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APPENDIX 'E.'

REPORT OF THE SUPERINTENDENT DOMINION ARSENAL.

QUEBEC, June 20th, 1913.

To the Secretary the Militia Council.

SIR,—I have the honour to report upon the operations of this establishment for the fiscal year ended 31st March, 1913.

APPROPRIATION ACCOUNT.

1. The appropriations voted by Parliament and expenditure during the year were as follows:—

Amount of appropriations for fiscal year ended 31st March, 1913.....	\$340,000.00
Amounts refunded as per balance sheet (p. 79)....	36,024.44
	<hr/>
	\$376,024.44
Amount of expenditure for the fiscal year ended 31st March, 1913, as per balance sheet (p. 79).	361,887.57
Amount in Treasury to credit of appropriation on 31st March, 1913.....	14,136.87
	<hr/>
	\$376,024.44

EMPLOYEES AND PAY ROLL.

2. Average number of employees 359. Total amount of salaries and wages paid, \$179,708.99.

AUDIT OF BOOKS.

3. Instructions have been given to make a thorough audit of books, and an examination of public property on charge. It is expected that this will be completed shortly.

COST OF PRODUCTION.

4. The cost of .303" cartridges is less than last year, and has decreased consistently for several years. That of .303" Mark VII, with pointed bullet and 18-Pr. Q.F. is high, as it includes cost of gauges and tools, which have been charged direct to production; this should be reduced as manufacture progresses.

PROFIT AND LOSS.

5. The estimated profit and loss on the year's work, as compared with the cost of importing, amounts to \$34,234.98, and is equivalent to 4.8 per cent. on gross capital. This is considerably less than last year, owing to large increase in value of semi-manufactures on hand, which is more than double that for 1911-12. The accumulation of components is due to delay in obtaining cordite, rendering it impossible to load and deliver cartridges.

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Considerable difficulty was at first experienced by British makers in producing Cordite, M.D.T. size 5/2, required for this purpose, and the Canadian Explosives Ltd., who are manufacturing for the Department, are having the same troubles, which they are endeavouring to overcome.

RATES OF PAY.

6. Owing to increased cost of living and demand for labour, a general increase of 20% in wages of mechanics and labourers was authorized on the 27th June, 1912.

REMOVAL OF PLANT.

7. Plans and specifications for danger buildings to be erected on site purchased near the St. Charles River have been prepared and are under consideration. The sum of \$100,000.00 has been voted by Parliament for this service.

RECOMMENDATIONS.

8. Reference is invited to recommendations made in previous reports regarding additional accommodation required and difficulty of meeting increasing demands in the existing premises. A proof range for Artillery ammunition, asked for originally in 1910, has not been provided; it is essential that this should be constructed.

The clerical staff who have not been permanently appointed to the Civil Service should, when qualified, be placed on the same footing as clerks employed at Headquarters. The difference in their status and prospects makes it difficult to retain men who are of value to the Service.

I beg to record my appreciation of the faithful services rendered by the Staff and employees during the past year.

STATEMENTS.

9. The following accounts are submitted:—

Balance Account.

Capital Account.

Statement of Indirect Expenditure.

Statement of Liabilities and Assets.

Production Statement.

Statement showing cost of manufacturing, compared with cost of importing.

DOMINION ARSENAL, CAPITAL ACCOUNT, 1912-13.
BUILDINGS, MACHINERY, &c.

Dr.		Cr.
To Balance Account:—		
For net Capital 1st April, 1912		
Buildings.....	\$ 146,336.09	
Machinery.....	114,864.60	
Tools.....	.25	
	<u>\$ 261,200.94</u>	
		\$ 15,394.69
To Machinery purchased in 1912-13.....		
	2,389.66	
	<u>\$ 263,590.60</u>	
		248,195.91
		<u>\$ 263,590.60</u>
By Indirect Expenditure Account:—		
For Depreciation during the year on:—		
Building.....	\$ 4,330.17	
Machinery.....	11,064.27	
Tools.....	.25	
	<u>\$ 15,394.69</u>	
By Balance Account:—		
For net Capital on 31st March, 1913:		
Buildings.....	142,005.92	
Machinery.....	106,189.99	
	<u>248,195.91</u>	
		<u>\$ 263,590.60</u>

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STATEMENT OF INDIRECT EXPENDITURE, 1912-13.

Expenditure on the following services, not chargeable direct to orders:—

Salaries of Staff.....	\$21,611.52	
Wages	12,651.42	
Motive Power, Heating and Lighting:—		
Wages.....	\$4,647.11	
Materials, etc.....	15,690.41	
		20,337.52
Removal of Snow.....		400.00
Water Supply.....		1,800.00
Maintenance of Buildings.....		6,268.05
Printing and Stationery.....		1,179.65
Travelling Expenses.....		338.46
Telegrams, Telephone and Postage.....		235.44
Customs Dues.....		89.73
Cartage and Cabs.....		1,277.44
Freight.....		117.45
Medicines.....		115.88
Miscellaneous.....		537.65
Material.....		2,181.67
Tools.....		59.71
From Capital Account:—		
3% Depreciation on Buildings.....	\$ 4,330.17	
10% " " Machinery.....	11,064.27	
		15,394.44
		<hr/>
	\$	84,596.03
Less amounts taken in relief of Indirect Expenditure:—		676.30
		<hr/>

\$83,919.73

NOTE.—This amount, together with indirect expenditure of each factory, has been distributed as a general percentage on direct labour, in each factory, as shown below:—

General percentages on direct labour for the year 1912-13:—

Workshop.....	72.22%
Cartridge Factory.....	94.89%
Shell Factory.....	96.18%
Carpenters' Shop.....	113.75%
	<hr/>
Average rate.....	94.26%

DOMINION ARSENAL—QUEBEC.		STATEMENT OF LIABILITIES AND ASSETS, 31st MARCH, 1913.		Cr.
Dr.				
		LIABILITIES	ASSETS.	
To Capital:—				
	For Net Balance on 31st March, 1913, as per Statement annexed, . . .	\$ 248,195.91	By Buildings and Machinery,	\$ 248,195.91
	For Advances by Department of Militia and Defence (after de-		Stores in Stock,	74,230.92
	ducting the cost of the year's work),	466,453.85	" Semi-manufactures,	391,907.10
			" Accounts Receivable,	315.83
		<u>\$ 714,649.76</u>		<u>\$ 714,649.76</u>

Abstract of the cost of work performed

(a) Including special expenditure for tools.
(b) Primers, cases and bags filled from Store.

(a) Including special expenditure for tools.

(b) Primers, cases and bags filled from Store.

APPENDIX "F".

INTERIM REPORT OF THE MILITIA COUNCIL FOR THE DOMINION OF CANADA ON THE TRAINING OF THE MILITIA DURING THE SEASON OF 1912.

To His Royal Highness Field Marshal Prince Arthur William Patrick Albert, Duke of Connaught and Strathearn, K.G., K.T., K.P., &c., &c., &c., Governor-General and Commander-in-Chief of the Dominion of Canada.

SIR,—I have the honour to lay before Your Royal Highness an Interim Report on the training of the Militia of the Dominion of Canada, during the season of 1912; to be embodied at a later date in the Report of the Militia Council for the year ending March 31, 1913.

I have the honour to be, sir,
Your Royal Highness' most obedient servant,

SAM HUGHES,

Minister of Militia and Defence.

Jan. 15, 1913.

GENERAL.

1. This report briefly outlines the training carried out by the Canadian Militia during the season of 1912. Appended is the report of the Inspector-General on the results of that training.

2. The table in Appendix A shows the number of officers and men of the Active Militia trained during the season of 1912.

3. The training during 1912 was carried out in accordance with a memorandum "Instructions for Training, 1912," issued early in the year.

4. These instructions were stated to be merely a guide to officers, in the training of those units under their command, and stress was laid upon the responsibility of active militia officers in this regard; instructors from the Permanent Force being intended only to assist officers and not to assume the responsibility for the training of units.

5. The period of training this year was generally longer than has been usual in the past. All arms trained for 16 days, except the rural infantry and a portion of the cavalry who trained for 12 days.

6. An endeavour was made to carry out various courses of instruction for officers and non-commissioned officers at the camps, in addition to the collective training.

The impression conveyed in previous years was strengthened: that it was undesirable to take non-commissioned officers or men away from the training of their units for other instructional work during the camp period, and in future these courses will be generally omitted. This does not apply to courses such as those for Quartermasters and Quartermaster-Sergeants, who have a certain amount of time which would not otherwise be occupied, and who can receive a large amount of instruction without actually being on parade with troops.

7. The point brought out in last year's report on training was again in evidence as to the necessity for proper training areas. The cost of bringing units from a dis-

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tance to Petawawa is excessive, and yet Petawawa is the only training ground in Eastern Canada where there is sufficient room for the training of all arms, and provides the only artillery practice ground at present available.

8. Instructors, both officers and non-commissioned officers from the Permanent Force, were provided for all arms of the Militia.

9. The scale of instructors laid down for units in camp was:—

1 officer to each Cavalry or Infantry Brigade.

1 non-commissioned officer to each Cavalry or Infantry Regiment.

1 officer to each Artillery Brigade.

1 non-commissioned officer to each Artillery Battery.

This scale was exceeded in some cases where instructors were available.

10. The dearth of trained instructors is a serious hindrance to the training of the Militia, and yet it is apparent that the capacity of the Permanent Force is strained to the utmost to provide even the present numbers.

11. The importance of field training as opposed to parade movements was impressed upon instructors and upon the militia at large, but the very large proportion of recruits makes it necessary to repeat each year so much of the preliminary work that an advance in the general standard of efficiency from year to year is impracticable.

PERMANENT FORCE.

12. As in 1911, all available troops of the mobile units of the Permanent Force were assembled at Petawawa for four weeks' field training, as follows:—

Royal Canadian Dragoons (2 Squadrons).....	112
Lord Strathcona's Horse (2 Squadrons).....	113
Royal Canadian Horse Artillery (Brigade of 2 batteries)...	252
Royal Canadian Engineers (2nd Field Company).....	85
Royal Canadian Regiment (Battalion of 8 companies).....	570
Administrative troops.....	109

Total..... 1,241

Two weeks were devoted to regimental training and two weeks to the combined training of all arms.

13. The last three days of the combined training took the form of manœuvres during which the troops moved out from the Government training area and were exercised at a distance from camp bivouacking in the open for two nights.

14. The spirit shown by all ranks in spite of the most inclement weather, was most gratifying, as was also the patriotic spirit evinced by the farmers who asked no rent for land used as camp grounds and put forward no opposition to the conduct of operations through their farms.

15. The whole of the Cavalry and Infantry Instructional Cadre (non-commissioned officers) was assembled at Petawawa during the same period and during these four weeks exercised in methods of practical instruction and field training under two officers of the General Staff.

CAVALRY.

16. Eleven cavalry regiments trained in camp for 16 days; but owing to lack of funds, 22 regiments were ordered to train for 12 days only. The value of the four extra days, which can be largely devoted to tactical work after the more elementary troop and squadron training is completed, cannot be overestimated.

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ARTILLERY.

17. Nearly all artillery units trained for 16 days.

18. For the first time the 3rd, 4th and 11th Canadian Field Artillery Brigades from the Maritime Provinces proceeded to the central camp at Petawawa for the complete period of their training and practice. The value of the training thus obtained is much greater than can be obtained by batteries training for 12 days at one camp and then sending small detachments for gun practice to another.

19. The expense of bringing units from such a great distance is almost prohibitive and much time is lost in travelling, thus emphasizing the necessity of obtaining suitable training areas other than Petawawa.

20. All ranks of Brigade Ammunition Columns were ordered to train with their Brigades and the results were more satisfactory than those obtained last year when a special course was arranged for the officers.

21. A further step was made in the training of the heavy batteries in that the Cobourg Battery and the two batteries of the Montreal Heavy Brigade performed 8 days of their training at Petawawa.

22. Further remarks on the training of the artillery will be found in "Extracts from Reports of the Royal School of Artillery," published separately.

ENGINEERS.

23. All engineer units with the exception of the 5th Field Company (Kingston) and the 6th Field Company (North Vancouver) were trained at Petawawa. This is a great improvement as compared with training carried out in local armouries, which Officers Commanding Companies of Engineers now realize.

24. The necessity for combined training of Engineers with other branches of the service is most important and should be practised as much as possible.

25. The training of cable and wireless detachments showed an improvement.

CORPS OF GUIDES.

26. The Guides of the 1st Division carried out a reconnaissance ride of seven days, under the General Staff Officer, 1st Division, in June, at the termination of the annual camp at Goderich.

27. The Guides of the 2nd Division trained in September, independently of any other troops in the Command, to the northwest of Toronto, in country well adapted for the special nature of their work.

28. The Guides of the 3rd and 4th Divisions were assembled at Petawawa, during September, under the Officer Administering the Corps, and were exercised in the reconnaissance of a large tract of country in the vicinity of Pembroke; the value of the information thus acquired being put to a practical test during subsequent tactical exercises of the Permanent Force.

29. The Guides of the 5th Division trained at Levis Camp at the same time as the infantry of the Command. During this period they carried out a short tour into the surrounding country as well as being employed in connection with the tactical exercises of the infantry.

30. The Guides of the 6th Division were trained at Sussex, N.B., at the same time as other troops in New Brunswick. Special exercises were arranged for each day of the training in accordance with a previously prepared syllabus.

31. The Guides of Military Districts 10, 11 and 13, were assembled at Calgary in June and were trained under the direction of the Officer Administering the Corps.

32. Small detachments of 1 sergeant, 1 corporal and 6 to 8 Guides were organized in the 1st, 2nd and 5th Divisional Areas respectively, and were trained, as a section of a Divisional Mounted Company, at the same time as the officers of the

Corps in those Divisions. This is the first occasion upon which any rank and file have been trained as guides.

33. Fifty-two officers attended camp and two officers were employed upon special work in lieu. This is a higher proportion than in any previous year and shows a very marked improvement over the figures for last year.

INFANTRY.

34. Rural Corps trained for 12 days in camp under their own Brigade Commanders.

35. For the first time, nearly all Infantry City Corps found it possible to go into camp though generally very weak as to numbers.

36. Although the Syllabus of training for City Corps was intended to provide for their proper training in field exercises and tactical work it is apparent that this portion of the work is still apt to be neglected in favour of parade movements.

37. The following statement, which includes all City Corps, shows the training if any, performed in Camp. The number of days includes one day "marching in" and one day "marching out" and in most cases includes also one Sunday:—

Unit	Establishment	Strength in Camp	Percentage of Establishment	Number of Days	Where trained in Camp
Governor General's Foot Guards.....	418	189	45	5	Petawawa, Ont.
1st Regiment Gren. Gar.....	546	.....	.....	.....	.....
2nd ".....	777	362	47	5	Niagara, Ont.
3rd ".....	548	163	30	5	Three Rivers, Que.
5th ".....	776	278	36	5	"
6th ".....	546	196	36	5	Esquimalt, B.C.
7th ".....	410	194	47	5	Goderich, Ont.
8th ".....	412	.....	.....	.....	.....
9th ".....	410	.....	.....	.....	.....
10th " <i>Royal Gren.</i>	546	162	30	5	Niagara, Ont.
13th ".....	548	230	42	5	"
14th ".....	410	240	59	5	Barrie, Ont.
15th ".....	410	.....	.....	.....	.....
19th ".....	410	196	48	5	Niagara, Ont.
21st ".....	410	172	42	5	Goderich, Ont.
22nd ".....	240	161	67	5	"
24th ".....	240	218	91	5	"
25th ".....	*240	138	58	5	"
28th ".....	410	.....	.....	.....	.....
29th ".....	410	.....	.....	.....	.....
38th ".....	410	237	58	5	Niagara, Ont.
41st ".....	240	83	35	5	Barrie, Ont.
43rd ".....	412	251	61	5	"
48th ".....	546	234	43	5	Niagara, Ont.
53rd ".....	410	239	58	4	Levis, Que.
54th ".....	410	297	73	4	.....
57th ".....	410	254	62	5	Barrie, Ont.
62nd ".....	427	216	51	5	Sussex, N.B.
63rd ".....	548	227	41	5	Aldershot, N.S.
65th ".....	546	156	29	5	Three Rivers, Que.
66th ".....	548	210	38	5	Aldershot, N.S.
72nd " <i>Seaforth</i>	546	254	47	5	Esquimalt, B.C.
79th " <i>Lawson</i>	546	177	32	5	Sewell, Man.
84th ".....	240	.....	.....	.....	.....
86th ".....	240	.....	.....	.....	.....
90th ".....	548	94	17	5	Sewell, Man.
91st ".....	546	202	37	5	Niagara, Ont.
95th ".....	410	67	16	5	Sewell, Man.
96th " <i>Lake Superior</i>	410	320	78	5	"
100th " <i>Winnipeg Gren.</i>	546	235	43	7	"
101st ".....	410	275	67	6	Calgary, Alta.
103rd " <i>Calgary Rifles</i>	410	167	41	5	"
104th ".....	240	153	64	11	Esquimalt, B.C.
105th ".....	410	.....	.....	.....	.....
106th ".....	410	.....	.....	.....	.....
Earl Grey's Own Rifles.....	59
Total.....	19,985	7,247	36

*Increased to 410, on May 1, 1912.

240.
410.
546.

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ARMY SERVICE CORPS.

38. The numerical weakness of the Canadian Permanent Army Service Corps rendered it necessary to fall back upon the units of the Canadian Army Service Corps for assistance in carrying out the administrative services, supply and transport, of the various camps, thus preventing the latter units from receiving the training for war which is necessary.

39. The functions of the Army Service Corps are not only to provide for the above services in standing camps but to provide for supply and transport services during manœuvres away from camp under conditions which differ altogether from those obtaining in a standing camp.

ARMY MEDICAL CORPS.

40. All medical units in Eastern Canada were assembled as far as possible in two camps at London, Ont., and Farnham, Que., leaving only the necessary details to carry out the Medical Administrative service at the other camps, and a special effort was made to train the field ambulances in their duties of collecting, treating and evacuating the wounded, as connecting the Regimental Medical personnel with the Clearing Hospital.

41. The new feature of the training in 1912, was the concentration under the Director General of Medical Services of the Field Ambulances of the 1st, 2nd and 3rd Divisions at a central training camp at London. Six Field Ambulances and one Cavalry Field Ambulance were present. The Camp lasted sixteen days.

42. The object was to provide instruction in training the Medical Service under conditions as closely resembling active service as possible.

43. The Medical Service with a regiment, a brigade, a division and finally with two divisions, was worked out in every detail, the last five days being spent on the march and in bivouac. Very good results were obtained, and this training was much appreciated by all concerned.

44. At Farnham Camp three Field Ambulances and two Cavalry Field Ambulances for the 4th and 5th Divisions were also concentrated for co-ordinated training.

MUSKETRY.

45. Musketry training in camps of instruction was carried out on the same lines as that of 1911-12, *i.e.*, preliminary instruction by means of tripods, sub-target rifle machines, and miniature targets (where available), before firing ball ammunition. Very little shooting was done beyond that required for efficiency pay owing to lack of time and target accommodation. One exception to this was at Niagara Camp, where time was found for considerable practice at longer ranges and as far as could be judged without interfering with regular training. The shooting at Goderich, owing to there being no service range available, was with gallery ammunition at 25 yards.

46. Efficiency pay based on Musketry was granted at 15 cents per diem for a score of 42 points at two ranges, 100 and 200 yards.

47. This change in the rate of efficiency pay does not appear to have been detrimental to individual efforts to shoot as well as possible.

