l'exemplaire filmé, et en conformité avec les conditions du contrat de filmage.

Les exemplaires originaux dont la couverture en papier est imprimée sont filmés en commençant par le premier plat et en terminant soit par la dernière page qui comporte une empreinte d'impression ou d'illustration, soit par le second plat, selon le cas. Tous les autres exemplaires originaux sont filmés en commençant par la première page qui comporte une empreinte d'impression ou d'illustration et en terminant par la dernière page qui comporte une telle empreinte.

Un des symboles suivants apparaîtra sur la dernière image de chaque microfiche, selon le cas: le symbole  $\rightarrow$  signifie "A SUIVRE", le symbole  $\nabla$  signifie "FIN".

Les cartes, planches, tableaux, etc., peuvent être filmés à des taux de réduction différents. Lorsque le document est trop grand pour être reproduit en un seul cliché, il est filmé à partir de l'angle supérieur gauche, de gauche à droite, et de haut en bas, en prenant le nombre d'images nécessaire. Les diagrammes suivants illustrent la méthode.

*C. J. Fairbank*

INSTRUCTIONS FOR PRACTICE.

...FIELD ARTILLERY...

1899.

✻ CONTENTS ✻

PRELIMINARY TRAINING—

Examination in Laying and Setting Fuzes	2
Section Commanders	3
Gun Layers	3
Auxiliary Marks	4
Range-takers	4
Supply of ammunition	4
Casualties	4
Orders	4

GENERAL REMARKS—

Range-party	5
Safety	5

UMPIRES—

Duties	7
Credits	8
Faults which most frequently occur	8
Laying Tests	9
Forms	11-12
Conditions of Prize Competition	13
Targets	14
Ammunition	15
Fire Discipline Competition	15

# INSTRUCTIONS FOR PRACTICE.

---

---

1899.

---

---

## ✻ PRELIMINARY REMARKS ✻

*The Field Artillery Drill Book is the authority on which the practice is to be conducted. These instructions are supplementary in matters of detail. No instruments or appliances other than those approved for the service, or ordered to be tried experimentally, are to be used.*

---

## PRELIMINARY TRAINING.

1. *Preliminary Training of the Detachment*—Must be as complete as possible before arriving in camp, so that a very small amount of elementary drill will put a finishing touch to it, and render the detachment fit for service practice. It is too often the case that elementary drill is taken as the chief means of training the detachment for service practice; there is not sufficient time for this.

The points upon which good practice depends are laid down at length in the Field Artillery Drill Book.

Before going to practice detachments can and must be exercised in the whole system of ranging and fire discipline as a drill.

2. *Examination in Laying and Setting Fuzes*—Three men per sub-division (exclusive of Sergeants), eighteen in all, per battery will be trained as expert layers, six of whom will be selected by lot by the inspecting Officer for examination with tangent sight test.

Each layer should have four lays. The tangent scale laying should be checked as laid down under regulations for layer's prize.

Twelve men per battery will be trained in fuze setting or boring.

The average results should be recorded on Form A, given on page 11.

3. *Section Commanders.*—Should have a thorough knowledge of the principles of ranging, in order that they may be able to intelligently assist or even replace their Battery commander. Section commanders are at liberty to move about their sections according as they consider it necessary for the best supervision of their guns, but when standing still they should be at attention. Dressing must be maintained from the flank on which the battery commander is posted. Dressing

They are responsible that the correct target is laid on. This they should ascertain by looking over the gun, or one of the wheels, from some distance in rear, so as not to interfere with the gun layer.

On no account must they hurry the layers.

4. *Gun Layers.*—Require practice in laying at service objects and at service ranges. They should be frequently examined by an officer and worked against time.

They should remember that the same accuracy of direction is not so essential to effect when firing at broad formations of troops, long line of shelter trench, &c., (except for the ranging shots), as at a narrow target, and not lose time in trying to obtain it when firing at the former. Elevation is, however, all important except when firing case, when everything must give place to rapidity.

