



IMPERIAL MUNITIONS BOARD

OTTAWA



*Re photographs*

IN REPLYING PLEASE REFER

TO

January fourteen  
Nineteen eighteen.



*Winslow Personal*

E. S. Winslow, Esq.,  
Manager, Munitions Department,  
Canadian Ingersoll-Rand Co.,  
Sherbrooke, Que.

Dear Sir,-

You have, no doubt, read of the very sudden death of Dr. Wilfred Campbell, who was acting as Historian for this Board. If you will refer to Dr. Campbell's letter to you of November 28th 1917, and be kind enough to favour us with the statements and photographs requested therein, we shall greatly appreciate it. In the statement of your plant we should be very pleased if you would include such information as the following:

- (a) Number of Employees, Men and Women, with any special notes regarding welfare work started.
- (b) The largest output in any one day.

Trusting you will be able to favour us with this very interesting information at an early date,

Yours very truly,

*Arthur Graham*

Secretary,  
HISTORIAN'S OFFICE.

FG/RD.



Largest output 8" April 26/17 - 1710

" " 18Pdt Scrap Jan 10/17 - 7773

Largest days output  
of both 8" + Scrap

1382  
6781  
8163

} April 17

High Explosive not in operation  
at this time

— 0 —

Largest output 18Pdt H.E.  
Sept 14/17 - 3174

8" finished + Scrapnel practically  
finished at this time

eyd

Jan/17 2,155

April/17 2275

Sept/17 1306



\* Extra  
Good letter  
no of shells  
made

Winslow Personal.

18th January 1918.

Imperial Munitions Board,  
Historian's Office,  
OTTAWA, Ont.

Dear Sirs:-

Replying to your favour of January 11th. We did read with much regret of the sudden death of Dr. Wilfred Campbell.

With reference to the questions you ask as to the number of employees, and largest output, we give you the following information:-

Largest output 8" How. Shells	April 26/17.....	1710 Shells
" " 18 Pr Shrapnel	Jan 10/17.....	7773 "
" day's output 8" and Shrapnel combined		
April 17th 8" How.....		1382 "
Shrapnel.....		6781 "

In addition to these two main contracts we have worked on 18-Pr H.E.

Largest day's output on September 14/17.....3174  
at that time the 8-inch and shrapnel contracts were practically finished.

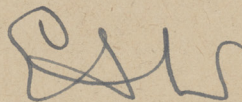
At the present time we have orders from the Board calling for deliveries of 3,000 and 2,000 6-inch shells from our two plants respectively. In addition we are making



marine engines for the Board. We have an order calling for 35,000 75 M/M shells per week placed by the American Government through the Board and also a large number of Winch engines destined for the Emergency Fleet Corporation.

I will endeavour to secure for you some photographs of the plant and officials, but these are not available at the present moment.

Yours truly,



ESW/EP.

Manager Munitions Department.



**COPY TO** 

FROM

**CANADIAN INGERSOLL-RAND CO.,** Winslow Personal  
LIMITED

SHERBROOKE QUE.

*Report of Shells*

6" General.

Feb. 1, 1918.

Imperial Munitions Board,  
Mr. W. A. Petersen,  
Director 6" Shell Production,  
Ottawa, Ont.

Re 6" Shell Contract.

Dear Sirs:-

We attach sheet showing our 6" Final acceptances to date. Our shipping schedule calls for:

December 5,000: January 25,000: February 47,000.

The report, therefore, shows that we are about two week's behind our schedule. This was due to the "Smooth Bore" matter which you will remember was adjusted satisfactorily to us, and then later to Ghost Line trouble-one whole week's production of Dominion Iron and Steel Co. Shells (1,500 pcs) being rejected, and then further trouble being found with some Algoma Forgings. We then started on Cast Steel heats and have made moderately good progress.

We trust that you will go on record with Contract Department on our behalf in connection with Ghost Line difficulties.

Yours truly,

CANADIAN INGERSOLL-RAND COMPANY Limited.

*E. S. W.*  
*EW*

Manager Munitions Department.

ESW/RJJ



CANADIAN INGERSOLL-RAND CO.,  
LIMITED

FILE NO. Personal.

Nelson, B. C. Jan. 27, 1918.  
BRANCH OFFICE

TO Mr. N. M. Campbell, General Sales Manager, Montreal.

SUBJECT WESTERN TERRITORY:

DEAR SIR: Mr. Campbell:-

Your letter of the 17th was received just

before I left for Silverton the other morning and as I have been pretty busy since then and full of mine grit and tired when not actually working I hav'nt had time to do much letter writing. I had to go up to the Echo mine to try and get the BCRW-430 outfit started off right and try and overcome their prejudices up there.

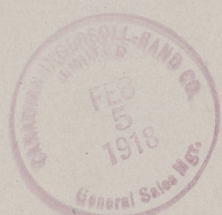
It was a good thing that I did, as I had to practically set up the outfit, *drill the first few holes, and* get in and help the blacksmith fix up the shanks of the

steels, which again we could'nt have done if I had'nt taken up lard oil and prus. potash. Everything seemed favorable when I came out of the mine at eleven oclock Friday night and I hope the outfit will prove a success. There was a days delay in getting this up the mountain, as the outfit, as well as the writer, had to go up in a heavy snowstorm in the Standard aerial tramway, which is a mile and a half long, but which saved several miles in very heavy snow up the mountainside. One of the hooks of my bucket came loose when I was over a ravine a couple of hundred feet deep and if the other one had'nt held I probably would'nt be writing this. At any rate I got on my "digging" clothes in this case, as I did at the California, and other cases in the past, and did all I could here, as the Waugh agent in this territory never sleeps and I have got to meet conditions as they are presented to this

*Probably Porter Idaho mine*

*Might be interesting?*

*of crew  
and 8 Porter Idaho in outfit*







IMPERIAL MUNITIONS BOARD

OTTAWA

February 25th, 1918.

IN REPLYING PLEASE REFER

TO 6" Shell Production - 4452.

*Winslow*  
PERSONAL.

*Inspection?*

Mr. E. S. Winslow,  
Canadian Ingersoll-Rand Co., Ltd.,  
Sherbrooke, Que.

Dear Sir:-

Referring to your personal letter of the 23rd instant outlining the difficulties you are experiencing with the Inspection Department, I was speaking to Mr. Dalziel, who is Col. Ogilvie's assistant, and I asked him if he would not endeavour to go down to Sherbrooke and investigate conditions with a view of seeing what improvements he could make. I explained a few of the complaints that you are making, and while he did not promise he would do anything I think I would leave the matter for this week and see what steps he intends to take. I will send Mr. Whitehouse to Sherbrooke, probably, on Monday of next week as he is unable to go this week. He can spend a week or more with you and will assist you to the best of his ability towards effecting improvements if it is possible to do so.

I note your remarks regarding face of base plate. You state the Inspectors want these base plates absolutely straight or even concave. I think you should make a stand on this and call the Inspectors' attention to the blue print on which it is stated that base plates may have a camber not exceeding .002" to ensure contact all over. It is very important that this camber is left on the plate, and I do not think you will get a tight base plate unless the plates are machined with the camber. This evidently appears to be the greatest trouble you now have, and I think you would be justified in making a determined stand on that point.





IMPERIAL MUNITIONS BOARD

OTTAWA

IN REPLYING PLEASE REFER

TO .....

-2-

With reference to your remarks that you want a man to come and stay with you for 10 days, and that you do not want him to say anything or do anything, I would not consider that proper. If I send Mr. Whitehouse he will go thoroughly into the matter, and should he find anything that is wrong in your plant he will say so. Should there be anything regarding the inspection, he, of course, has no right to dictate to the Inspectors and he probably will not say anything to them but he will make a report to me on conditions as he actually finds them.

Yours truly,

IMPERIAL MUNITIONS BOARD,

WAP:S.

Director 6" Shell Production.



# THE JENCKES MACHINE COMPANY LIMITED

ENGINEERS AND MANUFACTURERS

GENERAL OFFICES  
AND WORKS  
SHERBROOKE, QUE.

WESTERN WORKS  
ST. CATHARINES, ONT.

HOISTING AND WINDING ENGINES, AIR COMPRESSORS.

ROCK DRILLS AND PNEUMATIC TOOLS, CRUSHERS,



STAMP MILLS AND ORE TREATING MACHINERY, CORLISS AND SLIDE

VALVE ENGINES, BOILERS, PLATE AND STRUCTURAL WORK

OFFICES AND WAREHOUSES  
MONTREAL  
COBALT  
SOUTH PORCUPINE  
TORONTO  
NELSON  
VANCOUVER

To E. W. Gilman Esq.  
General Manager  
Montreal

Sherbrooke, Que.  
CANADA.

28<sup>th</sup> February 1918

Dear Mr Gilman

In consideration for my obtaining the necessary order and otherwise assisting in putting through the plan to acquire the Jenckes property you advised Mr Doubleday that you had undertaken to stand the cost of a house for me here in Sherbrooke. The house which we had chosen was that belonging to Mr John McDonald on Victoria Street.

Having made the necessary sale of shells and <sup>my</sup> having also acquired the Jenckes property, I therefore instructed Col Fraser to proceed with the purchase of the house which he did. The purchase price was thirteen thousand five hundred dollars (\$13,500<sup>00</sup>). I have already paid and now hold a receipt for an advance payment of one thousand dollars (\$1000<sup>00</sup>). A further seven thousand five hundred dollars (\$7500<sup>00</sup>) becomes due on April 15<sup>th</sup> next which is the time I take possession. The balance, being five thousand dollars (\$5000<sup>00</sup>), is in the form of a 6% mortgage held by Mr J. S. Mitchell and has about a year more to run.

Before your holiday will you kindly make such arrangements as are necessary and advise me so that I may be able to meet the payments as they fall due.



# THE JENCKES MACHINE COMPANY LIMITED

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GENERAL OFFICES  
AND WORKS  
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HOISTING AND WINDING ENGINES, AIR COMPRESSORS,  
ROCK DRILLS AND PNEUMATIC TOOLS, CRUSHERS,



STAMP MILLS AND ORE TREATING MACHINERY, CORLISS AND SLIDE  
VALVE ENGINES, BOILERS, PLATE AND STRUCTURAL WORK

OFFICES AND WAREHOUSES  
MONTREAL  
COBALT  
SOUTH PORCUPINE  
TORONTO  
NELSON  
VANCOUVER

copy  
Sherbrooke, Que.  
CANADA.

It is my understanding that the gift of a house is not subject to income tax. I therefore hope the matter may be treated with this consideration in view. I shall be glad to submit the deed of sale for your inspection on your next visit.

I may say in connection with the shell sale that this consisted of an order of \$1,680,000<sup>00</sup> for the Jenckes plant and \$1,120,000<sup>00</sup> for the Rand plant. I do not know whether you might wish to divide the present account between the two plants or not.

Yours sincerely  
(signed) W. Winslow

(copy made  
25<sup>th</sup> Feb 1918)  
W. W.

1680  
1120  
2800



**COPY TO** 

FROM  
**CANADIAN INGERSOLL-RAND CO.,**  
LIMITED  
SHERBROOKE QUE.

Mr. Campbell,  
General Sales Manager.  
Montreal, Que.

Winnipeg Personal.

May 3rd, 1918.

William Carter,  
C/o. Canadian Ingersoll--Rand Co., Limited,

Dear Mr. Carter:

As you know Mr. Winslow and I have been carrying the executive end of our munition contracts for over three years now. During this period we have had shop help from Mr. Cotter of the Sidney office, and Mr. Arthur Williams of the Vancouver office. We now have three very large munition contracts, two up at the Rand shop and one down at the Jenckes plant. I am taking charge of the munition work out here. Mr. Winslow is Manager of the Munitions Department, and Robert Newton is General Superintendent Munitions, and we three are having jurisdiction over the three contracts, with divisional Superintendents in charge of each contract.

We three feel that we want some executive help and I suggested to Mr. Campbell on one or two occasions that it seemed to me business was now dull in Winnipeg that you could be brought to help us here in Sherbrooke, and you should be able to come here fresh as a daisy and with like energy to meet with what we all had three years ago. Mr. Campbell was willing that your office be left in charge of your present assistant, and that the General Sales Department could handle any special deals which might require special attention, and I therefore, wired you yesterday to know if you felt like leaving your family for a little while helping us on this proposition.

