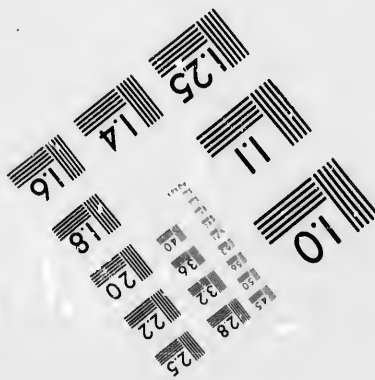
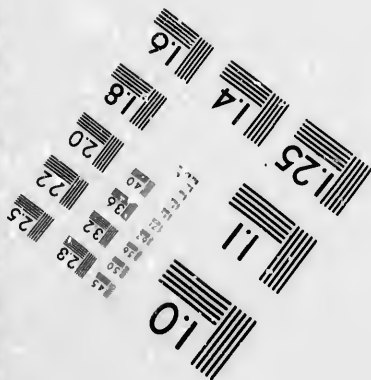
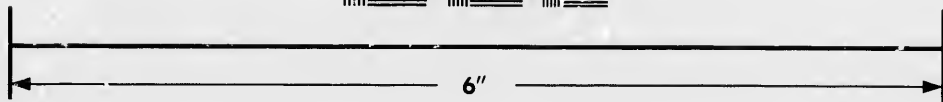
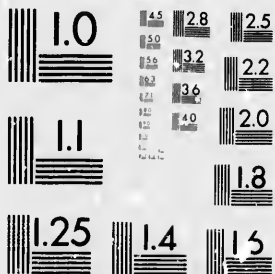


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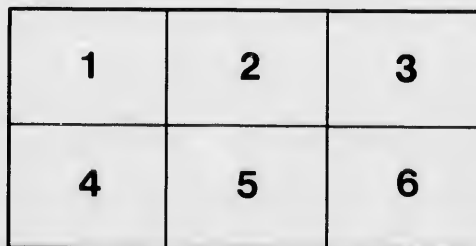
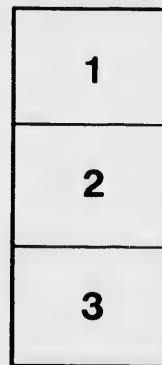
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DOMINION ARTILLERY ASSOCIATION.

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# PRIZE ESSAY.

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ON THE PROPORTIONS OF ARTILLERY (FIELD, SIEGE AND GARRISON,)  
REQUIRED FOR THE PRESENT FORCE OF ACTIVE MILITIA OF  
THE DOMINION, WITH SUGGESTIONS AS TO THEIR ORGA-  
NIZATION, EQUIPMENT AND LOCALIZATION.

BY

**Bt. Major J. G. Holmes,**

*"A" Battery, C. A., Adjutant School of Gunnery, Kingston.*

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AUGUST, 1878.

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QUEBEC :

PRINTED AT THE GUNNERY SCHOOL PRESS, CITADEL.

1878.



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CHRISTIANITY

THE HISTORY OF THE CHRISTIAN RELIGION  
FROM THE BIRTH OF CHRIST TO THE PRESENT TIME

BY JOHN H. MORSE

NEW YORK: G. P. PUTNAM'S SONS

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ON THE PROPORTIONS OF ARTILLERY (FIELD SIEGE AND GARRISON,) REQUIRED FOR THE PRESENT FORCE OF ACTIVE MILITIA OF THE DOMINION, WITH SUGGESTIONS AS TO THEIR ORGANIZATION, EQUIPMENT AND LOCALIZATION.

*"Carpe diem, quam minimum credula postero."*

"HORACE," Book 1.

Canada, owing to the vast and important nature of its public works, such as canals, railways, etc., in which it has been, and is engaged, has been unable to devote very much of its revenue to defensive purposes, and depending, as it did, upon the Imperial Government, whose troops, up to 1871, were quartered in the country, and who occupied and kept in repair, all the permanent fortifications, as well as supplying their armaments, little was done in the Artillery branch of the Militia Service. A few Field Batteries were organized in different parts of the country, in such places as chance led to their formation, without reference to any particular scheme of defence.

Garrison Brigades and outlying Batteries of Artillery were formed, and accepted just as they offered; irrespective of their actual use in case of sudden hostilities, in fact, just as the whim of their commanding officers might lead them, whether to be Artillery, Cavalry, or Infantry—the colour and cut of their uniform, having more to do with their nature of service, than any consideration of usefulness. This led to our having, in the case of Garrison Artillery, especially, a number of corps organized and equipped as Artillery, but except in the matter of uniform, different in no particular from Infantry. To rectify this, and to have Artillery corps organized, equipped, and drilled, in places where they would be most useful, and where they could learn, in the short time allowed them by the present system of annual training, the duties they would be required to perform in actual warfare, is now the aim of those who have the welfare of the artillery in their especial charge, viz: the Inspectors of Artillery, and who are, it is believed, fully supported by the Lieut. General Commanding the Militia of Canada.

## THE PROPER PROPORTION OF FIELD ARTILLERY.

In determining the proper proportion of field artillery to infantry, a great many things have to be taken into consideration, among which may be considered, the nature of the country in which the operations are to be conducted, whether wooded or open, mountainous or level: means of transport, such as railways, good roads, water communication, plentiful or the reverse: whether the campaign is to be of an aggressive character, or is to be carried on in a strictly defensive manner.

Canada presents in its different provinces, a variety of these conditions hardly known in any European country, its immense frontier open to attack, the densely wooded districts, varying from the Western boundary of New Brunswick, to the Eastern Townships of the Province of Quebec, the comparatively open and well cultivated country, lying between those townships and the Western limits of Ontario, as well as the differences of population, numbers of horses, etc., compels us to consider in detail, the different requirements, as well as means, of keeping up efficient batteries, in the different localities where they would be most useful. Farming communities are, as a rule, the most favourable localities in which to raise Field Batteries. Here the men own their own horses, they are accustomed to ride, and drive them, as well as to feed and groom them, and the horses from being accustomed to work in pairs, are much steadier in manœuvring, and under fire, than horses obtained in cities, and towns, where they have to be hired wherever they can be obtained—strange to each other, as well as to their drivers, who, as a rule, know little regarding the care and requirements of the animals, on whose well being and condition so much of the efficiency of the Battery depends.

Upon means of transport depend, in a great measure, the number of guns an army will take into a campaign, for the large number of carriages of all descriptions which necessarily accompany the Artillery, renders their transport, a matter of very serious consideration. If railways are convenient, of course a great deal of the transport of both men, horses, and material, may be performed by them with the greatest ease, and consequently the proportion of

Artillery can be as great as possible, as is consistent with the service likely to be demanded of it; if the ordinary roads are good; a large proportion of Artillery can be employed; as it will be able to move itself without any extraordinary strain being thrown upon it; but should there be neither railways or good roads, and instead there should be nothing but the wretched cart tracks, miscalled roads so prevalent in this country, the work of moving a large force of Artillery would be most difficult. The roads bad at the commencement, under heavy traffic, caused not only by the moving of the Artillery, but also by the immense trains of wagons necessary to supply the Infantry and Cavalry with food, forage, ammunition, and other supplies, rapidly become so bad as to be almost impassable. Whether the campaign is to be of an offensive or defensive character determines to a great extent the proportion of the Field Artillery. If a long march has to be made into an enemy's country, the remarks previously made, regarding means of transport, such as the state of roads, etc., suggest the advisability of taking as little impedimenta as possible, on the other hand, if the army is acting on the defensive solely, a much larger proportion of Artillery could be used, as no long marches have to be made, and it could be brought almost to where it would be required, long before the time of its use in action commenced.

Another principle upon which the proportion of Artillery to Infantry depends, is the state or condition of the Infantry itself, if the latter is well equipped, and disciplined, a smaller proportion of Artillery will be required, if poorly, a larger.

Before actually determining the proportion of guns to men required, it would be well to see what the opinions of competent authorities are upon this subject. Major Le G. Geary, R. A., in a lecture delivered at the Royal Artillery Institution, Woolwich, 3rd January, 1873, says, "it is proposed that a *corps d'armée* consisting of 12,000 men should have altogether 48 guns, 12 guns to accompany each division of Infantry 5,000 strong, 12 to be attached to the Cavalry Brigade, and 12 to be in reserve, thus giving 4 guns per 1,000 men. This seems to have been determined upon after the Crimean War, for at the Alma, we had only 60 guns to about 29,000 men, a little over 2 guns per 1,000 men, while at Waterloo we had less than 2 guns per 1,000 men. I have extracted from the official account of the Franco-

Prussian War, 1870-71, translated from the German, by Capt. Clarke, the following information respecting the strength of the corps, and divisions of the combatants. A French division consisted of 13 battalions, (one of which was a rifle battalion,) 12 guns, 6 mitrailleuses, 1 company of Engineers. A corps was constituted of a variable aggregation of divisions, and had an Artillery reserve in the proportion of about 12 guns to each division. There was, besides, a large Artillery reserve of some 96 guns for the whole army. The Cavalry was organized separately by divisions. A Prussian division usually consisted of 12 battalions of Infantry, 4 Squadrons of Cavalry, 24 guns and 1 company of Pioneers. There was a reserve, or corps of Artillery, to each army corps of usually, 36 guns. The total of a *corps d'armée* was then 25 battalions, 8 squadrons, 3 companies of Pioneers, and 8 batteries of divisional Artillery, besides 6 batteries of Corps Artillery. The Cavalry division was organized separately, and had its own complement of Artillery, the chief points of difference were that the French had no unit of organization, beyond the division, while the Prussians had that of the *corps d'armée* of 2 divisions. The French Corps Commander of 2 divisions had only at his disposal 48 guns and 12 mitrailleuses, while the Prussians had 84 guns. I apprehend that the system which gave a full reserve Artillery, to the Corps Commander, was more likely to produce effective results, than that which limited his reserve for the sake of keeping a reserve of 96 guns for the disposal of the Commander of an army of 300,000 men."