Each alteration in elevation must be promptly followed up by every gun whether loaded or not. When a gun has been laid a very slight adjustment is necessary after loading is completed.

All men must be taught to lay for direction from the end of the handspike, so that after the first round the handspike number can obtain the line. This is of great assistance to the gun layer, and also an almost certain safeguard against laying on the wrong target.

5. *Auxiliary Marks*—Should be used, and laying by clinometer practised. When using the latter, it is desirable to have the guns of a battery as nearly as possible on the same level, as slight corrections would be required for guns on different levels.

In determining the quadrant elevation necessary for the first round the Commanding Officer must increase or decrease, by estimation, the elevation due to the estimated range, according as the target stands on higher or lower ground than the battery.

In deciding on the length of fuze for the first shrapnel the Commanding Officer must remember that the quadrant elevation is different from the tangent elevation, and does not correspond with the range on the fuze scale.

Clinometer laying must be practised by layers, and they must be proficient at the drill for picking up the line of fire by pickets.

6. *Range-takers*—Must be careful to take up such a position as will not interfere with the battery. They should, as far as possible, keep themselves out of sight of the enemy.

Range-takers should not be made use of when the range is easy or the target of a transitory nature, such as advancing infantry.

7. *Supply of Ammunition*.—At practice this is generally much too slow, because the numbers are not accustomed at drill to withdraw the ammunition from the limber or wagon, and are consequently slow at it when required to do so. This should be constantly practised at all drills, whether in barrack or in the field.

8. *Casualties*.—Casualties should be frequently practised at drill. It should be thoroughly understood who is to take up the duties of any officer or No. 1.

Casualties amongst gun numbers should be filled up from the reserve, and not by changing rounds.

9. *Orders*.—Orders should be at once passed on verbatim by Section commanders, who should acknowledge the receipt



of an order by raising the hand to the forehead, as when answering a salute. All officers should carry note books with pencils.

Orders will be communicated by means of mounted orderlies, if possible in writing; but orderlies must be trained to deliver messages verbatim.

When in action, orders should be sent by dismounted orderlies. |||

#### GENERAL REMARKS.

10. *Range-party*.—In order that the results of practice may be accurately recorded, a range party of sufficient strength, in accordance with the number and nature of the targets, is to be detailed under an Officer, if possible a Captain, who will be responsible that the results of the fire are carefully judged and correctly recorded. Officers of the battery which is practising should not be detailed for this duty if any others are available. There is no position where officers can learn more regarding effect and action of projectile, &c., than they can when employed on range duties, provided they watch and criticise the effect of each shell.

At competitive practice the officer on range duty should not be one of the battery officers.

Pickets should invariably be planted 50 and 100 yards short and over the target to assist range officer's judgment.

A dummy placed edge on to the line of fire answers well.

When the nature of the ground does not allow the range-party to be posted at a convenient distance from the target, it is desirable that a splinter-proof shelter should be provided for them, and the requisite materials for this should be demanded.

14. *Safety*.—The officer commanding the practice is responsible for the safety and clearness of the range from the battery to target, and as far beyond the latter as he can see.

The officer commanding the practice is responsible that the range beyond the target is in distinct view either of himself or of the range-party. No practice is to be carried on unless the ground covered by the last ricochet of the projectile is well within the observation of some responsible person.

Although the layer is responsible for correct adjustment of sights and laying, each section commander must satisfy himself at practice, without unduly interfering with the gun layer, that the true object is aimed at, and that no such error is made as may endanger the range-party or others.

No battery flag or screen is to be hoisted, lowered, or used for signalling except by direct order of the officer superintending the practice on the spot.

The flag or screen is to be lowered before commencing fire, but no firing is to take place until the signal is answered by the lowering of the range-party's signal.