48. Provision has been made for a Musketry officer on the staff of regiments of cavalry and infantry and it is hoped that these officers will be able to effect some improvement in their respective units.

49. In cases where armouries are provided with shooting galleries preliminary training in musketry can be given which otherwise has to be carried out in camp. Recruit training in camp year after year prevents any general advance or improvement in the standard of musketry efficiency.

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SIGNALLING.

50. Signalling, with a few exceptions, has been more satisfactory this year, especially in the rural corps, which are now placed on the same footing as regards annual inspections in signalling, as city corps, and the annual reports show considerable improvement in the organization and efficiency of those undergoing training.

51. The number of signallers trained was 1,065, or about 2% of the total strength of troops trained in camp and at local headquarters.

52. There has been no improvement as regards the cavalry. This arm is very inefficient in signalling. The 19th Alberta Dragoons is the one Cavalry Regiment which has attained any reasonable standard of efficiency.

53. Good advantage was taken of signalling in connection with tactical operations at the following camps:—

Goderich, Ont., Barriefield, Ont., Sussex, N.B., and Aldershot, N.S.

54. At the inspections held to date this year units named below have obtained the figures of merit stated, thereby showing a high standard of efficiency:—

Unit	%	Signalling Officer.
59th Regiment (Rural)	96.27	Lieut. M. L. Sheppard.
77th " "	78.78	" H. S. Moss.
73rd " "	70.26	Capt. H. F. Fair.

55. The following are the four best sections in the Canadian Signal Corps, in order of merit:—

Section	%	Signalling Officer.
No. 8	98.68	Lieut. A. Levitt.
No. 12	94.76	" K. Rogers.
No. 2	88.98	Capt. E. Ford.
No. 10	82.49	Lieut. J. Schofield.

56. Most batteries trained this year with their establishment of signallers complete.

E. F. JARVIS,
Secretary, Militia Council.

APPENDIX A.

RETURN showing number of Officers and Men of the Active Militia Trained during the Year 1912.
(Not including Cadet Corps training at Camps).

MILITIA COUNCIL

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Corps, &c.	ESTABLISHMENT.				TRAINED.				UNTRAINED.			
	Officers	N.C.O.'s and men	Total	Horses	Officers	N.C.O.'s and men	Total	Horses	Officers	N.C.O.'s and men	Total	Horses
<i>Camps.</i>												
Goderich, 1st Division.....	313	3,365	3,678	765	173	1,729	1,902	486	140	1,636	1,776	279
London (Medical) 1st Division...	61	529	590	143	42	431	473	113	19	98	117	30
Niagara, 2nd Division.....	506	5,373	5,879	1,202	336	3,529	3,865	842	170	1,844	2,014	360
Barriefield, 3rd Division.....	303	3,566	3,869	1,140	183	1,874	2,057	38	120	1,692	1,812	102
Petaawake, 3rd ".....	442	6,006	6,448	4,369	319	4,431	4,750	2,706	123	1,575	1,698	1,663
Three Rivers, 4th ".....	139	1,709	1,848	1,110	84	1,180	1,264	45	55	529	584	65
Farnham, 4th ".....	110	1,480	1,590	1,116	101	1,131	1,232	755	51	349	400	361
Levis, 5th ".....	152	3,178	3,330	457	145	1,544	1,689	63	131	1,634	1,765	394
Sussex, 6th ".....	230	2,547	2,777	738	157	1,954	2,111	539	73	593	666	199
Aldershot, 6th ".....	289	3,384	3,673	483	195	2,476	2,671	375	94	908	1,002	108
Charlottetown, 6th Division.....	66	949	1,015	283	49	705	754	148	17	244	261	135
Halifax, 6th Division.....	53	745	798	6	41	713	754	3	12	32	44	3
Sewell, M. D. 10.....	337	3,566	3,903	2,669	229	2,447	2,676	1,808	108	1,119	1,227	861
Esquimalt, M. D. 11.....	66	664	730	29	43	491	534	21	13	173	186	8
Vernon, M. D. 11.....	58	632	690	596	50	324	374	347	16	308	324	249
Calgary, M. D. 13.....	182	1,778	1,960	1,674	120	1,160	1,280	1,055	62	618	680	619
(See Note 5)												
Camp Staff.....	3,471	39,471	42,942	14,780	2,267	26,119	28,386	9,344	1,204	13,352	14,556	5,436
Brigade Staff.....	196	376	572	139	196	376	572	139				
Permanent Force.....	67	123	190	70	67	123	190	70				
Total Camps.....	57	2,223	2,280	32	57	2,223	2,280	32				
Local Headquarters.												
1st Division.....	3,791	42,193	45,984	15,021	2,587	28,841	31,428	9,585				
2nd ".....												
3rd ".....												
4th ".....												
5th ".....												
6th ".....												
M. D. No. 10.....												
" 11.....												
" 13.....												
Local Headquarters.....	131	1,382	1,513	27	110	1,159	1,269	21	21	223	244	6
Camps.....	269	3,451	3,720	48	262	3,451	3,713	43	23	.....	370	5
Grand Total numbers trained..	199	2,390	2,589	68	176	2,043	2,219	28	78	885	963	40
	293	3,656	3,949	240	215	2,971	3,186	31	78	1,143	1,221	209
	63	3,376	3,442	12	58	2,733	2,793	10	13	143	157	2
	123	1,860	1,983	21	102	1,568	1,688	14	23	274	297	7
	238	2,892	3,130	42	173	2,569	2,742	19	63	953	1,016	33
	77	1,697	1,774	12	64	832	896	17	13	265	278	2
	63	368	431	12	60	688	748	17	8	180	198	5
Local Headquarters.....	1,468	18,562	20,030	482	1,220	15,492	16,712	173	248	3,070	3,318	309
Camps.....	3,791	42,193	45,984	15,021	2,587	28,841	31,428	9,585	1,204	13,352	14,556	5,436
Grand Total numbers trained..	5,259	60,755	66,014	15,503	3,807	44,333	48,140	9,768	1,452	16,422	17,874	5,745

NOTE 1.—Authorized establishments include the following corps relieved from training:—10th Hussars, 6th, 21st and 36th Batteries, 2nd, 3rd and 4th Field Troops, C.E., and 18th, 20th, 28th, 29th, 86th and 106th Regiments.
2. This return does not include units authorized but not yet organized.
3. Detail of figures of the following Regiments estimated only, as complete returns have not yet been received:—1st, 2nd, 3rd, 7th, 10th, 13th, 19th, 21st, 24th, 25th, 38th, 48th and 91st Regiments.
4. All City Corps training in camp for more than eight days are shown under District Camps.
5. In addition to training at Local Headquarters, certain City Corps, Infantry, trained four or five days in Camp, as follows:—Officers 593, N.C.O.'s and men 6,654. These figures are not included under numbers at Camp, but at Local Headquarters.

E. F. JARVIS,
Secretary, Militia Council

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APPENDIX B.

From,—

*The Inspector-General,
Canadian Militia.*

To,—

*The Secretary,
Militia Council.*

OTTAWA, November 30, 1912.

SIR,—I have the honour to submit for the information of the Hon. the Minister in Militia Council, my report for 1912, upon the training and efficiency, suitability and sufficiency of equipment, and the readiness and fitness of the Military Forces of Canada for war, together with the condition of the fortifications and defences of the country.

INTRODUCTORY.

2. The extent of my inspections during the year has been restricted to Eastern Canada, viz., between the Atlantic seaboard and Winnipeg, while the units west of the latter place were seen by the Chief of the General Staff.

3. In the area covered by myself all the camps of instruction of City and Rural Corps were seen save one, besides which I inspected the larger armouries and rifle ranges, the Divisional and District Offices, Schools of Instruction, the Army Service Corps and Ordnance Stores, also the barracks and personnel of Permanent Units and the Fortresses of Halifax and Levis, abridged or full reports being made at the time.

4. More might have been accomplished but for my early retirement.

5. The inspections made by the Chief of the General Staff included the camps of instruction at Sewell, Calgary and Vernon, as well as the Fortress and units of the Permanent Corps at Esquimalt.

ADMINISTRATION.

(General.)

6. In the administration of the force, there appear weaknesses which are more or less easy of remedy, and not confined to one particular quarter.

7. Beginning with Militia Headquarters I observed that:—

8. Delay in the regular issue of the Militia List during the early part of the year was the cause of much inconvenience and extra labour through the lack of a reliable record of recent promotions, appointments, and other data, of which it is the only compiled reference.

9. The numerous amendments to the various regulations and orders since their last publication, calls for new editions to avoid confusion and loss of time.

10. The collection of regular returns, reports, &c., is at times lax, in that compliance with regulations is not always rigidly enforced upon those responsible for their rendering.

11. Precautions to ensure secrecy in confidential correspondence might be more carefully observed.

12. In Districts and Divisions, the consensus of my interim reports will be found as follows:—

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13. Delays in forwarding specified reports, &c. just referred to, is a common occurrence, and results in much inconvenience.

14. The collection of intelligence in the form of statistics requires development, as no mobilization scheme is complete without such.

15. Lack of attention to the full observance of the discipline and regulations for camps of instruction.

16. But little fault was found in the Permanent Corps, whose records and returns were, with few exceptions, well attended to.

17. Coming to the Active Militia, the most faults in administration are naturally found, and the most difficult of remedy owing to the constitution of that body.

18. Although more attention is evidently being given to the records of units, the failing is still very prominent.

19. The service rolls of rural units particularly, are much in need of improvement, both in form and care; the present loose leaf is liable to early dissolution and loss, and little importance appears attached to its value as a record.

20. The equipment ledgers, while to the adept, of no trouble, are quite the contrary to individuals engaged in civilian pursuits, and generally left for completion by any but those immediately responsible for the charge of the stores, a resource certain to entail additional work and delay in the adjustment of accounts.

21. Correspondence, roll books, order books, and other records which the regulations call for, are in many cases neglected.

22. Officers' books are still incomplete.

23. It is perhaps that too much is asked for, but if not, then proper administration seems hopeless, unless aid in a permanent form is provided, such as paid Sergeant-Majors or Adjutants.

24. In city corps the strain is most felt, as shown by the action of two of them, the officers of which each pay for the services of an Adjutant out of their own pockets, in order that the duties entailed may be properly fulfilled. In both instances the efficiency of the units is so pronounced as to vindicate the employment of this extraneous assistance.

EDUCATION.

(Royal Schools of Instruction.)

25. That the education of the officers and non-commissioned officers of the Active Militia requires further development, is plain to be seen. How this is to be accomplished appears a difficult question, though one that has to be grappled with in an expeditious and determined manner, if the force is ever to become a real factor of defence.

26. To the Royal Schools of Instruction has long been deputed this responsibility, a duty met in most cases with a conscientious endeavour to fully perform the task imposed, in so far as the means at their disposal and existing conditions allow.

27. That failure has often followed cannot be denied, but a large part of the onus for such, must, I believe, be thrown upon those seeking qualifications owing to either lack of time, enthusiasm, or a misconception of the necessity for military knowledge, and the belief that little or no preparation is requisite for the assumption of the very important duties they propose undertaking. The fact that a military organization must be conducted on business lines is often overlooked.

28. To meet the general complaint of lack of time for qualification, Provisional Schools were some years ago established, and this year further facilities were afforded by sending Sergeant Instructors to regimental centres for the purpose of holding night classes of instruction in armouries and rented halls.

29. Both these plans are no doubt the means of inculcating the ground work of simple drill and administration, but cannot provide a knowledge of saddling, riding harnessing, driving or care of horses, handling troops, squadrons, batteries or com-

panies at drill or manœuvre; nor the practical points of administration and discipline, all necessary for the subaltern and captain to be in possession of, to say nothing of the higher ranks.

30. It is only at a school of instruction properly fitted with the facilities for teaching, viz., guns, horses, men and space, and so forming a military atmosphere devoted to one idea, that the desired end can be reached.

31. At the permanent schools a new syllabus of instruction was introduced this year, with a view to shortening the periods of attendance without restricting the requisite qualification.

32. I cannot think that the innovation has yet proved a success, inasmuch as the previous preparation which is entailed, and was to be obtained from the sergeant instructors already referred to, has so far seldom been in evidence on the candidates' appearance, and thus all the ground work had to be acquired during the very short time available at a school, with the frequent result of failure to obtain the qualifying certificate.

33. The attendance at the schools has been variable. In Western Canada it has been generally good, but in the Eastern section very meagre, considering the very large number of unqualified.

34. From the last named imputation I must except the School of Musketry at Ottawa, the capacity of which was taxed to its utmost.

35. It may be that a better record could be obtained by increased efforts on the part of the higher authorities in Divisions, who are in some cases charged with neglect of early dissemination of particulars affecting courses.

36. In connection with the regular established schools, I must again refer to the lack of instructional equipment and quarters; among the former may be mentioned lecture rooms, riding schools and miniature rifle ranges, and under the latter more accommodation for officers, many of whom are now obliged, notwithstanding their restricted numbers, to live out of barracks at great inconvenience and often expense, and to these drawbacks may be added the loss of many phases of instruction only to be acquired by actual residence in barracks.

37. I cannot name a single station in which these deficiencies are not apparent.

38. The further development of the schools for the following services appears a necessity, owing to their expansion, and to meet mobilization requirements:—

Engineers.

Army Service corps.

Army Medical Corps.

39. The appointment of a General Staff Officer to each Division and to Military District 10, has given officers better opportunities for obtaining a knowledge of tactical education, both in theory and practice, than has hitherto been obtainable. Similar provision should be made for Military District 13, in which prevails a rapidly increasing and very enthusiastic spirit.

40. Of the newly formed instructional cadre (sergeant instructors) it may be too early yet to say much. I am, however, convinced that its personnel is not wholly up to the mark, many having been detailed to the duty lacking the essential qualities. Another weakness is the want of full employment for these instructors in the localities to which detailed, generally arising from the absence of armouries or halls in the smaller places, a contingency liable to promote careless habits.

41. The distribution of sergeant instructors to camps of instruction was in one or two instances unfortunate. As to units entirely French speaking, instructors were detailed without a knowledge of that language, and their services were, therefore, of little use.

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42. Again in the detailing of officer instructors to Brigades, it is very desirable that those of seniority and experience be sent, otherwise their usefulness is liable to curtailment.

43. Among other forms of education should be noted those of the Militia Staff and Musketry Courses.

44. Increased interest was decidedly apparent in the Militia Staff Courses which were conducted in practically every Division and Military District No. 10 by the respective General Staff Officers, with final examinations by the Commandant and Staff of the Royal Military College at Kingston.

45. This course, as it becomes better known, is growing in favour with the officers of the Active Militia. The instruction given is good, and the knowledge accruing from it an asset of value when used as intended, but unfortunately many with the qualification have so far been but little employed, and will soon grow rusty.

46. Courses of musketry have been given in three forms during the year, viz., evening classes, day classes of three weeks and six weeks respectively. The instructors have proved both competent and hard-working, while the instructed were intelligent and assiduous, consequently the outcome has been most successful.

TRAINING.

47. Funds were provided for the training of the whole of the Active Militia, also for a large part of the Permanent Corps at Petawawa.

48. Again, as last year, I propose dealing with the respective merits of the two classes of our forces, viz., Permanent Corps and Active Militia, separately, and each by arms and departments of the service.

PERMANENT CORPS.

49. Difficulty is still found in maintaining the permanent units up to their establishment, the same reasons prevailing, viz., the abundance of civil employment at high wages.

50. I found that the percentage of men discharged was greatly in excess of enlistments, and the outlook for suitable recruits to fill vacancies very dubious.

51. That the demands made upon these units from all sources can be fully met from the present reduced establishment, is not in evidence.

52. The difference between the present strength and normal establishment, some 550 all ranks, is in my opinion a deficit to be made good, and the least number to ensure an adequate service.

53. The selection of suitable candidates for commissions, and officers to fill staff appointments is also for particular consideration, as our service calls for greater competency than most others, and the danger of adverse criticism ever present.

54. The concentration again of a large part of the corps for a month's combined training at Petawawa, under the personal supervision of the Chief of General Staff, proved very successful; intelligence and interest being shown by all ranks engaged.

55. The "Royal Canadian Dragoons" continues to maintain a good standard of efficiency, and fulfils the duties of an instructional corps as satisfactory as its limited accommodation and educational facilities permit.

56. The second squadron of the "Lord Strathcona's Horse" has recently been formed, and evidently given new life to the organization, which though undermanned shows a determination to become very proficient.

57. The location of the regiment in a new and fast growing country gives it particular value, and will call for more than ordinary capability in the matter of instruction, and example.

58. The Horse and Heavy Batteries, and Coast Defence Companies of the Royal Canadian Artillery, can be reported in a very satisfactory state, barring the numerical weakness of the last named branch.

59. To the Royal Canadian Engineers but little time can be allowed for field training, the duties pertaining to works, repairs and fortress requirements being already in excess of what the present personnel can reasonably discharge.

60. These duties are satisfactorily done within their limitations, though until increased strength is procurable, training must suffer.

61. The further development of the Instructional Staff and more non-commissioned officers and men appear as prominent factors for favourable attention, otherwise additional calls for its services cannot be met.

62. The Royal Canadian Regiment took part in the month's combined training at Petawawa to its advantage and increased efficiency.

63. In keeping up its strength, this unit has experienced similar difficulties found in others of the same class.

64. The sudden and large demand lately made upon the regiment for qualified instructors has more or less upset its regular administration, yet no pains were seemingly spared to quickly comply with the call and give the best material that was at hand, or could be turned out at short notice.

65. The units of the permanent branch of the Army Service Corps can be reported as having made progress during the year. Improvements have been effected, and with the presence of a special officer from the Imperial Service, further advancement and the induction of a good system may be expected.

66. The personnel and administration of the Permanent Army Medical Corps continues good.

67. As the Permanent Army Veterinary Corps is in a state of organization there is nothing of moment to record.

68. In the Ordnance Corps (permanent), perhaps the greatest difficulties to efficient administration are found.

69. The difficulties here most apparent are those which only time and money will eradicate, and the following are most conspicuous:—

(a) The inadequacy of store buildings.

(b) The absence of quarters for non-commissioned officers and men.

(c) Proper fire protection often wanting.

(d) Insufficiency of personnel, or perhaps a combination of civil and military, not subject to the same regulations and control, and therefore not of the same ideas or method in the discharge of their duties to the service.

(e) The lack of "general," "reserve" and "mobilization" equipment, and in the latter case, want of a record of what is needed, and its quick acquisition.

70. These requirements necessarily involve—

(a) Defects in the methodical classification, protection and easy disposition of stores.

(b) Delay in the assembly of the personnel in time of pressure.

(c) Danger of destruction to valuable property.

(d) Impossibility of keeping pace with the administration entailed.

(e) The unreadiness in time of need.

71. The Canadian Army Pay Corps can be reported in very good condition, and fully competent to deal with all matters pertaining to its branch.

72. The system of instruction to its personnel is practical and sound.

73. The main defect observed by me was the absence of any means for the safe custody of the records in use by the several detachments.

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ACTIVE MILITIA.

General.

74. The training of the Active Militia during the year has been an improvement on the past one, but not sufficient to warrant the assumption that the standard to be looked for has by any means been achieved.

75. The presence of General Staff Officers gave better supervision and more systematic tactical instruction than hitherto possible.

76. The great difficulty encountered in the prosecution of this new departure, was the crude knowledge of those under instruction, and the limited number of instructors, imposing upon the latter an impossible task in the short time allowed, although they spared neither time nor labour in the endeavour to fulfil the duty entailed upon them.