Taubert in speaking of this subject, says, "from the known strength of our army corps, we may assume that there was about 3 pieces to every 1,000 combatants, this proportion is adhered to by most of the other large continental armies. There are no general rules on this subject, because it is not a matter so difficult to determine, as the number and calibre of the pieces, which an army requires; for, independently of the nature of the ground, which has a great influence on this point, the predilection of an army for its existing organization, the character of its Commander, and the armament of the enemy, have to be taken into consideration.

In a country much cut up numerous light guns are desirable, while in a flat, and open one, a greater proportion of heavy guns, and Horse Artillery, might advantageously be adopted.

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Agreeably to these principles the number of pieces in all armies, has varied very much, but we invariably find towards the end of a campaign, that the proportion of Artillery to the other arms increases, this is partly to be attributed to the fact, of the effect of its fire being more highly estimated, and that the effect itself considerably increases, and partly because the number of combatants decreases, in a higher ratio than the pieces.

In the two first Silesian Wars, 1744 and 1745, the number of pieces was between  $2\frac{1}{2}$  and 3 per 1,000 men, it increased considerably in the seven years war 1756-63, and reached towards the end of it, to between 5 and 6."

"Frederick the Great brought 3 guns per 1,000 men to the field, with his greater armies, and increased that proportion considerably: as his Infantry decreased in numbers, an army of 60,000 might well be accompanied by 180 guns, a corps of 30,000 by 100 guns." (1.)

"In the invasion of Bohemia in 1866, the proportion of guns to men in the three Prussian Armies, consisted as follows: the Elbe Army about 40,000 and 135 guns. The Army in centre, called the 1st. army, commanded by Prince Frederick Charles, numbered 81,000 men and 270 guns. The army on the left called the 2nd. army, was separated by a wide interval from the centre, it was commanded by the Crown Prince, and contained 100,000 men and 360 guns." (2.)

"The great quantity of Artillery which was attached to both armies, Austrian and Prussian, was a noteworthy feature of the war, and it was employed in a manner which shows that this *arm* is even more than ever important." (3.)

"The proportion of Artillery, to Infantry, in the Dominion, is far too small, I recommend a gradual and steady increase of the Field Artillery, until to every brigade throughout the Dominion, there is attached, at least, one field battery. At present the proportion of guns to men is little more than 1 gun to every 1,000 men, available, which is quite inadequate, 3 guns being considered the least, and 4 a much better proportion for every 1,000 men." (4)

"The Prussians had in 1870, 90 guns to an army corps 42,500 men, 36 of which were reserve, or corps Artillery, which deducting

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(1) Hamley, Part VI. Chap. V.

(2) Lt. Col. Soady, R. A.

(3) Lt. Col. Miller.

(4) Col. Ross, Militia Report, 1871.

Pioneers, administration services, etc., gave rather under  $2\frac{1}{2}$  per 1,000, but this proportion was often exceeded in the Field. Thus the army which invested Paris had 147,000 Infantry and Cavalry, with 622 guns, or nearly 4 guns per 1,000 men." (1)

"It has been pointed out that as armies have increased in numbers, so the proportion of guns has been smaller, on account of the difficulty of transporting, and of bringing into action in time, the long trains of a numerous Artillery, and the conclusions have been arrived at, that large armies should not have more than 3 guns, in an open flat country, or more than  $2\frac{1}{2}$  guns in a difficult one, to 1,000 men, but that the proportion might, in a country favorable to the employment of Artillery, be increased to even 5 guns with smaller armies of 50,000 to 80,000 men." (2)

Keeping in view the opinions of the authorities already quoted, it may safely be assumed, that the proportion of Artillery required for the present force of the Active Militia of the Dominion should not be less than 3 guns per 1000 men, and 4 guns per 1,000 men would be a still better proportion. All the fighting that Canada will be called upon to do, for a great many years at least, will be of a defensive character. During the war of 1812-13 and 14, no attempt was made by us to carry on a lengthy campaign in the enemy's country, a few raids were made, lasting a few days, resulting as a rule disastrously, as often as they proved successful, among the former may be reckoned the attack on Sackett's Harbour, 1813, and Plattsburg, 1814, and among the latter the capture of Detroit, 1812. These were the only three of any importance attempted by us. The Canadian Militia when first called out for service, would have to be considered as raw and comparatively undisciplined troops, requiring therefore an Artillery force numerically much stronger than would an army of regular soldiers of equal strength.

The present strength of the Canadian Active Militia, Infantry and Cavalry, is as follows :

Cavalry .....	1,803
Infantry .....	27,990
Rifles .....	9,330

Total.....39,123 men.

(1) Owen's Modern Artillery, page 373.

(2) A translation from the German, entitled: Proportions of guns to men, by Capt. Baring, R. A.

Our Field Artillery consists of:—

ONTARIO.

9 Batteries, four 9 pr. M. L. R. guns each..... 36

QUEBEC.

3 “ four 9 pr. M. L. R. guns..... 12

MANITOBA.

1 “ four 9 pr. M. L. R. guns..... 4

SCHOOLS OF GUNNERY.

2 “ four 9 pr. M. L. R. guns each..... 8

Total .....60

There are also 5 other batteries, two of them armed with three 9 pr. S. B. guns, and one 24 pr. Howitzer each, and one with four 24 pr. Howitzers, making a total of six 9 pr. S. B. guns and six 24 pr. Howitzers. The two first of these batteries are in New Brunswick, and the last in Quebec. There is one battery in Ontario not yet armed, and one in Nova Scotia. The Halifax Field Battery, six 6 pr. B. L. R. guns. The S. B. guns and Howitzers are of little value in the present day, owing to their short range, and inaccuracy of fire, and the enemy would no doubt with the present long range rifle, very soon disable the gun detachments, of both men and horses. The 6 pr. Armstrongs in Halifax are too light in calibre for field service, although useful for the purpose for which they were intended, viz: use in mountainous countries, where transport of heavier guns is impossible, leaving these out of the question we have of serviceable guns:

In Ontario ..... 40

Quebec..... 16

Manitoba..... 4

Total.....60

being a proportion of a little less than 2 per 1,000 men, or to make the comparison the plainer, we will take the total approximate strength in Cavalry, and Infantry, (including rifles,) in each Military District shewing the number of 9 pr. M. L. R. field guns in each.



Province.	Mil. Dist.	No. of men.	No. of guns.	Propr. per 1000
Ontario. ....	No. 1.	4,800	8	1.66
	No. 2.	7,300	12	1.64
	No. 3.	4,300	8	1.86
	No. 4.	2,700	8	3 nearly.
Total. ....	.....	19,100	36	1.88
Quebec .....	No. 5.	5,900	8	1.35
	No. 6.	3,100	0	0.00
	No. 7.	4,100	4	.97
Total. . . . .	.....	13,100	12	.91

Military District No. 5 has still another battery which, owing to its armament, (24 pr. Howitzers,) can not be reckoned among the effective batteries, if it were, it would raise the proportion of guns to men to 2.03 instead of 1.35, and the total for the Province to 1.22 instead of .91 per 1,000.

Military District No. 8 comprises the Province of New Brunswick, and contains 2,300 men with 2 Batteries of Artillery, one at Newcastle, and the other at Woodstock. Each of these batteries is armed with three 9 pr. S. B. guns, and one 24 pr. Howitzer. If rifled guns were substituted for these, the proportion of guns per 1,000 men, would be about 3.5 which would be a fair one.

Military District No. 9 consists of the Province of Nova Scotia, and musters 3,450 men, it has one Field Battery at Halifax, armed with six 6 pr. Armstrongs. These guns are not at all suitable for what is known as Field Artillery, being light pieces of ordnance, weighing 3 cwt., with a service charge of 12 ozs. of powder, and are useful only for service in mountainous countries, where the roads are not practicable for the conveyance of heavier ordnance. It would appear advisable to equip this battery in the same manner as other batteries in the country, viz: with four 9 pr. M. L. R. guns.

Were this done the proportion of guns per 1,000 men in Military District No. 9, would be 1.10.

Military District No. 10 consists of the Province of Manitoba, and contains about 230 Infantry and Rifles, with one Field Battery of four 9 pr. M. L. R. guns which will be a sufficient proportion for this district, for some years to come, until the force of Infantry grows to

such a proportion as would warrant an increase of the Artillery force.

Military District No. 11 comprises the Province of British Columbia, and Vancouvers Island, it contains only 230 men, exclusive of one Garrison Battery at Seymour, it is questionable whether it would be advisable to raise a Field Battery in this District at present.

Military District No. 12 consists of the Island of Prince Edward, and contains about 710 Infantry. There are no Field Batteries in this District. There should be at least one, this might easily be effected by converting one of the four Garrison Batteries into a Field Battery, and by arming it at once with three 9 pr. S. B. guns, and one 24 pr. S. B. Howitzer; with which they could carry on their drill, and practice until such time as the country can arm them with rifled guns.

In completion of this portion of this paper it would be well to shew what number of guns each District will require, to complete it to an establishment of about 4 guns (M. L. R.) per 1000 men.

Province.	Mil. Dist.	No. of guns.	Propr.	Additional No. required.
Ontario .....	No. 1.	8 (1)	1.60	12
	No. 2.	12	1.64	16
	No. 3.	8	1.86	8
	No. 4.	8	3 nearly	4
Quebec .....	No. 5.	8 (2)	.35	16
	No. 6.	0	0.00	12
	No. 7.	4	.97	12
New Brunswick.....	No. 8.	8 (3)	3.5	00
Nova Scotia.....	No. 9.	6 (4)	1.01	8
Manitoba.....	No. 10.	4	16.0	00
British Columbia.....	No. 11.	00	.00	00
Prince Edward Island.	No. 12.	00	.00	4

(1) The Ontario Battery is omitted, it being yet unarmed.