When the superintending or other officer in command of the practice deems it necessary, or receives a caution to cease fire either by raising of the range flag or by other indication, he will give the command "Stand Fast."

If a cartridge is exposed it will be replaced in the case, or if a fuzed shell is in the bore it will be rammed home, but nothing further is to be done at the guns after the order "Stand Fast" until the order "Go on."

The flag at the battery is to be raised only at the direct word of the officer superintending the practice, who will first satisfy himself that the order to "Stand Fast" has been obeyed throughout the battery. He will ascertain that the range is clear before directing the flag to be lowered, and will not until the flag is down give the command "Commence Firing." This order will be repeated by the subordinate officers, who will afterwards give the order "Go on."

If there are any signals agreed upon locally between the battery and range-party, or *vice versa*, they should be formally issued and a copy of them in possession of both parties during the practice.

The range-party is always to be provided with a flag, screen, or other distinct signal, which is not to be hoisted, lowered, or used for signalling except by direct order of the responsible officer, or non-commissioned officer. When not displayed it is an indication that all is safe, and that firing may proceed.

#### UMPIRES.

12. At every camp where practice is carried out the G. O. C. will appoint such umpires as may be required, the

senior to be Umpire-in-chief, who will carry out the duties as detailed below.

Their duties are to be as follows :—

- (1.) To make all arrangements as to targets, ranges, and range-party, independently, when possible, of competing batteries.
- (2.) To give necessary orders, written or otherwise, to the Battery commanders previous to the battery being brought into the firing position.
- (3.) To take the time, award credits, record and tabulate results.

13. The Umpire-in-chief to make every effort to ensure that the practice is carried out by all the batteries, as far as possible, under similar conditions of range and target.

14. At the conclusion of the competitive practice the Umpire-in-chief will forward the results of the practice\* and allotment of prizes made by him to the C.S.O.

15. The Umpire will watch the working of the battery for unnecessary noise, uncalled-for repetition of orders, interference by the Battery commander in the battery working, slovenly drill, &c.

He will allot credits from a total of 100 (gunnery mistakes, faulty observation, &c., will carry their own penalty in loss of credits for effect.)

16. Credits should be awarded on the following system:—

The Chief Umpire should place himself near the Battery Commander, and the Assistant Umpire near the other flank of the battery.

The Umpires should take notes during each series. They are at liberty to go into the battery, but must be careful not to interfere in any way with its officers or men.

W

\*Form B, page 12.

After the battery has fired its three series the Umpires should meet, and after consultation agree as to the number of marks to be awarded, considering its fire discipline, system and style, and also the capacity for command as shown by its commanding officer.

Taking a perfect battery as worth 100, marks are deducted if it fails in any respect, and from the figure thus obtained marks are deducted for any lapse in drill and fire discipline that may have been noticed during practice.

For instance, if a battery is perfect it would receive 100; and from this figure the marks for mistakes observed during practice, say 10, are taken, which brings the fire discipline award down to 90.

Marks for drill and fire discipline must be awarded before the record of hits is known.

Points will be deducted for errors in drill from the time the Battery is reported as ready to move off from Camp.

17. The Battery Commander should be subsequently informed, as far as possible, of the mistakes committed.

The following faults occur most frequently;—

- (a.) Battery commanders giving incorrect and unnecessary orders.
- (b.) Battery commander not going forward to reconnoitre.
- (c.) Section commanders hurrying layers.
- (d.) Section commanders not passing orders correctly.
- (e.) Section commanders not acknowledging orders.
- (f.) Section commanders ordering guns to fire at irregular intervals.
- (g.) Section commanders slack and inattentive.
- (h.) Section commanders not making necessary changes in deflection.
- (i.) No. 1 not giving number of gun when ordering fire.
- (j.) Layers not following up elevation during ranging.
- (k.) Layer not laying his gun while waiting for length of fuze.
- (l.) Firing gun without orders from No. 1.