*E. W. Gilman*



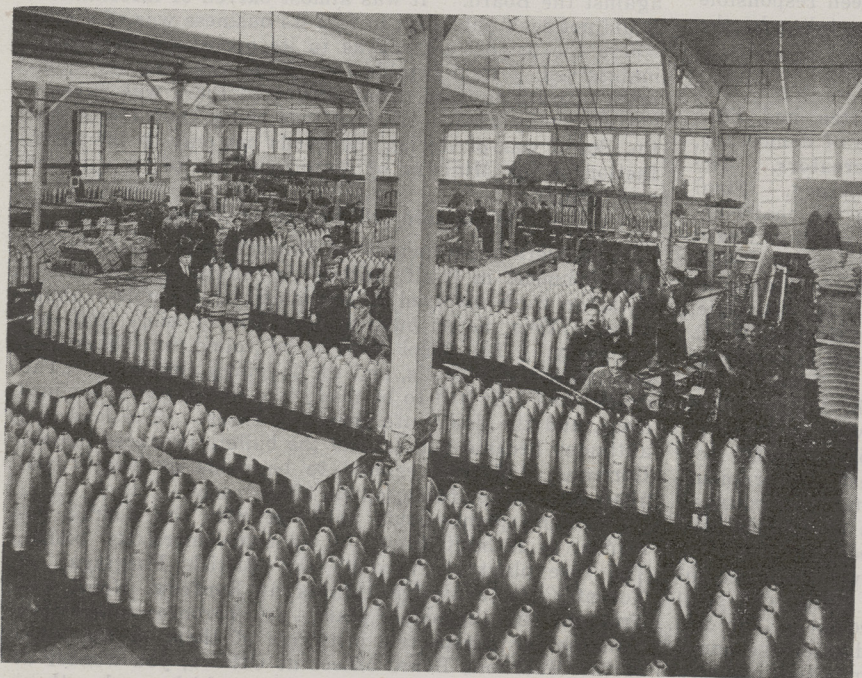
*Munitions 1918.*

# CANADIAN MACHINERY

AND  
MANUFACTURING NEWS

Volume XX. No. 26.

December 26, 1918



## CANADA MADE A REMARKABLE RECORD IN PRODUCTION OF MUNITIONS

Canadians Undertook  
Work of Mastering New  
Industry and Succeeded

By T. M. FRASER, Ottawa Representative MacLean Papers

OTTAWA, December 26.—Among the romances of commerce which the war has produced in Canada, there is none more striking than the organization and work of the Imperial Munitions Board, which, in the three years of its operation, furnished to the Ministry of Munitions and other departments of the British Government, Canadian manufactures to the value of one billion, one hundred million dollars. This enormous commerce was developed literally from the ground up, because, prior to the beginning of this war, there was no munitions industry in Canada, or no thought that such an industry was capable of any serious development. Mr. Churchill might well say, as he took the earliest opportunity to do in a handsome acknowledgment of the work of the Munitions Board on the cessation of hostilities, that "Canada's remarkable output of munitions has played a large part in the munitioning of the British armies, and will remain a testimony to the high value of the work of the Board in this great struggle"; a tribute in which Premier Lloyd George coupled the staff of the Board, the Canadian manufacturers, and the great army of workers who so splendidly assisted.

As a matter of record, it might be noted that the first shells made in Canada and shipped from a Canadian plant, outside of a few at the Quebec arsenal, were made at the C.P.R. shops at Montreal, and this was mainly due to the keen personal interest taken in the matter by Lord

Shaughnessy. The British army tried them and pronounced them good. Then small orders began to come in from Great Britain, and the manufacturers got interested. Gradually orders came for the larger shells. No order, great or small, was ever turned down.

The second plant to take up the work was the Ingersoll-Rand Drill Company at Sherbrooke. Although no Canadian manufacturer had ever previously made a shell, or a cartridge case, or a fuse, they were willing to try. In December, 1914, there were two firms shipping; January, 1915, 8 firms; April, 1915, 14, and in June, 1915, 36 firms, with an average weekly production of 77,000 shells. The maximum point in the industry was reached in June, 1917, when 53 firms were engaged in the work, with an average weekly production of 386,000 shells.

A few 13 and 15 pound shells were made at first, but serious production was early directed to the 18-pound shrapnel. In fact, while the industry was handled by the Shell Committee, which it was for the first fourteen months, it was mainly engaged in the production of 18-pounders and high-explosive. Cartridge cases and some other component parts were also produced in small quantities, but no complete rounds.

### Working Under Adverse Conditions

The Shell Committee had done good work. It broke the ground, and was instrumental in inducing Canadian

? I think the first were C.P.R. Co. -  
Can. Fairbanks  
nose



manufacturers to engage in the new industry, which many of them were loath to do. In the criticisms which were so freely made of both the Committee and the manufacturers, little thought was given to the conditions under which they were operating. To engage in the work meant practical abandonment of the plant and organization which they had built up, to engage in a work which was unknown to them, and to embark their capital in an industry, the life and death of which was uncertain. This was a time, it should be remembered, when men were predicting an early end to the war. Under such conditions no one would be likely to engage on what all admitted was a very necessary work except at a rate of profit higher than normal.

Criticism was not lacking. It was painful and frequent and free in public, press, Parliament, and even in the pulpit. The result was that the existing arrangement became unsatisfactory to all concerned. The Shell Committee went out of business after having been responsible for about 3,800,000 shells, and its place was taken by the Imperial Munitions Board.

#### Turned to a Real Autocracy

The organization of the Shell Committee had been democratic, and like many of the creations of democracy, it had failed to give satisfaction to its creators. The Imperial Munitions Board was a pure autocracy. Final authority and responsibility was vested in the chairman, Sir Joseph Flavelle, the other members of the Board being: Brigadier-General Sir Alexander Bertram, vice-chairman; R. H. Brand, representative of the Board at the Ministry of Munitions, London; Col. D. Carnegie, ordnance adviser; G. H. Dawson, Brigadier-General W. E. Edwards, R.A., director of inspection (Canada); F. Perry, financial member; J. A. Vaillancourt; E. R. Wood. Sir Charles Gordon was representative of the Ministry of Munitions in Washington. The Board was an integral part of the British Ministry of Munitions, directly responsible to the Minister, and the British Government was financially responsible for all its expenditure, although the Government and the banks of Canada advanced three-fifths of the total sum expended.

The Imperial Munitions Board took over the work in November, 1915, when the demand for shells was still small in comparison with what it soon became. The development of the systems of barrage and intensive bombardment created a new problem for the munition makers, creating a demand for shells never hitherto dreamed of as possible. Canada was asked for six, eight, and nine inch high-explosives, and also for the component parts to produce complete rounds, and the Ministry of Munitions seemed to have a considerable degree of confidence that it would get them. It was waking up to the possibilities of Canada as a source of supply, and the Canadian manufacturers were waking up to their own ability.

#### The Work of Organization

All this meant something very much more intricate and elaborate than any problems which the Board had hitherto encountered. It was seen that the work must be allocated among the forty or more firms which had by this time gone into munition making, and that provision must be made for controlling their supply of raw materials and machinery as well. The motto of the Board became: "From each one according to his ability; to each one according to his needs." This was good for both the Government and the manufacturers; it regulated supplies and stabilized prices both of raw material and of the finished product.

A purchasing department was organized to supply the manufacturers with their raw materials; a distribution department which directed the supply of the same to the best advantage, and a production department which had supervision of manufacture, and rendered expert advice and any other assistance required. There was also a labor department for the supply of help to the plants, and an inspection department whose work was of the most vital importance and assistance, not only to the Government, but to the manufacturers as well. The inspection

department had as many as eight thousand persons on its pay roll.

The organization of the Board was well-nigh perfect. It summoned to its assistance, in one capacity or another, the best brains and skill available, and it worked in the utmost harmony. It may be imagined that any organization having in its hands an expenditure of over a billion dollars early attracted the notice of the birds of prey. Graft, like death, loves a shining mark, but the men at the head of it were determined that the British taxpayer, who was paying a fair price for what he was buying, should receive full value for every cent of that billion dollars, and it was not long before the fact was fully understood that the Board was not a mark for anyone. After that it was left severely alone by all except legitimate business men, and they have always been glad to do business with it.

Newspapermen may, perhaps, have a slight grudge against the Board. It was almost barren of information. It did not seek publicity; in fact its business was of a kind where the utmost secrecy as to its operations had to be maintained. It is notable that in all the time its mommoth operations were being conducted there was never a "leak" of any kind. All that was being known was that the Board was producing the goods not only to the satisfaction of the Ministry of Munitions, but to its surprise and delight.

#### Went Into All Phases of Work

The mere manufacture of shrapnel shell was an accomplishment in itself, but it was slight in comparison with the work involved in furnishing the complete munitions. This meant buying steel, copper zinc, lead and antimony. The steel had to be rolled into bars, the bars forged into shells, and the forgings machined. The copper and zinc had to be made into brass, the brass into discs, and the discs into cartridge cases. The lead and antimony became bullets, and the bullets produced "good" Germans. Explosives had to be made or bought and filled into shells, fuses, or cartridge cases.

Existing plants could not cope with the Board's demands, so it built plants of its own—enormous plants. The fuse plant at Verdun; the British Forgings at Toronto; the explosives plants at Renfrew, Nobel and Trenton; the aeroplane plant at Toronto—when you examine the perspective drawings of them on the walls of the Munitions Board offices at Ottawa, you wonder at the energy and organizing ability which made these modern forges of Vulcan spring up overnight. If you were a German you would say: "An enemy hath done this thing, and you would have as much respect for the Canadians who were behind the man behind the guns as for those who aimed and fired them. Once, when Randolph Churchill tried to hold up a Government of which he was a member, he found his plans upset by reason of the fact, as he said, that he "forgot Goschen." One of the factors the Kaiser failed to take into account when he started to upset the world, was little one-horse Canada.

And this is not mere braggadocio, either. When Randolph Churchill's son cabled his congratulations the other day, he had in mind the fact that in the second half of 1917 Canada was producing 55 per cent. of the shrapnel, 42 per cent. of the 4.5, 27 per cent. of the 6 inch, 15 per cent. of the eight inch, and 16 per cent. of the 9.2 inch shells used by the British armies. Wilhelm remembered Canada then. In addition to the munitions for the British Government, the Board at different times was filling orders for the Italian, Russian, and Belgian Governments, and when the war was ended, was handling very large orders for the United States.

#### Conditions Better Than in States

One of the surprising features of the war has been the comparative failure of our neighbors in certain particulars wherein they have always been reputed to be notably strong, and the display of an unlooked for moral strength. The failure of the United States in the matter of munition and aeroplane production as compared with Canada's handling of the same problems, was as pronounced as



their superiority over us in the matter of solving the conscription problem, or the handling of the I. W. W. and other revolutionary malcontents. The dislocation of the ammunition and aeroplane programme with our neighbors appears to have been largely due to a lack of co-ordination of the manufacturing end, a problem which, as already mentioned, was solved here very early by the Board, when it organized its purchasing, distribution, and production departments, and itself took in hand the centralizing of the supply of raw materials. It is a very fine thing that two good neighbors should be able and willing to learn from each other and profit by each other's successes and failures, and this we have both done.

The activities of the Board were not confined to the production of war materials. They showed such a willingness to take on new problems and handle them successfully that the British Ministry of Shipping asked for aid, and at the end of 1916 they had begun placing orders for steel ships and reviving the wooden shipbuilding industry in Canada. They placed orders for 215,000 deadweight tons of steel ships in all, and undertook the construction of 140,000 tons of wooden steamships. The wooden shipbuilding industry, in which Canada was once a leader, had fallen so low that it was confined to the construction, mainly, of small coasting and fishing ships on the Atlantic and Pacific coasts. In Eastern Canada the Board arranged for the building or expansion of eight yards, and on the Pacific it took over two yards and constructed four more. The impetus thus given to the industry has led to a wonderful expansion on both coasts, and while wooden ships may never come back permanently, they have filled a great need, and will probably continue to do so for some time to come.

When aeroplanes and aeroplane spruce became a crying need of the Allies, this "Handy Man" of the British Government was again ready to step into the breach. They have managed all the business and construction side of the Royal Air Force in Canada, which, when peace came was producing air fighters at the rate of between three and four thousand a year, as well as large numbers of machines to fly and fight in. The Allies wanted spruce, which is the best wood for aeroplanes, and Canada had lots of it. The Board sent one of its experts, Major Austin Taylor, to the Pacific Coast to assist the lumber producers in securing it, and it was not long before this problem was satisfactorily settled.