(2) The Melbourne battery armed with four 24 pr. S. B. Howitzers, is omitted, recommended armament four 9 pr. M. L. R. guns of 6 cwt.

(3) Consists of six 9 pr. S. B. guns and two 24 pr. S. B. Howitzers, recommended to be replaced by eight 9 pr. M. L. R. guns of 6 cwt.

(4) Six pr. Armstrongs B. L. R. guns of 3 cwt., recommended that they be replaced by four 9 pr. M. L. R. guns of 6 cwt.

Showing the number of guns required to replace S. B. guns, and Howitzers, and B. L. R., 6 prs. to be.....	16
Number required for Ontario Battery .....	4
Number required for which no batteries are organized or enrolled .....	88

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Total..... 108

Number of 9 pr. M. L. R. guns in organized Batteries, 52.

The eight 9 pr. M. L. R. guns in possession of the Schools of Gunnery are not included in the latter number, as they are not among the effective lists of guns, being required for instructional purposes and use in very extreme cases, and would be all the more necessary where they are, and at their present use, were the Artillery force of the country up to its proper standard. If the Schools of Gunnery were each divided into two distinct branches viz: Field and Garrison, one Battery of each at each station, these guns then might be considered effective, as indeed they would be, being properly regarded as the *Corps d'Elite* of the Canadian Militia—Field Artillery—and available at a moment's notice for any Service. This they are not at present, the establishment of Horses, at each School being only eight, and of men, *none*, as the enlisted men of A and B Batteries are Garrison Artillery, raised for the purpose of garrisoning the Fortifications of Kingston and Quebec, and in the event of hostilities would all be required for this purpose.

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#### ORGANIZATION OF FIELD ARTILLERY.

The present organization of the Militia Field Artillery of the Dominion, is one of independent batteries, each under the immediate command of the Deputy Adjutant General of the District to which the battery belongs. The only exceptions to this rule, are Military District 5, 6 and 7 where the Artillery is under the Regimental command of the Inspector of Artillery Lt. Col. Strange, R. A. In no case are any of the Batteries formed into Brigades, which might readily be done, or what would be better still, form them into separate Regiments with their proper Staff.

It is impossible to have the whole of the Militia Artillery of the Dominion formed into one Regiment in the same manner as the Royal Artillery, as promotion must go by seniority, and it would be impossible to transfer a man from Manitoba, for instance, to Nova Scotia, to fill a vacancy occurring there, and to which he would be entitled because of his seniority. There would be no difficulty, however, in an arrangement by Districts, in the same way as the Cavalry were formed in Military Districts, Nos. 1, 2 and 3, some few years ago, and which has worked well, and without difficulty. A vacancy which occurs in the Field Officers list is filled by the senior Captain, no matter where he resides, and if the Regiment is called out, he joins it at any place where he may be ordered to report.

“In order that Field Artillery may perform efficiently the various duties required during a campaign, it is necessary that it should be well organized and equipped, for otherwise it would prove more embarrassing than useful to the troops of other arms. In consequence of the continual movement of a force in the field, the Field Artillery is obliged to carry not only a large amount of ammunition, but a great variety of stores, so that all repairs of carriages, harness, etc., may be executed without delay, the equipment is, therefore, very complicated, and a good organization essential to prevent confusion in the interior management or manœuvring of a battery. A battery of Field Artillery has three chief requirements or elements, matériel, personnel and transport.

#### MATÉRIEL.

Pieces of Ordnance.  
Ammunition and stores.  
Carriages for the above.

#### PERSONNEL.

Officers to Command.  
N. C. officers and trumpeters to execute orders.  
Gunners to serve the pieces.  
Drivers to groom and drive.  
Artificers to repair carriages, harness, etc., and to shoe horses.

## TRANSPORT.

Horses, mules or other transport animals.

A Battery should consist of as many pieces as can be readily manœuvred and worked by the requisite establishment of officers, men and horses in the field. The number has varied in the different European armies, between four and eight pieces to a battery. In England, Prussia and France, there are six; in Russia, Austria, Sweden, Belgium, and some minor European States, there are eight, while in the Swiss artillery there are but four. The number eight appears to have some advantages over six, for the extra two guns greatly increase the fire of the battery; a battery of eight pieces can also be divided into two tolerably powerful batteries of four guns each if required; and each half battery is composed of two separate divisions instead of one and a half, as with a battery of six guns, and therefore can be more easily manœuvred. Six guns are, however, more manageable than eight, entail fewer carriages, and stores, and are better adapted to the rapid movements now so requisite: (1)''

The establishment of a Canadian Militia Field Battery is as follows.

1 Captain.	59 Gunners and Drivers.
2 1st Lieutenants.	51 Horses exclusive of Officer's Horses.
1 2nd do	4 Spare horses when the Battery is called out for Active Service.
1 Assist. Surgeon.	4 Guns with carriages and Limbers.
1 Vet: Surgeon.	4 Wagons, Ammunition.
1 Serjt. Major.	1 Forge Wagon.
1 Q. M. Serjeant.	1 Store Cart or Wagon.
4 Serjeants.	
4 Corporals.	
4 Bombardiers.	
1 Trumpeter.	
1 Farrier.	

Some of the Batteries have small arm Ammunition wagons attached. Until a couple of years ago, the whole of the horses were taken out for annual training but are now limited to 28 in all, too small a number to carry out the training properly. Every Battery as at present constituted in Guns, Officers and Men should have for annual drill at least the following number of horses.

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(1) Owen's Modern Artillery.

Each Subdivision 6.....	24
“ Serjeant 1.....	4
“ Staff do 1.....	2
“ Combatant officer 1.....	4
	—
Total.....	34

There should be as well, at least 2 spare horses, so the in that event of horses becoming non effective through sickness or casualty the drill would not be interfered with.

The non combatant Staff such as Surgeon and Vet. Surgeon need not be mounted for annual drill, as their duties do not require them to attend drill parades, and as they usually attend to their private practice, as well as their Battery duties, they are hardly ever present with the Battery except at their own sick parades, which usually occupy very little time.

For Active service the strength of the Batteries both in men and horses is much too small, and does not leave any margin for casualties, which are sure to occur, such as sickness, absence, etc., etc., Col. Robertson Ross, late Adjutant General, in his report for 1870, recommends the following as the proper establishment of the Battery.

Major	1	Bombardier's	4
Captain	1	Trumpeter	1
Lieutenants	3	Farrrier	1
Serjeant Major	1	Gunners and Drivers	80
Serjeants	4		—
Corporals	4	Total.....	100

With 60 horses exclusive of Officers horses. He adds, in speaking of the above. “ By the adoption of the above recommendation, this very important branch of the service, which cannot be hastily organised, would, I am confident, eventually attain a very high degree of efficiency.—” Colonel Ross omits altogether in this estimate, Surgeon, Veterinary Surgeon and Quarter-Master Serjeant, very important personages to a Field Battery on Active Service.

consolidating the provincial railways I would submit to my colleagues the question of taking advantage of the contract made by your Government with the company for taking over the Eastern Extension, by paying the money expended by the company, and making it a part of the Intercolonial, but when applied to by Mr. Holmes, I told him it was very doubtful if that proposal would be entertained, and that it would be useless to propose that a dollar should be returned to the Local Government. You are at liberty to make any use you please of this telegram.

Sd. CHAS. TUPPER.

(Applause.)

And now, I had heard Sir Charles Tupper on various occasions state his views in regard to this matter. He did so publicly several times in the County and Town of Pictou. But I am obliged to him for now giving me the opportunity, by allowing this telegram to be made public, to tell you that in carrying out an opinion of my own, that if we could get the Dominion Government to take these railways under their own management and advance the moneys expended in their construction, it would be better even than the great Syndicate scheme, I ventured to put it to Sir Charles Tupper whether he could not take back the Eastern Extension and give us back our money. He said "I will take it into consideration; I think we made a mistake in giving away the Pictou Branch; but we cannot return a dollar to Nova Scotia." He further said that he would not undertake the responsibility of even recommending the building of a line into the Island of Cape Breton by the Dominion Government. Perhaps it was hardly necessary to read these telegrams, because at a public meeting in Antigonish, where a large assemblage met the Minister of Railways and presented an address to him, urgently requesting the Dominion Government to take over the Eastern Extension and the Pictou Branch, and make them a part of the Intercolonial, his reply was that he might now tell them (for I had acquainted him with our success and the deposit of money under the contract), that the plan of the Local Government would be much better for them and the East generally than anything the Dominion Government could do for them. This declaration was publicly made in the Court House at Antigonish, in my presence, and in the presence, I believe, of the Hon. member for Antigonish (Mr. McGillivray).

You will see, therefore, that this effort of the "Chronicle" is a deliberate, and, I cannot characterize it as anything else, most malicious falsehood intended to influence the people in the Eastern part of the Province.

Now there is one other matter to which I shall very briefly refer, apologizing to the House for doing so. Among other schemes devised by the enemies of Nova Scotia to defeat the beneficial arrangement for consolidating the railroads of the province and replenishing its depleted coffers a pamphlet has been published, to which no man has had the courage to put his name, and which bears upon its title page the name of "John Smith." There are a good many John Smiths, and the person who wrote the pamphlet, knowing that if he published his real name, it would probably not have much weight, appears to have concluded that the name John Smith would be better than his own. I do not intend to review this pamphlet, because it is worthless, but as parties ignor-

Drivers gun .....	12
"    spare.....	6
To clean officer's horses and appointments.....	6
	—
Total drivers .....	24
	—
Total gunners .....	46
	—
Spare men for guards, stable pickets, casualties.....	10
	—
Total N. C. officers, gunners, and drivers..	70

The men mounted on the off horses should be employed to clean their riding horse and harness." (1)

It would be useful in forming an idea as to the proper establishment according to Imperial Standard in men and horses of a Canadian 4 gun Battery both in time of peace and in time of war—to take  $\frac{2}{3}$  rds of the strength of a 6 gun Battery of Royal Artillery. There are many reasons why a Canadian Battery should be similar in nearly every respect as regards its equipment to the Royal Artillery.