- (m.) Gun not run up after firing.
- (n.) Detachment gunners not standing up and working smoothly.
- (o.) Gunners placing their fingers in their ears on word fire.
- (p.) Gun fired without sight being removed.
- (q.) Incorrect intervals between guns in action.

#### LAYING TESTS (FULL CREDIT, 32.)

##### 18. Tangent Sight Test (4 lays.)

Two well-defined objects at least 20 degrees apart at medium ranges are to be chosen as targets, two lays at same elevation at each object, and the exact part of the target to be laid on is to be clearly explained to the competitor, or pointed out by laying the gun on it. The Commanding Officer or another officer of the battery will lay the gun and the clinometer reading will then be recorded by the Umpire as a standard for the competitors. The gun is then thrown out of line. The tangent sight set at zero is in the competitor's hands.

The officer gives—

“Range” in yards, “Def. in minutes—“Lay.”

The competitor will not attempt to adjust his tangent sight until the word “Lay” is given.

To lay, the competitor will adjust the sight, place it in the gun, and lay.

As soon as the gun is laid as ordered, competitor says, “Take post,” and steps clear. The time is taken from “Lay” to “Take post.”

The officer first notes whether the tangent sight and deflection leaf are set as ordered, but does not alter it. The elevation is checked by means of the clinometer, and if the gun is laid within 3 minutes elevation and 6 minutes deflection, and the time is 30 seconds or under, then the competitor scores 8 for that round.

For every 5 seconds or fraction of 5 seconds beyond 30 seconds he will lose one of the 8.

The third round will be laid at another target with a different elevation and deflection under the same conditions.

The range and deflection given will always be to some division on the scale, not to a fraction of one.

If the sight is incorrectly set, no marks will be given for that round. Setting to be considered incorrect when the graduation order is either covered up by the clamp or space can be seen between it and the top of the clamp. The gun is to be thrown out of line and the elevating wheel turned after each round.

If the gun is not laid within 3 minutes' elevation and 6 minutes' deflection, no marks will be given for that round.

The layer must use the signals for traversing as laid down in Field Artillery Drill Book.

In order to qualify as a layer at competitive practice, a competitor must score 20 points in four lays.

Twenty-four points are required to qualify for a gun layer's badge.





# FORM B.—RESULTS OF BATTERY SERVICE AND COMPETITIVE PRACTICE.

Battery ..... Cond'r ..... Time Allowance for Series I, II, III.

Series.	Time from Action to				1st Gun.	First Time Shrap.	Battery Fire.	End of Series.	Rate of Battery Fire.	Range—Yards.	No. of Rounds Fired.			Men hit per Shell.	Marks for Hit.		Fire Discipline—Full Marks—100.		Total Marks		
	Percussion.	Time.	Hits.	Men							No. of D's Fired at	Hits per Shell.	Men hit per Shell.		Possible.	Gained.	Lost.	Gained.			
III.																					
II.																					
I.																					

mm



ACTUAL CONDITIONS OF BATTERY PRIZE COMPETITION.

20. Previous to coming into action, a battery should be halted in rear of the position in accordance with the Umpire's instructions, and, if possible, under cover.

21. The Battery commander will then be called up to the position, with his range takers, to receive his instructions.

Before leaving the battery for the first series, the Battery commander will give the order "Prepare for action."

As soon as the Battery commander has received his instructions he will order the battery up and proceed with the series.

The period from the time of his instructions being given to him up to the time of his coming into action must not exceed five minutes.

In the first series the battery should be brought into action by the deliberate method. In the second and third series the method to be employed is left at the option of the Battery commander. / dm

22. Each series to last for ten minutes, time being taken from the word "Action." The Battery will receive the order "Limber Supply," "Cease firing" when the time limit has elapsed and no more rounds can be fired in the series.

Guns loaded or partly loaded will be allowed to fire, if fired within one minute of the order of "Cease firing," after which "Stand fast" will be ordered. "Partly loaded" is to be understood to mean shell in the bore.