**Here Are Some Huge Totals**

We can't get away from figures where the Munitions Board is concerned. It has created a new standard for Canada in the way of big figures. It put us on the map as a billion dollar manufacturing concern. Here are some of the Board's records, approximately:

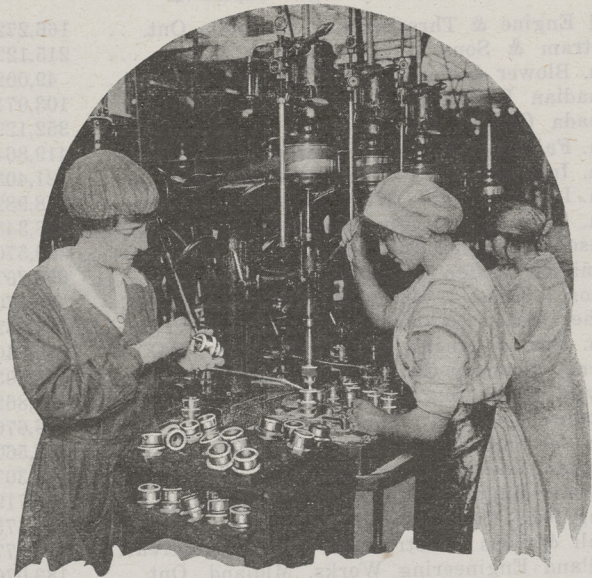
The following figures give a summary of Canada's accomplishments, during the last four years, in the production of munitions of war, referring especially to the British contracts:—

Total number of shells produced ..... 65,000,000  
 Approximate number of components represented by above, for which Imperial Munitions Board has let separate contracts ..... 800,000,000

In addition to the 60,000,000 of shells produced, there have been a great number of components exported, such as forgings, cartridge cases, primers, copper bands, time and graze fuses, exploder containers, friction tubes, etc. In the production of this war material steel has been used to the amount of, tons ..... 1,800,000

(About 75% of this steel is Canadian product).  
 Quantity of high-grade explosives and propellants produced, lbs. .... 100,000,000

Value of orders placed by the British Government through the Imperial Munitions Board ..... \$1,200,000,000



Amount furnished by Imperial Government for above purpose from sources outside of Canada .....	\$400,000,000
Amount loaned to the Imperial Government by the Government of Canada and by the Banks in Canada for purposes of the Imperial Munitions Board .....	\$600,000,000
Approximate number of contractors in Canada amongst whom contracts for munitions have been distributed .....	1,000
Number of workers engaged in war contracts .....	200,000-300,000
Approximate number of persons employed in handling stores in transportation and other collateral organizations .....	50,000
Approximate total number of workers ....	350,000

**The List of British Contracts**

CANADIAN MACHINERY was able to secure, through the courtesy of the Imperial Munitions Board at Ottawa, the following figures of total production in the various plants:—

Eight-Inch High Explosive	Complete No.
Bertram & Sons, Dundas, Ont. ....	64,500
Can. Bridge Co., Walkerville, Ont. ....	60,690
Can. Fairbanks-Morse, Toronto .....	149,796
Can. Ingersoll-Rand, Sherbrooke, P.Q. ....	187,451
Dominion Bridge Co., Montreal .....	19,703
Gurney Foundry Co., Toronto .....	49,866
Montreal Tramways, Montreal .....	49,915
T. McAvity & Sons, St. John, N.B. ....	5,919
N. S. Steel & Coal Co., New Glasgow, N.S. ....	2,127
Russell Motor Co., Toronto .....	9,005
Standard Steel Construction Co., Welland, Ont. ..	24,953
Universal Tool Steel Co., Toronto .....	129,999
<b>Total .....</b>	<b>753,924</b>

9.2 High Explosive	Complete No.
Amalgamated Amm. Machine Co., Toronto ....	30,009
Canada Cement Co., Montreal .....	254,998
Dominion Steel Products Co., Brantford .....	64,997
Fisher Motor Co., Orillia, Ont. ....	66,005
Leaside Munitions Co., Toronto .....	79,064
T. McAvity & Sons, St. John, N.B. ....	41,086
N.S. Steel & Coal Co., New Glasgow, N.S. ....	13,687
Russell Motor Car Co., Toronto .....	74,675
Steel Co. of Canada, Montreal .....	60,004
St. Lawrence Bridge Co., Montreal .....	100,009
<b>Total .....</b>	<b>784,534</b>



## Six-inch High Explosive

Bell Engine & Thresher Co., Seaforth, Ont. . . . .	166,272	McGregor & McIntyre Co., Toronto . . . . .	51,303
Bertram & Sons, J., Dundas . . . . .	215,122	McKinnon-Dash Co., St. Catharines . . . . .	61,392
Can. Blower & Forge Co., Kitchener, Ont. . . . .	49,002	Napanee Iron Works, Napanee, Ont. . . . .	26,445
Canadian Bridge Co., Walkerville, Ont. . . . .	103,071	N.S. Steel & Coal Co., New Glasgow, N.S. . . . .	10,000
Canada Cement Co., Montreal . . . . .	352,129	Sawyer-Massey Co., Hamilton, Ont. . . . .	42,489
Can. Fairbanks-Morse, Toronto . . . . .	419,864	Steel Co. of Canada, Stratford, Ont. . . . .	10,000
Can. Ingersoll-Rand Co., Sherbrooke, P.Q. . . . .	421,403		
Can. Linderman Co., Woodstock, Ont. . . . .	78,982	Total . . . . .	1,104,288
Can. Tube & Iron Co., Montreal . . . . .	348,343		
Consol. Steel Co., Toronto . . . . .	300,570	<b>4.5 Howitzers</b>	
Dominion Bridge Co., Montreal . . . . .	656,207	*Alberta Fdry. & Machine Co., Medicine Hat. . . . .	108,564
Eaton & Sons, J. R., Orillia, Ont. . . . .	88,770	*Albion Machine Co., New Glasgow, N.S. . . . .	243,629
Fisher Motor Co., Orillia . . . . .	114,962	Acton Foundry Co., Acton, Ont. . . . .	130,180
Gen. Car & Mach'y Co., Montmagny, P.Q. . . . .	225,840	*Bell & Sons, B., St. George, Ont. . . . .	8,550
Gurney Foundry Co., Toronto . . . . .	151,703	*Branden Shell Co., Toronto . . . . .	31,255
Hayes Wheel Co., Ltd., Chatham, Ont. . . . .	140,862	*Buckeye Foundry Co., Calgary, Alta. . . . .	2,797
Hepburn Co., J. T., Toronto . . . . .	116,676	*Burlington Steel Co., Hamilton . . . . .	14,558
Hope & Sons, Ltd., Henry, Toronto . . . . .	202,560	*Can. Stove & Foundry Co., St. Laurent, P.Q. . . . .	318,286
Jenckes Machine Co., Sherbrooke, P.Q. . . . .	54,307	*Can. Allis-Chalmers Co., Toronto . . . . .	190,687
Leaside Munitions Co., Toronto . . . . .	724,719	*Can. Car & Foundry Co., Montreal . . . . .	162,201
Long Mfg. Co., E., Orillia, Ont. . . . .	124,475	*Can. Locomotive Works, Kingston, Ont. . . . .	124,045
Lyall & Sons Construction Co., P., Montreal. . . . .	1,314,477	Can. Malleable Iron Co., Owen Sound, Ont. . . . .	73,873
Midland Engineering Works, Midland, Ont. . . . .	183,076	*Can. Steel Foundry Co., Montreal . . . . .	369,000
Modern Tool Mfg. Co., Montreal . . . . .	254,555	*Can. Westinghouse Co., Hamilton . . . . .	122,090
Montreal Locomotive Works, Montreal . . . . .	749,508	*Chapman Eng. Mfg. Co., Dundas, Ont. . . . .	23,318
Montreal Tramways Co., Montreal . . . . .	56,608	*Cobourg Shell Co., Cobourg, Ont. . . . .	134,669
Munitions & Metal Products, Peterborough . . . . .	220,545	Coghlin & Co., B. J., Montreal, P.Q. . . . .	9,425
McKinnon Industries, Ltd., St. Catharines, Ont. . . . .	301,767	*Collingwood Shipbldg. Co., Collingwood, Ont. . . . .	29,126
McLennan Foundry & Mach. Works, Campbellton, N.B. . . . .	71,593	*Copp Stove Co., Fort William, Ont. . . . .	214,203
National Mfg. Co., Ottawa and Brockville . . . . .	245,525	*Cummings & Sons, J. W., New Glasgow, N.S. . . . .	201,887
National Steel Car Co., Hamilton . . . . .	3,282	*Darling Bros., Ltd., Montreal . . . . .	181,639
Page-Hersey Iron Tube & Lead Co., Guelph . . . . .	144,390	*Dominion Bridge Co., Montreal . . . . .	81,164
Pease Foundry Co., Toronto . . . . .	127,731	*Dom. Copper Products Co., Montreal . . . . .	938,741
Pembroke Iron Works, Ltd., Pembroke, Ont. . . . .	339,502	*Dominion Steel Co. . . . .	48,668
Peterboro' Machine & Lub. Co., Peterboro' . . . . .	35,714	*Eastern Steel Co., New Glasgow, N.S. . . . .	108,739
Quinlan & Robertson, Ltd., Campbellford, Ont. . . . .	76,583	*Fawcett & Co., Chas., Sackville, N.B. . . . .	174,973
Russell Motor Car Co., Toronto . . . . .	204,493	Frost & Wood Co., Smith's Falls . . . . .	69,076
Savoie-Guay Co., Montreal . . . . .	70,405	*Gen. Railway & Signal Co., Montreal . . . . .	91,869
Spramotor Co., London, Ont. . . . .	95,837	*Goold, Shapley & Muir Co., Brantford, Ont. . . . .	126,952
Steel & Radiation, Ltd., Toronto . . . . .	387,206	*Hamilton Co., Wm., Peterborough, Ont. . . . .	57,274
St. Catharines Steel & Metal Co., St. Catharines . . . . .	309,573	*Holden-Morgan Co., Toronto . . . . .	70,043
St. Lawrence Bridge Co., Montreal . . . . .	175,930	*Hepburn Bros., Ltd., Montreal . . . . .	311,542
St. Lawrence Iron Foundry, Montreal . . . . .	209,399	Hunter Bridge & Boiler Co., Kincardine, Ont. . . . .	38,769
Taylor-Forbes Co., Guelph, Ont. . . . .	142,157	*Inglis Co., John, Toronto . . . . .	106,707
Three Rivers Indus. Co., Ltd., Three Rivers, P.Q. . . . .	42,226	*Robb Engineering Co., Amherst, N.S. . . . .	239,800
Universal Tool Steel Co., Toronto . . . . .	230,221	*Jenckes Machine Co., Sherbrooke, P.Q. . . . .	161,241
		*Jenkins Bros., Ltd., Montreal . . . . .	84,011
		Ker & Goodwin Co., Brantford, Ont. . . . .	271,006
		*Leonard & Sons, E., London, Ont. . . . .	149,240
		Lauzon Engineering Co., Levis, P.Q. . . . .	262,581
		*Long Mfg. Co., E., Orillia, Ont. . . . .	43,009
		*Lyall & Sons Construction Co., P., Montreal. . . . .	438,577
		*Martin Pump & Machine Co., Toronto . . . . .	160,089
		*Maritime Foundry & Mach. Co., Chatham, N.B. . . . .	59,459
		Marsh Engineering Works, Belleville, Ont. . . . .	127,979
		*Matheson & Co., I., New Glasgow, N.S. . . . .	13,649
		*Manitoba Engines, Ltd., Brandon, Man. . . . .	30,824
		*Man. Bridge & Iron Co., Winnipeg . . . . .	122,150
		*McAvery & Sons, T., St. John, N.B. . . . .	150,924
		*McDonald Thresher Co., Stratford, Ont. . . . .	103,683
		McDougall Caledonian Iron Works, Montreal. . . . .	82,711
		*McFarlane Engineering Co., Paris, Ont. . . . .	113,872
		*McGregor & McIntyre, Ltd., Toronto . . . . .	25,973
		Mechanical Engineering Co., Three Rivers, P.Q. . . . .	32,454
		*Medicine Hat Pump & Brass Co., Medicine Hat, Alta. . . . .	76,532
		*Montreal Locomotive Works, Montreal . . . . .	489,519
		*Motor Trucks, Ltd., Brantford, Ont. . . . .	256,893
		*Munitions & Machinery Co., Montreal . . . . .	91,177
		*Napanee Iron Works, Napanee, Ont. . . . .	37,940
		National Hardware Co., Orillia, Ont. . . . .	91,777
		*National Machinery & Supply Co., Hamilton . . . . .	11,568
		*Newfoundland Shell Co., St. John's, Nfld. . . . .	52,711
		*New Barrell-Johnston Co., Yarmouth, N.S. . . . .	61,809
		*Norwood Engineering Co., Cowansville, P.Q. . . . .	99,571
		*Northern Foundry & Machine Co., Sault Ste. Marie, Ont. . . . .	82,678
		*N.S. Steel & Coal Co., New Glasgow, N.S. . . . .	99,322