It would depend on the Imperial stores in time of war for everything required to keep it efficient, Ammunition, Small Stores, Material for repairs of harness, carriages etc. No system of supply, that would stand the least strain thrown upon it being in existence at present in Canada.

The following table shews the strength of a Royal Artillery 9 Pr. M. L. R. Battery of 6 guns—also the comparative strength of a Canadian Battery of 4 guns, being  $\frac{2}{3}$  rds. of the R. A. establishment, where possible, as in some cases certain officers, N. C. officers, and artificers will be required for the Battery, irrespective of the No. of guns.

	9 Pr. F. By. R. A.	9 Pr. F. By. C. A.
Officers	5	4
N. C. Officers	18	14
Gunners	66	44
Drivers	61	40
Trumpeters	2	2
Artificers	7	4
	—	—
Total	159	108

(1) Colonel Strange, R. A. Militia Report 1873.



DISTRIBUTION,

Majors	1	0
Captains	1	1
Lieutenants	3	3
Serjeant Majors	1	1
Quarter Master Serjeants	1	1
Sergeants	6	4
Corporals	6	4
Bombardiers	4	4
Trumpeters	2	2
Farrrier Sergt.	1	1
Shoing Smiths	3	1
Collar Makers	2	1
Wheelers	1	1
Gunners	66	44
Drivers	61	40

Total 159 108

Horses riding	18	12
Draught	66	44
	84	56

The horses are distributed as follows :—

Officers	5	4
Staff Serjeants	2	2
Sergeants	6	4
Trumpeters	2	2
Artificers	3	0
6 gun teams 6 horses each	36	4—24
6 Wagon teams 4 horses each	24	4—16
1 Forge wagon	2	1—2
2 General Service wagons	4	1—2
Total	84	56

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The left hand column in the above table shows the strength of the R. A. Battery of 6 guns and the right hand column the comparative strength in officers, men, and horses, that a Canadian Battery should be, it having only 4 guns.

No Medical or Veterinary officer exists on the establishment of single Batteries, those officers forming part of the Brigade Staff, one of each being detailed for duty with Batteries at outlying stations.

The above tables show that the establishment of gunners and drivers, at present allowed to the Canadian Battery, when called out for service, to be much too small; in other respects it appears to be about correct.

It would appear advisable that all Militia Field Batteries should be kept up to their full establishment in officers and men for annual training, as a supply of trained men cannot be obtained at a moment's notice; and other than trained men are comparatively useless in a Field Battery.

• This fact is even now officially recognized, as the Field Batteries are allowed twelve days annual training, while Infantry are trained but eight.—Would it not be still better to go even further, and make the period of training for Field Artillery at least 24 days per annum.—The first 12 days to be carried on without horses, the men being instructed in standing gun drill, squad drill; and rifle exercises.—The officers, N. C. officers, and drivers sword drill in addition, and all to be thoroughly grounded in a knowledge of ammunition, stores, and of laying ordnance. The last 12 days the Battery to be horsed without wagons, saving a useless expenditure of pay for 16 horses, as the Battery never manœuvres with them, the Battery to be complete in other respects, for the purpose of learning field drill, etc., and carrying out the annual gun practice, which now, thanks to the Dominion Artillery Association, which has inaugurated competitive practice, and laid down rules for the same, is of real benefit to the service, instead of being, as heretofore, a pyrotechnic display at great expense to the public, for the benefit of members of the corps and their friends.

The command of Field Batteries is one which ought to engage the attention of the proper authorities and be arranged without much longer delay. At present all Commanding Officers of Batteries, (except in the Province of Quebec which has a Regimental Command-

ing Officer,) are practically independent of each other, and ought to be formed into some regimental system, so that, in the event of two or more Batteries being brought together, the senior Field Artillery officer would take command, without any question or jealousy on the part of the others. At present if two Batteries are serving, for instance, at a Brigade Camp of instruction with other troops, each Captain can claim to be a Commanding Officer, and decline to be commanded by the other, but only by the senior officer in the camp, in the same way as each Battalion Commander, and apparently no regulation exists at present to prevent this.

This case has actually occurred, and the junior Captain of two Batteries in one camp, who objected to being placed under the command of the senior, was upheld, and his objection supported as being a valid one.

A much better system than the present one in my opinion would be that, instead of the present four gun batteries we now have, a Battery be composed of two of the present ones, to be exactly the same in every respect, commanded by a Major, and all Batteries in each District to be formed into Regiments, the number of Field Officers depending on the number of Batteries.

If the Batteries were increased in strength from four to eight guns each, each half Battery to be of the same strength as the present Battery, or of the proposed strength for a four gun Battery; the system of Command would be as follows :

Each division of 2 guns.....	1 Lieutenant
Each half Battery 4 guns.....	1 Captain
Each Battery 8 guns.....	1 Major
Every 2 or more Batteries.....	1 Lt. Colonel

Each Regiment would have the same number as the District to which it belongs, and the Medical and Veterinary staff appointed Regimentally, one of each to each Battery.

We will take the number of guns for each District as determined by the paper on proportion, and by this means place fairly before us the strength of each Regiment were each District up to its proper strength in Field guns.

Mill. Dist.	No. of guns.	Lt.-Col.	Majors.	Captains.	Lieutenants.	Surgeon.	Vet. Sur.
No. 1	20	1	2	5	15	3	3
2	28	1	3	7	21	3	3
3	16	1	2	4	12	2	2
4	12	0	1	3	9	2	2
5	24	1	3	6	18	3	3
6	13	0	1	3	9	2	2
7	16	1	2	4	12	2	2
8	8	0	1	2	6	1	1
9	8	0	1	2	6	1	1
10	4	0	0	1	3	0	0
12	4	0	0	1	3	0	0

Military District No. 11 remaining as at present.

In Military District Nos. 1 and 2, it would appear advisable not to adhere strictly to the proportion of guns to men, but give to No. 1 District an excess of 4 guns over the proper number, and reduce No. 2 District by 4 guns, making each Regiment in the Districts of equal strength, viz: 24 guns each, with the proper complement of officers, as it would make a more perfect organization for discipline and command, and the Districts being geographically connected, it would not really affect the services of the Artillery in those Districts in case they were required.

Col. French's Report on the Artillery Militia of Canada, dated 10th January, 1872, contains many good suggestions, a number of which are quoted; of the officers, he says: "Generally speaking, the officers commanding Batteries are well able to handle their Batteries when performing ordinary manœuvres, some of them have passed through the Gunnery Schools, and can instruct in gun drill, mounting and dismounting guns, filling shells, boring and fixing fuzes, etc.

The Subalterns, as a rule, not being as well acquainted with their duties as one could wish, restrictions should, I think, be placed on their appointment and promotion.

In view of the facilities now afforded to all ranks of Field and Garrison Artillery desirous of obtaining instruction, I would submit the following suggestions, which, if carried out, would I believe tend to greatly increase the efficiency in those very important branches of the service.

1st. That after the 1st January 1873, no officer shall be promoted to the rank of Captain who does not possess a 1st or 2nd class certificate from the School of Gunnery.

2nd. That after the 1st January 1873, no N. C. officer shall be promoted to the rank of Serjeant who does not possess a 1st or 2nd class certificate from a School of Gunnery, or a certificate showing that the bearer is competent to fulfil the duty of that rank, signed by a Commandant of a Gunnery School, or by a board nominated for the purpose by the Commandant of a Gunnery School.

3rd. That no person be appointed to a commission in the Artillery till his educational qualifications are reported as satisfactory by the Inspector of Artillery.

### HORSES.

The difficulty of horsing the Batteries appears unabated, some District Staff Officers, having pointed out that batteries in their districts, would not be able to turn out for want of horses, an extra allowance of 25cts. per horse per day was authorized for the Artillery.

I consider such an arrangement unsatisfactory for the following reasons:

1st. It is invidious to pay the Artillery horses at a higher rate than the Cavalry.

2nd. Some of the horses are inferior, unfit for work, and occasionally die of disease while on service, and have to be paid for by the public.

The drivers of such teams having no connection with the Battery, but just clothed for the occasion, are a drag on the Battery during the whole training.

3rd. That in the event of a sudden turn out of a Battery no horses are available, as was the case last year, when the Montreal Field Battery was ordered out to repel a Fenian raid. This Battery it will be remembered kept a Regiment waiting for several hours, and was eventually a day too late for the affair at Trout river.

The same Battery could only turn out for four days at Laprairie this year, the Officer commanding having to promise the people who supplied him with horses that they were to be returned within that time, such a state of affairs is highly objectionable, and I would again urgently recommend the enrolment of draught horses for *Field Batteries*.

## ENROLLING HORSES.

I have studied this subject attentively during the past year, and having taken the opinions of a great number of persons in various parts of the Dominion on the matter, have come to the conclusion, that the object can be attained without increasing the estimates, by giving enrolment gratuities, viz., by the insertion of a clause in the Militia Act, exempting from all statute labor, tolls on roads, water taxes, etc., teams of horses duly certified as having been enrolled in a local Battery, and marked, with the initial letter of the Battery. There are certain details connected with this proposal, which need not be gone into in a report of this nature. They are mainly intended to guard against imposition, and to induce owners of enrolled horses to drive them together in pairs viz: by non exemption from tolls on roads if driven singly, etc., etc.

I can see no difficulty in carrying out this measure, and if it is approved of, I believe that the difficulty of horsing Field Batteries will be ended, that the Batteries will have the pick of all the horses in their vicinity, and that the horses having been constantly driven in pairs will work kindly together, in the gun and wagon teams. The riding horses of the Battery can be provided by those using them as in Cavalry corps."

