

Montreal, Que.
July 20th, 1939.

CANADIAN MANUFACTURERS ASSOCIATION
COMMITTEE ON NATIONAL DEFENCE

The following constitutes the delegates who will sail
on the Empress of Britain from Quebec, July 29th.

probably duplicate

- W.D.Black, President, Otis-Penson Elevator Co.Ltd., Hamilton.
- H.G.Bertram, President, The John Bertram & Sons Co.Ltd., Dundas.
- E. Holt Gurney, President, Gurney Foundry Co.Ltd., Toronto.
- E. Winslow-Spragge, First Vice President, Canadian Ingersoll-Rand Co.Ltd.,
Montreal.
- Paul F. Sise, President, Northern Electric Co.Ltd., Montreal.
(Mr.Sise is going to England separately but will be
considered as a member of the party.)
- Victor Drury, President, Canadian Car & Foundry.
(Mr.Drury is in England and will be a member of the party.)
- J.G.Morrow, Chief Metallurgist of the Steel Co. of Canada.
- G.T.M.Bevan, Chief Engineer, Massey-Harris Co. Ltd., Toronto.
- A.R.Goldie, Director, Babcock-Wilcox & Goldie-McCulloch, Ltd., Galt.
(Mr.Goldie is in London and will be a member.)
- R.J.Magor, President, National Steel Car Corp., Montreal.
(Mr.Magor is in England and will be a member.)
- Sir James Dunn, President, Algoma Steel Corp. Ltd., Sault Ste.Marie.
(Mr.Dunn is in England and will be a member.)
- Mr.Dalton is being sent by the British Columbia Division.

The following will sail but are not manufacturers.

- Major-General A.G.L. McNaughton, President, National Research Council,
Ottawa, accompanied by
- A. Gill as Technical Adviser.
- Dr. O. W. Ellis, Chief Metallurgist, Ontario Research Foundation,
Toronto.
- Col. Noel Carr, Director of Mechanization and Artillery,
Department of National Defence, Ottawa.
- J.C. Patteson, European Manager, Canadian Pacific Railways, London.

Mr.Euler, Minister of Trade & Commerce, is co-operating and giving his blessing to
the project.

*In letter to Keefer. "I assume that you are rather anxious that I not
go on this mission, I would of course, very much like to have your
blessing on ^{my} this trip"*

Montreal, July 28, 1939

Memorandum to Mr. E. Winslow-Spragge,
General Manager
MONTREAL

*About 1914
was effort in a
general way - written
officially -
plans
with Can Manufacturers Ass.*

Subject: Trip to England

In accordance with your instructions, I looked up the publications on the manufacture of munitions in Canada during the Great War period and have marked the following passages in the books by Carnegie and Vaughan.

- Carnegie - Page 2 - Origin of munitions supply in Canada and E.S. Winslow's connection therewith.
- Carnegie - Page 138 - Canadian Ingersoll-Rand as largest producer of 8" high explosive shells.
- Vaughan - Page 2 - Meeting on September 2, 1914, attended by E.S. Winslow, Geo. W. Watts, Alex Bertram, Alex Goldie, etc.
- Vaughan - Page 9 - Introduction of magnetic detector for determining the critical temperature of steel, introduced by E.S. Winslow.

Some weeks ago, Mr. E.L. Chicanot offered us for publication in "Compressed Air Magazine" an article entitled "Canada -- Empire Arsenal." This was found not suitable for "Compressed Air Magazine" and was offered to the Canadian Manufacturers' Association by the writer, on behalf of Mr. Chicanot. This was turned down by Mr. W.A. Craick's letter of July 25 herewith.

I am including two copies of Mr. Chicanot's paper with the material for your London trip, as some of the material dealing with the production of munitions in Canada during the war period may be helpful to you. I have marked these paragraphs on Pages 3 and 4. I think that some of the material in the balance of the article (from Page 5 onward) may be helpful to you as it outlines Canadian natural resources and raw materials which would be valuable in connection with the manufacture of war munitions, aero-plane parts, etc.

Yours truly,

F. J. McLean

Publicity Manager

FAMcLean:md

CANADA - EMPIRE ARSENAL.

By E.L.Chicanot.

The crisis of last September, when the British Empire seemed on the point of being plunged into another large-scale war, naturally raised the question of Canada's participation and contribution. While there was never the slightest doubt but that the Dominion would place the whole of her resources behind the Mother Country the exact manner of her doing so never came to an issue. However, the view was semi-officially expressed, and fairly widely entertained, that there was not likely to be any Canadian expeditionary force or combatants sent overseas beyond those freely volunteering for service with the British Forces, such as has been leaving the country in a steady dribble for some time. Canada's role in the waging of a war, it was fairly generally credited, would be rather as a supplier of food and armaments.