Total . . . . . 11,048,578

## 13 lb. Shrapnel (1915)

Canadian Vickers, Ltd., Montreal . . . . . 79,550

## 15 lb. Shrapnel (1915-16)

Can. Crocker Wheel Co., Ltd., St. Catharines. . . . . 66,193

Can. Westinghouse, Ltd., Hamilton . . . . . 15,247

Dominion Bridge Co., Montreal . . . . . 26,163

Electric Steel & Metals Co., Ltd., Welland . . . . . 180,065

Inglis Co., Ltd., John, Toronto . . . . . 15,018

Total . . . . . 302,686

## 60 lb. High Explosive

Can. Allis-Chalmers Ltd., Toronto . . . . . 22,493

Can. Locomotive, Kingston . . . . . 34,974

Can. Malleable Iron Works, Owen Sound, Ont. . . . . 64,919

Can. Westinghouse, Hamilton . . . . . 35,010

Chapman Eng. & Mfg. Co., Dundas, Ont. . . . . 18,408

Coghlin & Co., B. J., Montreal . . . . . 43,977

Dominion Bridge Co. . . . . 11,695

Doty Engine Co. . . . . 9,962

Eastern Machine Co., Montreal . . . . . 44,963

Jenckes Machine Co., Sherbrooke, Q. . . . . 10,641

Leonard & Sons, E., London, Ont. . . . . 146,597

Long Mfg. Co., E., Orillia, Ont. . . . . 207,739

Lyall & Sons Construction Co., P., Montreal . . . . . 88,924

Montreal Amm. Co., Montreal . . . . . 50,042

Munitions & Machinery Co., Montreal . . . . . 112,588



O'Connors, Ltd., Montreal .....	42,269	*Lymco Corporation, Montreal .....	3,895
*Ormsby Co., A. B., Toronto .....	244,698	Massey-Harris Co., Ltd., Toronto .....	746,930
*Otis-Fensom Elevator Co., Toronto .....	156,222	*Metal Drawing Co., St. Catharines .....	631,769
*Phoenix Foundry & Loco. Co., St. John, N.B. ..	29,094	Montreal Locomotive Works, Montreal .....	452,674
*Polson Iron Works, Toronto .....	19,549	*Mueller Mfg. Co., Sarnia, Ont. ....	315,137
*Port Hope Supply Co. ....	4,121	National Machine & Motor Co., New Glasgow, N.S. ....	197,777
*Prescott Emery Wheel Co., Prescott, Ont. ....	57,676	*National Machinery & Supply Co., Hamilton..	293,200
*Public Enterprise Co., Levis, P.Q. ....	70,816	*National Mfg. Co., Ottawa and Brockville ..	1,179,373
*Pioneer Tractor Co., Ltd., Calgary, Alta. ....	4,660	National Steel Car Co., Hamilton .....	469,562
*Quebec Engineering Co., Quebec .....	105,598	*Northern Electric Co., Montreal .....	523,649
*Record Foundry & Machine Co., Moncton, N.B.	206,424	*Norton Co., A. O., Coaticook, P.Q. ....	108,641
*Robertson Mfg. Co., P. L., Milton, Ont. ....	38,166	Grand Trunk Railway, Montreal .....	445,094
*Roelofson Machine & Tool Co., Galt .....	52,193	Grand Trunk Railway, Stratford .....	441,681
*Saskatchewan Bridge & Iron Co., Moose Jaw, Sask. ....	89,579	*Hamilton Gear & Machine Co., Toronto ....	615,458
*Sawyer-Massey Co., Hamilton .....	15,825	*Ingersoll Machine Co., Ingersoll, Ont. ....	709,390
*Seaman-Kent Co., Hamilton .....	35,929	International Engineering Co., Amherst, N.S.	60,343
Sherbrooke Iron Works, Sherbrooke, P.Q. ....	399,008	Inglis Co., John, Toronto .....	437,335
Sorel Mechanical Shops, Sorel, P.Q. ....	154,255	*Jardine & Co., A. B., Hespeler, Ont. ....	233,123
*Smith Foundry Co., Fredericton, N.B. ....	138,581	Jenckes Machine Co., Sherbrooke .....	124,077
*Spartan Machine Co., Montreal .....	352,816	*N.S. Steel & Coal Co., New Glasgow, N.S. ..	289,270
*St. Thomas Construction Co., St. Thomas, Ont.	122,689	*Otis-Fensom Elevator Co., Toronto .....	270,616
*St. Lawrence Iron Foundry, Montreal .....	56,015	*Estate of Jas. Fleming, St. John, N.B. ....	307,132
*Stratford Mill Bldg. Co., Stratford, Ont. ....	61,249	*Pink Mfg. Co., Thos., (burned out), Pem- broke, Ont. ....	452,758
*Steel & Radiation, Ltd., Toronto .....	207,078	*Polson Iron Works, Toronto .....	375,003
*Steel Co. of Canada, Ltd., Brantford, Ont. ..	190,384	*Record Foundry & Machine Co., Moncton, N.B.	19,202
*Starr Mfg. Co., Dartmouth, N.S. ....	23,928	*Renfrew Machinery Co., Renfrew, Ont. ....	674,040
*Toronto Structural Steel Co., Toronto .....	130,180	*Renfrew Manufacturing Co. ....	11,395
*Toronto Type Foundry Co., Toronto .....	43,616	*Roelofson Machine & Tool Co., Toronto ....	3,000
*Truro Steel Co., Truro, N.S. ....	134,869	Sawyer-Massey Co., Hamilton .....	81,250
*Vancouver Engineering Co., Vancouver, B.C. ..	7,607	*Sheldons, Ltd., Galt, Ont. ....	641,538
*Victoria Machinery Depot, Victoria, B.C. ....	4,881	Steel Co. of Canada, Brantford, Ont. ....	616,509
*Vulcan Iron Works, New Westminster, B.C.	5,717	*Steel of Canada, Montreal .....	274,704
*Vulcan Iron Works, Winnipeg .....	75,677	*Steel & Radiation, Ltd., Toronto .....	845,665
*Waterous Engine Works, Brantford, Ont. ....	186,258	*St. Thomas Construction Co., St. Thomas, Ont.	6,910
*Western Machinery Co., Port Arthur, Ont. ..	10,339	*Truro Steel Co., Truro, N.S. ....	21,828
*Western Shell & Box Co., Edmonton, Alta. ..	49,759	Toronto Laundry & Mach. Co., Toronto .....	854,197
*Wilford & Co., F. R., Lindsay, Ont. ....	100,819	Western Dry Dock & Shipbuilding Co. ....	35,014
*Wilson & Co., J. C., Belleville, Ont. ....	78,751	Zenith Machine Co., Montreal .....	300,649

\*Complete figures.

**18-lb. Shrapnel**

Albion Machine Co., New Glasgow, N.S. ....	13,054
Banfield & Sons, Toronto .....	721,817
Beatty & Sons, M., Welland .....	98,427
Bertram & Sons, J., Dundas .....	520,228
Brown, Boggs Co., Hamilton .....	172,000
Canada Beds, Ltd., Chesley, Ont. ....	128,189
Can. Allis-Chalmers Co. ....	899,851
Can. Bridge Co., Walkerville .....	189,811
Can. Car & Foundry Co., Montreal .....	299,899
Can. Crocker-Wheeler Co., St. Catharines ..	530,501
Can. Fairbanks-Morse Co., Toronto .....	3,030,313
Can. Ingersoll-Rand Co., Sherbrooke, P.Q. ....	1,969,326
Can. Locomotive Co., Kingston .....	202,132
C.P.R., Montreal .....	920,190
Can. Vickers, Ltd., Montreal .....	513,225
Can. Westinghouse Co., Hamilton .....	793,414
*Chapman Double Ball Bearing Co., Toronto..	894,936
Cluff Bros., Toronto .....	37,418
*Cobourg Steel Co., Cobourg .....	3,625
Collingwood Shipbuilding Co., Collingwood ...	152,238
*Cummings & Sons, J. W., New Glasgow, N.S.	12,046
Dominion Bridge Co., Montreal .....	3,743
Dominion Steel Foundries, Hamilton .....	1,316,430
*Drolet & Co., F. X., Quebec .....	70,259
Eastern Steel Co., New Glasgow, N.S. ....	269,202
Electric Steel & Metals Co., Welland .....	18,761
*Fawcett & Co., Chas., Sackville, N.B. ....	2,874
Fisher Motor Co., Orillia, Ont. ....	159,431
*Fittings, Ltd., Oshawa, Ont. ....	389,911
*Gen. Car & Machinery Co., Montmagny Stn., P.Q. ....	751,602
Goldie & McCulloch Co., Galt, Ont. ....	842,000
*Loughead Machine Co., Sarnia .....	175,626
*London Mfg. & Machine Co., London .....	692,067
Lymburner, Ltd., Montreal .....	774,610

\*Figures not complete.

NOTE—This is supplementary to the list above, and gives further production available to date.

**18-lb. Shrapnel**

Gen. Car and Machinery Co. ....	42,445
Drolet, F. X. ....	3,167
Lymco Corporation .....	3,895
Northern Electric .....	31,740
Norton, Limited, A. O. ....	9,012
Chapman Double Ball Bearing Co. ....	25,722
Fittings, Limited .....	12,190
Hamilton Gear & Machinery Co. ....	27,845
Ingersoll Machine Co. ....	25,651
Metal Drawing Co. ....	40,351
National Machinery and Supplies .....	8,118
Otis-Fensom Elevator Co. ....	16,860
Steel & Radiation .....	35,048
Toronto Laundry Machine Co. ....	21,892
Cobourg Steel Co. ....	6,505
National Manufacturing Co. ....	22,195
Renfrew Machinery Co. ....	41,950
Renfrew Manufacturing Co. ....	27,015
Jardine & Co., A. B. ....	2,908
London Mfg. and Machine Co. ....	31,884
Loughead Machine Co. ....	9,995
Mueller Manufacturing Co. ....	18,156
Roelofson Machine & Tool Co. ....	6,209
Sheldons, Limited .....	29,123
St. Thomas Construction Co. ....	13,300
Albion Machine Co. ....	13,832
Cummings & Son, Ltd., J. W. ....	16,170
Fleming, Jas., Estate of .....	6,114
Fawcett, Limited, Charles .....	8,506
N.S. Steel & Coal Co. ....	10,453
Record Foundry & Machine Co. ....	20,562
Smith Foundry Co. ....	8,056
Truro Steel Co. ....	10,423



## British Columbia's Part in Ship Programme

The Year Has Seen a Tremendous Revival of Industry in the Pacific Coast Province—What the Future Has in Store.

By A. F. MENZIES

**D**URING the past twelve months or so, British Columbia has, so to speak, come into her own as regards shipbuilding. The extensive program undertaken by the Imperial Munitions Board Wooden Shipbuilding Department has been completed, resulting in the addition of 27 wooden steamers of a total D. W. capacity of over 75,000 tons. Of steel boats 40,000 tons D.W. have been passed into service.

The Imperial Munitions Board wooden shipbuilding programme was carried out by yards which built the hulls only, the Imperial Munitions Board being responsible for the supplying and the installation of machinery, etc. The 27 hulls were divided up between the following concerns: Wm. Lyall Shipbuilding Co., Ltd., 6; Western Canada Shipyards Ltd., 6; Western-Genoa Co., Ltd., 4; The Foundation Co. of Victoria, Ltd., 5; New Westminster Construction and Engineering Co., Ltd., 4; Coquitlam Shipbuilding Co., Ltd., 2.