The opinions of several Commanding Officers of Field Batteries in various Military Districts, are given in Appendix 4, page 80, Militia Report, 1873, they are too lengthy to be given in this paper.

## INSTRUCTION OF FIELD BATTERIES.

The present system of instruction is one that might be very well improved upon, and is a subject that requires very careful consideration. Under present regulations, each officer commanding a Field Battery, receives \$200 per annum for the purpose of providing a *competent Instructor* for his battery, as well as keeping in good order, the guns, carriages, harness, stores, etc., in his charge. In many cases no competent instructor is attached to the Batteries, and the equipment of the Batteries is not kept in that good condition that it ought to be. Would it not be better that an Instructor be detailed

annually from the Schools of Gunnery, who could reside at the Battery Head Quarters, wearing his uniform on all occasions, and attending all drills. This man could also superintend the cleaning and care of all the Battery stores, and to a great extent assist the Officer Commanding in the recruiting of his Battery, and in other ways aid him in keeping the Battery in that state of efficiency in which it should always be, to be of service to the country if required. It may be said that this grant of \$200 is also to enable the Officer Commanding to meet other expenses, not included under the head of instruction and care of arms. If this be the case it is a wrong system, that of paying money for a particular purpose, knowing it to be in part appropriated for another. If money for other purposes be required, give him a contingent allowance sufficient to meet this, and the present allowance be paid to the Instructor detailed for the duty. By changing the Instructor every year at least, they would not be allowed to fall off in their discipline and drill, and everything would be much improved by this means.

Another want much felt is that of better means for instruction of Field Battery officers and men at the Schools of Gunnery. At present these Schools have an establishment of eight horses only, with which they are supposed to teach riding and field manœuvres. To say that they can do so is simply ridiculous, and the subject has again and again been brought to the notice of the authorities, but apparently without any effect.

Colonel Strange in his report on "B" Battery, School of Gunnery, dated 31st. December, 1873, says: "The duties of Garrison and Field Artillery, being as distinct as Cavalry and Infantry, only that each of the Artillery branches is far more difficult, and takes much longer to learn.

I am of opinion that for each Gunnery School, a Garrison Battery and one of Field Artillery, with at least one Captain, and two Subalterns, one Serjeant Major, one Quarter Master Serjeant, six Serjeants, six Corporals, six Bombardiers, one Trumpeter and 125 Gunnors or Drivers, are required for each Battery. The Captain would be much occupied with pay, and discipline, but the Subalterns duly qualified, in time might each take a subject to teach as a specialty, such as surveying, fortification, or Military law etc;



The Field Battery should consist at least of four guns, four ammunition wagons, and forty horses, with less than that number, it would be impracticable to teach Field Battery movements. Mounted Officers should be permitted to draw a forage ration for their private horses, used for government purposes, as allowed at the Cavalry School last year.

Militia Artillery Officers, N. C. Officers, and Gunners, should be attached, supernumerary for short courses, to Field or Garrison Batteries as the case might be; their instruction being confined to their special arm."

In the Militia Report, for 1872, page XXXV, Colonel Strange also says: "The number of horses (eight) is inadequate for instruction, in Field Artillery movements. Forty horses would be sufficient for a *permanent* instructional Field Battery, and riding establishment, especially if Officers going through courses were given forage for their own horses, as allowed last year for the Cavalry School, such horses being available for gun draught.

The Artillery horses might under these circumstances be able to perform the transport and fatigue duties for the store and supply departments, driving wagons being almost as good practice as driving guns. A considerable saving of money would be the result, combined with efficient instruction, and a Field Battery *always ready for service*, which during annual training at camps, or on emergencies might be distributed among the Field Batteries, to whom the addition of a few well trained wheel, and lead drivers, with their horses, would be invaluable."

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#### EQUIPMENT OF FIELD BATTERIES.

The Field Batteries in Canada are with four exceptions, previously mentioned, armed with 9 pr. muzzle loading rifled guns weighing 8 cwt., purchased from Imperial stores. The first supply consisting of one Battery of four guns with carriages, and ammunition wagons complete, and of ten similar guns without carriages, or wagons, were purchased in September, 1871. The complete Battery, above mentioned, is now in possession of the London Field Battery. The



remainder of the guns, to the number of 60 in all, have been purchased at different times since, together with iron carriages and limbers sufficient for them, it not having been considered advisable to convert the wooden 9 pr. S. B. carriages to suit them. No further supply of ammunition wagons, however, was purchased, but the old pattern wagon and limber boxes were converted to carry the 9 pr. M. L. R. projectiles.

Since the introduction of the 8 cwt., 9 pr., a new gun of 6 cwt. has been introduced, as it was found that the lighter gun was just as effective as the heavier one, firing the same projectile, and service charge, and fitting the same carriage—with the advantage of being 2 cwt. lighter, a matter of importance, as the mobility of the Battery was therefore very much increased by thus lightening the weight to be drawn by the gun teams.

In purchasing any new supply of guns, it would be better, therefore, to get the 6 cwt. gun. This was recommended as long ago as the 31st December 1874, by Col. Strange, R. A., who says: "I beg to submit a copy of my last year's report on armament (A) which was not published, only adding to it the recommendation that the 9 pr. M. L. R. gun of 6 cwt. might advantageously be substituted for the gun of 8 cwt. for Field Artillery."

No reserve of guns, carriages, limbers, or wagons, is kept in this country, a want which would be most seriously felt, in case of sudden hostilities; of course reserve ammunition for the Batteries might be carried in ordinary country wagons, but it would be at great risk, as well as being very liable to deterioration by wet, etc.

It is generally considered that Artillery should take as much ammunition into the field as will suffice for two or three actions, but as such an amount cannot be conveyed with the Battery, reserves are organized, from which the wagons of the Battery may be replenished.

The expenditure of ammunition in different Batteries of the same force, in any one engagement varies so much, that it is impossible to lay down any rule as to the number of rounds required per gun for an action.

"In the French and Prussian war of 1870, the Artillery of the 12th German Corps, in eleven engagements, expended an average of 14½

rounds per gun, at Sedan one of the heavy Batteries fired 115 rounds, and one of the light 126 rounds per gun, it is difficult to obtain the expenditure of the French Artillery, especially as the ammunition sometimes failed, but the following averages have been given: at Borny 15 rounds, at Rezonville 45 rounds, and at Gravelotte 110 rounds per gun." (1)

"It has been pointed out that the employment of rifled guns has not affected the consumption of ammunition, but that the greater use which will doubtlessly be made of Artillery, will tend to increase the expenditure: it must, however, be remembered, that rifled guns properly placed, and fired with deliberation, produce such formidable effects, that there may offer no necessity for a very large expenditure, to accomplish the desired object." (2)

The number of rounds taken into action by the gun carriage, and ammunition wagon in our service is

Gun Carriage.....	{	Limber.....	36
		Axletree boxes.	4
Wagon.....	{	Limber.....	36
		Body.....	72
			—
			148

and the proportions of different kinds of projectiles are,

Case shot.....	4
Common shell.....	32
Shrapnel shell.....	112

The total number of rounds per gun taken into the field is to be

With Battery.....	{	Limber and gun	40
		Wagon.....	108
1st. Reserve. Divisional reserve. ....			108
2nd. Reserve. Corps Reserve.....			44
			—
Total.....			300

(1) Lt.-Col. Reilly, supply of ammunition to an army in the field.

(2) Lt.-Col. Reilly, C. B., R. A.

The 1st. reserve ammunition is carried in ammunition wagons, one for each gun in the Batteries, the remainder or Corps reserve ammunition could be carried in ordinary farmer's wagons, provided the cartridges were packed in metal lined cases, (of which a proper number might be kept in store) and protected from damp by tarpaulins or other waterproof covers.

The wagons for the 1st. reserve ammunition should be kept in the district stores, together with the proper supply of ammunition ready for issue at a moment's notice, as well as the ammunition for the 2nd. reserve, and the proposed means for protecting it from the weather; wagons, horses, and harness, being hired, or impressed when required.

The number of spare ammunition wagons 1st. reserve, required for the present force of Field Artillery would be as follows :

District	No. of guns	Wagons, ammunition.
No. 1, (1)	8	8
2,	12	12
3,	8	8
4,	8	8
5, (2)	12	12
6,	0	0
7,	4	4
8, (3)	8	8
9, (4)	6	6
10,	4	4
11,	0	0
12,	0	0
Total.....		70

The number of ammunition wagons required for the Batteries, if they were of the proper strength according to numbers suggested in this paper, would be as follows :

- 
- (1) Ontario Battery omitted, not yet armed.
  - (2) One Battery 24 pr. Howitzers at Melburue.
  - (3) Two Batteries, (three 9 pr. S. B. guns, and one 24 pr. Howitzer each) one at New-castle, and the other at Woodstock.
  - (4) The Halifax Battery, six 6 pr. Armstrong B. L.

Military District.	No. of guns.	No. of wagons.
No. 1,	24	24
2,	24	24
3,	16	16
4,	12	12
5,	28	28
6,	12	12
7,	16	16
8,	8	8
9,	12	12
10,	4	4
11,	0	0
12,	4	4
		Total.....160

A certain proportion of spare gun carriages with limbers should also be kept in reserve in the proportion of about one to every six guns, these should also be kept in store, with the reserve wagons, together with a proportion of materials for repairs in the field, such as spokes, felloes, shafts etc., in the rough : leather, nails, iron of proper sizes, horse shoes, and nails, thread etc.

The present system of supply of war material, is to purchase from time to time, as required, from the Imperial stores whatever is needed. This, especially as regards gun carriages and wagons, appears to be very inadvisable for many reasons, among which may be reckoned that of economy, one of the principal ones apparently in this country, where every dollar spent in preparation for defence is bogged by many, and by others called money thrown away.