The crisis is passed but the fear cannot be altogether banished that war may have been only postponed. Countries are re-arming on a more extensive scale than ever, with Great Britain very much to the fore. And increasingly, as preparations are made for a war in which the British Empire may be involved, it would appear that this is the part Canada is destined largely to play. Long known as the Granary of the Empire she may come to be known as the Empire's Arsenal.

The logic of such a development from the standpoint of situation, if Canada is capable of playing the part, is immediately apparent when modern conditions of waging war are considered. Aerial bombing has rendered Britain's traditional measures of defence

inadequate and centres of armament manufacture will in the future be subject to attack. Canada is reasonably safe from such hazard and at the same time the most accessible of the outlying parts of the Empire to Britain. Travel between the two countries involves no possibility of trouble with another nation and the route can be afforded a substantial measure of protection. Additional supporting factors are that the extent and variety of Canada's natural resources render them of peculiar value in such an emergency, while the Dominion has made such progress in diversified manufacturing as to have laid a very sound base on which to build war industries.

Just what Canada today might be capable of in this direction is faintly foreshadowed in her record of accomplishment during the Great War. The achievements of the 595,000 soldiers Canada raised and the 418,000 she sent overseas, as well as the thousands who served with the Royal Air Force, tend to overshadow the accomplishments of those who served no less in other fields.

Marvels were effected in augmenting the food provision, to make greater shipments possible. This was attributable to the efforts of patriotic Canadian farmers with a very depleted labor force, supplemented by those of a host of town and city men who gave up their holidays to engage in what for them was exhausting physical labor. Campaigns for increased food production resulted in the

extension of the officially estimated area of farm crops from 33,427,190 acres in 1914 to 51,427,190 acres in 1918, an increase of 53.8 per cent. A vastly enhanced wheat and other food production developed out of the extension of a peacetime activity. What Canada accomplished in activities new and strange to her was yet more remarkable.

Before the Great War Germany had, by bounties on production and export, so stimulated her iron and steel industry that she had far surpassed the United Kingdom in this field. Immediately on the outbreak of war German armies occupied the chief iron and steel producing regions of France and Belgium, thus increasing their available resources and diminishing those of the allies. It was absolutely necessary therefore that Great Britain should call a new world supply into existence to redress the balance of the old and she enlisted the rising Canadian iron and steel industry in the struggle.

As a result of overtures from the Imperial War Office the Canadian Minister of Militia appointed a Shell Committee in September, 1914, to undertake the task of organizing the supply of shrapnel to the British Government, and the first shipments were made in December 1914. By May 31st., 1915, about four hundred establishments were engaged in the manufacture of shells. In November 1915 the work of the Shell Committee was transferred to the Imperial Munitions Board which was directly responsible to the Imperial Ministry of Munitions.

Canadian accomplishment in the subsequent years of hostilities can well be summed up in a report of the Imperial War Cabinet for 1917. "Canada's contribution during the last year has been very striking. Fifteen per cent of the total expenditure of the Ministry

of Munitions in the last six months was incurred in that country. She has manufactured nearly every type of shell from the 18 pounder to the 9.2 inch. In the case of the 18 pounder no less than 55 per cent of the output of shrapnel shells in the last six months came from Canada and most of these were complete rounds of ammunition which went direct to France. Canada also contributed 42 per cent of the total 4.5 inch shells, 27 per cent of the 6-inch shells, 20 per cent of the 60 pounder H.E. shells, 15 per cent of the 8 inch shells, and 16 per cent of the 9.2 inch."

A further idea of what Canada was able to do for the British army in the field in the way of supplying munitions is furnished by the following production figures: 1914 - \$28,164; 1915 - \$57,213,688; 1916 - \$296,505,257; 1917 - \$388,213,553; 1918 - \$260,711,751. In addition, as a result of industries new to Canada established under the direction of the Imperial Munitions Board, shipbuilding contracts were awarded to the extent of \$70,000,000 and some 2,900 aeroplanes were built.

All this was accomplished by a country totally unprepared, with a substantial part of its manpower actually in the field of hostilities, and having to learn a great deal about many lines of production. To-day the possibility of hostilities is anticipated and plans have been laid, only some of which it is reasonable to conclude have been disclosed, which would immediately put Canada on a war footing as the arsenal of the British people. In every physical way she would be found better prepared and equipped to play the role than she was in 1914-1918.

Primarily Canada would be expected to appear again in her

stellar part of emergency food provider. She would start out from a much more favorable position than she did in 1914. With her population but slightly augmented the Dominion has added nearly 10,000,000 acres to the extent of possible food production to the artificially swollen figure of 1918. She is still able to export more than 80 per cent of the wheat she raises, which has amounted to half a billion bushels in a single year.