The boats are of the well decked type with the poop extended to the bridge deck. They are 250 feet long B.P., by 42 ft. x 6-in. mld. beam, by 25 ft. mld. depth. The carrying capacity on a draught of 21 ft. is about 2,800 tons.

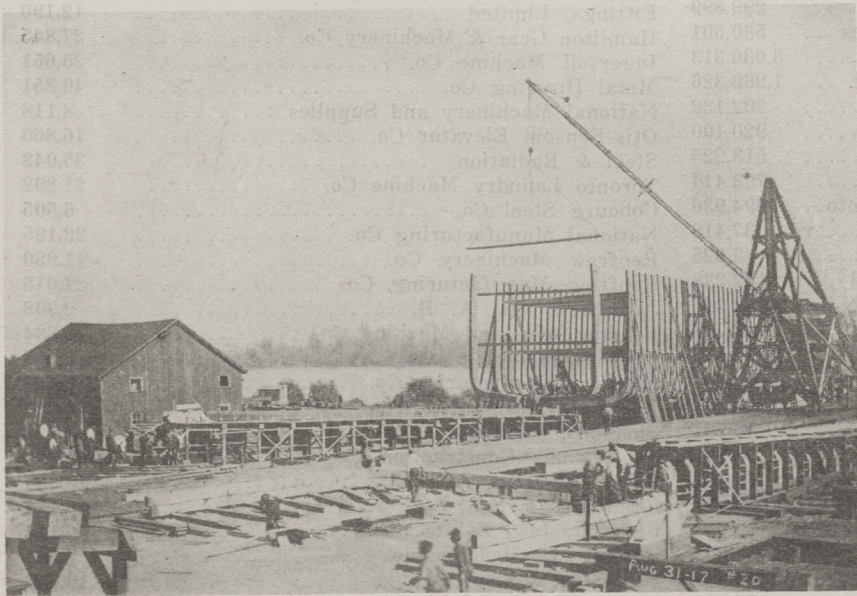
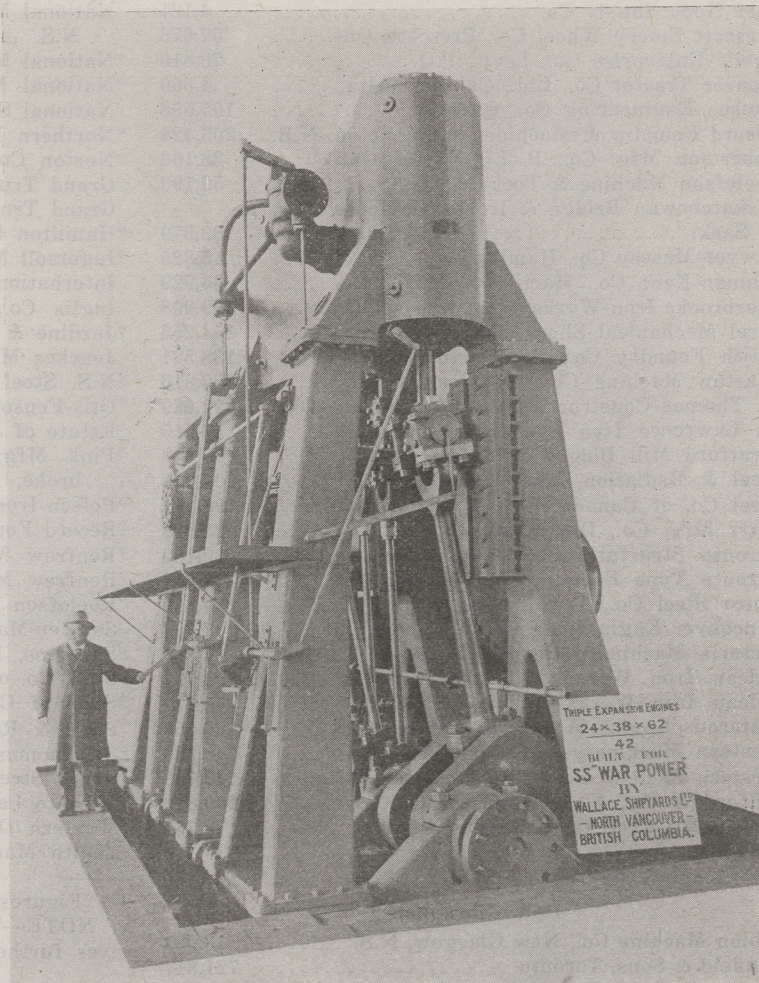


FIG. 1—WOODEN STEAMER IN FRAME



The hull is divided into several compartments by watertight bulkheads, which will materially assist in keeping the vessel afloat should it become damaged. About one and a half million feet of lumber was used in each boat, while for caulking over 350 bales of oakum were required.

The following brief description of the more important timbers will give an idea of the sizes of lumber used. Fig. 1 shows one of these boats being framed.

The keel is in four pieces all 20 x 24 in and from 54 to 76 ft. in length, the various lengths being joined together by scarps are carefully shifted in order also 20 x 24 in. and the sister keelson 24-ins. square. These sticks are in as long lengths as is practicable and the scarps are carefully shifted in order to maintain the maximum possible strength throughout.

On the top of the wooden keelson there is a steel box girder keelson consisting of top and bottom plates 25 and 40 ins. respectively by  $\frac{3}{4}$ -in., web plates



*Size of staff  
1919*

March 13th, 1919.

Mr. H. W. Jerry,  
c/o Munitions & Metal Products,  
6 Chenneville Street,  
Montreal, Que.

Dear Mr. Jerry:-

I have your letter of March 12th, but I am sorry it is impossible for me to extend any hope of being able to find you a position with us in the near future.

We cut down our staff from 3,000 men to less than 1,000, and are now in the process of again cutting it in half, consequently there are no opportunities for new men coming in at the present.

*was up to  
4000*

Wishing you success in locating something suitable, I am,

Yours very truly,

Canadian Ingersoll Rand Company, Limited.

*W*  
Assistant to General Manager.

ESW:IB



Personal.

May 5th. 1919.

Mr. S. A. Williams, Vancouver

xxxxxxx

My dear Arthur:-

Since I wrote you on April 29th. events have moved rapidly. Mr. Doubleday has recommended that we send an executive to London immediately to spy out the land and to arrange for the attaching to the Ingersoll-Rand Office in London of a Canadian representative, who would remain in the employ and on the pay-roll of our Canadian Company and whose business it would be to further the interests of our Canadian Company in connection with export trade to Great Britain.

Mr. Winslow will leave very shortly for London to attend to the executive duties and we have decided to transfer Mr. Bell as having been born, brought up and educated in the Old Country, to London, as the resident representative of the Company.

It has further been decided to readjust the territory in the West, placing Charles Sangster in charge at Vancouver, with the present existing boundaries and making of the Coast territory a separate district, reporting directly to the Sales Manager in Montreal.

This will leave you free to move your headquarters to Calgary and to concentrate on that territory as I suggested to



For Charles Sangster to E. W. S.

Page two

Mr. Winslow - Montreal (File Sangster personal) December 24th/1919....

mines were pushed to their utmost; they made large profits and bought machinery freely. They could afford to change drills on a month's notice if they saw an advantage in the change. As luck would have it, the Denver drill had beaten us just at the beginning of this rush period, and were right in line to take advantage of the boom days in copper. They made a complete clean-up; every large mine was turned right over from Rand to Waugh drills.

It is going to be harder for us to do the trick again. Conditions are not as favourable at the present time to get mining companies to change. There is not the same great demand for copper, and the mining companies have heavy stocks of machinery. It is also more difficult to beat them now by the same margin which they beat us in 1914. They beat us by bringing out a 2-3/4" drill against our 2-1/2". Their latest drill is the Turbro - 3-1/2" bore, against which we have brought out our No-88 jackdrifter with a 3-1/4" bore. I think we have a better drill, but the margin<sup>of</sup>/difference is closer.

To give you a concise idea of the mining situation in British Columbia, would say that there are four large companies which I would classify as follows; The Consolidated Mining & Smelting Company, which is the CPR interest, with headquarters at Trail, owning and operating six different mines. The Granby Consolidated Mining Smelting & Power Company with headquarters in Vancouver, operating at present, at Anyox. The Britannia Mining & Smelting Company, with mine and office thirty miles from Vancouver, operating one mine only. The Canada Copper Corporation



Mr. Winslow - Montreal (File Sangster personal) December 24th/1919....  
with mine and office at Princeton, B.C. (in my territory).

There are a number of smaller mines and a large number of prospects which may be developed next year.

I would say that the majority of mining men in British Columbia are from the United States. Seattle people are more interested in the mining industry than the average Canadian. We will always have to deal with Seattle men who are operating properties in this province.

You are quite right about this branch cooperating with Seattle. We should work together very closely. I have made it my business to get acquainted with Mr. Lucker in Seattle, and find him a very keen salesman and one with whom I can work in close harmony.

I have made three trips over to Seattle since coming west. It is only a night's ride on the boat, and we do not hesitate to run over there when necessity arises.

Speaking of cooperation; what we really need in British Columbia, is more cooperation between Montreal and British Columbia, not that Montreal and British Columbia have been working at cross-purposes, but the folks in Montreal are all in the same boat as yourself, that is, they do not know very much about British Columbia.

Previous to the war, Mr. Campbell or Mr. Gilman would make a hurried trip out here and back again, and great changes have taken place during the past five years.

Now that Mr. Campbell is leaving, it will be of vital importance that someone who makes his headquarters at Montreal, should get personally acquainted with British Columbia territory and conditions here. We are



(FOR INTER-OFFICE USE ONLY)

CANADIAN INGERSOLL-RAND CO.,

LIMITED

VANCOUVER, B. C.

FILE NO. ~~PERSONAL.~~

3rd of May 1920.

TO Mr. E. S. Winslow, Montreal, Que.

SUBJECT Mr. A. C. H. Garhardi.

*Diamond  
Interesting*



DEAR SIR ~~SIR~~

Dear Mr. Winslow;-

Replying to your's of April 24th, Mr. Harhardi is the same man whom Mr. Southee met at the Dolly Varden Mine, and I quite agree with Mr. Southee's opinion which he formed of him then.

Yours very truly,

*Chas. Langster*  
MANAGER VANCOUVER BRANCH.

CS/GTW

**CULLINAN DIAMOND  
SHIPPED THROUGH  
THE PARCEL POST**

After serving in the Canadian forces and previous to that being engaged in mining in South Africa, Capt. A. C. H. Garhardie is locating in Vancouver. He is very much impressed with the possibilities of British Columbia's mineral areas.

Capt. Garhardie was at the Premier mine, near Pretoria, when the famous Cullinan diamond, weighing before being cut, over 3000 carats, was found. The Kaffir miner had located the gem and took it to Mr. Garhardie, who was superintendent of the mine. It was valued at over a million dollars.

At the time, 1905, there was considerable interest displayed as to the manner in which the uncut diamond was taken to England. Three parcels of exactly the same size and weight were made up, two with alum and the third with the "rock." In this way the packages were sent by ordinary parcel post to England.

Mr. Garhardie, who was born in South Africa, was one of the members of the famous Springbok football team that so successfully toured Britain in 1906.

*← This is the same  
Garhardie*



CANADIAN INGERSOLL-RAND CO.,  
LIMITED

*Copy to G.M.  
plan*

*J. M. Tozer*  
FILE NO. Personal.

BRANCH OFFICE Winnipeg, Man.  
June 25th. 1920.

TO Mr. E. S. Winslow, Assistant to General Manager.

SUBJECT

*N.B. +  
Winnipeg  
Territory a  
comparison  
etc*

DEAR ~~SIR~~: Mr. Winslow:

I am very sorry to have kept you waiting so long for a reply to your letter of May 31st., but I was unable to conscientiously answer it due to the rush in getting things cleaned up to get away to The Pas on the 8th.

I feel, Mr. Winslow, that the New Brunswick territory does not offer the prospects and advantages that the Winnipeg territory does and we are just now beginning to see daylight here. This territory is destined for big developments, bigger than at any time in the history of the west and I certainly want to have the opportunity of putting this office on the map. I am too much interested now in this Branch to want to give it up for a new territory such as the New Brunswick district, which I feel can never be as productive as Winnipeg.

Mining is beginning to show signs of becoming very active in Manitoba and Western Ontario, we are gradually getting the Railroads more interested in our tools with the possibilities of doing business with them, all of which presents tremendous possibilities.