The Field Artillery carriages and limbers, at present in use by the different Militia Artillery Batteries are constructed principally of wrought iron, the parts only which are of wood being the shafts, constructed of ash, the limber boxes are of deal with elm ends, the centre boxes are of deal with mahogany ends, (elm could be substituted) the axletree boxes are of deal with elm ends, the footboard is of elm, the platform board of ash, the spokes of the wheels are of oak, and the felloes of ash.

All these various woods can be obtained in this country (except the mahogany, which is not actually necessary), of as good quality and at less than  $\frac{1}{3}$ rd the price at which it can be obtained in England. Before the introduction of wrought iron, Field Artillery carriages were constructed almost entirely of wood, which owing to the cheapness of this material would seem to be the best for us to use in our manufactures. It is, of course, more liable to destruction from natural decay than iron, but is not liable to the contraction or expansion to which iron carriages are subject from the various extremes of temperature to be met with in a climate like that of Canada, or to that great brittleness to which iron is liable when subjected to a violent strain in very cold weather, a fact to which many of the almost unaccountable breakages of the present iron carriages, which have occurred since their introduction in this country, may be attributed.

The cost as per priced vocabulary of stores used in H. M. Service 1871 of a wooden 12 pr. B. L. R. gun carriage with limber (this being a carriage of about the dimensions as regards strength which would be required for a 9 pr. 8 cwt. M. L. R. gun) is £100.12.0, while the cost of the wrought iron carriage with limber for the 9 pr. M. L. R. gun 8 cwt. is £165.7.0. The comparable length of life of two carriages, of course, can hardly be determined, until experience has been had with the iron carriages, but it is pretty safe to assume that two wooden carriages will last as long as one iron one, shewing a balance in favor of the iron carriage, at this rate of comparison, of about £35.0.0. In any case it can be safely asserted that the wooden carriage can be constructed in this country of as good quality and a great deal cheaper than in England.

Take the price charged in the vocabulary before referred to for some of the component parts, and compare it with the ordinary market value of the same articles in this country, as a basis for calculation, assuming that the price of labor, etc., is about the same, which it is.

Spokes in the rough 5 in. cost in England 1s. 6d. stg. Market value in this country, best quality, 0s. 5d.

Shafts in the rough cost in England 11s. 7d. Market value in this country, best quality, 3s. 0d.

This shows a result in favor of Canada of over 3 to 1, as regards cost of material, while coal and iron are very little dearer here than

at home. It can therefore be safely assumed that the same carriage that costs in England £100.0.0. can be produced in this country, at a price not exceeding £50.0.0, which, taking the life of the wooden carriage to be equal to one half that of the iron one, shews a gain by manufacturing the wooden ones for ourselves in this country instead of purchasing the iron ones of about £32.0.0 stg. or about 40 per cent, which would amount to a very large sum, when taking into consideration the number of carriages and wagons which are required for even so small a service as Canada, as well as starting even on a small scale the manufacture of war matériel in this country, and the consequent spending of our money among our own people. In connection with this part of our subject, the following article from the *Broad Arrow* of the 9th March, 1878 is worthy of careful attention. It is headed "The supply of Artillery ammunition," and is as follows:—

"The subject of the supply of Artillery ammunition in the field touched upon by Lieut. Graves, 20th Hussars, in his recent Lecture at the United Service Institution, has engrossed the attention of officers of the arm more directly concerned for some years past. Major W. B. E. Ellis, R. A., assistant superintendent of experiments at Shoeburyness, has contributed a short paper to the Journal of Proceedings of the Royal Artillery Institution, in which the matter is fully and exhaustively discussed.

The supply of ammunition to replace that carried in the gun limbers is at present effected by the agency of wagons, or four wheeled carriages, consisting of a limber identical in all respects with the gun limber, and (excepting some trivial differences of detail in interior fittings of the ammunition boxes), interchangeable with it, and a "body," the latter being merely a system of four ammunition boxes fitted on a frame resting on the axletree on which the two hind wheels of the carriage run, a "perch" attached to the frame forming the means of connection between the body and the limber, an eye at the end of the perch fitting over the limber hook precisely as the trail eye of the gun carriage does. Major Ellis proposes to substitute for this heavy and cumbersome four wheeled carriage, (drawn on the peace establishment by four horses, increased on service to six,) two limbers, these two limbers carrying between them the same amount of ammunition as the present service wagon.

From experiments made with a service limber altered to carry out this idea in 1876. Major Ellis now gives figures and facts in support of his proposal. "The weight on a shaft horse in a wagon is 60 lbs. in the modified limber without any carriage attached, the weight on the shaft horse was found to be 64 lbs. As great nicety of adjustment is required in testing this weight, it may be that practically no difference arises. With regard to the load and motive power, the service wagon packed weighs 40 cwt. 0 qrs. 2 lbs, the converted limber packed weighs only 18 cwt. at most, or 2 cwt. 0 qrs. 24 lbs. less than the service wagon. Two of the proposed limbers would then weigh 36 cwt. only, or 4 cwt. 0 qrs. 2 lbs. less than the service wagon, while carrying an equal number of rounds of ammunition. From this it appears that the ammunition wagon carries 4 cwt. 0 qrs. 2 lbs. of perfectly useless load.

The wagon with six horses gives a gross load of 747 lbs. per horse. One of the proposed limbers could have four horses while the other had only two horses, making together the total of six horses, allowed for the wagon. With four horses in Major Ellis's pattern limber the load per horse would be 504 lbs; while with only 2 horses it would be 1008 lbs. The latter load would, however, be none too great, as the second line of limbers would not be required to move out of a walk. The first line with four horses would always be able to keep up with the guns, even on service.

The number of carriages of a battery turned out on the proposed plan with the same number of guns, and carrying the same total number of rounds as now (888) would be increased by four only, counting each separate limber as a carriage.

It must be remembered that the modified ammunition limbers would be available as gun limbers on an emergency, without any alteration, so that they could either be substituted in action for a damaged limber, or one whose team was disabled, or in case of urgent need of an augmentation of Artillery it would only be necessary to issue guns and carriages to these limbers. From this source, without any increased expenditure as regards horses, harness, or drivers, at a comparatively short notice, nine batteries could be put into the field for every eight now in existence, the number of guns available being thus increased (in round numbers) from 480 to 540. As before observed, the modified limber would give less weight on



the shaft horse when the gun is limbered up than in the case of the service limber. Major Ellis claims as special advantages for his system greatly increased mobility, eighteen more rounds with every gun limber than at present, and thorough interchangeability and uniformity of every part of the equipment: a more rapid and easy supply of ammunition in the field, with a much less weight on the shaft horse under the same conditions.

The alterations could be carried out quickly and at small cost while the eventual economy would be very great. In marching over difficult country, in going down steep hills, and making sharp turns, the increased mobility would be very great."

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### LOCALIZATION OF FIELD BATTERIES.

With regard to this subject little can be said. Of course it is necessary, that all Field Batteries should be raised in localities where their services could be quickly utilized in cases of sudden invasion, and where there are means of rapid transport to any point where they may be required. In case of war which has been expected, and of which due warning has been given, this is not of so much importance, as time is given to centralize the force, and make whatever arrangements are thought necessary.

In a voluntary system, such as ours, Batteries can only be raised in those places where persons can be found willing to take the trouble to organize them; and in some places—no matter how important it might be to have Batteries there,—it might be found impossible to raise them, owing to there being no one in the place who would come forward and undertake their formation.

It might be well to look at the present localization of the Field Artillery, and judge what other places in each District would be favorable for the formation of Batteries, in order to bring the proportions of Field Artillery up to the proper standard.

#### MILITARY DISTRICT No. 1.

This District has three Batteries of 4 guns each, one at London and two at Guelph. One of the Guelph Batteries has as yet no guns, having only just been formed. This district requires (from



reasons given in previous portions of this paper,) three additional Batteries of four guns each. To do this it seems advisable to raise an additional four-gun Battery at London, making eight guns at that point. Raise two additional Batteries at Stratford, an important and growing town situated on the Grand Trunk Railway, at the junction of the Buffalo and Goderich branch of the same, a place apparently having every advantage from a military point of view. If difficulty occurred in manning and horsing so many guns at Stratford, St. Mary's and Mitchell, two large towns adjoining, might each furnish a division. London would then have eight guns, Guolph eight guns, and Stratford eight guns, all situated at important strategic points for the defence of the Western peninsula of Ontario.

#### MILITARY DISTRICT No. 2.

This District has three Batteries of four guns each: Toronto, Hamilton, and the Welland Canal with its Head Quarters at Port Robinson. It requires three additional Batteries of four guns. To do this a Battery of four guns could be organized in Barrie, a large town on the Northern Railway, to form the left half of the Toronto Battery. Another Battery of four guns could easily be raised at Brantford, a city on the Buffalo and Goderich branch of the Grand Trunk Railway, this corps to form the left half of the Hamilton Battery. The Welland Canal Battery could be augmented to eight guns by giving the St. Catherine Battery (Garrison) four field guns. This would give this District 24 guns, the number recommended.

#### MILITARY DISTRICT No. 3.

This District has two Batteries of 4 guns each, one at Kingston, and the other at Bethany, county of Durham. It requires two additional Batteries, of 4 guns each. This might be effected by changing the Napanee Garrison Battery into Field Artillery, with four guns, forming the left half of the Kingston Battery, and the Port Hope Garrison Battery into Field Artillery, forming the left half of the Durham Battery. This would complete this district to the number recommended.

#### MILITARY DISTRICT No. 4.

This District contains two Batteries of 4 guns each, the Ottawa and Gananoque. It requires four additional guns. The Ottawa

Battery might be increased to 8 guns which could now easily be done, as the disbanding of the O. B. G. A. would leave an ample field for recruiting. The Gananoque Battery remaining at its present strength, this would complete this district.