77. That all ranks were as a rule interested, was obvious, and the future gives promise of gradual advancement, if officers, non-commissioned officers and men enter upon each year's training better prepared for their responsibilities, by taking advantage of the increased opportunities for instruction now at hand.

78. The absence of administrative staff officers from field exercises was often noticeable, and the valuable experience of working with troops, so seldom afforded, lost.

79. In the personnel of units, vacancies in the appointment of Adjutant, Musketry and Signalling Officers, show quite a large percentage; the Cavalry arm is particularly weak in this respect.

80. These deficiencies in a regimental staff greatly impede the special training or duties for which the appointments were created, and that of the unit as a whole.

81. The number of totally unqualified officers in the force is large, but that of the non-commissioned officers is still greater, and proves an overwhelming handicap to anything like efficiency. True, many may claim qualification through service in the ranks, and by regimental certificates, but the very first practical test nearly always demonstrates humiliating ignorance.

82. The question of officers absent from training is one I must remark upon, as this year shows the percentage to be twenty-five; but this is not the worst feature, for of these over half were absent without leave.

83. The disproportion of non-commissioned officers to privates so often found, suggests unwarranted promotion with a view to increased pay, a supposition which is further confirmed by a complete absence of ability to perform their duties. In a very large number of instances there is no difference between the non-commissioned officer and private so far as military knowledge is concerned.

84. Among the mounted officers of infantry, the lack of knowledge of horsemanship is evident, conveying the impression that qualification in equitation is too easily obtained.

85. The selection of officers to command brigades is not always a happy one; fitness to administer and command, energy and tactical knowledge are frequently ignored. Brigade Commanders should of necessity be able to instruct and control their own units.

86. Similar qualifications in Brigade Majors are often forgotten in their recommendation for appointment.

87. Both these appointments are of such importance as to warrant the necessity for special qualification, and the Militia Staff Course was really inaugurated with that end in view.

88. In one or two instances regimental camps were authorized, a mistaken concession I venture to think, as the absence of supervision, competition and example are apt to evolve a tendency to picnic conditions and a waste of public funds.

89. In the matter of dress, officers of rural corps continue to show indifference to regimental uniformity, as in the majority of units there are seen on parade at least two to four different orders of dress; the effect is anything but soldier like.

90. The absence of chevrons on the service dress renders the distinction between the non-commissioned officer and private impossible, and the lack of regimental badges or numerals, that between units.

91. The large number enrolled each year to meet the peace training establishment, presents a problem in our militia force requiring immediate solution.

92. The almost entire change that annually takes place in many units is, in a great measure, responsible for the elementary nature of training subjects which occupy the greater portion of the time and efforts of the instructional staff at camps, and reduces to a minimum the possibilities of further advancement.

93. As any movement towards compulsory service does not appear a possible remedy, then the terms of the present three years' engagement should be more rigidly enforced, either in the original corps or some other, and steps taken to dispel the apparent misunderstanding on the part of the officers and men, that the responsibilities of enrolment terminate with each year's training, or other means devised to cope with this great weakness in our system.

94. A closer observance of the regulations excluding extreme youth and age from our ranks also seems necessary. While the spirit and interest shown by both classes in their presence is to be commended, their inability to meet ordinary duties, or withstand the hardships of heavy work or fatigue, reduces their value, and involves undue risk to health, with the consequent charges thrown upon the public.

CAVALRY.

95. The necessity for an extension of the training period for Cavalry from twelve to sixteen days, is conceded and asked for by all units.

96. One third of the force was actually given this year the additional period, and it is hoped that all will be included in the coming one.

97. Complaint is made of the confined areas in the majority of training sites, which consequently restrict the movements of this area.

98. The large areas of Calgary, Petawawa, and Sewell, where one-half of the cavalry trained, were certainly conspicuous in the advantages given, but the cost of the transport to these places renders an increased assemblage almost prohibitive.

99. The quality of the horses enrolled was a slight improvement upon 1911, but cannot be classed as more than fair.

100. The question of an increase in the pay for horses is constantly advocated, and in most cases with reason; to some it has been allowed I understand, consequently the concession exaggerates rather than allays the demand.

101. In the care of horses, exception can be taken to the knowledge in possession of the officers and men, or else carelessness ruled in many camps, for the percentage of claims for disability was excessive.

102. The question might here be asked whether there is full appreciation of their duties by Veterinary Officers; also the farrier service inquired into, appointments in which are filled by many totally unqualified for the work, and but little attention has so far been paid to any system of instruction along this line.

103. Neither does sufficient care appear to be taken to save horses; the trot and gallop is often used when the walk would suffice, and units remain mounted when they should dismount. The necessities of active service should be practised in peace training.

104. The saddlery can be improved by the issue of a stronger made head-collar, both in manufacture and material; the present one is often found at fault.

105. Five regiments are still in possession of the "universal" pattern saddles, which in one, at least, are unserviceable; in the others again there is a mixture of "universal" and "colonial," a condition very undesirable.

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106. The issue of a shorter rifle is called for by many, but the prevailing grievance is the present mode of carrying the one in general use.

107. Several units were found short of such articles as rifle buckets, waist-belts, spurs, haversacks and clothing, which, it was reported, were not available for issue.

108. The spirit throughout the mounted branch is quite good, and the desire exists in nearly every unit on being assembled to become efficient; during intervals however that commendable spirit relaxes, and the opportunity of gaining knowledge given by the presence of instructors has been often times neglected.

109. The percentage of cavalry trained during the year was, Officers, 68 per cent; Men, 73 per cent; Horses, 71 per cent; and a fair estimate of the efficiency of the 38 cavalry units may be obtained from the following classification:—

Good.....	13
Fair.....	18
Indifferent.....	2
Disorganized.....	2
Being organized.....	3

ARTILLERY.

Field.

110. In general efficiency the Field Artillery appears to somewhat less advantage than usual.

111. A falling off has occurred in gun practice, attributable to considerably more difficult ranges being used than heretofore.

112. Of the 31 batteries detailed for training, all with the exception of five were brought to Petawawa for sixteen days, and therefore enabled to carry out the field training and gun practice concurrently. Of the remaining five units, two were assembled at Sewell under similar conditions, and one at Calgary, but without gun practice, while the 6th and 21st Batteries failed to respond at all.

113. That the completion of the whole training at the one period is of the greatest possible advantage, there can be no doubt, and the only objection that can be made, is the expense and time entailed in bringing units from the long distances often incurred, such as those from Nova Scotia and New Brunswick in the east, and Winnipeg and Regina in the west; but with the acquisition of large local areas this obstacle would be avoided.

114. The system of instruction employed at Petawawa, appeared to be most comprehensive and practical, introducing upon all occasions tactical situations on service conditions, and the importance of co-operation with other arms.

115. The training of the 26 units at Petawawa within a period of six weeks proved a somewhat heavy strain upon the instructional staff, and it would seem necessary that means be taken to relieve such in view of a larger number appearing next year, and if the same standard of instruction is to be maintained.

116. The horses were of a fair class, but not up to active service requirements.

117. As in cavalry, complaint was made that the pay allowed for them is too small, and in certain localities doubtless difficulties are encountered in procuring good horses for the money.

118. In horsemastership, weaknesses are apparent, if the large number of claims for disability are to be taken as a standard.

119. The individual reports upon batteries show that in some, the harness and saddlery were not well cared for during training.

120. Brigade Commanders have this year been much alive to their responsibilities.

121. The personnel of Ammunition Columns were more in evidence; those however of the 4th, 7th and 11th Brigades did not train.

122. A "brush up" course arranged for at the Royal School of Artillery, Kingston, was attended by only seven officers, a very regrettable result, as such a course is of great value and constantly asked for.

123. The percentage of unqualified section commanders is also large.

124. An opportunity was for the first time given to officers of cavalry and infantry to attend the gun practice at Petawawa, and taken advantage of by many to their evident interest and benefit. A continuation of the privilege is very desirable, and the appointment of an officer to specially accompany and explain the work of artillery in the field would further enhance its value.

125. The provision of magaphones to each battery is strongly advocated as being a very necessary adjunct.

126. Eight batteries arrived in camp without dial sights, and others wanting in aiming posts, fuze indicators, &c., and consequently a system of loaning had to be established, a condition that in future should be guarded against.

127. Instances of shortages in personal equipment not obtainable were noted.

128. The percentage of Field Artillery trained was: Officers, 75 per cent; men, 84 per cent; horses, 91 per cent.

129. In classifying the efficiency of the various batteries, the results below named may be taken as a fair indication:

Good.....	7
Fair.....	12
Indifferent.....	9
Disorganized.....	4
Being organized.....	4

ARTILLERY.

Heavy.

130. This year's training of the heavy batteries of artillery has been an improvement over the last inasmuch as three units trained at Petawawa intact, though only for seven days, while two others did the four days practice, thus accounting for the whole of the arm as at present constituted.

131. The gun practice was satisfactory, but the weak spots were many in other particulars; for instance, the knowledge of riding, driving and harness was very defective and a great detriment to efficiency, while the want of ability on the part of the specialists (gunlayers, range-takers and signallers) handicapped the Battery Commanders.

132. The necessity for the full course of sixteen days at Petawawa, or a similar camp, is obvious.

133. The several batteries are practically complete in establishment, the officers zealous and interested, the non-commissioned officers and men of a good type, save in some cases their youth, and the horses supplied equal to the requirements.

134. The harness of both batteries of the 4th Brigade is old and unserviceable.

ARTILLERY.

Moveable Armament.

135. What formerly constituted the 3rd Heavy Brigade of three batteries, has now become moveable armament, and detachments from it attended the Petawawa Camp for four days' gun practice with good results, in so far as that part of the training was concerned.

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136. The Regimental Staff and Company Majors were absent from the practice, two of the companies being under captains, and one in the hands of a subaltern. The recent re-organization of the regiment will likely account for these defects.

ARTILLERY.

Coast Defence.

137. The efficiency of the Coast Defence branch shows an improvement for 1912 over that of the previous year, and two of its units are in quite fair order.

138. Difficulty is being found by the 6th Regiment in maintaining its present establishment, as only 30 per cent. of such came forward for technical training, the remainder being rated as indifferent infantry. A reduction in the strength of this unit seems desirable.

139. The officers and men of this corps who attended for gun practice in the Halifax Forts, were quick to acquire and very zealous, but the time available, four days, was much too scant to permit of the attainment of a very high standard.

ARTILLERY.

Siege Companies.

140. The recent formation of the two Siege Companies at Mahone Bay and Montreal respectively, and the result of their training this year, have shown the difficulties attending their organization.

141. The high standard of technical knowledge required from all ranks and the want of accommodation for equipment and stores, have proved somewhat of a handicap to the efficiency of these units.

142. The training and gun practice were carried out at Halifax under the immediate supervision of the Royal School of Artillery.

ENGINEERS.

143. Since last year the organization of three Field Troops and four Field Companies has been effected, but none of them were in a sufficiently forward state to undergo this year's training. Should success attend the formation of these new units, the efficiency of this arm will be materially increased.

144. The majority of the already established units trained at Petawawa, and the general result proved very satisfactory. The locality undoubtedly furnishes at present the only suitable place available for the purpose.

145. The introduction of wireless telegraphy into the syllabus this year was a forward step in training, and the 1st Field Troop furnished a personnel whose zeal and intelligence was quite equal to the demands made upon it. The further development of this branch is important, and the outcome of the experiment gives every hope for the attainment of proficiency in it.

146. In the Field Companies a shortage of officers and men was observed, a condition difficult of remedy; otherwise there was every evidence of interest and progress.

147. Instruction in mounted duties proved, however, deficient, owing to the scarcity of proper instructors.

148. The absence of combined work with other units was very noticeable at Petawawa, and deserves attention.

149. Better facilities for the instruction of engineer units in their armouries are required, in the form of models or mechanical apparatus, peculiar to the many technical services called for, efficiency in which can only be gained by frequent voluntary practice as opportunities may occur.

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150. The obstacles in the way of ensuring the training of No. 5 Field Company (Queen's University), and the city section of No. 2 Company (Toronto University) at a camp of instruction, are unfortunate, and greatly limits the advantages to be gained from the best possible material.

CORPS OF GUIDES.

151. The duties devolving upon the Corps of Guides, are being generally well carried out.

152. Adequate accommodation though is wanting for such officers as are specially charged with the care and compilation of maps and records, consequently this service suffers.

153. During the year a beginning was made towards the organization of mounted companies by the enrolment of small detachments, which were trained in each of the 1st, 2nd and 5th Divisions.

154. It is satisfactory to find that a higher proportion of officers attended camps of instruction, or performed special work in lieu, than in any previous year; also that no less than eight of the corps are in possession of Military Staff Course certificates, whilst every officer is qualified for his present rank.

155. Such keenness is satisfactory, though it has been noted with regret, that graduates from the Royal Military College, who have joined the corps under the provisions of para: 658, King's Regulations and Orders, appear to evade their obligations as to training, and for this reason a doubt is created as to whether such a desirable source can be counted upon to fill vacancies.

156. Great difficulties are incurred in procuring the horses necessary to the training at the current rates, and in nearly every instance an extra fee had to be paid, a cause for complaint.

157. The folding blanket issued with the colonial saddle is found to be unworkable, and the provision of a numnah instead asked for.

INFANTRY.

158. My report on this arm is made under two distinct headings as the training conditions of City and Rural units differ in many respects.

(City Corps.)

159. Following upon the initiation last year of the field training in camp for a few units of the City Corps, the system was this year extended to embrace all, and a unanimous response given, save in the cases of the 8th, 9th, 15th and 84th regiments.

160. The time required for this training was fixed at five days, and in most instances that period was utilized, though a few corps gave three only, and as a Sunday was often included, the benefit accruing in such cases was necessarily very limited.

161. The average strength of the Corps who actually attended this training was 40 per cent, but so much interest was shown as to warrant the expectation of decided improvement in this respect next year.

162. The great point gained was the acknowledgment by all ranks that necessity existed for practice and experience in this particular direction, and as a further evidence of this may be cited the fact, that, notwithstanding attendance at camp, the city units of the 1st and 2nd Divisions took advantage of the Thanksgiving holiday for further tactical exercises.

163. For the remaining part of their training carried out at local headquarters, City Corps in nearly all cases were up to, and in some few, over their establishments.

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164. The percentage of City Corps trained was: Officers, 90 per cent; men, 94 per cent; with a standing in the matter of efficiency as below:—

Good.....	20
Fair.....	16
Indifferent.....	4
Disorganized.....	3
Being organized.....	2

(Rural Corps.)

165. Dealing with the efficiency of this class of units is a more difficult matter than any other, for the reason that so many adverse conditions exist, such as the widespread distribution of its personnel, and consequent difficulty of assembly for preliminary drill or lectures beforehand, the absence of armouries whereby a military spirit can be created, however small; the changing in one year of nearly the whole of the enrolled strength of units, and the short period for training, all tending to curb enthusiasm, interest and progress.

166. The attendance of rural infantry units at camp was less than last year, the average being below 65 per cent.

167. As before noted, an improvement was visible in this year's training throughout the whole force, the infantry duly participating, but not to the extent to be wished for, and the reason may I think be traced to the weakness in the qualification of officers and non-commissioned officers.

168. In administration also, much is lacking, the company and regimental records being as a rule very loosely looked after.

169. Better attention to the care of arms is another matter which impresses one as a necessity.

170. The percentage of Rural Corps trained was; Officers, 64 per cent; men, 65 per cent; and the rating may be classed as under:—

Good.....	8
Fair.....	32
Indifferent.....	8
Disorganized.....	8
Being organized.....	Nil.

ARMY SERVICE CORPS.

171. This branch of the service has somewhat fallen away during the year, and but six of the eighteen units composing it can be rated as good, a small proportion in a corps upon which so much depends.

172. Its strength certainly has been increased by the resuscitation of two companies which had last year become disorganized, and the creation of four new companies, one only of which, however, was ready for use this year.

173. That urgent action should be taken in bringing the weaker companies up to a better standard is quite plain.

174. Shortages in equipment were observable, arising from inability to supply them from the proper quarter.

ARMY MEDICAL CORPS.

175. The condition of the Army Medical Corps cannot be reported upon as favourably as in 1911, for while some few of its field units are no doubt in very good order, others have failed to come up to that standard, and in three or four cases must be rated so far below as to need reorganization.

176. All its authorized units are organized, with the personnel of officers as a rule complete, but the attendance of the latter fell short of expectations, indicating a want of their usual enthusiasm, though likely only of temporary duration.

177. Additional units are required to complete the organization for mobilization purposes.

178. The training of the Corps this year was carried out somewhat differently from the preceding one, in that while the larger number of units were detailed with other troops at the regular camps, some seven were assembled at London, Ont., for sixteen days, and underwent special instruction.

179. This latter camp was very successful from an instructional point of view, partaking as it did of both technical and tactical conditions, but a doubt exists as to whether the loss of interest, and experience resulting from the absence of association with larger bodies of troops and consequent professional administration do not outweigh the advantages otherwise gained.

180. The two General Hospitals underwent training and were found in good order.

181. The sanitary conditions supervised by the corps in all camps were most satisfactory.

ARMY VETERINARY CORPS.

182. The organization of the Canadian Army Veterinary Corps has been somewhat tardy, as the change from old to new conditions naturally presents difficulties which require careful consideration. Apparent trouble arises in obtaining officers to complete the establishment, and many units in camp were therefore without veterinary aid.

ORDNANCE CORPS.

183. The non-permanent branch of this corps recently authorized, was not ready to render assistance this year. Its services will be found of much value when available.

POSTAL CORPS.

184. This useful auxiliary for the formation of which authority was given last year, appeared on duty at the recent camps of instruction for the first time, and proved equal to its functions, in so far as energy and intelligence were concerned.

185. Its facilities for proper administration were not always equal to the requirements.

SUPPLY AND TRANSPORT.

(Supply.)

186. The question of supply was fully gone into at each camp of instruction visited and while the quality and quantity of the rations issued were found to be good and sufficient, in fact almost profuse, I am of the opinion that economy and better service may be secured by a few changes in the quantity and variety of the articles now provided.

187. From the large quantities of bread and meat to be seen in the garbage pits, the impression received is that in both items the issue is too great.

188. Again it is questionable whether bacon is an article much desired in June or July weather.

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189. On the other hand no issue of rice, dried fruits, cereals, or condensed milk is made, all articles suitable to a warm season; wholesome, strengthening, and pleasant to the palate.

190. The want of small regimental ice chests is much felt, as considerable butter is wasted for lack of proper means of keeping it, even for the few hours necessary.

(Transport.)

191. Many complaints were made me respecting the railway service provided for men and horses, in moving to and from camps of instruction.

192. These complaints covered the following:—

- (a) Unpunctuality and delays en route.
- (b) Provision of cattle cars for conveyance of horses.
- (c) Dirty and dangerous condition of such cars when delivered.

193. The unpunctuality in leaving and arriving, with delays en route, apparently were very numerous, although in some cases I am inclined to think that the railway authorities were not always to blame, as the tardiness of officers and men in arriving at stations, with the absence of staff officers at main points to supervise entrainment, and confer with the railway executive, was no doubt a factor contributing to the trouble.

194. As a rule however, the facilities for the transport of troops by rail cannot be claimed as equal to the necessity or cost.

195. In the transport of horses, the only safe means is by the palace horse car, but as the number of these is very restricted, the freight and cattle car become the usual mode. In neither of these can horses be fed or watered, while in the one little or no ventilation occurs, and in the other there is so much as to become dangerous.

196. As to the condition in which cattle cars have been furnished for the conveyance of horses, cases can be cited in which they were fetlock deep in dirt, and again where the prevalence of nails existed.