The Pas as a mining district is the most promising in Canada and will be equal to Northern Ontario within the next two or three years. Within the same period I feel that this office should have an annual revenue of at least \$300,000.00.

Take the Flin Flon alone. They have twenty million tons of ore in sight of an average value of \$10.00 per ton. It can



CAPT. A. C. H. GERHARDI  
MINING ENGINEER  
SAN FRANCISCO, U.S.A.  
VANCOUVER, CANADA

Anyox B.C. July 1st 1920

file  
Gerhardi  
charge  
machines  
use

Mr. E.S. Winslow,  
260 St. James St.,  
Montreal Que.



Dear Mr. Winslow,

Your letter of June 8th reached me on my return from Stewart, the outcome of our visit no doubt Ben has informed you of.

You will pardon my delay in not acknowledging your letter before this.

On our return from Stewart we found the Sullivan D X 61 running in an opposition test to the 88, yesterday this test came to an end, and needless to say our 88 upheld all its former performances, the drilling speed of the two machines, the 88 is in the lead of only a small margin, copies of the drilling time, will be mailed to your office, as soon as I have them compiled.

Mr. E.E. Campbell the newly appointed Manager of the Granby, talks of the 88 as being the only machine, as well as it being very popular among the miners.

The past week I have been demonstrating at the Rambler Quartz Mine, which is one of the Granby silica producers, the 88 has been drilling 13-7 ft. holes in 7 hours, which is <sup>2</sup>round per shift, before with a Dreadnought they were only able to get a round out in 3 shifts, I have every hopes of that machine being purchased.

In the next 8 days I have two demonstrations on, one at the



**COPY TO** 

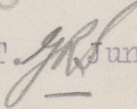
FROM  
**CANADIAN INGERSOLL-RAND CO.,**  
LIMITED  
TORONTO, ONT.

File  
H. B. Davis

48

Dear Dinslow -

This is from Davis at Cobalt and  
looks pretty good. Thought you would  
be interested. Am also sending copies  
to our Western fellows to cheer them  
up.

COBALT, ONT.  June 26th, 1920.

Dear Reg:-

Well Old Timer, Skelly and I saw the mine captain  
Morris Hasty of the Lake Shore two days ago in Timmins, to-day  
came down through K.L. and sold them another machine (88). They  
are going to use it in shaft sinking with the blower attachment,  
which we recommended. Bob Coffey had me to lunch, and told me  
if the breakage here isn't too bad, they will standardize on 88's.

Also had a long talk with Cap. McAllister at the McIntyre,  
and he is going to give us every chance in the world to come back  
with her, and said he would be in the market for some more machines  
in a couple of months.

After returning from this trip, never felt so enthusiastic  
about the 88. If the shop can only give us pistons that will last,  
in a year will have a good part of the business back. Am getting  
a lot of these fellows to root for us now, and although it will be  
some time before we live down our breakage, you are beginning to  
hear of the machine now as the fastest thing going.

Business is damnably slow, however, the Nip. have not as  
yet got the parts for their sharpener, and Parke told me he didn't  
want to order until he got it going. Am going to take another whirl  
at him the first of the week, and see if he can't be pinned down.  
Hurd says he is waiting on financial arrangements before doing any  
thing more about the Sharpener.



not possibly lie idle, it is bound to go ahead because it is the biggest thing in Canada at the present time and in addition it is by no means the only prospect in the Le Pas district. It is a wonderful country up there.

I do not feel that I am over optimistic in my statements regarding the future of the west, as the spirit and feeling generally is that we are on the verge of a big progressive boom, not only by the people of the west, but by those travelling through.

Of course I am probably not in a position to say, but I do not feel that New Brunswick can produce the revenue that this district can in the future, and looking at it from a personal standpoint it certainly does not offer the same financial returns that this territory does.

During the past two months my salary with commissions has amounted to \$250.00 per month and I certainly do not anticipate any dropping off in this during the coming year, but rather to a big increase and I therefore feel that if I went to New Brunswick, I should receive a salary of \$250.00 per month and a guaranteed salary of \$300.00 per month, which would simply represent what I expect to earn in salary plus commissions in this branch during the coming year .

I am very anxious and want to hold on to the Winnipeg Branch for what I believe I can make it mean to the Company and consequently to myself; that is, one of the most productive branches in the Company.

I have never received any criticism for the way in which I have been handling matters, since coming out here, and if you have any to offer as to what should have been done and what should not



**Canadian Ingersoll-Rand Company**  
**Limited**

G-351 (4)

FILE

H. G. Evans

St. John, N.B. November 1st 1920

E. S. Winslow Esq.,  
Gen. Sales Manager  
Can. Ingersoll Rand Co.,  
Montreal, P.Q.

*Appointment  
as Gen Sales  
Manager  
E. S.*

Dear Mr. Winslow,-

I am in receipt of Mr. Gillman's letter of the 29th ulte advising us of your appointment as General Sales Manager and it pleases me not a little to be able to address you as such. I am sure you will prove a success in your new capacity and I sincerely trust that under your guidance the sales of our company will continue to prosper.

You are taking hold at a time when the business outlook is not of the fairest but I feel sure that we will pass quickly through whatever hard times may be before us and with a long pull and a strong pull and altogether I do not think you need have any apprehension in looking ahead. From my short but pleasant acquaintance with the other men I am sure your appointment is a popular one with the rest of the staff and I think you will have them with you.

With heartiest congratulations and sincerest wishes for your continued success, I am,

Yours sincerely

H. G. Evans





OFFICIAL HISTORY  
of  
THE CANADIAN FORCES  
in  
THE GREAT WAR 1914-19

GENERAL SERIES VOL. I. AUG. 1914-SEPT. 1915

by

*Colonel A. Fortescue Duguid*

*D.S.O., B.Sc., R.C.A.*

Director of the Historical Section, General Staff

---

MAPS AND SKETCHES COMPILED AND DRAWN BY

*Captain J. I. P. Neal*

*R.C.E.*

---

**T**HIS Volume, published by authority of the Minister of National Defence, deals with the Outbreak of War 4th Aug. 1914—the Raising of the First Contingent—the Crossing to England—the Winter on Salisbury Plain—the 1st Canadian Division in the British Battle-line—in the Gas Attack at Ypres—at Festubert and Givenchy—also with other Canadian Forces raised and sent Overseas prior to the Formation of the Canadian Corps 13th Sept. 1915.

The book is 8vo, and in two parts: (i) Text, pp. xxvii, 596, with two maps, six sketch maps and one chart, and another map as end paper; (ii) Appendices, pp. lvi, 464, with 14 maps in pocket. The retail price for the complete volume is \$3.50, postage paid; a discount of 25% is allowed to booksellers. Copies may be ordered from The King's Printer, Ottawa, Ont. (money order or marked cheque in favour of "The Receiver General of Canada").

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*For Extracts from Reviews see Overleaf*



## • SOME PRESS OPINIONS •

Up to 3rd December, 1938, over 130 newspapers and other periodicals—Canadian, British and U.S.—have carried notices, editorials or reviews of the volume.

### CANADA

" . . . The work does credit to the orderliness and care of those responsible for it . . . every fact is authenticated by documentary evidence . . . at all times it is good reading . . . The maps . . . combine a fine artistry and a consummate care. Enormous research has obviously gone into the compilation . . . The work should find immediate and general acceptance . . ." (From *Canadian Press* review, which appeared in 27 papers).

"Two of the most interesting volumes to have been produced in many a day . . ." (*Windsor Daily Star*).

" . . . For the student of Military science it will be an invaluable text . . ." (*The Albertan, Calgary*).

" . . . This is a book which no one should overlook . . . and should be specially acceptable to veterans . . ." (*Times Journal, Fort William*).

" . . . Tous les faits sont d'ailleurs exposés avec une grande franchise . . . les combats auxquels les Canadiens ont pris part sont décrits de main de maître, tant au point de vue stratégique et tactique que narratif . . . un magnifique monument . . ." (*Le Canada, Montréal*).

" . . . An authoritative, comprehensive and most thorough record . . . an invaluable book of reference . . . vividly presented . . . opinions always supported by documentary evidence . . . good and easy reading. It is a very difficult task brilliantly accomplished . . ." (*Ottawa Journal*).

" . . . It is a glorious book, written with a narrative simplicity and clarity that will no doubt cause some critics, of the spectaclé kind, to find fault because it is not like all other official war histories . . ." (*Toronto Star*).

" . . . a story that for drama and romance could never have been conceived by the most enterprising fiction writer . . ." (*The Canadian Veteran*).

" . . . many lessons that every one should learn from this book . . . will be of international repute . . ." (*The Salute, Montreal*).

" . . . for the first time citizens of Canada may look behind the scenes . . ." (*Farm and Ranch Review, Calgary*).

" . . . The contents of this volume require patient study . . ." (*Winnipeg Free Press*).

" . . . a masterly work of great precision . . ." (*The Legionary*).

" . . . something better than mere dry-as-dust historical study . . ." (*Calgary Herald*).

" . . . a comprehensive and satisfying work . . ." (*Kingston Whig-Standard*).

" . . . One gets the impression of perfect fairness . . . It is a monumental work . . ." (*Moncton Transcript*).

" . . . For those who were in the war the pages . . . will be full of interest . . ." (*Montreal Gazette*).

" . . . the book makes vivid reading . . ." (*Queen's Review, Queen's University, Kingston, Ont.*).

" . . . It is second to none . . . a piece of historical work of outstanding excellence and importance . . ." (*Vancouver Sun*).

" . . . without any doubt the most important contribution of 1938 to Canadian literature . . . an extraordinarily complete picture . . . will take a high place among all special histories in any language . . ." (*Toronto Saturday Night*).

" . . . No war book that has yet appeared touches this official account in gripping interest. The story of the gas attack is a classic . . ." (*Northern Miner, Toronto*).

" . . . an extraordinary piece of historical recording . . . He lets history speak for itself, and the frank authenticity of his pages spares no one . . ." (*Halifax N.S. Chronicle*).

" . . . the tribute to the troops is dignified and most impressive . . . illuminating comment . . . complete impartiality . . . readably presented . . . these volumes teach a significant lesson . . . authoritative . . . well printed and attractively bound . . . the maps are fine examples of the military mapping art." (*The McGill News, Montreal*).

" . . . No attempt is made to gloss over mistakes . . . The whole story is there . . ." (*Edmonton Journal*).

" . . . The work bristles with warnings that cannot be disregarded by the people of Canada to-day . . . It is more than history, it is a revelation . . ." (*Toronto Telegram*).



## GREAT BRITAIN

"... a carefully-compiled narrative that is valuable in its reliability and at the same time eminently readable. For with the patience of a master-sifter the author combines the faculty of being able to tell a great tale worthily... a thrilling account of the Canadians' exploits in these battles... maps and appendices that add to the interest and value of the narrative..." (*Newcastle Daily Journal*, 13th July, 1938).

"... the clearest and most beautifully printed maps that can ever have adorned a military history... the truly startling quality... is the certainty of his touch... has sifted, refined, tested and yielded a simple residue which nobody hereafter will ever dream of challenging..." (*British Weekly, London*, 18th August, 1938).

"... lucid narrative... minute description... are alike excellent. The maps are numerous and first rate... supplementary volume... which students will find invaluable. We know of no account of Second Ypres... that brings out so clearly the confusion prevailing..." (*The Spectator, London*, 19th August, 1938).

"... monumental... well printed book... maps admirably clear in detail... as a record of Canada's magnificent effort this inaugural volume is all that could be desired... a clear and straightforward narrative, tracing the main course of events in a coherent form which cannot fail to be of the deepest interest to all concerned, as well as to the general reader in all parts of the Empire... describes vividly the harrowing results of the first poison gas... and the gallantry of the troops who had to face it... the general tone... is strictly impersonal... full justice is done to the Canadian force and its contribution to the Allied cause..." (*Illustrated London News*, 20th August, 1938).

"... the lessons learnt in Canada, as elsewhere... are indeed shown to be innumerable... narrative of Canada's share in saving the salient is vivid... thorough work in text and maps..." (*Manchester Guardian*, 23rd August, 1938).

"... a strictly objective narrative... a vivid and unforgettable picture of Canadians in action." (*Western Daily Press, Bristol*, 15th July, 1938).