#### MILITARY DISTRICT No. 5.

This District has three Batteries of 4 guns each, the Montreal, Shefford, and Melbourne, and it requires as many more to complete it. To do this, it would simply require the Batteries to be increased to 8 guns each, which there is no doubt the commanding officers would readily undertake to do if they were allowed the increase of substantive rank recommended.

#### MILITARY DISTRICT No. 6.

This District has no guns at all, and should have twelve. The large town of Three Rivers would seem a likely place in which to organize a Battery of eight guns, and Beauharnois or Sorol a suitable place for a half Battery of 4 guns. By doing this, the district would be complete in Field Artillery.

#### MILITARY DISTRICT No. 7.

This district has one Battery of 4 guns, and should have at least 12 guns more. The Quebec Battery, the only one at present, might be increased to eight guns, and an additional eight-gun Battery raised in the fine county of Megantic. By so doing this district would have the number required.

#### MILITARY DISTRICT No. 8.

This District contains two Batteries of 4 guns each, one at Newcastle and the other at Woodstock. It has nearly its proper proportion of Artillery, these Batteries should be united as one command, as previously recommended, forming one Battery of eight guns, each half Battery remaining, of course, at its present location.

#### MILITARY DISTRICT No. 9.

Contains one Battery of six guns at Halifax. Increase its equipment to eight guns, raise another Battery of eight guns in the

populous country lying on the shore of the bay of Fundy, making 16 guns in all, the number required to complete its proportion.

#### MILITARY DISTRICT No. 10.

This District has one Battery of 4 guns at Winnipeg, ample, for years to come, for its force of Infantry Militia.

#### MILITARY DISTRICT No. 11.

This District contains no Field Artillery, and its Infantry force is too small to warrant the raising of any.

#### MILITARY DISTRICT No. 12.

Contains no Field Artillery, and should have a half Battery of four guns. One of the two Garrison Batteries at Georgetown and Summerside might be changed into Field Artillery; and would complete this District.

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### SIEGE ARTILLERY.

"The object and equipment of Siege Artillery are very different from those of Artillery for service in the field, the quantity and variety of the material required being very much greater, as well as the time necessary for its collection. The organization of Artillery for siege purposes is however in some degree simpler than that of Field Artillery, as there is generally a sure basis on which to ground such an organization. Sieges causing much expense and delay should not be undertaken, unless by such a course the enemy may either be much crippled in his resources or deprived of his points of support, or unless the capture of any particular fortress is absolutely necessary for the reduction of a country, and is likely to produce a considerable moral effect." (1) Canada from the very nature of its Military organization, a purely Militia one, possessing no large standing army, would always be fighting a defensive campaign. It would never undertake any operation in an enemy's coun-

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(1) Owen's Modern Artillery.

try requiring a siege train, from the fact that there are no works in the country of our only possible antagonists of any size which would render their reduction by a regular siege either advisable or necessary. We will, therefore, instead of considering under this heading what is properly known as Siege Artillery, take up what is called heavy Field Artillery or guns of position.

This class of Artillery is, in the British regular service, armed with 25 and 40-pr. M. L. R. guns, and in this country consists of a few 18-pr. S. B. guns on travelling siege carriages.

"The proper proportion of heavy guns of position can hardly be determined. Most of the Continental powers have a proportion of heavy *Field Batteries*, attached to both divisional and Corps Artillery; they are equipped and horsed like other Field Batteries, and therefore possess sufficient mobility to accompany an army in its operations. Experience has constantly shewn the advantage of heavy armaments in the field.

Before Waterloo some of the troops of British Horse Artillery, exchanged their 6-prs. for 9-prs and two or three Batteries of 18 prs. were equipped for field service, although not present in the battle.

In the Crimea some of our Horse Artillery had 9 prs. The Russians both at Alma and Inkerman brought 12-pr. guns, and 32-pr. Howitzers into action, overmatching the fire of our 9-prs., and 24-pr. Howitzers in the latter engagement, until a couple of British 18-pr. position guns and two French 12-pr. batteries restored the balance." (1)

We have in Canada 32 S. B. cast iron 18-pr. guns. It is proposed to convert these guns on the Palliser system into 40-pr. M. L. R. guns. Were this done, and these guns with suitable carriages, limbers, and wagons, distributed in about equal proportion to the Militia Stores in London, Toronto, Montreal, and Quebec, together with a proper supply of ammunition (at least 400 rounds per gun) it would prove an ample supply of position guns for our present force.

These guns would not be required for service of a temporary nature, such as the Fenian raids 1866 and 70, as their use is principally in crushing the Artillery of the opposing army, and Artillery

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(1) C on's Modern Artillery.

is not likely to form a portion of the armament of such a filibustering force.

In the event of more serious hostilities, were it deemed advisable to have a proportion of heavy ordnance with the army, the lighter 9-prs. might be withdrawn from some of the Field Batteries, and the heavy 40-prs. issued instead, in the proportion of one heavy gun to two light ones, the equipment in harness, horses, etc., thus answering without any serious alteration. This is done every year at Aldershot, and no difficulty is found in the men picking up the drill, which only differs slightly from Field gun drill.

### GARRISON ARTILLERY.

"Is employed in the defence of fortresses, for the purpose of retarding and injuring the besieger's works, of counteracting and silencing the fire of his batteries, of creating casualties among his troops, and of repulsing such assaults as may be made by him." (1)

The proportion of Garrison Artillery required by us is governed by the size of the armament of our different fortresses, forts, or batteries, which we have at present in this country, and to determine the number of men we require, we shall take each place where works of defence are erected, by districts, in the same way as the Field Artillery portion of this paper was treated.

As the greater number of guns mounted in all our works are of comparatively light calibre, we can safely assume that a Garrison Battery, of the present authorized strength, (Vide, Regulations and Orders, Active Militia, para 12,) will be able to man at least 4 guns, (allowing for casualties such as sick, etc.,) we therefore require in the different Military Districts the following strength of Garrison Artillery.

#### MILITARY DISTRICT No. 1.

Has no permanent works, and requires no Garrison Artillery.

#### MILITARY DISTRICT No. 2.

Contains the Old Fort at Toronto, armed with 7-8" 65 cwt. S.B. guns, and 2-32-pr. 56 cwt., S.B. guns. It possesses one Garrison

(1) Owen's Modern Artillery.

Battery at Toronto, and one in Collingwood, which could be brought to Toronto to man this work in addition to the Toronto Battery.

The St. Catharine's Garrison Battery is not required and could be disposed of as previously recommended.

#### MILITARY DISTRICT NO. 3.

Contains the important fortified City of Kingston. It contains four Garrison Batteries, Cobourg, Napanee, Port Hope, and Trenton. None at Kingston where most required. The armament of Kingston when taken over from the Imperial Government in 1870, was as follows.

56 pr. guns .....	1
8 in. guns 65 cwt.....	2
32 pr. guns 56 cwt.....	24
24 pr. guns 50 cwt.....	28
5½ in. Howitzers.....	4
32 pr. Carronnades.....	14
24 pr. Carronnades.....	2
18 pr. guns.....	5
13 in. L. S. Mortars.....	1
10 in. J. S. Mortars.....	2
8 in. L. S. Mortars.....	2
Total.....	83

Since then 2.7" B. L. R. guns have been received, and mounted, one in Fort Henry, and one in Fort Frederick, in places formerly occupied by the 8" S. B. guns. All the guns on the land and west face of Fort Henry have been dismantled, and are to be replaced by 10 64-32 pr. M. L. R. converted guns. This will make the total number of guns mounted at Kingston as follows.

7" B. L. R. guns 82 cwt....	2	} Exclusive of Howitzers & Carronnades.
8" S. B. guns 65 cwt....	1	
64 pr. M.L.R. guns 56 cwt....	10	
32 pr. S. B. guns 56 cwt....	24	
24 pr. S. B. guns 20 cwt....	9	
Mortars.....	5	
Total.....	51	

The Carronades and Howitzers for flank defence would not require men especially detailed for them, as they would seldom be required for use, until after the necessity for using the guns, in a great measure, ceased. They could be manned by a few Infantry men trained to ordinary gun drill, as no particular accuracy in laying is required for them, and only case and grape would, as a rule, be used. To man the guns and mortars, 10 Batteries would be required, and only two are available, the Cobourg and Trenton. The other two are recommended for disposal as Field Artillery.

#### MILITARY DISTRICT No. 4.

Contains no permanent works, except Fort Wellington at Prescott, an almost useless work, and at present unarmed. A Garrison Battery has just been formed at Prescott to man this work.

#### MILITARY DISTRICT No. 5.

Has no permanent works. A saluting battery of eleven 24-pr. S. B. guns, and a couple of 32-pr. S. B. guns on St. Helen's Island, constitute its armament. The important post of Fort Lennox, situated on Isle-aux-Noix, is dismantled and empty. It had at the time it was given over to the Canadian Government an armament of seven 32-pr. and five 24-pr. S. B. guns, which have been removed and placed in store at Montreal.

This Fort contains also fine stone barracks for half a regiment, and should certainly be looked after, as it would be a fine place for the Fenians to capture, and at present easily to be done. They would have the easily earned reputation of capturing, and if they liked destroying, a *British Fort*, and would not only gain prestige by the achievement in the eyes of their ignorant supporters, but might cause considerable loss to the Government in buildings, etc., as well as the expense incurred by driving them out. This might be prevented by keeping a detachment of "B" Battery there. The men formerly at St. Helen's Island, would be available, and Colonel Strange, R. A. has recommended this should be done. Montreal in this district has a Brigade of six batteries, and another battery is situated in St. John's. This would all be required for the defence of Montreal, in the event of war.

## MILITARY DISTRICT No. 6.

Has no works, and has no Garrison Artillery—none is required.