197. This question of transport is a vital one, and calls for early attention.

SIGNALLING.

198. Progress continues to be made in this branch, and there is evidence that system and energy are being used to bring the signalling service up to the required standard.

199. Good and efficient work by the Canadian Signalling corps for the year can be reported. All the officers and non-commissioned officer instructors have discharged their duties at the various camps of instruction very creditably.

200. Touching upon the signalling service of units of the Permanent Force, from reports received so far, the results are disappointing, and little interest appears to be taken.

201. With regard to the signalling sections included in the establishments of units of the Active Militia, special facilities were afforded during the year for their education.

202. Classes of instruction were held at different centres, and their advantages extended to the Cadet Service with good results, a number of the latter attaining a high standard of qualification.

203. Up to the present time the certificate awards have been as follows—

<i>Active Militia.</i>	27	Officers.	245	non-commissioned officers and men.
<i>Cadets.</i>	8	"	74	"

with the probability of a considerable increase by the end of the year.

204. Classification by Divisions reveals the 4th as still very weak, with the 3rd closely following in the same direction. Both call for the attention of the Divisional Staff and Signal officers concerned.

205. There is almost a complete absence of interest in signalling in so far as the cavalry regiments are concerned; with very few exceptions the appointment of Signalling Officer remains vacant, likewise signallers of any ability, and the deficiency calls for remedy.

206. Neither can the artillery signallers be considered as having made desirable progress; sections are organized, but their work is, save in a few units, indifferent.

207. The reports upon signalling sections of rural infantry indicate a decided improvement, in so far as the numbers trained and progress towards fitness for manœuvre.

208. In concluding my remarks under this heading, I would direct attention to the following defects and suggestions—

209. Due care is not exercised in the selection of the personnel of sections in camps of instruction, as some sent from units could neither read nor write. This may astonish, but it is a fact, and an example of the indifference of some officers to the importance of the service.

210. Provision of a special signalling equipment for use in connection with the instruction of cadets, and thus relieve difficulties now experienced through physical inability of the boys to handle the 2 x 2 flag with a 3 ft. 6 in. pole.

211. The early attachment of Cadet signallers to Militia units.

MUSKETRY.

212. The musketry training at camps of instruction during the year was carried out on the following lines:

Preliminary instruction by means of tripods.

Sub-target rifles.

Miniature targets where available.

Service ammunition.

213. The full course prescribed for the last named was 42 rounds, but in few cases was more than the number required to qualify for efficiency pay (14) fired, owing to the lack of time and target accommodation.

214. The entire absence of service targets at Goderich Camp entailed the sole use of the miniature range, at which 25 rounds per man was expended, a condition perhaps better than nothing, but at best unsatisfactory.

215. Until lately the absence of regimental instructors has been a great want, but these are now coming forward, thanks to the establishment and extension of the School of Musketry.

216. It is however the lack of time and target facilities that still stare us in the face, conditions which materially neutralize the improved means of instruction.

217. Fully two-thirds of the force appear in camp without any idea whatever of the first principles of shooting, and are rushed in a few hours from one subject of the syllabus to another, finishing on the service range, upset and confused, to fire fifteen or twenty rounds.

218. Preliminary training must be gradual, and the company or battalion armoury the best place to acquire it.

219. Reviewing the whole question of the musketry instruction of the force for many years past, it cannot be said that any real efficiency can be looked for unless better means are provided for its prosecution. As at present conducted in camps of instruction, it fails entirely in its object.

220. The amount of efficiency pay based on musketry was reduced for this year's training to 15 cents per day on a qualification of 42 points at 100 and 200 yards, while the regular pay was increased.

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221. It was not observed that this redistribution of the pay earned had any adverse effect on the interest taken, which after all, in the majority of camps, is perfunctory.

222. It is to be regretted that two or three cases of attempted bribery of markers or register keepers were discovered during the training, and a larger number of impersonations.

223. The returns giving a summary of the results of the practice for 1912, show a slight improvement over that of 1911, which is satisfactory in so far as it goes.

DISCIPLINE.

224. In the Permanent Corps the paucity of quarters for officers and men necessitates much absence from their units, and has a strong tendency towards reducing the standard of discipline which should predominate in that body, and prove an example to the Active Militia.

225. The laxness referred to in my last report with respect to the Active Militia still continues in evidence and needs attention.

226. The discipline of a unit is greatly affected by the capability in that particular of its senior officers, and in many cases it cannot be disguised that the responsibility for much of the existing weaknesses can be traced to such causes.

227. Another salient feature in this connection is the appointment of non-commissioned officers without qualification, as noted under "Active Militia (General)" para : 83. The evident deficient appreciation and knowledge of their duties is productive of anything but obedience and respect.

228. The absence of officers and men from parades without permission or reason; the large number of officers absent from training without leave as quoted under "Active Militia (General)" page 20, para. 82, with the irregular observance of the dress, and general carelessness in the administration of regulations, are all factors prejudicial to discipline.

BOOKS AND RECORDS.

229. In the course of my inspections due attention was given to the books and records of units and departments, with the result that in the permanent service a fair general efficiency was found, and though cases of carelessness or oversight were often brought to light, they were easily and quickly adjusted.

230. The records prescribed by the governing regulations of the Canadian Permanent Army Service Corps, and Canadian Ordnance Corps, are so numerous, that the constant supervision of the responsible head in each Division or District is necessary, otherwise omissions occur, as will have been noted in my separate reports.

231. In rural units of the Active Militia, there are still to be found those to whom a complete issue of books (office and personal) has not yet been made, the excuse given being that they could not be obtained from the Divisional Office.

232. I cannot think that the inspection of books and records is as close as it should be, and accountable in a measure for much of the indifference shown in their proper maintenance.

233. To remedy the absence of records generally visible in camps of instruction, an observation calling attention to the fact in the usual "Memorandum of Instruction for Annual Training" might assist.

ARMS, EQUIPMENT AND CLOTHING.

234. The present provision for the accommodation and proper care of arms and equipment being notably deficient, it is a necessity that issues should not be made until the means of security are available; this applies particularly to artillery stores, whose cost is so great and good care so essential.

235. In the care of stores, lack of attention shows itself much too often, and a not uncommon occurrence is to find arms, clothing and equipment of units relieved from training, lying about in tangled and dirty masses weeks afterwards. A little more attention on the part of responsible officers would bring a remedy.

236. The care of arms and saddlery in camps of instruction is also open to criticism.

237. There is a great variety in description of the rifles in the hands of troops, preventing simplicity of musketry instruction, while the situation of the sight not being uniform in the different marks or patterns, or often in those of the same issue, creates difficulties in the endeavour to set sights alike.

238. The absence of a handy method of carrying the rifle in mounted units gives rise to inconvenience and interferes with efficiency.

239. The problem of boots is, since the practice of more manœuvre, assuming increased importance; the foot gear generally found in rural corps is by no means up to the mark, and the wearers are often rendered unfit to carry out the training through disability arising therefrom.

240. In clothing much diversity prevails in the shade of the tartan issues, and objection can often be taken to the fit, also at times the material itself.

241. The need of closer attention to the quality and price of the articles classed and issued to permanent units as "necessaries" was forced upon me during some of my inspections, as I had complaints under both these headings made me, and for which verification was obtained.

242. An irregularity that appears likely to lead to imposition is that wherein articles of clothing and equipment on charge to units become depleted through their acquisition by individuals upon the understanding that they will be replaced by new articles; thus private possession is obtained at reduced cost.

ARMOURIES.

243. Some progress is being made in the provision of that much needed adjunct or home for the military unit, the Armoury, thirty-one of such being erected this year; but as an almost equal number of new units have been authorized an alleviation of the situation can hardly be claimed.

244. The want of armouries is now almost entirely restricted to units of rural corps and if such are to be maintained at even a semblance of efficiency, the provision is most urgent.

245. The presence in a town or village of a respectable looking building, properly fitted and devoted to military purposes, at once draws attention to the fact that the neighbourhood has a duty to perform in the direction of defence, and creates an interest and desire on the part of the younger element to meet the obligation, to say nothing of the protection and care of the stores which the general public is called upon to supply.

246. Rented buildings for use as armouries do not prove a success; their construction and accommodation are invariably deficient, while being a makeshift they do not appeal to the enthusiasm of the unit concerned.

247. Proper fittings of a convenient and commodious nature form an important factor in an armoury, and many instances occur where arms and equipment remain in cases, and cannot receive the attention due them, because the arrangements are wanting.

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248. If in the erection of armouries the fittings are so arranged as to give ample room for the full complement of arms and equipment necessary to a unit at war strength much trouble and expense will be saved in the future.

249. The selection of sites for these buildings is worthy of attention, bearing as it does on the convenience of the personnel of the unit.

250. In the administration of armouries generally, there appears room for improvement.

251. The distribution of fire apparatus is in places defective, and in other localities absent.

252. The neglect of long standing repairs is not uncommon.

253. The regulations prescribe that the keys of all rooms, or duplicates, should be in possession of the senior or chief caretaker, but this rule is not complied with in all cases.

254. In the engagement and number of government employees, no definite regulations exist, and consequently some individuals and buildings are overpaid and overstaffed in comparison with others of equal responsibilities and size. This service does not appear to be on a proper basis.

255. The distribution of government and private caretakers in the same building does not work well; a friction constantly arises as to division of work, and only in one case have I found satisfactory results attain.

CAMP SITES.

256. Under this heading I cannot report any progress during the year towards the acquisition of larger areas for training grounds, and without which it is futile to suppose that any real efficiency can be attained in tactics and manœuvre over ground only capable of use for drill movements as now the rule.

257. The question of artillery ranges is also embraced, and until suitable sites are obtained, time and money will be spent unnecessarily in bringing units from the extreme East and West to the only ground available, viz., Petawawa, or else forego the practice so indispensable to units of that arm.

258. Such ranges in the Maritime Provinces and Manitoba or Saskatchewan, would pay their cost in a very few years in the saving of the transport now entailed by units going to Petawawa, putting aside the time gained.

259. Petawawa, our only suitable training ground, is proving of increased advantage each year, and though so far only used by units of the cavalry, artillery and engineers, the infantry of the 2nd, 3rd and 4th Divisions might, until more extensive areas are available, be sent there with advantage in place of Niagara, Kingston and Three Rivers, all of which are ridiculously contracted for the purpose.

260. The sites at Aldershot, N.S., and Levis, P.Q., are well adapted for camping and drill purposes, but very restricted for manœuvre, while Niagara, Kingston, Three Rivers and Farnham present no training advantages of any description.

261. For the troops of the 1st Division, the camp has been alternating between London and Goderich, neither place affording suitable accommodation.

262. The cramped and dispiriting influence produced upon troops endeavouring to carry out manœuvre schemes upon contracted areas, has anything but a good effect, and I cannot too strongly urge the necessity for the provision of proper training grounds in each Division, nor the losses which delay will produce.

RIFLE RANGES.

263. An addition to the number of rifles ranges to the extent of four has been effected this year, and three more are under construction. Yet here again as in the case of new armouries, the increase of units leaves us as far short of this military requirement as ever.

264. The existing ranges are as a rule in good order, though in a few I found the natural wear and tear was not being attended to, giving cause for complaint on the part of those most interested in their efficient maintenance.

265. In more than one locality, I also found that after the expenditure of quite large sums in the installation, little or no use was made of the range owing to the difficulties in reaching them, notably at Sydney, C.B.; and again at Woodstock, N.B., the building of a railway line through or close by the ranges will soon render them useless. At Brantford, Ont., the range is situated upon the flats of the Grand River, and becomes unserviceable through flooding, during the early part of the season, while that at Three Rivers is unsafe by the existence of a highway nearby.

266. Many large centres are still without any accommodation, and it is needless to remark upon the necessity for urgency in their provision.

267. On not even our best ranges do facilities exist for practice at unknown distances and varied targets, conditions which could be obtained with increased training areas.

RIFLE ASSOCIATIONS.

(Military.)

268. The Military and Cadet Rifle Associations are now fairly well distributed throughout the country, and the increased attendance at the Dominion, Provincial and Regimental matches, would indicate a growing interest in rifle shooting.

(Civilian.)

269. Last year I recorded my doubt as to the general benefit arising from the large expenditure entailed through the organization of civilian rifle associations, and I have since had no reason to change my opinion.

270. Among the large number of such associations now authorized, but few can be classed as in good order.

271. Practices are irregular, attendance small, and the proper expenditure of ammunition I fear questionable.

272. Far better results would obtain were these associations excluded from centres in which militia or cadet units exist, and the expense thus saved turned over to the latter for their better supervision and instruction.

BARRACKS AND STOREHOUSES.

273. Our requirements in the form of suitable and convenient quarters and stabling for the Permanent Corps have lately been relieved in the latter case by the provision of stables and an infirmary at Kingston. Both at Kingston and Toronto, however, troops still remain in congested and unsanitary barracks.

274. At Calgary it is not possible to quarter the much required Royal School of Cavalry, and "B" Squadron of the "Lord Strathcona's Horse" for want of accommodation.

275. Nor have the proposed barracks at Montreal yet been taken in hand.

276. The absence of married quarters at all stations militates against good administration, discipline and economy.

277. Further facilities for recreation purposes are also needed for the soldier in his spare time.

278. An even greater need than barracks, however, prevails, and that is the provision of storehouses in which to properly house and care for the many valuable stores of all descriptions necessary to the upkeep of our military forces.

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279. The large quantity of stores on charge at our Ordnance Depots call for constant attention, especially at Halifax, Montreal and Toronto; yet in practically every instance the buildings available fall far short of the requirements for the methodical and ready classification of articles found in a private establishment, or the exigencies of our service.

280. The congestion from lack of room and dangers from deterioration, as well as from fire at the last named place, present themselves most forcibly.

281. The premises on Melville Island (Halifax), now used as a military prison, offer facilities for storage which might be used to advantage without interfering with the interests of discipline.

FORTRESSES.

282. The Fortresses of Halifax and Quebec were found in good order throughout, and while no fault could be found in the condition of the armament and works at Esquimalt, little or no attention was being paid to the regulations respecting the admission of strangers within the works.

283. The works at Levis are still incomplete.

MOBILIZATION.

284. Last year my remarks upon this subject expressed the intention of dealing with it in a separate report, but opportunity has not presented itself, and the duration of my time in office now precludes the possibility of more than a few observations in a general way.

285. No doubt the question is receiving due attention by the Staff specially appointed at Militia Headquarters for the purpose, and the scheme so far as the apportionment of units, and composition of Divisions, as well as the allotment of centres for mobilization, prepared.

286. Hinging on this scheme we shall be face to face with numerous and serious deficiencies which must be met before practicability is at all possible, and although those I now intend referring to have all more or less been remarked upon under preceding headings of this report, I feel it my duty to here urge in the strongest manner, the consideration and action they deserve, for the sooner the attention, the more rapid and effective strides will be made for the conversion of our force into an organized means of defence.

287. In the first place we are far short of the number of units, chiefly technical branches, requisite to complete Divisional organization, and in the formation of which, attention to mobilization requirements should predominate rather than the desire to meet the wishes of localities or individuals, and thereby involve expenditure that will not meet the necessity.

288. The provision of accommodation for the arms and equipment of all branches of the service up to war strength at local centres is imperative, to say nothing of a reserve, and one that should never be omitted in connection with construction of new, or enlargement of the older armouries and store houses.

289. At present the many examples of inadequate facilities to meet storage requirements of even equipment for the peace establishment enlarges the deficiency.

290. In this same connection a uniformity in the establishment of units to war strength is very desirable, both from the views of present education and future simplicity in mobilization.

291. Coming to the question of arms and equipment, I found little or no thought yet given mobilization requirements, nor any evidence of an estimate to meet such demands, except as regards certain ammunition.

292. Regarding the subject of remounts and transport, much is to be accomplished in this direction.

293. An issue of regulations governing the "Provision of Horses and Transport on Mobilization," has been made, but little yet done to put them into practice, consequently I must again suggest the indispensability of the service, and that the progress of the scheme be brought to a condition of use should circumstances demand.

294. The compilation of military intelligence is to be urged, as much pre-arranged data would at once be called into use in event of any concentration of troops for service.

295. Our true condition in event of mobilization is, under existing conditions, certain to result in delay and confusion to say the very least.

MILITARY TRAINING AT UNIVERSITIES.

296. I cannot report that the prosecution of military instruction in our universities has made any material advance during the year.

297. Schemes have been drawn up and discussed with a view to the organization of "Officers' Training Corps," a most desirable and necessary addition to our military system of education, but no definite results have yet accrued, although it may be claimed that both at McGill and Toronto Universities, the question has been seriously thought of, yet for various reasons very little real progress made.

298. It does seem a pity that the services of such a valuable asset to the betterment of our militia force, as the students of universities trained in military acquirements would prove, cannot be brought within reach.

299. That the right spirit exists among them has already been proved through their presence in two of our Engineer units, drawn from "Queen's" and "Toronto."

CADET CORPS.

300. The training of Cadet Corps during the year has received a decided impetus through the appointment of special officers in each Division and District, charged with the supervision and development of this organization.

301. The qualification of a large number of teachers as cadet instructors is a further satisfactory evidence of extension in the movement, and commendation is due them for the capability and enthusiasm displayed.

302. Increasing interest in musketry is visible, and the high standard of shooting achieved by cadets at the recent meetings of the Dominion and Provincial Rifle Matches, is the strongest possible evidence of what encouragement in this direction can produce.

303. Facilities for participation in field days with local militia, and instruction in signalling will both be found of material advantage in stimulating the acquisition of military knowledge by our youth.

304. The prosecution of the necessary drill during school hours, in place of afterwards would tend to increase attendance at these exercises.

305. The administration of discipline by captains of cadet companies, who are constantly changing, is not as a rule what it should be, and the immediate control of units by cadet instructors offers a better solution.

306. The wearing of the same badges by officers of cadets corps as by those of the militia, causes difficulty in recognition, and the substitution of bars on the collar appears a more suitable distinction.

SUMMARY.

307. In concluding my report, I trust that I shall not be thought egotistical by alluding to my long and active connection with the Canadian Militia, during which it has been my privilege, luck or fate, to have served in every military capacity from the lowest to the highest rank, and taken part in every incident of its struggles, both peace and active service.

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308. My reason for thus placing my services in the limelight, is solely for the purpose of establishing a claim to experience that will more or less vindicate the various criticisms made in the course of my previous remarks, and enables me to form an intelligent idea of the present condition and fitness of the force for the purposes of its organization and maintenance, viz., the defence of this country.

309. From the conditions I have recorded there can remain no doubt as to our many weaknesses and utter inability to ensure without immediate remedy, anything like a properly organized or even tentative scheme of protection.

310. The fact that neither the public nor the members of the force itself, takes the militia seriously, is perhaps our greatest handicap; otherwise the provision of money by the former for the necessary arms, equipment and buildings would be easily obtained, and concurrently the want of discipline and qualification of the latter immediately provided.

311. That a country with resources the envy of the world, and a people possessed of energy, intelligence and the best of physique, can delay and procrastinate in the establishment of a strong and effective barrier to aggrandizement, must appear a marvel to any one with a knowledge of human nature, who bestows even a casual thought to the situation.

I have the honour to be, Sir,

Your obedient servant,

W. D. OTTER,

*Major-General,
Inspector-General.*

APPENDIX "G"

NOTES ON BRITISH AND FRENCH MANOEUVRES

1912.

Prepared by Canadian Officers in accordance with the instructions of the Hon. the Minister of Militia and Defence.

INTRODUCTION.