"... The 14 magnificent maps... can only be described as works of art, examples of the cartographers' art which are of the highest degree of excellence... book of appendices and maps is a monument of meticulous attention to minute detail, and of patient perseverance in pursuit of facts

and accuracy... a vivid description... Of what Canada accomplished in the following years of the war we shall hope to read in the promised future volumes of this series; and if they are all as finely produced in all respects as this first one, Canada's war effort will indeed have been most fitly recorded for all time..." (*Nottingham Guardian*, 18th August, 1938).

"In appearance, treatment, arrangement and style it is a credit to the Historical Section... Canada's whole contribution to the Empire's effort during the first year of the war is described at considerable length... the first to describe in detail the confused and crowded happenings of those critical days (*Ypres, 1915*) as seen from the point of view of a division. The course of the fighting... is traced in great detail... Legitimate pride is taken in the courage and steadfastness displayed by the Canadian troops... maps printed in colours are admirably clear." (*The Army Quarterly, London*, October, 1938).

"... scrupulously fair... does not shirk various controversial subjects—political or otherwise... gives a very full and complete history of this weapon (*the Ross rifle*)... This excellent history is of great interest to soldier or civilian... the maps are very good and clear... A first-class index completes the work." (*The Cavalry Journal, London*, October, 1938).

"... bears the evidence of meticulous research, careful selection, scrupulous impartiality and no mean professional acumen: moreover, the narrative, though never dramatized, is neither dull nor colourless... an epic story which will surely be as great a source of pride to every Briton as it will be of inspiration to generations of Canadians as yet unborn." (*Journal of the Royal United Services Institution, London*, November, 1938).

"... The maps are perfectly delightful, and it would be difficult to overpraise them... a work that forms a worthy monument to the deeds of the Canadian troops... eminently satisfactory... the author allows himself no heroics... events are left, and rightly left, to speak for themselves..." (*The Fighting Forces, London*, October, 1938).

"... A prodigious task... That the work has been competently performed is evident from every page in the narrative, in which practically every movement of any moment is detailed with a sense of proportion and an accuracy of detail that might only be anticipated from an actual observer in every section of the Army's activities..." (*Weekly Scotsman, Edinburgh*, 3rd December, 1938).



## BRITISH DOMINIONS

"... valuable for reference purposes... excellent maps..." (*The Age, Melbourne, N.S.W., Australia*, 13th August, 1938).

"... The author... is a finished writer with outstanding ability in marshalling facts and presenting them with an economy of words and clarity..." (*The New Zealand Herald, Auckland, N.Z.*, 30th July, 1938).

"... there is a freedom of comment and criticism here: both, though effective, are commendably fair and restrained—usually absent from official military histories which too often tend to become glorified diaries padded out with boring statistics... South Africa... might well take to heart... the example furnished by the publication of this very carefully prepared history... Those to whom the defence of the Union is a matter of concern and especially those who, in any capacity, are responsible for military measures to ensure its safety will find much to guide them in this valuable work." (*Cape Times, Cape Town, South Africa*, 17th August, 1938). (The author of the lengthy review from which these extracts are made is Brig.-General, J. J. Collyer, C.B., C.M.G., D.S.O., a member of the Council of Defence, Union of South Africa).

"... The story... is well told." (*Civil and Military Gazette, Lahore, India*, 28th August, 1938).

"... in a form readable to everyone... a dramatic account. The volume is a poignant reminder of the horrors of war, and of the great debt which civilization, the Allied countries, and the British Empire owe to the co-operation of Canada." (*Belfast News Letter, Ireland*, 1st September, 1938).

"... written in an easy, flowing style... the story can be followed without the constant turning and re-turning of pages... the detailed account of the fighting... is military history of the first order and will prove of absorbing interest to even the casual reader, and of the highest value to the military student..." (*The Otago Times, Dunedin, N.Z.*, 17th September, 1938).

"The minute descriptions... are lucid so that the narrative may be followed easily by the non-military reader... The maps... are clear and adequate and are splendidly drawn and reproduced... brings out with startling effect the confusion which prevailed on both sides during the fortnight of the battle (*Second Ypres*). The diplomatic correspondence, battle orders and extracts from the French and German official histories, will be invaluable in assisting the student to an understanding of that confusion." (*Irish Times, Dublin*, 3rd September, 1938).

"... The outstanding characteristic of this first volume is candour. It is more frank than the official histories to which we are accustomed, and in this lies its merit. No excuses are made; no blame is apportioned. But the facts are stated without evasion, and certainly with no attempt to shield the reputations of ministers, commanders and others in authority. It forms a refreshing corrective to the propaganda often provided from unofficial sources... The maps are very good, and excellently arranged... Hardly ever does one have to turn back to find a reference—a matter of arrangement which many military historians would do well to copy." (*Journal of the United Services Institution of India*, October, 1938).

## UNITED STATES

"... an invaluable source book... There is a succinct but moving account of the first horrifying encounter, and of the Canadians' gallant resistance..." (*The Sun, Baltimore*, 3rd July, 1938).

"... magnitude of the task undertaken, and the thoroughness of its execution by the author... evidence of the intention to leave no stone unturned to secure a complete and authentic record... excellently illustrated with maps..." (*Christian Science Monitor, Boston*, 20th July, 1938).

"... accurate, painstaking, impartial and authentic, and is written in an interesting and readable style... This great work contains a priceless heritage of experience and knowledge, not only for Canadians but for all

young countries confronted with the emergency of war. Policy and procedure to guide in future emergencies may be deduced from this clear statement of events that actually occurred... The man in public office, the Army Officer, the college professor, and the librarian have now available a source of information which none of them can afford to be without." (*The Cavalry Journal, Washington*, September, 1938).

"Most careful research and thorough editing have gone into this work. And much good writing. The story of the First Gas Attack, among others, is an accurately dramatic piece of description... one passage... expresses in language impossible to better the basic truth of national defence... a signal military work." (*Infantry Journal, Washington*, September, 1938).



*incomplete*

*15! World War  
1917-18 (approx)*

18-Pr Shrapnel shells had just been received. The only existing plant for the manufacture of these shells was the Dominion Arsenal, at Quebec, whose capacity was less than 100 shells per day. Our impression that we could imitate the work of the Dominion Arsenal was received with mild incredulity by the M.G.O. Nevertheless, we were successful in obtaining a letter of introduction from the M.G.O. to the Superintendent of the Dominion Arsenal requesting that we be given full information regarding the manufacture of 18-Pr shrapnel.

- Aug 29 (Saturday) Made report to General Sales Department, Montreal.
- Aug 31 (Monday) Mr.E.S.Winslow inspected the Dominion Arsenal, and brought to Sherbrooke a full set of 18-Pr drawings, together with the detailed costs of each operation.
- Sept 1 (Tuesday) At a conference in Sherbrooke at which were present Mr.A.M.Sangster, Works Manager, Mr.H.V.Haight, Chief Engineer, Mr.S.R.Newton, Assistant Engineer, and Mr.E.S.Winslow, Sales Department, the decision was arrived at that we could make shells. A contract price was decided upon based on our being able to obtain materials at prices mentioned by Dominion Arsenal.



Sept 2 (Wednesday)

A very large list of manufacturers had been called to meet the Minister of Militia at 10 A.M., few of those present knew exactly the object of the meeting. After waiting until about nearly 4 o'clock in the afternoon we were ushered into the Office of the Minister of Militia, and Col Hughes read the cablegram inquiry for 100,000 18-Pr shrapnel shells. After a few further words from the Minister of Militia we were instructed to go up with Col Benson, M.G.O., to discuss the inquiry in detail. When the meeting commenced the general feeling of the manufacturers seemed to be that they had been called up to Ottawa on a wild goose chase. Everyone was tired and anxious to get away, no progress was being made, and there were more objections than suggestions in evidence. When the matter of price was mentioned, each suggested figure was a little higher than the last.

Finally Mr. Winslow moved, seconded by Mr. Goldie that a Shell Committee be formed to consist of three manufacturers to represent the manufacturers, and three military men to represent the Government. The idea being that the manufacturing



members would look into the practical work and the military men on the Committee would serve as a guarantee that the Government would be given fair treatment. A second motion was put by Mr. Winslow, seconded by Mr. Goldie that Col. Alex. Bertram should act as Chairman of the Committee. Col. Benson, M.G.O. was ex officio the military head of the Committee. Both the motions were passed unanimously and Col. Benson and Col. Bertram left the room to obtain the Minister of Militia's approval. The rest of the meeting had had time to collect their hats and raincoats when Col. Benson and Col. Bertram returned and reported that the proposal was acceptable to Col. Hughes.

One point that deserves special mention is that in agreeing after a little remonstrance to act as Chairman, a very important idea was immediately explained to Mr. E. S. Winslow by Col. Bertram. On the spur of the moment Col. Bertram said, "Yes, we can get Gently, of the Nova Scotia Steel and Coal Company to make us steel and forgings. We can get the General Electric Company to make parts - meaning copper and brass parts - and we can get yourselves, Goldie McCullough and our firm, and a lot more to do the machine work."



This idea and the carrying out of it whereby the Shell Committee dealt direct with the maker of each individual part had more to do with the remarkable progress made in shell manufacture in Canada than any other thing; in fact it would not have been feasible for more than about one dozen firms to have engaged in the manufacture of shells if the old system had been adopted of placing orders for the complete article. We believe this plan had never previously been used in any country. In any case, we heard some of the early British Official visitors expressing wonder that such a scheme could be carried out without much incessant friction as to make the thing unpractical. The feeling seemed to be that the parts would not go to-gether, that the shell would be rejected by the inspectors and that it would be difficult to place responsibility.

The Committee as we understood <sup>it</sup> at the close of the first meeting would consist of Col. Bertram, Chairman, who was especially qualified to look into the machining of the shell body. Col. Gantly of the Nova Scotia Steel and Coal Company to look into the matter of steel supply and forging manufacture, and Mr. Watts of the Canadian General Electric Company to look into the supply of the other components. Col. Benson, Col. Grenville-Harson, Chief Inspector and Col. Lafferty, Superintendent of the Quebec Arsenal.

At the original <sup>meeting</sup> there was present Mr. Edward Carnegie who stated that his brother Mr. David Carnegie was shortly coming to Canada to advise him in a consulting capacity in connection with a new plant. Mr. Edward Carnegie suggested that his brother knew about shells and he had no doubt that he would <sup>gladly</sup> greatly assist the Committee in any way he could. As is well known the Committee got in touch with Mr. David Carnegie whose presence and advice



Page six.....

as Ordnance Advisor gave both the Committee and the manufacturers confidence in going ahead <sup>which</sup> ~~when~~ they would not otherwise have had. The Committee quickly got to work and very shortly it was arranged that, as our share we should undertake an order for 10,000 shells which was later increased to 15,000 shells. We got our first few components, 25 or 50 at a time from the Dominion Arsenal. We issued our first order on the shop to manufacture shells on October 28th, 1914, we made our first shipment on December 23rd, 1914 and completed our first 100,000 shells June 22nd, 1915. Over 500,000 shells had been delivered on March 1916, over 1,000,000 by November 10th, 1916 and over 1,900,000 by October, 1917 when no more orders for shrapnel were available.

In addition to shrapnel we manufactured nearly 200,000 8-inch shells, a small quantity of 18-Pr H.E. Shells and are now starting on 6-inch Howitzer shells and 75 m/m shells for the American Government.

In all business relations the British War Office has been highly praised by both Canadian and American manufacturers for fair dealing. In comparison with British makers, Canadians have been at some disadvantage due to distance from Inspection Headquarters and in connection with H.E. Shells loaded in England these have got to be given special care to avoid rust to compare favourable with shells from British makers.

We hope that the above data may be useful in connection with the work you are doing.

Yours very truly,

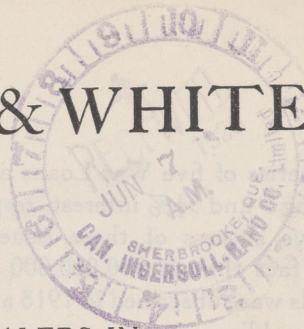
ESW/EPS.

Manager Munitions Department.



*Mr. Winchlow*  
*Personnel*

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*Canadian  
situation*

*1920?*

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## “Very Remarkably Good”

By  
T. K. D.

*18/19 world war*

**D**URING the course of his recent Budget Speech in the House of Commons, Sir Henry Drayton stated that Canada not only financed her own war effort and her own after-war requirements, but also extended credits to other nations, and, in these circumstances, the situation of Canada's currency must be considered as “Very Remarkably Good.”