## MILITARY DISTRICT No. 7.

Contains the most important Fortress of Quebec. This Fortress is armed as follows.

7 inch B. L. R. guns, 82 cwt.....	5
8 inch S. B. " 65 " .....	1
64-32 por. M. L. R. " 58 " .....	10
32 por. S. B. " 56 " .....	18
24 " " 50 " .....	18
24 " " 48 " .....	32
24 " " 20 " .....	2
18 " " 42 " .....	9
12 " " 34 " .....	6
Mortars L. S., 13 inch 36 " .....	3
" S. S., 10 inch 52 " .....	4
" " " 47 " .....	4
" L. S., " 18 " .....	6
" " 8 inch '9 " .....	2
Total.....	
120	
Carronades .....	54
Howitzers.....	10
Total.....	
184	

The total number of guns and mortars being 120, requires 30 batteries of Garrison Artillery to man them. To meet this demand we have one Battery at Quebec, one at Grosse-Isle, (this Battery has been disbanded since the above was written,) which could not be spared being composed of Quarantine employées, and another at Gaspé; steps should be taken to remedy this.



## MILITARY DISTRICT No. 8.

Contains the fortified harbour of St. John. Its armament consists of 28 guns and mortars,

8 inch S. B. guns, 54 cwt.....	4
68 por. " 95 " .....	2
22 " " 64 " .....	2
" " " 58 " .....	8
24 " " 50 " .....	8
18 " " 38 " .....	2
12 " " 34 " .....	1
8 inch Mortars L. S. 9 " .....	1

Total ..... 28

It has also five 64-32 pr. M. L. R. guns lately mounted at Fort Dufferin, making 33 guns in all, requiring a force of 8 Batteries of Garrison Artillery, which the district has, making it complete in Garrison Artillerymen.

## MILITARY DISTRICT No. 9.

Contains the city of Halifax, the only station in the Dominion where Imperial Troops are stationed. Its works and their armament being under the Imperial control do not come within the province of this paper. This district contains 16 Batteries of Garrison Artillery which would afford assistance in the defence of Halifax, and they could all be utilized without the slightest trouble, as this post is heavily armed with modern rifled guns of large calibre.

## MILITARY DISTRICT No. 10.

Requires no Garrison Artillery.

## MILITARY DISTRICT No. 11.

Has no permanent works of defence, although its defenceless condition has been the subject of remonstrance for some time past. The Lieutenant General Commanding speaks most strongly on this subject. In his last report, page 20, he says: "Before quitting the subject of ordnance, I beg again to refer to a suggestion submitted in Decem-

ber 1875, shortly after my return from Vancouver's Island, viz: for the construction of an earthwork battery upon a promontory called McAuly's point, commanding the entrance to the harbours of Victoria and the Naval Station of Esquimault. I had plans and estimates of this work, prepared by Lt. Col. Blair, R. A., and he estimates the expense, exclusive of magazines, at about six hundred dollars. The number of men requisite for this Battery would probably be about 100, and I have no doubt that the loyal people of Victoria would readily raise a small Brigade of Volunteer Artillery for the purpose.

This Battery is a real necessity, because in the absence of a man-of-war from the anchorage in Esquimault harbour, which sometimes happens, there is no kind of protection for the valuable Naval stores in the Dockyard, nor for the city of Victoria. Any piratical cruiser or privateer entering the straits of Fuca could blow up and destroy both places, with perfect immunity at present.

On visiting the dockyard at Esquimault, at the request of Vice Admiral the Honorable Arthur Cochrane, I found two 7 in. and four 40 pr. B. L. R. guns obsolete for naval service, and about to be sent to England. I requested that they might be detained, with their shell, and equipment, pending my proposition to have them handed over to the Dominion Government. I submitted this scheme in December 1875. I now find no steps have been taken to procure the transfer of the guns, and I earnestly hope this may be done."

Since the above was written, the Canadian Government, acting, no doubt, under pressure from the Home Authorities, have determined to carry out this scheme, of fortifying in a small way the harbours of Esquimault and Victoria, and Lt.-Col. Irwin, Inspector of Artillery, is now there carrying out the building of the works, and organizing, as well as training, volunteer Batteries to man them.

This Battery, even when erected, will be quite inadequate for the protection of such an important position as this, and it would appear very advisable that the construction of permanent works, mounting guns of heavy calibre, say 9 in. or 10 in. M. L. Rifled, should be commenced without delay. The cost of constructing these works might be spread over a number of years, the country would hardly feel the effect of it, and would have the satisfaction of feeling that, in that quarter at least, it had taken its share in the defence and upholding of the grand old Empire it is so proud to be called a part of.

## MILITARY DISTRICT No. 12.

This District has no fortified harbours, and, owing to its close proximity to Halifax, with a strong naval squadron generally cruising in that vicinity, it is comparatively safe from any serious attack. I have no information as to the capabilities of Charlottetown its Capital for defence, but should think that a light Battery of rifled guns, properly manned by a couple of its Garrison Batteries, would be sufficient for its defence against any privateer likely to operate against it. It has at present 4 Garrison Batteries. Those at Charlottetown might be retained as Garrison Artillery, the other two being treated as recommended in a previous portion of this paper.

In concluding the subject of Garrison Artillery, it would, perhaps not be out of place to refer in as few words as possible to the equipment of the different Batteries, as well as that of the different forts and earthworks in which guns are mounted, scattered as they are, over different parts of the country.

These works when handed over by the Imperial Government were armed altogether with smooth bore cast iron guns. Within the past year or two the idea of converting these guns into rifled guns has been suggested, and steps are being taken towards the carrying out of this important work. Although a few heavy rifled guns of modern construction are required, in places where there is a probability of naval attack, such as St. John, Quebec, Kingston etc., still the converted gun would prove quite powerful enough for the defence of all land fronts of works, and of harbours of not very great importance. We have in Canada according to General Smyth's report the following guns suitable for conversion viz :

19	8 in. guns.
135	32 pr. guns.
209	24 pr. guns.
32	18 pr. guns.

The 8 in., 32 and 24 pr. guns can be converted into 64 pr. rifled guns, and the 18 prs. into 40 pr. rifled guns. A 32 pr. gun was given to a firm in Montreal for conversion, but they have, it is understood, given up the work, owing to some defect in their plant, which renders it impossible, without constructing special machinery

for the purpose, for them to turn out the finished gun. The importance of this work to the country is so great that, if necessary, the government should give a sufficient amount of money to provide the plant, and have the work proceeded with at once.

The details of ammunition, stores etc., for guns, works, or Batteries, are omitted, the detail being fixed by a Royal Warrant, called "Regulations for the equipment of the Army," and it would be useless to recapitulate the different items here.

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### ORGANIZATION.

The organization of Garrison Artillery requires little to be said about it. A system of regimentalization is much required; and that by districts, as proposed for Field Artillery, is recommended, so as to permit of promotion to substantive field rank of its officers, as well as to secure a proper system of command in the event of many Batteries being brought together. This system having been detailed at length in the paper on Field Artillery, it is considered unnecessary to reproduce it here.

The time allowed for training is too short to permit of any degree of efficiency being attained, and should be doubled, half to be put in at local head quarters, and half in barracks at the nearest fort, where the officers and men could put into practice what they had been working at theoretically, during the first half of their training.

In conclusion it would be well to state that this paper has been written with the view that it applied simply to a system purely a Militia one, and not as applicable to a thoroughly trained and well disciplined regular force, with an endeavour to place plainly before the reader what could be done by this country, with its present system. That the time will never come when this country, like other countries, will require to keep up a small standing army, is not the opinion of the writer. In fact it is necessary, that not only our distant North West territories should have an armed force of regular soldiers, but that all our cities, of any size, should be garrisoned by at least a few trained men, who would not only assist in maintaining order, but also serve as patterns of Military neatness and soldierly bearing to the Militia Corps, as well as furnishing them with well

trained instructors for their annual drill. The regular force need not be a large one; the proportion of the regular Army of the United States to its population, would be a fair one for us, and would give us about 2500 officers and men.

They could form a part of the Imperial forces, and might be exchanged with them, at stated intervals, letting our men serve in England or elsewhere, being replaced by a similar number from there, thus keeping up their efficiency, by seeing all the modern improvements in works and matériel, and taking part in manœuvres on a scale not likely to be obtained in this country for many years to come.

The present active militia force of this country is too large by about one half. This can be seen by the difficulty experienced in keeping the ranks of many of the corps up to their proper strength.

Better for us to have a fairly well drilled militia, 20,000 strong, than an armed mob of double the number.

The Reserve militia enrolment should be strictly carried out every two years as provided by law, thus not only giving proper information on which to work, in case it should be necessary to call out a portion of them at any time, but also keeping before the mass of the people the knowledge that they are liable to be called upon to serve for the defence of the country, should necessity arise for their so doing.

A proper supply of warlike matériel of all sorts, for, at least, 100,000 men, should be always at hand in our reserve stores; and in addition, plans and equipment for quickly transforming our Lake steamers into gunboats, should be kept in certain Garrison towns bordering upon the different lakes. Our lakes and rivers form our principal line of defense in our two most important Provinces—Ontario and Quebec,—and if we can succeed in suddenly getting complete control of them, and keeping it, we are safe; it is one of our cheapest means of defense, and should no longer be neglected. As it is now, we have been compelled, owing to a sudden Fenian scare, to arm, or prepare to arm, a few tugs, with a few, comparatively worthless, smooth bore field guns, the only weapons at our disposal.

Were this country placed in a thorough state of defense, such as it could be, by the expenditure of a not very large amount of money

and the exercise, by those in authority, of a little forethought and prudence in dealing with the Military defence of this country from a practical and not (as it is now, and has been for many years) a *political* one, we should be in a position far different from what we are at present : an arm of strength to our Mother Country, instead of a source of weakness in time of danger.