The Honourable the Minister of Militia and Defence proceeded to England this year, accompanied by a selected party of officers to attend the autumn manœuvres of the British and French armies, and also to visit the military training depots, arsenals, establishments for the manufacture of arms and equipment, ordnance, &c. The party consisted of the Minister, Col. the Hon. Sam Hughes; Col. W. E. Hodgins, commanding the 1st Division, London; Col. J. P. Landry, commanding 5th Division Quebec; Lt.-Col. C. Greville-Harston, Chief Inspector of Arms and Ammunition, Quebec; Lt.-Col. E. W. B. Morrison, D.S.O., commanding the 8th Brigade C.F.A., Ottawa; Lt.-Col. G. S. Maunsell, Director of Engineer Services, Ottawa; and Major W. Robertson, General Staff Officer, 5th Division, Quebec.

On arrival in England on August 29, it was found that the heavy rains which had prevailed for some weeks previously had flooded the manœuvre areas to such an extent that it was feared the manœuvres would have to be postponed. Fortunately the weather improved and the manœuvres were proceeded with, but under conditions of unusual hardship to the troops, owing to the state of the ground and the occasional prevalence of cold and wet weather during the three weeks of the operations. The cavalry manœuvres on a large scale took place during the first week of September, followed by the inter-divisional manœuvres during the second week; the whole concluding with the army manœuvres from the 16th to the 19th, inclusive. As the French manœuvres were also held during the second week in September, it became necessary to divide the party, the Minister, with Col. Landry and Major Robertson, proceeding to Touraine and returning in time to take part in the British Army manœuvres.

As will be perceived by a perusal of the diary of the trip many sources of military information were placed at the disposal of the Canadian officers through the courtesy of the British War Office and of the companies that make a speciality of the manufacture of arms and equipment. Every opportunity was taken advantage of to acquire the latest information on all points, and in regard to all branches of the service, that might be useful to the militia of Canada. In this manner a large amount of valuable data was accumulated. It was the first occasion on which such a visit had been paid by a party of representatives of the forces of the Over-sea Dominions and nothing was lacking on the part of the officers and officials with whom they came in contact to insure the collection of much profitable material as a result of the visit.

Acting under instructions of the Honourable the Minister of Militia and Defence the preparation of the present publication was commenced on the return voyage, while the facts and experiences were still fresh in the minds of all. The intention is



OVERSEA REPRESENTATIVES AT BRITISH ARMY MANOEUVRES.

Standing—(1) Maj. W. Robertson, R.E., Gen. Staff, 5th Div. Quebec, Canada. (2) Lt. Col. E. W. B. Morrison, D.S.O., Commg. 8th Bde. Canadian Field Arty. (3) Lt. Col. P. E. Thacker, Canada, Dominion Sect., War Office, London. (4) Major H. W. Dangar, Royal Australian Field Arty. (5) Lt. Col. G. S. Maunsell, Royal Canadian Engrs., Director Engineer Services, Canada. (6) Mr. Hofmeyer, Secretary to Br. Gen. Beyers. (7) Col. J. P. Landry, Commg. 5th Div. Quebec, Canada. (8) Maj. C. C. M. Maynard, D.S.O., General Staff, War Office, London. (9) Lt.-Col. Greville-Harston, Chief Inspector of Arms and Ammunition, Canada. (10) Major N. G. Cameron, General Staff, War Office, London. (11) Lt.-Col. H. Temple-Mursell, Commg. Transvaal Med. Corps. (12) Capt. C. M. Merritt, 72nd Seaforth Highrs. of Canada. (13) Col. W. E. Hodgins, Commg. 1st Div., Ontario, Canada.

Sitting—(1) Col. A. H. Russell, Commg. Wellington Mtd. Rifles Brigade, New Zealand. (2) Colonel A. W. Robin, C.B., C.M.G., New Zealand, Dominion Section War Office, London. (3) Brig. General C. F. Beyers, Commandant General, Union Defence Forces, S. Africa. (4) Col. G. M. Harper, D.S.O., General Staff, War Office, London. (5) Col. Hon. S. Hughes, Minister of Militia and Defence, Canada. (6) Lt. Col. Hon. Sir N. Moore, K.C.M.G., Australian Intelligence Corps (Agent General for W. Australia). Lt. Col. J. G. Legge, C.M.G., Australia, Dominion Section, War Office, London.

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not so much the compilation of a formal and technical report, as to convey to the Militia of Canada in succinct form such items of the information acquired as are likely to prove most interesting to regimental officers in the various branches of the service, together with a brief outline of the strategical and tactical features of the manœuvres.

DIARY.

- 29th August.—Disembarkation at Bristol.
2nd September.—Visit to small arms factory, Enfield Lock.
3rd September.—Visit to Ordnance Mobilization Store Depot at Woolwich.
4th September.—Visit to works of Vickers, Sons & Maxim, at Erith. Three officers to cavalry manœuvres in the Thames valley.
5th September.—Visit to Portsmouth coast defences.
6th September.—Visit to School of Musketry, Hythe.
9th-14th September.—Inter-divisional manœuvres.
11th-14th September.—Three officers to French manœuvres in Touraine.
16th-19th September.—Army manœuvres.
20th September.—Visit to Coventry Ordnance Works.
2nd October.—Visit to School of Military Engineering, Chatham.
3rd October.—Visit to Portsmouth harbour.
5th October.—Departure of Minister of Militia and Defence.
6th October.—Visit to Aldershot to see administrative work in a division.
7th October.—Visit to Woolwich Arsenal.
7th-8th October.—Two Officers to Aldershot for tactical examination.
9th October.—Visit to Territorial School of Instruction, Chelsea Barracks.
10th October.—Second visit to works of Vickers, Sons & Maxim, at Erith.
12th October.—Second visit to School of Musketry, Hythe.
28th October.—Visit to works of Mills Equipment Company, at Tottenham.
30th September to 29th October.—Officers individually paid visits to Territorial units, and underwent courses of instruction at Woolwich Arsenal, Small Arms Factory, Enfield Lock, Aviation School, Aldershot; School of Military Engineering, Chatham; School of Signalling, Aldershot; and visited battlefields on the Continent.
30th October.—Embarked for Canada.

PART I.

BRITISH ARMY MANOEUVRES, 1912.

These manoeuvres took place in the Eastern Counties of England, north of London. The general idea, under which the operations were carried out, was that an Invading Army from Redland, whose imaginary frontier coincided with the eastern coastline, was advancing against London, the capital of the Home Territory (Blueland).

The positions of the troops on each successive day are shown on the attached outline sketches of the theatre of Operations.

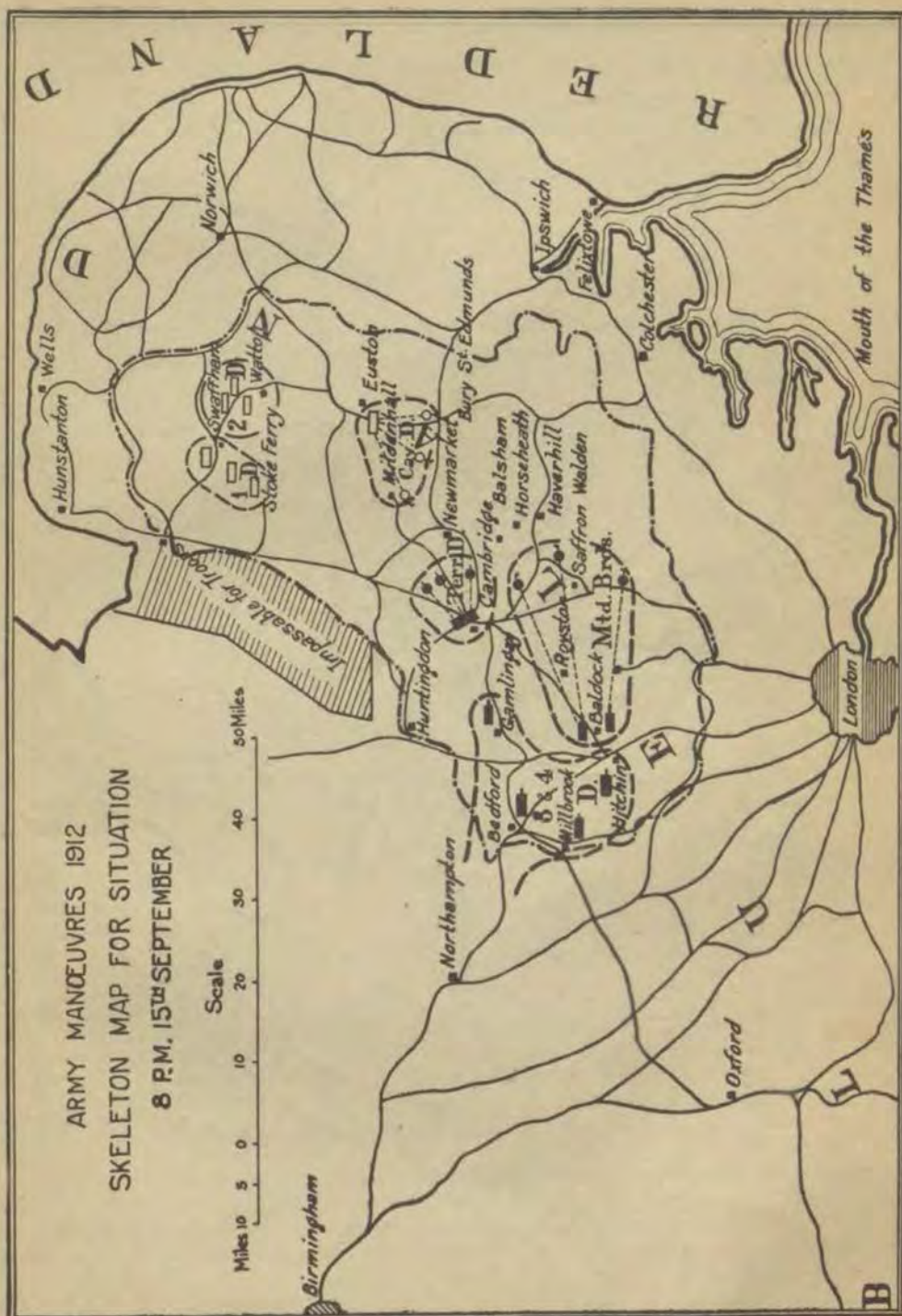
At the outbreak of hostilities the Red Army under Lieutenant General Sir Douglas Haig, consisting of one Cavalry Division and the 1st and 2nd Divisions from the Aldershot Command, about 25,000 strong, advanced across the frontier at Wells and Hunstanton, and commenced to move southwards to threaten London. The political and commercial centre of the Blue country being a decisive factor in the campaign, the Home Defence Forces were hurriedly mobilized and concentrated by rail to intercept the invader on his march towards the Capital. A detachment of all arms belonging to the Territorial Force, then undergoing training at the time, was given imperative orders to defend the important city of Cambridge at all costs in order to cover the detrainment of portions of the Home Army, which were mobilizing at all speed.

The task of defeating the invader was entrusted to Lieutenant General Sir James Grierson, who determined to assemble his Army, consisting of two Mounted Brigades and the 3rd and 4th Divisions from the Eastern and Southern Commands, southwest of Cambridge. The total force at General Grierson's disposal amounted to about 30,000 troops of all arms, including the Territorial Detachment at Cambridge. The superiority of the Cavalry Force of the invader necessitated caution, during the opening stages of the campaign, on the part of Colonel Briggs, who had at his disposal a Regular Cavalry Brigade and a Brigade of Yeomanry with some 1,500 cyclists.

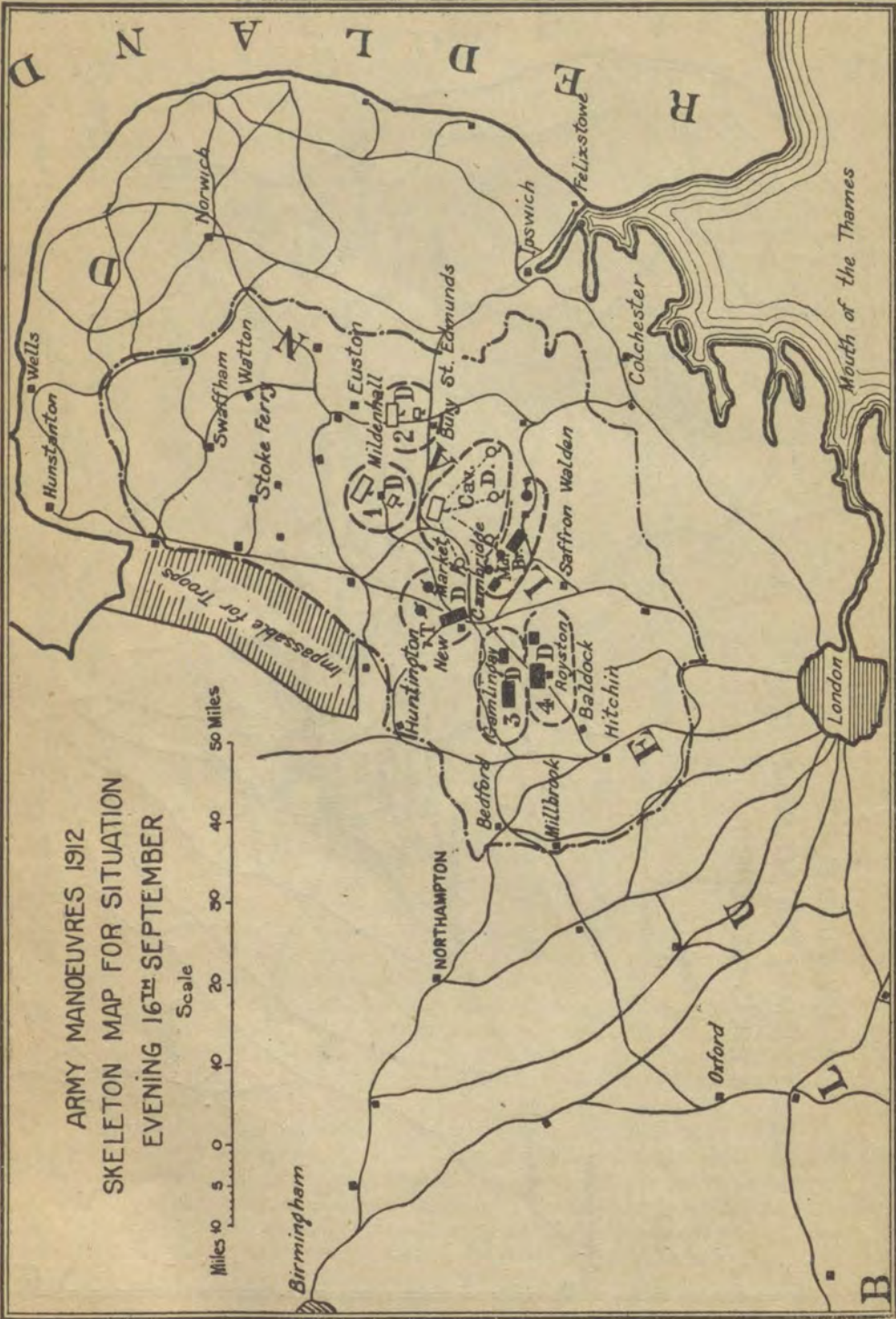
General Haig's Red Cavalry Division consisted of three Brigades of Regular Cavalry with 1,000 cyclists, under the command of Major-General Allenby, from whom energetic action and decisive results were expected with this fine force at his disposal. The employment of numerous cyclists in co-operation with the mounted troops was an innovation, the success of which was confirmed during the fighting which ensued during the short campaign.

During September 15 the Red Army made good progress in their march of invasion, and bivouacked for the following night with the first and 2nd Divisions in the area Stoke Ferry, Watton, Swaffham, covered by General Allenby's cavalry at Easton with outposts on the river Lark running through Bury St. Edmunds.

The rapid and successful concentration by rail of General Grierson's Main Body was the outstanding feature of this day in the defender's lines. Without any appreciable delays a succession of troop trains poured into the railway stations at Bedford, Gamlingay, Hitchin and Millbrook, discharging troops of all arms and administrative units, who at once set themselves in motion towards the concentration bivouacs allotted to them. So successful was this railway concentration that the whole of the defending army was ready to advance against their opponents on the morning of September 16, but General Grierson was obliged to hold back his eager troops until information regarding the position of the invading army could be gathered from reports sent in by his cavalry brigades and by the air-craft.

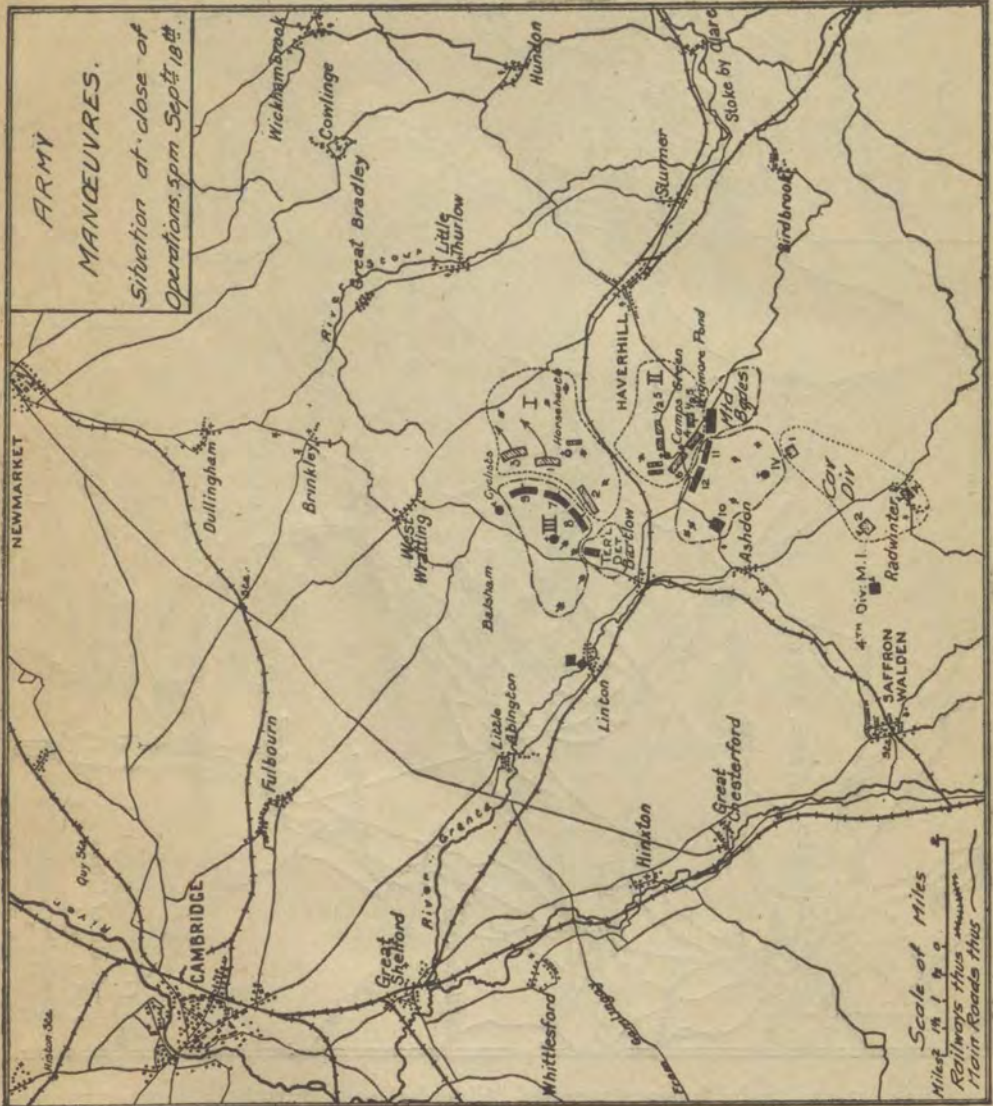


During September 16 cavalry skirmishes were frequent, as the opposing mounted troops obtained touch near Horse Heath and Balsham: the firm front presented



by Colonel Brigg's horsemen in a strong defensive line prevented, however, any serious engagement until the bulk of the invading cavalry was within striking dis-

The night of September 16-17 passed quietly; the wearied and soaked troops on outpost duty were withdrawn to their respective mounted units, which were early on the move, the duty of protecting the Red Columns in rear having been handed over to the useful cyclist battalions. General Allenby pushed forward towards Little Abington with his Cavalry Division at an early hour; the arrival at Dullingham of a mixed Brigade of all arms, detached from the 1st Division, increased the striking power of the force at his disposal, but the supporting artillery



and infantry were too distant from his horsemen to be utilized that morning in his advance. After desultory fighting all day with small bodies of cyclists, reinforced during the afternoon by the arrival of the 3rd Division of General Grierson's Army, a gallant charge was made *en masse* by the whole of General Allenby's Cavalry Division across several fields separated by hedges which were cleared in great style; unfortunately it proved to be a blow in the air, as the only adversaries encountered were a few cyclists holding advanced positions. Disappointed in the re-

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sults of the great charge and being beyond the reach of support of his infantry and guns at Brinkley, General Allenby broke off the fight, and moved across the front of the opposing line of outposts to Great Bradley without being molested. The result of his operations that day was that the arrival of the 3rd Division of the Home Army in the vicinity of Little Abington had been recorded.