“Very Remarkably Good” is not by any means an extravagant expression. It merely, in plain English, epitomizes precisely the business situation in Canada to-day.

Official statistics show uniformly increased and increasing productivity throughout Canada, and the satisfactory condition of our foreign trade balance for almost a full six-year period, has enabled Canadian citizens to provide  $1\frac{3}{4}$  billion dollars for war effort, in the shape of money loaned to the Government, in addition to an increase in total bank deposits by the public, approximating \$700,000,000 over the 1913 figures. Besides this, in one year alone, that of 1919, Canadians made a surprising exhibit of thrift and foresight by absorbing nearly half a billion dollars' of protective life insurance.

It is not too much to say that the increased productivity of agriculture, industry and mines, effected during the past five years, will amply provide for the additional annual interest charges incurred as a direct result of war expenditure.

So, “Very Remarkably Good” is very good. Let it stand.

It will be admitted that one of the outstanding revelations of the world-war was Canada's ability to withdraw one-tenth of her male population, and at the same time become an important factor in providing much-needed war material. As a result, Canada's status has become unique among the nations.

In piling up an abundance of new assets and liquid resources, we naturally were compelled to meet heavy national expenditures, which expenditures were made possible by the sale of Government Bonds to the public of Canada.

The first Government flotation ever made in Canada was for \$50,000,000 5% 10-year bonds, sold to the public at  $97\frac{1}{2}$ , on a yield basis of 5.42 per cent. This issue met with remarkable success, being over-subscribed to the extent of 100 per cent.



Then followed a series of five War Loans and Victory Loans, bearing 5 and 5½% interest, respectively, the progressive success of these issues being indicated by the fact that \$1,300,000,000 of 5½% Government bonds was subscribed in 1918 and 1919 by the Canadian public.

All these facts point to the inherent strength of Canada's financial position, and warrant the conviction that such underlying stability will ultimately reflect a very strong market for all maturities of Victory Bonds.

Since the overwhelming success of the 1919 Victory Loan campaign (which issue was not exempt from income tax, as was the case with all previous issues of War and Victory Bonds), there has been a decline in the prices of Victory Bonds, due entirely to the condition of settling-down, readjustments, etc., which usually follows such issues in all countries, though the comparatively small price shrinkage in Canada is striking even in the realm of international finance. At the reduced prices the Victory Bonds may now be said to constitute the best investment on the whole list of Canadian Securities.

Victory Bonds, according to the different maturities, give the attractive yield of 5.42 to 6.00%. The tax-free bonds are in steady demand, though a peculiarly interesting feature in respect to the taxable 1934 and 1924 maturities is the heavy purchases on behalf of Insurance Companies, owing to the fact that income tax is not a consideration on such security holdings.

The high yield of 5.92 and 6.00% on the 1934 and 1924 maturities offers great attractions, not only on behalf of institutional purchasers, but also on account of individual investors who appreciate the fact that in the course of a year or so it will not be possible to secure a Government Bond to yield much over 5% on the investment.

So far as we understand the Victory Bond market, there is an exceedingly small floating supply of the various maturities. On some occasions it is practically impossible to purchase any considerable volume of the bonds at current market prices, while on other occasions there undoubtedly is a more or less liberal supply.

The Minister of Finance has intimated that there will be no Government Loan in Canada this year. When we consider that since December 1st, 1915, the Government has called upon the public every year (twice in 1917—March and December) for funds to carry on the war work, the elimination of a 1920 Loan will leave large accumulations of private and institutional funds awaiting investment, and the natural course will be to put much of this money into existing bonds, especially at the very attractive prices obtaining to-day.

The inevitable absorption of the small floating supply, together with the certainty of high income taxation for several years, gives every justification for the belief that Victory Bond prices to-day offer unusual attractions for all classes of investors, and we cannot too strongly advise the purchase of the Victory Bond maturities which will meet the individual case.

*Minors, Dickinson & Whitehead Limited*



AN ADDRESS MADE

by

Mr.E.S.Winslow.

prob. 1920 -  
First World War

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Mr.Chairman and Gentlemen:-

I am not competent to say anything on the real subject of this evening but I have been asked to tell you some things that have never been told before on the subject of Canadian Shell Making.

Sherbrooke has reason to be proud that, not only has she sent many splendid men to the front, whose fine patriotism we cannot praise too highly, but Sherbrooke has also reason to be thankful that she has been able to apply her industries and her men to such good effect in the production of British Shells.

It was on August 27th, just twenty-three days after the declaration of war between Great Britain and Germany, that Mr.Sangster telephoned me in Montreal that he would like to make shells. The following day when I called on Col.Benson, Master General of Ordnance in Ottawa, he fished out from under some papers a requisition from the War Office for 100,000 - 18 Pdr.Shrapnel Shells.

I am sure Col.Benson must have been puzzled as to what he could reply to such a requisition, considering that the only place that could handle such work in Canada was the Dominion Arsenal whose production was about three hundred and fifty shells per week. So that it would have required just about five and a half years at that rate to complete the order.

I told Col.Benson that this requisition was just what we were looking for and that we and the other Canadian Shops could perform the work. It was arranged that I should visit the Arsenal at Quebec. This was on Friday and telegrams were sent broadcast for Manufacturers to meet the Minister of Militia, the following Wednesday, Sept.2nd at ten o'clock.

At that time business was at an absolute stand still and we could only look forward to terrible depression. The manufacturers were all asked to quote on making shells. Perhaps I was wrong but I anticipated cut-throat competition. I proposed to my firm that we should try an organize a Manufacturers' Association and try to agree on a uniform price. As we had by this time been to the Arsenal and seen their costs, blue prints and specifications, I felt that the scheme could carry.

To my surprise, at the meeting, which was presided over by the Master General of Ordnance, nearly everyone seemed to think they had come on "a fool's errand". We had been kept waiting several hours and were nearly all in a bad humour. Instead of rushing to secure orders everyone seemed timid and all the talk was about getting



a big and a still bigger price. So much was this the case that I could not dream of proposing my scheme of a Manufacturers Committee which would have been taken by Col. Benson as a direct attempt to create an unfair price.

With this situation there seemed only one alternative. I went over to Col. Benson and, to put things in a proper light, proposed that a Committee be formed to consist of a Chairman and two others to represent the Manufacturers and Master General of Ordnance himself and two other military men to give their assistance and to see that the interests of the War Office were properly looked after.

Col. Benson agreed to this proposal and I nominated Col. Bertram as Chairman seconded by Mr. Goldie, of the Goldie McCulloch Company of Galt. Col. Benson and Col. Bertram then left the meeting for a few minutes and returned to report that the great Sam had also approved and that Alex. Bertram was Chairman of the Shell Committee.

The first members of the Committee were,

Col. Bertram . . .	Chairman representing the Machining Manufacturers.
Col. Cantley of the N.S.S.Co.	Representing the Forging Manufacturers.
Mr. Watts of the C.G.E.Co. &	Representing the Component part Manufacturers.
Col. Benson.	" " " " " "
Col. Harston.	Chief Inspector of Arms & Ammunitions.
Maj. Lafferty.	Superintendent of Dominion Arsenal.

A great deal has happened since then. The Shell Committee was authorized by the War Office to act as the principal Contractor for Canada at no profit to themselves and all Canadian Manufacturers had to take the position of Sub-Contractors to the Shell Committee. At that time none of us would take an order at any price until we were assured that if we equipped and any new orders could be obtained that we, the first fifteen to make the venture, would be allowed to continue. One or two firms with more nerve than the rest offered lower prices to get the whole contract, but the Committee with fairness to all and conforming to the plan of laying foundations for larger work distributed the order to practically all those who would accept them.

In this way Canada became unique in having fully organized her Manufacturers for the manufacture of Shells. There was no other Shell Committee anywhere. Ordinary manufacturing plants in Canada produced shells months before similar concerns in Great Britain and the United States had got started. The cost of encouraging the tremendous development that has taken place in the course of a single year has been considerable but the result (to those of us who remember



the small beginning) has been absolutely amazing. I believe that, to-day, the efficiency of our Shell Making plants would compare favourably with similar work almost anywhere.

Our plants in Sherbrooke are working twenty-four hours a day and I am sure their efficiency will increase as long as Great Britain needs the Shells.



Winston Permet

and  
Gowar

important  
all  
supplimental

Nov. 8th. 1918.

Sir Joseph Flavelle, Chairman,  
Imperial Munitions Board,  
Ottawa, Ont.,

9th letter to

Dear Sir Joseph:-

The question was asked this morning on whom the duty devolved of providing against the hardships which will arise out of the cancellation of munitions contracts.

My judgement is that any normal trade relationship necessarily benefits both parties. When a relationship of long standing is broken for the benefit of one party he owes a duty to the other party even though both parties have been aware that the relationship was not a permanent one. It is the feeling of reliance that the stronger party will accord such treatment that is the basis of loyal and faithful service.

In the case of the munitions industry, manufacturers have helped for four years to do essential work and their labours have borne fruit. Nevertheless the last year for them has been the leanest and it is the final



closing out condition that will be remembered and considered when perhaps further co-operation is desired.

Again, through the agency of the manufacturers and with the aid of government advertising and encouragement, an army of workers have been engaged on government work. They are now intimately interested for the first time in what they <sup>will</sup> consider government policy and government treatment. With them too, it is the closing out condition which will be remembered.

The cheap but probably short-sighted policy would be the instantaneous stoppage of work the moment it can be dispensed with and regardless of those affected. But is it not possible that the better policy in the long run would be the temporarily expensive plan of dealing considerately, even generously, with those, (both manufacturers and employees) who for the past four years are conscious of having done arduous and essential work.

Yours very truly,

Edwin



INGERSOLL-RAND CO.

EXECUTIVE OFFICE

11 BROADWAY

NEW YORK February 21, 1919.

*deputation to  
Munitions  
Board  
for settlement after war*

E. S. Winslow, Esq., Asst. to Gen'l Mgr.,  
Canadian Ingersoll-Rand Company, Ltd.,  
Sherbrooke, Canada.

Dear Mr. Winslow:-

I have your letter of the 19th instant enclosing copy of yours to the Secretary under the same date, and while the problem that confronts you is not entirely clear to me, due to my unfamiliarity with the details of your settlement with the Munitions Board, I feel that, if the Canadian Ingersoll-Rand Company is represented by three officials at a meeting with the Chairman, more satisfactory progress can be made than if only one man attended the conference, all with the understanding, of course, that you are the spokesman of the Company's Committee and will control the situation.

Now that it apparently becomes necessary to review the Company's past financial history in order to present your claims forcefully and intelligently, the Secretary should be a valuable member of your Committee, and if you feel that Mr. Robins should be present too, I am quite in accord. However, I think the entire matter should be left to your best judgment, and if you feel at the last moment that you could make better progress alone, do not hesitate to act for us without assistance.



E. S. Winslow, Esq.

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2-21-19.

Two heads are always better than one, and sometimes three are better than two, if they are the right kind of heads. If I were the Chairman of the Munitions Board and were visited by three officials of any corporation I would be more impressed than if I were taken on by one man, even though he had full authority.

My understanding of these important negotiations is, that the Chairman of the Imperial Munitions Board feels like giving us further consideration in the final settlement of the 6-inch shell contracts than he had obligated himself to give us in the formal wording of the agreements; that we went into the Jenckes venture at his particular request for patriotic reasons and a desire to assist him; that the venture had not been profitable to us and that we were entitled to something more than a cash settlement along the rigid lines outlined in the contract; that if we can satisfy him that we would have been better off today without the Jenckes plant on our hands he might make such a recommendation as would put us in a more satisfactory financial condition than we found ourselves after the cancellation of all agreements.

If my understanding of the reason for this conference is correct, I believe you will be in a position to prove to the Board that your Company should receive liberal consideration.

If you decide to invite Messrs. Sullivan and Robins to join you in presenting your case, I think it well to rehearse your



E. S. Winslow, Esq.

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2-21-19.

arguments very thoroughly among yourselves and coming to a thorough and mutual understanding before you officially meet the Chairman of the Munitions Board.

With the assurance that I have every confidence in your ability to make an intelligent and dignified presentation of our Company's case, and with best wishes for satisfactory results, I am,

Yours very truly,

A handwritten signature in cursive script, appearing to read "George D. ...". The signature is written in dark ink and is positioned below the typed closing "Yours very truly,".

PRESIDENT.