23. At the conclusion of the first and second series the Battery commander will, when ordered to do so by the Umpire, give the order "Limber Supply," and as soon as ready, will limber up and move to the next preparatory position. He will then be called up as on the first occasion.

24. Rate of fire must be regular.

25. Intervals of 15 seconds will be maintained in battery fire.

26. In series I. four marks and in series II. and III. two marks will be given for each dummy disabled by a "lodge" or "through." For the surprise Target 4 marks will be given for each Trooper hit and 2 marks for his horse.

If during any series any dummies shall be blown down either by the wind or by the blast of a shell, without being disabled, one point shall be allowed for each dummy so blown down.

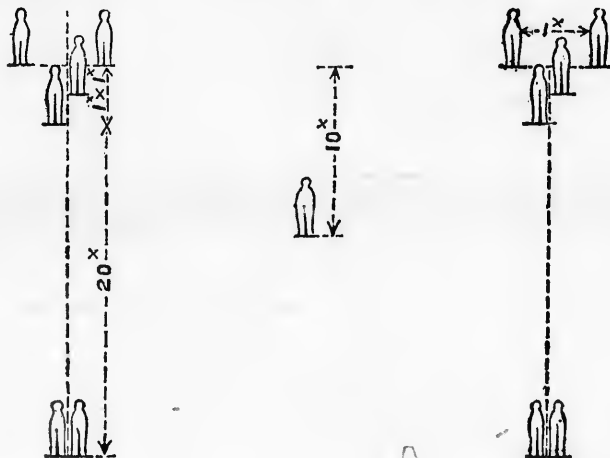
In the event of any of the shells bursting in the bore or at the muzzle, the same number of rounds may be fired after the time limit has elapsed.

50 per cent. of the credits awarded for fire effect will be added to the marks awarded for fire discipline.

TARGETS.

27. *First Series.*—Target, 4 gun detachments: Range from 2,400 to 3,000 yards.

The dummies representing each section arranged as shown:—



*distance line*

No dummy guns or limbers.

Section commanders and gun detachments alone are represented. III

*Second Series.*—A column of Infantry represented by 10 sections of fours with Officers, and N C. O's ; ranges from 1800 to 2200 yards. II

*Third Series.*—Target, a line of Infantry represented by 45 kneeling dummies at 1 yard intervals. A surprise target will be introduced in this series. III

*Fourth Series.*—Instructional. Fire from behind cover, by aid of auxiliary marks.

The Captain of the battery will be required to command in either the second or third series.

#### AMMUNITION.

28. Limbers and wagons will be filled with ammunition as authorized by the Handbook. Commanding Officers may, therefore, select their own projectiles.

*Fourth Series.*—Instructional.—12 rounds.

29. The daily programme of Drill and Practice will be as follows for each detachment:—

*First Day.*—1, 2, 3 series—Practice.

*Second Day.*—4th series, Gun Practice and Critical Lecture by Commandant.

#### FIRE DISCIPLINE COMPETITION.

30. This will be carried out during mobilization for Annual drill under the previous conditions for Battery Prize Competition with the following exceptions:

1. Only two series will be fired, in the first the Battery will be brought into action by the deliberate method—in the second by the direct method.

2. The number of rounds to be used in each series will be twenty shrapnel shells.

3. Credits will be given by the system detailed in par. 16. No credits will be given for the results of fire.

4. The command "Stand Fast" may be given by the Umpire at any time during either of the series, and the guns examined with a view to ascertaining whether the elevation and deflection as ordered, have been given and the guns correctly laid.

5. 50 per cent. of the credits awarded for fire discipline and 25 per cent. of those for fuze boring or setting and 25 per cent. of those for gun laying will be included in the efficiency report of each Battery.

By order.

**W. H. COTTON, Lt.-Col.,**  
*Asst. Adj. Gen'l for Artillery.*