Meanwhile General Haig with the Main Body of the Red force advanced southwards to the neighbourhood of Cowlinge, the advanced guards of his two columns engaging in a running fight with the energetic Blue Mounted Brigades, by means of which Colonel Briggs was able to transmit to his own Commander accurate information of the dispositions of the Main Columns of the invader.

The march of the 4th Division of General Grierson's force from their bivouacs near Royston and Saffron Walden commenced at 3 a.m. that day, so as to reach its destination before the ubiquitous biplane could record its movements. Special instructions were issued to the troops of this division to take cover on the approach of any air-craft; on the alarm being sounded by whistle, officers and men dived for the nearest cover and 'lay low' until the humming machine had passed out of range. No report of the position of this division reached General Haig during the day, although his aviators maintained stoutly that reports of the arrival of the 4th Division at Saffron Walden were submitted.

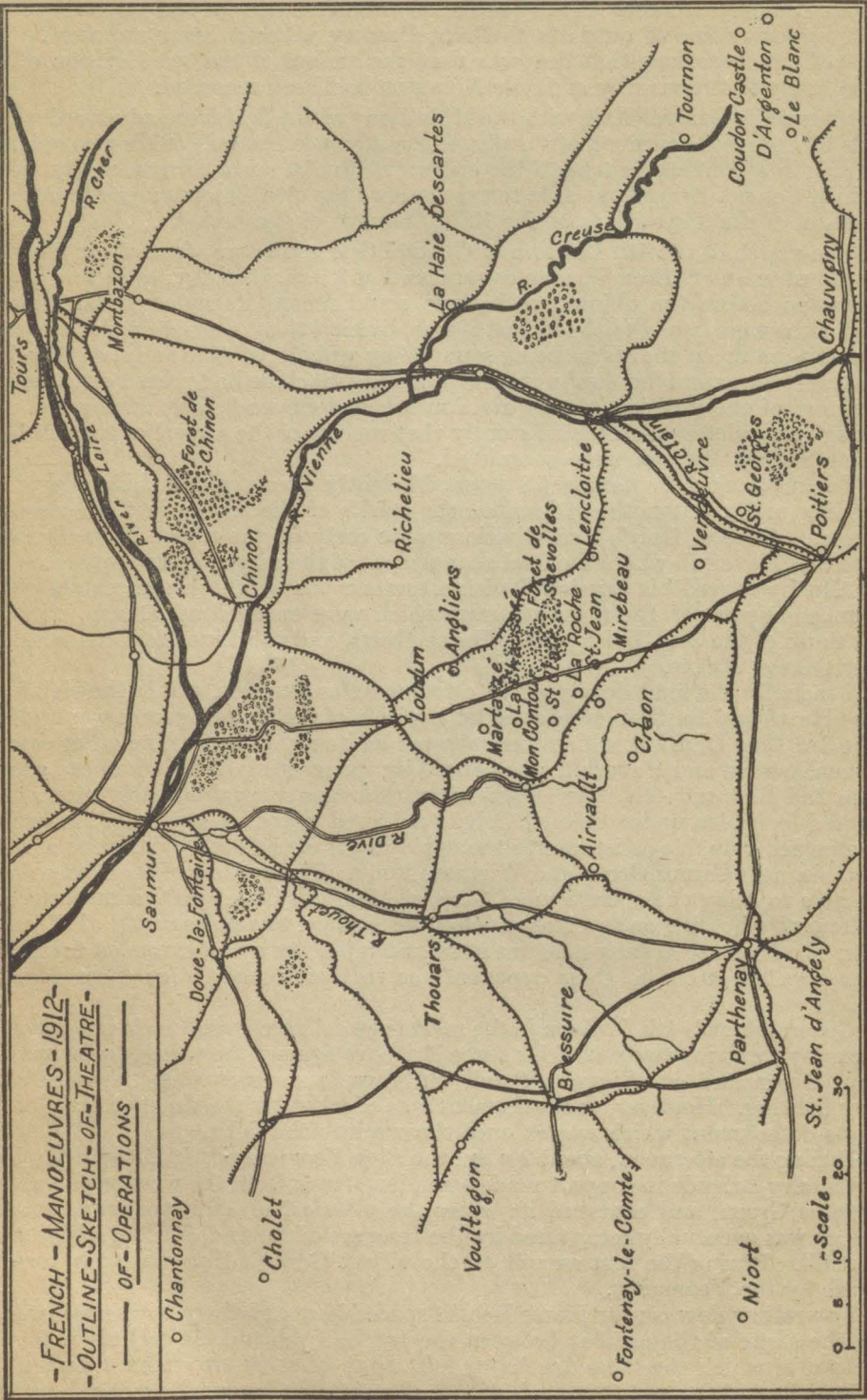
The morning of September 18 dawned brightly after the drenching dew of the preceding night, but nothing daunted the spirits of the troops in their cheerless bivouacs. General Haig's Red Divisions were early on the march towards Horse Heath and Haverhill where the final engagement of the campaign took place. General Allenby moved his cavalry Division towards the south on the arrival of the Advanced Guards of the main columns which were engaged at 11 a.m. with the right flank of the 3rd Division near Horse Heath and the Blue Mounted Brigades under Colonel Briggs.

Gradually the fight developed into two main encounters, one in the vicinity of Horse Heath and Bartlow, where the 1st Division of the invading force was opposed to the 3rd Blue Division, which concentrated on its right flank. The other combat between Ashdon and Haverhill commenced by the meeting of the advanced guards of the 2nd Red and 4th Blue Divisions on their march against each other. The Mounted Brigades under Colonel Briggs rendered a good account of themselves and afforded valuable assistance to the deployment of the 4th Division for a series of attacks near Camps Green and Wigmore Pond. The cyclists of the Home Army were able to delay the operations of General Allenby's Cavalry Division for nearly two hours by holding on to a strong defensive locality, two miles south of Wigmore Pond; the bold use of their machine guns and rapid fire by an extended firing line, well concealed, deceived their opponents as to their strength for a considerable time.

General Snow's 4th Division in the meantime delivered a succession of energetic attacks by throwing two out of his three Brigades against the woods to the west of Camps Green and on Wigmore Pond, but these were eventually repulsed after heavy fighting. However, the retirement was checked by the timely arrival of the cyclists detachment which was at once thrown into the fight.

During the afternoon, about 2 p.m., the Blue Yeomanry Brigade with the Regular Cavalry Brigade in support made a sudden attack from the west on the village of Camps Green, and captured it: after the village had changed hands several times, it was eventually recaptured by the reserves of the 2nd (Red) Division from Haverhill. During the first assault on the village General Haig narrowly escaped capture by the Yeomanry.

The rolling downs near Horse Heath, spaced here and there with small woods, were the scene of the combat between the 1st Red and 3rd Blue Divisions. The direction in which the fight developed left a gap of some two miles between the two Divisions of General Grierson's Army, of which his opponent made use to push



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in one of his Brigades to the village of Bartlow. It was not till late in the afternoon that the dangerous gap in the line of battle of the Home Army was filled in by the Territorial Detachment hastily summoned from Cambridge. As the afternoon passed long lines of infantry in successive waves swept across the open fields, supported by the fire of numerous batteries; the opposing lines surged backwards and forwards as reinforcements arrived, till about 5 p.m. the opposing forces were intermingled in inextricable confusion.

No official decision was announced regarding the probable result of the battle, but general opinion seemed to favour the fortunes of the Home Army under General Sir James Grierson.

A full report on the Army manœuvres, 1912, is being prepared by the War Office, and will be issued officially to Canada shortly for the information of all interested in the details of these manœuvres.

FRENCH ARMY MANŒUVRES, 1912.

The manœuvres of the French Army were held south of the Loire, in Touraine, and in Poitou, in the neighbourhood of Loudun, from the 11th to the 13th, and from the 15th to the 17th September.

They were of particular interest, partly on account of the extensive scale on which they were carried out and of the large forces that were engaged, approximating 110,000 men, 20,000 horses, 500 guns, 54 aeroplanes and 4 dirigibles, and partly because the Generals commanding each side were given full liberty of action, special care being taken that no premature publication of information to the prejudice of either party should be made by the press, but that all situations and conditions should be ascertained by the normal medium of military reconnaissance.

The general idea given out by the Directing Staff, Head Quarters at Loudun, was as follows:—"During the first days of September a Blue Western side has assembled to the west of the line Chantonay, Fontenay-Le-Compte, Niort, St. Jean d'Angely. Other elements have been formed in Vendée, north of Cholet, and in Anjou, in the region of Laval. To operate against these forces, a Red Side is assembled on the upper Creuse, above d'Argenton. Other Red groups are forming on the lower Cher, to the east of Tours."

This situation practically restricted the theatre of active operations during the first period of the manœuvres within the polygon bounded by Saumur, Bressuire, Parthenay, Chauvigny and Tours, an open and generally level country, very fertile and rich and naturally lending itself to great deployments. The large number of good routes and roads, and of rivers and railways crossing it in every direction, rendered communications and transport rather easy, and allowed of free movements of troops; whereas the forests with which it is dotted afforded security from view and facilitated surprises.

The western Blue Army, commanded by General Galliéni, was composed of the 1st Cavalry Division, the 10th and 11th Army Corps and some Army Heavy Artillery. The eastern Red Army, under General Marion, was made up of the 7th Cavalry Division, the 9th Army Corps and a Provisional Army Corps composed of the 9th Infantry Division and of a Colonial Infantry Division. The 54th Division of reservists which was encamped at Ruchard was held by the Directing Staff for the second period of the manœuvres, together with other special troops.

The Western Army was first deployed on the line Saumur, Doue-la-Fontaine and Bressuire, on the left bank of the Vienne, with headquarters at Cholet and a detachment of the army camping on both banks of the Loire. Another detachment was about sixty kilometres lower down, in the neighbourhood of Bressuire, the Division of Cavalry being well in rear near Saumur. The task of the Blue Commander appears to have been to concentrate at once these disseminated forces and march on the enemy somewhere on the line Chauvigny-Tours, to then overthrow and destroy him.

The first position of the Eastern Army was the line Chauvigny, La Haie-Descartes and Montbazou, on the right bank of the Vienne, with headquarters at Leblanc. It was scattered in different places, one Army Corps lying between the rivers the Clain and the Vienne, near Poitiers; another being on the Creuse near La Haie-Descartes and Cavalry operating near the forest of Chinon. The efforts of the Red General tended to join these dispersed detachments with lightning rapidity and profiting by their slight geographical advantage to prevent the concentration of the opposing forces and to defeat them in bulk if unable to do so in detail.

Operations commenced on the morning of September 11. The first day was employed by both Commanders in trying to effect the concentration of their own forces, in which both were successful, and in making for the region south of Loudun, between Moncontour and Mirebeau, with the result that on the evening of that day the front of the Western Army instead of occupying about sixty miles as it did the

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previous day was reduced to about fifteen miles. And that was also the then approximate distance between the advanced bodies of the two armies.

The Blue Force assembled for the night in the region Thouars (10th Corps), Airvault (11th Corps), and Moncontour (1st Cavalry Division), facing the gap Moncontour-Mirebeau.

The Red Army had reached St. Georges and Vendevre (9th Corps), the forest of Scevolles (Provisional Corps), and Richelieu (7th Cavalry Division), also facing the gap Moncontour-Mirebeau, and had succeeded in reducing its morning frontage of 120 kilometers to about 40.

Marching was resumed very early on the morning of the 12th. And all that day appears to have been spent by both sides in feeling the enemy and manœuvring for battle positions.

The Red Commander advanced the 9th Corps from Vendevre on the plateau between and near Mirebeau and Lencloître. The Provisional Corps penetrated the forest of Scevolles and occupied its western outskirt, to clear it later and occupy a position in front of it. The 7th Cavalry Division rode from Richelieu to Loudun and appeared to hold the gap between that place and the Scevolles woods.

The Blue General moved the 10th Corps to Moncontour, which it occupied, and later towards Mirebeau, the 11th Corps also advancing on its right. The 1st Cavalry Division reconnoitred the different outlets of the forests of Scevolles, but seeing they were occupied in force by the Colonial troops of the Provisional Corps, later assembled near the village of Laroche, south of the forest, nearly in contact with the enemy.

The different reconnaissances made during the day brought about a number of local engagements, some of which were quite important, as at Martaizé, which was attacked vigorously by the 20th Division (10th Army Corps), and at the village of Angliers, which was taken by the Alpine Forces of the Provisional Corps. The 1st Cavalry Division, while moving from the woods of St. Clair and Lachaussée to St. Jean de Sauves, came into contact with the infantry forces of the Provisional Corps; but while making dispositions to engage them appeared to have been ordered in the direction of Mirebeau, its strategic role being practically over.

The overlapping of the British Army Manœuvres which necessitated the prompt return of the Honourable the Minister of Militia and the Canadian officers accompanying him to England caused the latter to leave the French manœuvres before the termination of the operations of the first period and before the general engagement which took place on the morning of September 13, and which was especially hot at Vatré, on the plateau of Martaizé, between the 10th and the Provisional Army Corps; and at Craon, where the southern opposing forces met. The latter engagement culminated in the sensational capture by the Blue Cavalry of the Red Commander with his staff and one of his corps Commanders and Staff, and of six batteries of Army Artillery and a number of aeroplanes and apparatus of the wireless telegraph—which put an end to that period of the manœuvres.

From what has been seen during the operations, some impressions have been formed, subsequently strengthened by fuller reports, and among them the following may be specially pointed out:—

1. The normal working of the French Army showed training, discipline and organization.

2. Their marching and march arrangements seemed of the best. Everywhere there appeared to be alertness, interest and intelligence.

3. The French soldier, although not like the British Guardsman in size, is of good physique, especially so in the cavalry, and he has endurance and lots of good spirits, which do not appear to fail him even after the longest and most tiresome march.

4. The French officer, as a rule, is learned and keen; he is a professional, at home in his work.

5. The relations between officers and men seemed very good.

6. French troops are well armed, especially the Artillery, which has a gun that gives amazing rapidity of fire.

7. The French cavalry men are full of initiative, rapidity and dash, and they are good horsemasters. But although dismounted action was employed by the Cavalry on occasions to check the advance of hostile Infantry, it is possible that this arm has clung more closely than the others to the tradition of the past. They appeared at places to move in close formation under Infantry fire at effective ranges. They have an urgent need of being supplied with a new horse artillery gun, lighter and easier to handle than that which they possess at present. This problem is now meeting the attention of the French Minister of War.

8. The Infantry deployment against Cavalry was in fairly dense firing lines and supports. Cover was made use of where available, but Infantry did not appear afraid of open ground when covered by Artillery. Lines were thicker than in the British manœuvres, owing probably to greater strength with an equivalent frontage.

9. French troops have as yet no general service uniform and consequently their clothing would appear too conspicuous and distinctive for modern conditions.

10. The Manœuvres of 1912 were remarkable in that they constituted an excellent test of the technical capacities of the officers, the different staffs having solved with great credit to themselves formidable problems of concentration, transport and mobilization. They also tried the physical capacities of the men, a number of Corps having marched on an average over 40 kilometres a day. Their force of resistance and the wonderful endurance of the French Infantryman have been the admiration of the foreign officers. On a strength of 2,800 men, the 47th Regiment of Infantry, which is reported as having marched an average of 50 kilometres a day during six days, had only 20 casualties, all of which were due to accident or illness.

11. Reference should be made to the splendid work of the aerial scouts and mechanical transport, as two of the distinctive features of the manœuvres.

A.—MECHANICAL TRANSPORT.

The organization of the mechanical transport for the manœuvres took in:—

1. One Light Automobile Company, of a tonnage sufficient to carry one day's ration for a Cavalry Division of 2,500 men and 3,000 horses.

2. One Heavy Automobile Company, to carry one day's ration for an Army Corps of 20,500 men and 3,000 horses.

3. One Automobile Section of Reserve Park, to ensure repairs and replacements of vehicles for the two foregoing units and eventually repairs to touring cars and the motor trucks used for the meat revictualling of the Western Army. The mechanical transport is reported as having given highly satisfactory results and as having carried out in a most conclusive manner the undertaking of revictualling the troops with fresh or half frozen meat.

B.—AERIAL SCOUTING.

The organization of aerial scouting was excellent. Systematic aerial reconnaissance has become an established part of the routine of the army, carried out as a matter of course. The most reliable information came in greater part from the aviators. The organization included dirigibles and aeroplanes:

1. Dirigibles.—One for each army, with a reserve of two:

Red Army.—The 'Adjutant Reau,' stationed near Coudon castle, between the Creuse and the road from Tournon to Leblanc. Crew, 11 men.

Blue Army.—The 'Depuy de Lome,' stationed at Voultegon. Crew, 10 men.

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The work of the dirigibles was found slow as compared with that of the aeroplanes.

2. Aeroplanes.—Fifty-four aeroplanes were used in the manœuvres, six of which were specially detailed to the Red Artillery, the balance being equally divided between the Red and Blue armies. They were formed into squadronnettes of six each, under the command of a captain, and comprised as nearly as possible machines of the same type. With the exception of one mixed squadronnette, they were either numbered I, II, III, IV, and V, or lettered A and B, the numbered ones being two-seated aeroplanes of the same type, the lettered ones one-seated monoplanes of the same type, whereas the mixed squadronnette included three-seated machines of different types. They were allotted to the rival forces as follows:—

Blue Army.—Squadronnette I.—6 two-seated Henri Farman.

“ II.—6 two-seated Henri Farman.

“ III.—6 two-seated Blériot.

“ A.—6 one-seated monoplanes: 3 Borel and 3 Blériot.

Red Army.—Squadronnette IV.—6 two-seated Déperdussin.

“ V.—6 two-seated Maurice Farman.

“ B.—6 one-seated Hanriot.

Mixed squadronnette.—2 two-seated Déperdussin; 2 three-seated Bréguet; 2 three-seated Nieuport.

These aeroplanes instead of being treated as neutral as they had been in preceding manœuvres, were organized as fighting units of each army, and instead of moving probably 15 kilometers from the Headquarters of the Directing Staff as done previously, were now prepared to make reconnoitring rounds of 200 or 300 kilometres from the point where they happened to be. The Blue ones with their motor trucks and cars were first concentrated at Voultegon, the Red being assembled at Tournon-Saint-Pierre and a reserve established on the banks of the Loire, between Tours and Saumur.

To ensure revictualling and repairs, each squadronnette commander disposed of:

1. Six light motor cars, one to follow each aeroplane to its camping ground and to carry the material necessary for small repairs of first necessity. They usually carried the machinists, and could tow the aeroplane when necessary.
2. Three heavier motor trucks, one per two aeroplanes, to carry the heavier spare parts, such as motors, tubes, &c.
3. One motor workshop. This was an interesting new thing. About 10 yards long, the wagon was constructed so as to open on both sides and thus allow of easy work. The 18-power motor which was used for the traction of the vehicle, also moved a dynamo which lighted the workshop and set going the machinery and tools installed in it: strap saw, lathe, borer. The vehicle also contained all the tools necessary for wood-work, one forge, vices, &c.
4. One automobile for personal use.
5. One motor cycle.

Thus organized, the squadronnette was quite independent. It could work by itself, leave on a sudden, settle anywhere, follow the troops, camp near them, was attached to no park, needed no shed, could maintain and protect itself and obtain shelter through its own resources.

During the first period of the manœuvres six aeroplanes were disabled and four were taken prisoners, leaving still thirty-eight ready for the subsequent phase of the campaign. Those taken prisoners were disqualified for twenty-four hours. The fact that six of the disabled machines were replaced by six reserve aeroplanes from Paris shows that in an emergency reserve machines can be summoned from a long distance.

12. The French officers the Canadians met, gave them a kindly welcome and treated them most courteously. They made them feel that the *entente cordiale* had created strong bonds of amity and friendship.

PART II.

MISCELLANEOUS INFORMATION ON BRITISH DIVISIONAL MANŒUVRES, ARMAMENT, TRAINING AND AUXILIARY SERVICES.

THE CAVALRY.

During the Cavalry manœuvres north of Windsor preceding the inter-divisional manœuvres, the Southern force of three brigades under General Allenby operated against a skeleton White force. General Allenby's division was armed with the short rifle, sword and lance. The operations commenced with swimming the horses across the Thames River at several points above Windsor. The river at the time was nearly 100 yards wide, with a fairly strong current, being in flood with the heavy rains. The saddlery was sent across in boats. The method of crossing the horses was to attach them by their halters to an endless picket rope extending across the river and back again. Parties of men on either shore "walked away" with the slack at the word of command, and the horses, tied at intervals of 10 or 12 feet along the rope, were partly dragged and partly swam across the river. All that is necessary to ensure success is a good "take-off" and a good landing on either shore. The brigades crossed without accident.

During the ensuing operations lasting about a week, officers and men maintained the same energy and alertness as though on active service. It was difficult country to scout, owing to the numerous lanes and high hedges, and gave little scope for the exercise of the cavalry spirit in the minor engagements that marked the operations, dismounted action with rifles being the rule.

During inter-divisional manœuvres only Divisional Cavalry and a few cyclists were present, consequently both Commanders had difficulty in carrying out tactical reconnaissances of the hostile force. By means of air-craft the general situation was fairly well known to each Commander, but not the local situation when tactical contact was made. In the absence of definite information in enclosed country neither Commander appeared inclined to pursue energetic measures against his opponent.

It was noticeable during all the manœuvres that few opportunities presented themselves for mounted action by the cavalry in large bodies. No doubt the nature of the country had a good deal to do with the prevalent employment of cavalry in dismounted work; but it would seem that this arm in large bodies would have to watch its opportunities for mounted action when the terrain is suitable.

ARTILLERY.

The employment of mobile artillery as demonstrated at the manœuvres left little to be suggested in the way of improvement of the system of training in Canada. For firing and manœuvre the Canadian artillery has at Petawawa a training area not surpassed in the world either for extent or suitability. It is therefore to be expected that the Canadian artillery should be fairly well trained in manœuvre, long and medium range fire and the selecting of positions. With us comparatively little training or ammunition is devoted to the practice of "close support" and decisive ranges. This is to some extent due to the fact that hitherto there have been few opportunities for combined training at Petawawa, and the further fact that having been trained in the more difficult phases of producing fire effect, battery commanders need comparatively little additional practice to ensure results at decisive ranges.

During the inter-divisional, as well as the army manœuvres, Canadian artilleryists would have been struck with the extent to which batteries and brigades went into action in the open at practically all ranges.

Where cover was available, either from fire or view, it was almost invariably

taken advantage of by the gunners of both forces. But the fact apparently has to be recognized that where large bodies of troops are engaged there will be not, under ordinary conditions, be nearly enough covered positions for the proportionate number of guns. Consequently the peremptory necessities of getting the guns into the fight, to give the infantry the support they are entitled to expect, render it imperative that many batteries and brigades will have to deploy in the open not only for "close support" but at the medium ranges.

In other words, to be of use guns have to get into action; if there are not enough covered positions to go round, as is most likely to be the case, then the guns will have to take to the open.

In the final phase of the battle on the last day of the Army manœuvres at least half the guns were in the open, otherwise they could not have taken part in the fight. Perhaps the moral is that when large forces are engaged even under the conditions of a modern battlefield, the targets offered are sure to be so tempting as to justify considerable freedom of exposure on the part of the artillery in order to take advantage of them.

The Canadian system of training closely follows that of the British and is quite up-to-date. There are few changes to be noted. The advent of the aeroplanes forces upon artillery commanders the additional desirability of over-head cover from view afforded by woods, either when halted or in action.

The new goniometric sight which has been placed on the latest types of field guns in the factories is supported by a triangular 3-inch steel stem, fitting into a heavy socket on the gun carriage, so as to ensure the necessary rigidity, as compared with the proposal to attach it to the shield by a bracket. The stem can be run up to the level of the top of the shield.

The gun manufacturing companies have some excellent types of automatic field guns with block-breech action, which, if the ammunition supply question could be successfully solved, would undoubtedly give a high rate of gun fire.

In addition to heavy mobile guns for enfilade purposes, there were in use at the manœuvres several batteries of heavy howitzers capable of throwing large projectiles to a considerable distance. The Blue Army placed one of these batteries on a hill north of Cambridge for the purpose of protecting its left flank from a turning movement, during a short but critical period in the preliminary operations.

Field Howitzers were pushed well forward under cover of woods during many of the engagements and came into action at close range.

The 60-pounder guns of the heavy artillery were able to find good positions during the main engagement on the last day of the army manœuvres, which enabled them to bring cross-fire to bear against different portions of the hostile lines of artillery and infantry. During the preliminary operations these heavy guns marched in rear of the troops of their own division.

It was rather significant that the field artillery only put three guns and three waggons per battery in the field during the manœuvres, owing to the low peace establishment of horses.

INFANTRY.

The march discipline of the Infantry was particularly noticeable, the columns were invariably well closed up, while the right half of the road was kept clear for the passage of traffic past the columns.

Deployments for attack were very varied according to the ground. There were usually several extended lines in order to obtain depth in the attack. Sometimes these lines were in echelon, sometimes in column if there was not sufficient frontage allotted to enable them to extend into echelon. Full use of cover was made where this was available, but if none was at hand it was not considered impossible to advance over open ground in extended order, provided that the advance was covered by artillery fire or infantry fire from neighbouring bodies of troops.

The principal lessons to be learnt by the Infantry of the Canadian Militia from

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these manœuvres are the vital necessity of march discipline, by means of which the infantry soldier can be brought into action with the minimum of fatigue and confusion; the necessity of practising deployments to come into action with the least delay in encounter combats, which must be frequent in enclosed country; the need of covering fire, either gun or rifle, in advancing over open ground in the attack; and lastly, the necessity of depth in formation so as to bring a sufficient number of rifles into the firing line before the assault can be carried out.

There is another phase of infantry work which is becoming increasingly important and which could be conveniently practised by our city regiments as well as the camping corps. This is night operations, consisting of night marches, night advances and night attacks. During the inter-divisional manœuvres the Canadian officers took part in one of these operations, consisting of a night advance by the 1st Division, followed by a deployment for attack at dawn. The Division moved out of its bivouac at 9.30 p.m. and marched nine miles to the place of rendezvous, where a halt was made in thick woods until the column was closed up, orders prepared and issued and the men rested. Shortly after midnight the column moved off, wheeled transport being kept in rear. An advance guard of one company preceded the column by about 100 yards until the outposts were reached, three miles to the front. After passing the outposts a Brigade was deployed along a front of a mile and a half, as nearly as could be judged in the darkness. The infantry lay down and waited until early dawn when the attack was launched. Such operations require a good deal of preliminary staff work, as well as practice on the part of the troops, in order to carry them out successfully. This training could be well carried out by our city regiments during the drill season in preparation to co-operate with the other arms when they go into camp under the new system inaugurated last year. Such practices could also be usefully combined with instruction in night outposts.

The Territorial Infantry during the army manœuvres were not allotted a very active role. For the defence of Cambridge they prepared a defensive position and threw out an outpost line. During the last day the detachment was ordered to Bartlow to join in the final engagement, but owing to the block of traffic on the road from Cambridge it was late in the afternoon before the Territorial Brigade was able to come into action: the attack was directed against a flank of the opposing troops, and succeeded in doubling them back at right angles to their original line of attack. Being a selected Brigade of Infantry from the Territorial force, both officers and men appeared to realize that they were on trial alongside the regular troops, and they created a good impression among the Canadian officers from the way they carried out the task entrusted to them.

CO-OPERATION BETWEEN ARMS.

Between Artillery and Infantry close communication was kept by telephone, visual signalling, mounted and cyclist orderlies. The senior artillery officer usually accompanied the commander under whom he was serving directly.

With small forces told off for a particular task the artillery were usually placed under the Infantry Brigadier. With larger forces, such as a Division, the O.C., R.A., retained control of the guns in the Division, and allotted tasks according to the infantry situation under instructions from the Divisional Commander.

The Cavalry Divisions worked invariably under the direct control of the Army Commander, and rarely co-operated closely with the troops in the Divisions. On the other hand it was the exception for the troops in the Division to support the work done by the Cavalry, even though as in one instance, a mixed brigade was placed at the disposal of the Cavalry Commander. The cyclists, however, were able on several occasions to co-operate with the cavalry.

It would appear that during the preliminary phases the cavalry by their mobility outstrip the supporting infantry and field artillery, and cannot delay action until their arrival when touch with the enemy is gained. It is only in the case of a reverse that the cavalry would use the slow moving support as a rallying point.

During the main engagement the employment of a mass of cavalry wide on one flank appeared to lead only to indecisive results.

CYCLISTS.

About 2,500 cyclists were detailed from Territorial Cyclist Battalions, under the Cavalry Commanders on either side. There being numerous good cycling roads, both main roads and country lanes, all over the manœuvre area, the cyclist units were able to give very effective support to the cavalry by their mobility and fire action. They relieved the cavalry of a large portion of harassing outpost and patrol duties on the roads and were able on several occasions to influence the local situation by fire action.

The quickness with which they could come into action, the possibility of sending every rifle into the firing line, and their mobility on the roads clear of troops in front of the main columns were points which drew particular attention. On the other hand in case of being driven back there is the possibility of the cycles being captured, as it is impossible to move the machines once the cyclists have deployed. The necessity of march discipline to prevent undue opening out of a column of cyclists was apparent.

It has to be remembered, however, that numerous and good roads are a necessity for the effective employment of cyclists.

Motor cyclists were largely employed with success as messengers, principally for the directing staff, umpire staff, and for communication between the cavalry divisions and army headquarters; they were not employed on combatant duties, except for the transportation of machine guns. Motor cyclists were able to travel at a rate of at least 40 miles an hour.

MACHINE GUNS.

There is a marked increase of interest in machine guns, both as to their construction and tactical employment. All the larger Arm companies have perfected patterns, each of which is represented as embodying some essential improvement. The result is that the present weapons of this class exhibit a marked advance in simplicity of mechanism, fire effectiveness and facility of transportation. Some are fed by clips containing 25 or more cartridges, others still retain the belt feed. They are variously transported,—on pack-saddles, in limbered carts drawn by horse or hand, on their carriages attached to small limbers, or even on motor-cycles and on automobiles. The firing tripods have been much improved, so as to be rapidly adjustable for the sitting, kneeling or prone positions, and can also be reared against the reverse side of a trench or wall in order to fire over it.

At the Hythe School of Musketry interesting experiments are being made in brigading machine guns and handling them as a tactical unit somewhat on the lines of a battery of artillery. What may be termed the method of manœuvre and the fire discipline are modelled on the artillery.

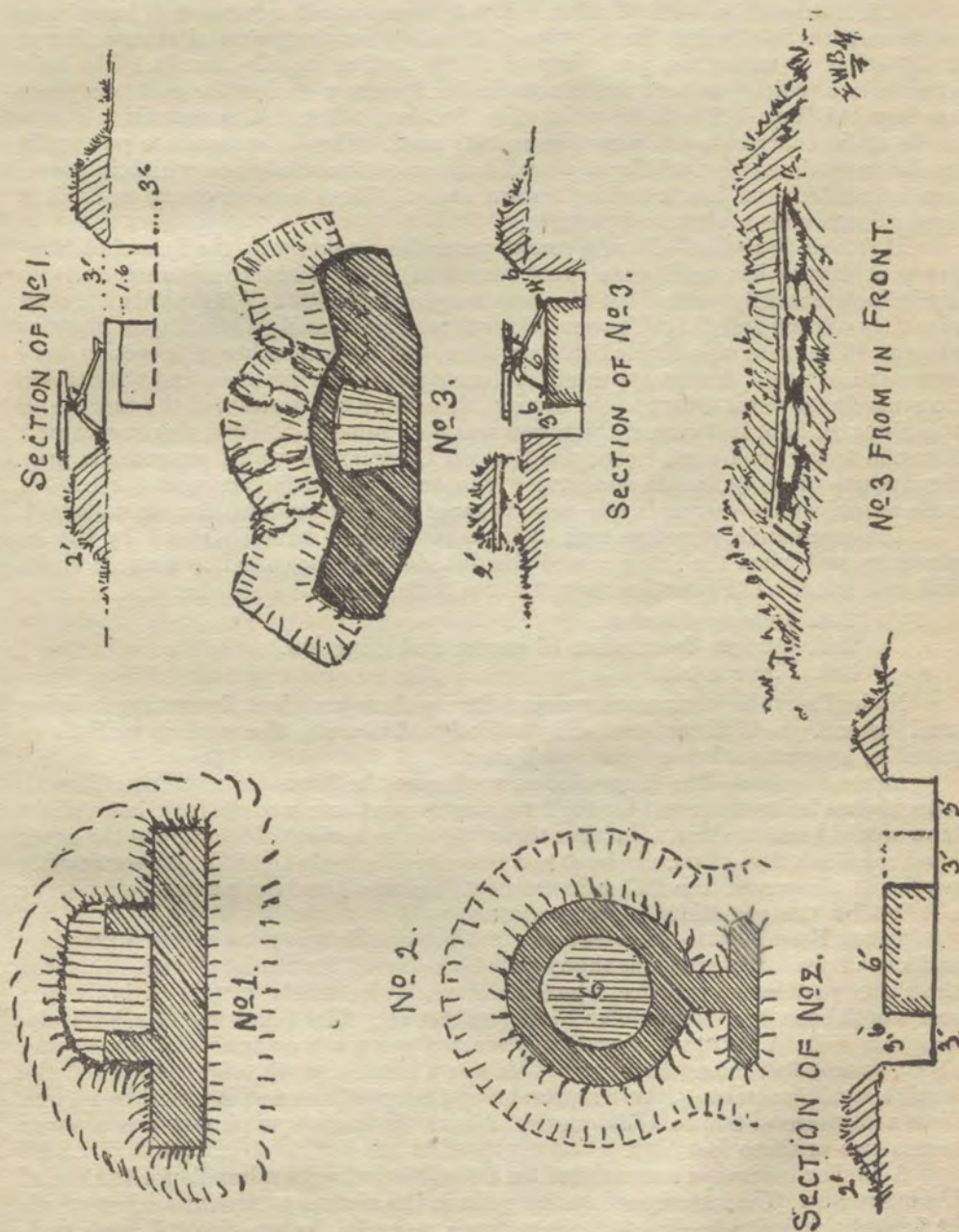
The unit now being experimented with consists of 8 guns. The guns are brought up under cover to a semi-crest position, where they are unpacked and placed on their tripods. The Officer Commanding makes his preliminary observation of the enemy's position, estimates the range and gives it out as an order to the group of guns. In giving the range the "ladder" method is issued, *i.e.*, each pair of guns is given an increasing distance, as 850, 950, 1,050, 1,150 yards. This has the double advantage of getting the most effective range and "searching" at the same time.

The guns being in readiness, the command 'In action' is given and three men lift each gun with its tripod and run up to the crest. As each gun is laid the non-com. holds up his hand and when all are ready, the signal is given to commence firing. In the same way the guns can "sweep" or be allotted sections of the target.

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This system could be used for the brigading of regimental machine guns; also, it would be worth considering, whether one or more such independent units under the immediate control of the infantry brigade commander could not be used with great advantage as a mobile reserve in addition to the regimental machine guns.

At Hythe there are also various models of hasty entrenchments for machine guns, as shown in the diagram:—



SMALL ARMS AND MUSKETRY.

New Service Rifle.—The new service rifle was inspected at Enfield. It has a calibre of .276, weighs 8 pounds 12 ounces to 9 pounds, has a barrel 26 inches long and a magazine which holds five rounds. Subsequently one of the party was permitted to strip and examine the parts of the rifle; but the details are at present of a confidential nature. It may, however, be mentioned that the rifling is an entirely new departure.

S.A. Ammunition.—At Woolwich it was learned that experiments have been made recently in altering the mixture of the alloy for the jacket of the small arm bullet so as to lessen the possibility of nickel fouling in rifle barrels. The only ammunition which has been manufactured for the army during the past two years has been the Mark VII with the pointed (or Spitzzen) bullet. All ammunition is now made up in chargers containing five rounds each. These chargers are put up in packets containing four, which are placed in cheap cotton bandoliers, which, in peace, can be refilled, and in war can be thrown away. These bandoliers are packed in boxes containing a thousand rounds.

Musketry Training.—During recent years the musketry at the School of Musketry at Hythe has undergone great improvements. Judging distance and fire discipline are mostly carried out at ranges varying from 800 to 1,500 yards. A class of eighty officers and N.C.O.'s were seen undergoing training according to the new system. The class was divided into sections, and each member of a section took command in turn. A man appeared at some point in the distance, and the Section Commander gave his orders to the section, describing the position of the target and the distance. For instance, if the target was near some distinctive object such as a Martello tower or a sand heap, the Section Commander would extend his arm, elevate one or more fingers and say: "Man one (2 or 3) fingers right (or left) of such an object at — yards — rounds rapid (or independent) fire (or volleys)".

The commands, direction and distance given were carefully noted by the instructors, and when the firing ceased the distance was measured by a range finder and corrected. The practice taught three things:—

- 1st. Judging distance.
- 2nd. Correct description of target and direction.
- 3rd. Fire control.

No bull's-eye targets were employed during these practices, figure targets being used instead. Everything seemed to be designed to make the work as realistic as possible, approximating service conditions.

Range Finders.—The range finders used were the Marindin and Barrs Stroud, a preference being expressed for the latter instrument owing to the fact that a slight blow would bend the Marindin, thus throwing the lenses out of focus. On the other hand the Barrs Stroud may be bent to a considerable angle and still give serviceable readings. However, the latter instrument has the disadvantage of being more affected by the variations in temperature.

Thirty Yard Target.—One feature of the instruction was particularly attractive, and a good deal of interest was shown in it by a class of Territorial officers. This was the thirty yard range practice, which could readily be widely introduced in Canada and would soon become popular when understood. The following is a brief description of it: A substantial wall was erected some ten or twelve feet high and about twenty-feet long. In front of this was a bank of earth, and in front of the earth a small landscape picture representing a country scene as it would be viewed from a distance of 800 to 1,500 yards. Above the landscape picture was a paper screen two or three feet high.

A similar landscape was painted on a small board with a handle for the use of the instructor. The instructor inserted a pin in the picture at a point against which he wished the fire to be directed. Sometimes, to make the practice still more real-

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istic a paper drawing of a gun of a unit, the size it would appear to the eye at the distance named, was pinned on the landscape for a target.

When the preliminary arrangements were completed, the section commander gave his orders in the following manner: 'Haystack corner of field on the right towards Battery behind river.—Rapid (or other) fire, — rounds at (say) 1,400 yards.' The sights were raised to the elevation given and the firing commenced.

When the fire ceased, the squad closed up to the target and the instructor measured above the target named to a point on the paper screen by a scale graduate to the distance—say, two feet above for 1,400 yards. He then drew a line horizontally across the paper screen indicating the height at which the shot should have struck.

A wire screen five inches square was then laid on the paper screen over the spot which should have been the point of impact, and all shots within this square counted five points. All shots outside of the square were penalized by a deduction of two points from the total.

Interest was much stimulated not only in the shooting but by the possibility that one or more members of the squad might mistake the proper target and thereby greatly damage the score of their comrades. Each member of the squad as he assumed command tried to beat previous scores and in this way the interest in the practice was sustained throughout. It seemed to be a great improvement on miniature range firing at conventional targets.

TRANSPORT AND SUPPLY.

Mechanical transport was more extensively used than at any former manoeuvres, and the numerous excellent roads in nearly all parts of the manoeuvre area contributed to the success of the experiment. As during the period when the roads in Canada are in approximately as good condition, mechanical transport could be used to the same extent, a brief description of the method of supplying a division on the march may be of interest.

Each division had sixteen steam motor trucks, each with a capacity of five tons, allotted to it. There was also one reserve truck and one repair truck. Taking the case of one division as an example: Two trains of five and nine cars respectively arrived at railhead at 5.30 a.m. and noon with food and forage. The motor transport loaded these supplies and carried them forward to replenish the divisional train the same evening. The latter, composed of horse transport, distributed to the units. If railhead advanced with each day's march the motor transport would wait at the advanced base of the previous day. If railhead did not advance, presumably another corps of mechanical transport would be sent out from railhead to connect with the first sent forward, though this, of course, was not necessary during the manoeuvres. On some days the troops marched 25 to 30 miles and but little difficulty was experienced in keeping them supplied, except when bivouacs were established after dusk, when the divisional trains could not always locate the units. On service it is usual for troops of a division to always bivouac relatively in the same order, as far as possible, at every halt, so this difficulty is avoided.

The waggons used were chiefly of the ordinary G. S. type, though much of the hired transport consisted of covered vans such as are used for moving furniture, which were well suited for the prevailing weather.

Small limbered waggons are used with the first line transport. They are simply two small waggon bodies joined by a perch, which enables them to travel better over rough ground. As against this it is difficult to keep the loads well balanced, and there is a waste of carrying capacity in proportion to horse-power used.

The units are accompanied on the march by water carts fitted with filters. The best type of filter has not yet been decided upon, but the remedy of such defects as exist is under consideration.

The use of travelling cookers was general during the operations and the results were excellent. During the inter-divisional manoeuvres the weather was cold and wet, and the troops frequently bivouacked at night, after a long march, under the most trying conditions. While the physique and spirit of the troops were excellent and they endured real hardships with admirable cheerfulness, it is doubtful if the sick list would have been kept normal had it not been for the hot rations furnished under all conditions of weather from these portable cookers. They may be briefly described as sheet-iron cauldrons with a fire-box underneath, the whole mounted on a pair of wheels with axles and shafts for transportation by one horse. In some cases the cookers were on a more elaborate pattern so as to cook meat as well as soup. But a hot bowl of soup with bread or ration biscuits at the noon halt or at the end of a march, was a much appreciated comfort to the soldiers. The fuel used was good and the cookers were in operation during the march, so that a hot meal for the men was available as soon as a halt occurred. The portable cookers did away with that dismal wait after a long march when cold and tired troops have to suffer in chill discomfort until the camp kitchens are established and rations prepared in the ordinary way.

The success attending the general adoption of these cookers during the manoeuvres has resulted in special reports on them being called for by the War Office with a view to the preparation of a new pattern embodying the most advantageous features of the various designs. When completed a copy of the design and specifications will be furnished the Department of Militia and Defence.

The portable cookers are comparatively inexpensive and would form a most useful portion of the equipment of every Canadian corps. Not only would they be available on the march or for advance parties going into camp, but on tactical field days or when bivouacking each unit could provide a hot meal for the men. This equipment would be particularly useful in large training grounds such as Petawawa, where the the corps frequently have to proceed to distant areas for firing and manoeuvre. The units could remain at the distant areas all day without returning to camp at midday, thus saving time and horseflesh.

AIR CRAFT.

The Royal Flying Corps is recruited from all branches of the service and officers are seconded from their own corps for service with it. They wear a distinctive uniform. This corps was represented at both Inter-Divisional and Army Manoeuvres.

A squadron was detailed to either side for the Army Manoeuvres as well as two dirigible balloons. One aeroplane only was allotted to each division during the Divisional Manoeuvres. (Normally, a squadron contains 12 aeroplanes.)

Unfortunately during the mobilization of the air craft, and their flights from Salisbury and Aldershot to the points of concentration near Cambridge, two fatal accidents occurred. Two monoplanes collapsed in the air and their pilots and observers, four officers, were killed. This had the effect of bringing out an order from the War Office preventing the use of the monoplane during manoeuvres. Notwithstanding the reduction in the number of machines available for manoeuvres, the bi-planes and dirigible balloons continued to carry out their duties, and the result was considered beyond expectations. Even where only one machine was available per division, the result was most satisfactory.

The first aeroplane order issued was of particular interest on account of the form adopted for this new branch. It was issued by the Red Commander on September 16. After a preliminary injunction to keep in touch with the cavalry, the order read: If possible the following flight will be made: Cambridge, Gallinay, Bigglesworth, &c., naming the different points to be visited. Next the air craft was instructed to obtain information (1) as to the position and direction of the march of the enemy's columns; (2) as to any large bodies of troops in the vicinity of rail-

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way stations; (3) as to the location of camps of the enemy; (4) as to whether there were any defensive positions being prepared on the Gog-Magog Hills, and the bridge between Linton-Saffron Walden, or the high ground above Chilly Hill, &c. The landing places were named up to a certain hour.

It was the general opinion that the aeroplanes employed on strategical reconnaissance obtained as much information in three hours as would have taken a cavalry division three days to procure. (It was estimated that nearly 1,600 miles was covered by these air scouts in one day.) During the earlier phases of a campaign it is considered that aerial reconnaissance will have still greater effect when the opposing forces are approaching each other from greater distances than was the case in these manoeuvres. The air craft did not carry arms and no attempt was made to practice dropping dummy bombs or any other means of offence.

Kites were used during the cavalry manoeuvres owing to the high winds preventing the ascent of bi-planes or dirigibles during some periods of the operations.

Guns were turned on the air craft upon several occasions and would probably have placed these machines in danger. The orders to the latter were to fly at a minimum height of 2,000 feet, otherwise they were ruled out of action. If they had to alight in the enemy's country they were treated as neutral. In this connection it may be pointed out that according to the experience of Italian aviators in Tripoli, 2,000 feet is altogether too close for safety from rifle fire. An instance is recorded where a machine was badly shot-up at that distance and the observing officer wounded.

On the night of the 18th September, the Blue dirigible 'Gamma' made a successful reconnaissance of the enemy's position. She ascended from Kneesworth, Cambridgeshire, and made a long flight over the area of operations, locating the camps and bivouacs of both forces. As she passed she dropped 'bombs' in the shape of fireballs. She was quite invisible, and her presence could only be detected by the hum of her engines.

The difficulty of distinguishing one's own aerial scouts from those of the enemy was clearly brought out in these manoeuvres. The G.O.C. 'Red' Force is quoted as saying:—

'The aeroplanes and dirigibles brought comfort and balm to his soul, but when the aircraft came and circled round his lunch table, as one did one day, and dropped a message on it, he really did not know whether it was one of his own aircraft with a message, or a hostile machine bent on his destruction.'

A remedy for this uncertainty must be found. It is not probable that nations will adopt machines of distinctive types, but some secret signal code must be adopted, or other solutions of this difficulty found.

Aeroplanes used during the manoeuvres were as follows:

RED ARMY.

Two 100 h.p. Breguets. (Captain Raleigh.)

One Maurice Farman Biplane, 70 h.p. Renault. (Major Ross.)

One B.E. 4, Aircraft Factory Biplane, 70 h.p. Gnome. (Lieut. Gordon Bell.)

One B.E. 1, Aircraft Factory Biplane, 60 h.p. Renault. (Lieut. Longcroft.)

One B.E. 5, Aircraft Factory Biplane, 60 h.p. Renault. (Lieut. Mackworth.)

One Maurice Farman, 70 h.p. Renault. (Lieut. Longmore.)

BLUE ARMY.

One B.E. 3, Aircraft Factory Biplane, 70 h.p. Gnome. (Lieut. Fox.)

One short Tractor Biplane, 100 h.p. Gnome. (Commander Samson, R. N.)

One B.E. 2, Aircraft Factory Biplane, 70 h.p. Renault. (Lieut. de Havilland.)

One Aircraft Factory Biplane. (Lieut. Malone.)

Several other machines would have taken part but for the order banning the use of monoplanes.

SIGNAL SERVICES.

During the Army Manœuvres the wireless stations with the Blue Force were made up of Territorials and did good work. They apparently had not a proper system of code, and their messages were in some instances caught by the Red Force. Their operators were well qualified.

The wireless waggon sets for communication between general headquarters and cavalry divisional headquarters were used at long ranges, showing the necessity for a powerful outfit. Several of these waggon sets were carried on motor vehicles during manœuvres. This is quite possible where the roads are macadamized, but would not suit on roads of a sandy nature.

The light Marconi sets designed for pack transport were invariably carried in light spring waggons in the same way as in Canada. The design of the pack loads, however, and their efficiency generally were highly spoken of.

The cable waggon equipment has not changed materially and appears suitable for work on English roads. For work on heavy roads or rough country, parts of the waggon require strengthening. Six horses are required on heavy or hilly roads, though four are usually sufficient in England.

The whole signal service is organized under one head, the Director of Army Signals, who is attached to army headquarters, taking his orders from the general staff. In this service are included the personnel not only for telegraph and telephone work, but also for visual signalling, motor cycles, bicycles and despatch riders. Regiments of Cavalry brigades of artillery and infantry battalions, retain control of their own signal services, but are assisted by the signal units as regards their training.

In addition to the above mentioned signal services, a neutral service was organized for communication between the Chief Umpire and his staff of umpires. This was under a special Officer Commanding. They utilized the local lines of the country as far as possible, and special cable lines.

It is understood that this service was a success.

SENIOR OFFICERS' COURSE.

At the School of Military Engineering.

The object of the Senior Officers' Course at the School of Military Engineering, Chatham, is to encourage co-operation between the Engineers and other branches of the service; also to instruct Senior officers of all arms in the employment of engineering. The course consists of lectures, practical schemes of attack and defence on the ground, besides affording an opportunity to view and have explained to them various descriptions of field work, bridges, demolitions, redoubts, siege works, &c. A number of the lectures delivered at this course will be printed and distributed in Canada as well as in England for general information.

The military training of engineer units consists of two branches: 1. Technical training in their engineering duties in the field. 2. Training with other branches of the service in the field operations. Besides these two courses of military training engineers are employed as much as possible at their own trades so that the men will not be handicapped on their return to civil life.

At present one of the principal duties of engineer units on these manœuvres appears to be the organization of a water supply for all the troops in their own division, in co-operation with the medical services.

It was pointed out, however, during these lectures, that unless any technical difficulties arise, it is considered the duty of the Divisional troops themselves to provide their own water supply in the field. Field Companies do not carry a sufficient number of pumps on service to furnish water supply to their Division. On man-

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œuvres, Field Companies often leave behind some important stores to enable them to carry an additional number of pumps. It was, therefore, thought that manœuvres are teaching the troops to rely too much upon the Sappers for their supply of water.

In the demolitions which were carried out, gun-cotton was the chief explosive used, but a new fuze has taken the place of the old time and instantaneous fuzes. It is a combined time and instantaneous. If lit with a match, it burns as a time fuze, but when detonated with a commercial cap, its effect is instantaneous.

Several attempts were made to destroy wire entanglements with the use of gun-cotton. Even when using a greater quantity than could be spared on active service, no appreciable result was obtained. It has been found that ordinary wire netting laid over wire entanglements, as a means of crossing, is more effective than an attempt at demolition.

HARNESS AND SADDLERY.

The artillery harness used is the breast-collar pattern similar to our own. Commanding Officers are in favour of mobilization harness and the issue harness being exchanged periodically so that the former may receive a certain amount of wear and not be issued new in event of mobilization. A belief exists that new harness deteriorates in store; also that horses should not be put to hard work in new harness until it has been "worked up" and softened.

A return is being made to the universal saddle in a slightly modified form. The seat is the same, but instead of the blanket being folded under the saddle and held in place by the numnah strapped to the arch and cantle, the side boards are sheathed in numnah felt and rest on the blanket which is folded on the horse's back.

In the case of most of the pack saddles seen, the load is carried too high on the horse's back, the object aimed at being apparently to make the load as narrow as possible so as to take up a minimum of space on the road, rather than to facilitate the climbing powers of the animal over rough country. Men having experience with pack trains in our Canadian Rockies should be able to devise a much superior pattern of pack saddle.

In connection with the new universal saddle, it was noted that at Woolwich a method of storage is adopted that might be employed with advantage by our mounted units, especially where armoury accommodation is limited. The saddles, with blankets removed, are "nested" and suspended in rows from the ceiling in a compact mass. The remaining parts of the harness being suspended from the walls, a very considerable saving of space is effected.

TERRITORIAL TRAINING AND INSTRUCTION.

The training instruction of officers and N.C.O.'s of the Territorial Force is carried out at the School of Instruction at Chelsea Barracks for the London Division, and at the different regimental depots at centres throughout the Kingdom, where instructional facilities are available.

The Chelsea School of Instruction, which was visited, is under the command of an officer of the Brigade of Guards, assisted by an adjutant and instructors furnished by the same Brigade. The course of instruction is for a period of one month and consists of lectures and practical instruction in squad, company and battalion drill, at the close of which an examination is held and certificates awarded. The school is open as well to officers from the Overseas Dominion. The system of instruction appeared to be thorough and complete. The possession, by the school, of a model of a section of country facilitated the instruction in and study of minor tactics. While the courses of instruction were graded for the different ranks, facilities were afforded to an officer to qualify, not only for the command of a com-

pany, but also for field rank if desired. Based upon the experience of the General Officer Commanding the 1st London Division of the Territorial Force, concurred in by the commandant of the school, the best results so far as the qualification and general keenness and knowledge of officers were concerned, were to encourage the officer joining the Territorial Force to take a course of instruction at the outset of his career, lasting a period of at least three months, thus affording him a thorough grounding and begetting intelligent interest in his profession, which rendered any subsequent qualification for higher rank easy of acquirement.

It was ascertained that while as a general rule qualification for promotion before an officer could obtain a step in rank was advisable, in cases where a promotion might, with advantage to the service be made, prior qualification for each rank was not insisted on, but the officer so promoted was given the substantive increased rank, leaving him to qualify for such subsequent to his promotion, but within a reasonable time, each case being judged upon its merits.

There are two methods of obtaining instruction in musketry which qualify Territorial officers for promotion, and render them capable of giving instruction in musketry to their N.C.O.'s and men. These methods are:—

1. Attendance at School of Musketry, Hythe.
2. Attendance at local classes organized under divisional arrangements, and which are held at suitable and convenient centres.

These local classes were this year held at Edinburgh, Liverpool, Hampstead (for London), Chelsea and Hythe, and were carried on during the months of (a) April, (b) September-October, in each case lasting for three weeks.

The hours of instruction are arranged to suit the convenience of those attending and the work is therefore carried on late in the afternoon and in the evenings.

The staff of the school consisted of one officer and six staff sergeants from the School of Musketry, Hythe, and the class consisted of 42 officers, divided into six squads, of seven each.

In conducting these classes arrangements are made for a drill hall, to be placed at the disposal of the Officer Commanding the course, and any necessary appliances not locally available are supplied from the Hythe School.

The work in the drill hall is carried on with the object of showing Territorial officers how they can make the best use of the appliances, &c., at their disposal, and at the same time suggestions are made as to how drill halls can be improved for instructional purposes, and when necessary, what additional appliances should be provided.

On Saturdays work is carried out early in the afternoon, if possible away from the hall, so as to show some outdoor work in the way of judging distance and visual training, as well as indication, description and recognition of targets and aiming marks on the ground. This is done after instruction is given in the drill, by means of landscape targets. The instruction is very necessary to enable fire commanders correctly and rapidly to describe succinctly and clearly the targets or objects aimed at, so that the R. and F. may readily locate and distinguish them.

Firing is seldom carried out on the service range, because the idea is to show how much can be done in drill halls, and besides the time occupied in the course is too short for much outdoor work.

Before presenting themselves for a course of instruction, in order that full benefits may be derived from the course, officers are required to show that they have a working knowledge of essential parts of the Musketry Regulations.

The courses are regarded only as elementary, the objects being to qualify officers to train their companies in the drill halls and also teach them to train N.C.O.'s in their more elementary duties as fire unit commanders. If full advantage is taken of the knowledge of those officers who so qualify, and a good instruction system is arranged in regiments, much can be done to qualify N.C.O.'s and men in the essentials of musketry. The qualification of the officer should ensure

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that he is competent, and has a good working knowledge of the subject, as will enable him, without difficulty, to teach and instruct his men.

By attendance at these courses, including the lectures and practical work, instruction is given in—

1. Aiming, firing and trigger pressing.
2. Mechanism, stripping and assembling of the rifle, and care of arms.
3. Visual training, judging distances and standard tests.
4. Fire discipline. Elementary direction and control of fire. Judging distance.
5. The use of (a) miniature cartridge range; (b) the 25 or 30-yard range.
6. Landscape targets, including the study of fire discipline and control.
7. Use of various appliances.
8. Elementary theory, paras. 146-175 of the Musketry Regulations.

Certain officers who have qualified at a local course, who can spare the time, and are desirous of further studying the subject, may be selected to attend the School of Musketry, Hythe, for a short advanced course. At this advanced course, these officers have fire field practices and also receive practical instruction in the conduct of range practices.

Officers thus qualified are eligible for appointment as Regimental Musketry Instructors, and in the training of junior officers and N.O.C.'s in the duties they would have to carry out on service.