War-power still depends largely on minerals and the outstanding feature of Canadian economics since the signing of the Armistice has been the expansion of the mineral industry. Camps have multiplied in remarkable manner and the annual value of minerals produced more than doubled. Canada is still producing 87 per cent of the world's supply of nickel, a mineral in the greatest demand for war purposes. In addition she accounts for 11 per cent of the world's copper, 11 per cent of the lead, and 9 per cent of the zinc. The iron and steel industry, which under wartime stimulus reached an output figure of 1,195,551 tons a year, is presently equipped under peace-time demand to produce 1,500,000 tons annually. Upon the emergency wartime construction of aircraft has been built a substantial industry to meet domestic requirements, which is capable of considerable and rapid expansion. The investigation and development of natural resources, which proceeds unceasingly in Canada, have in the post-war period revealed new possessions of the utmost value to the Empire in the event of war.

Both before and since the September crisis indications have been given by the British government of the recognition of all these facts, that it was expecting Canada to play the part in any future

war she had in the last war, supplying those things without which a successful war cannot be waged, but on a substantially extended scale. Accordingly Canada is to share substantially in carrying out Britain's rearmament program, which is intended to preserve the peace through exhibiting a preparedness for war. While putting under way an increased though still very modest defence program of her own Canada is inclined to think of the possibilities of hostilities in terms of workers rather than of soldiers.

Long before the crisis it was revealed as the hope of the British government to encourage creation of rounded out war supplies industries, that could be expanded substantially in case of emergency such as war, through obtaining Canadian government cooperation and increased participation in defence expenditures. It made the placing of business in the Dominion contingent upon Canada's cooperating in the matter of expense through contributing to Empire defence. Under this understanding the British government undertook to supplement any Canadian government orders with additional orders sufficient to make it worth while for Canadian companies to install additional machinery and make other plant changes necessary for development of armament manufacture.

The first business to develop under this arrangement was the manufacture of 5,000 Brenn machine guns for the British government by a private manufacturer consequent upon the Canadian government contracting to take 7,000 guns. In view of Britain's speed-up in the armament program since the crisis it is expected that the British stipulation regarding Canadian government cooperation will be amended and much more important business will result. Much attention is being given to the plant facilities of leading companies

which obtained experience in armament production during the Great War and whose ability to handle war supplies work is known in government circles as a result of complete plan surveys in recent years.

It has been revealed that plans exist for the rapid transformation of these factories from their peacetime occupations to the making of shells, so that they could get into their stride much more rapidly than they did in the Great War, while naturally, owing to the industrial development of the post-war period, they could account for a much greater volume of production. This production has been laid out so that the high degree of accuracy demanded would be provided by the tools and machines rather than by the workmen, so that 75 per cent of the labor employed might be semi-skilled and unskilled, and in this way workmen could be replaced by girls in case of necessity, avoiding the injury to armament manufacture consequent upon the withdrawal of man-power for active service, as in the last war.

More immediate is the cooperation between Canada and Britain in preparations for war in the air. Geographical position alone makes this a logical development since Canada is the only Dominion accessible by air to Great Britain without involving passage over any foreign country while, though remote from any likely theatre of war, planes manufactured in Canada can be flown to Britain without the need of even extra fuel tanks. It is equally logical from the standpoint of the apparent air-mindedness of Canada and the remarkable progress of post-war aviation in the Dominion. During the Great War Canadians came to constitute nearly one-half of the personnel of the

Royal Air Force and since the end of the war Canadian airmen have written an unique chapter in the annals of aviation in the northland and chalked up some remarkable records. Federal and provincial government and commercial aviation requirements in the post-war period have developed a substantial manufacturing industry, to which Britain and the United States have contributed, capable of considerable expansion. The Commercial Air Transport and Manufacturers Association, established in 1934, comprises sixteen operating companies, fifteen manufacturing companies, and eight associate member firms providing equipment or service to the industry.

Plans recently concluded involve not only the placing of large-scale and long-term contracts with private Canadian plants for the manufacture of bombers but for the training of fliers from Britain in Canadian schools. Nine of the Dominion's leading industrial organizations have formed a central organization and are building two plants, one near the St. Hubert Airport at Montreal and one at Malden, near Toronto, for the construction of these bombers, existing plants being found insufficiently large for the contracts of the British government. The preliminary order for long-range bombers involves an expenditure of nearly \$100,000,000. which may be compared with the \$14,000,000. spent by the Imperial Munitions Board for the construction of planes in Canada in 1918. In addition orders for training craft in large quantities are also anticipated from the British government.

Individual manufacturers in Canada are to build parts for the bombing planes and the ships will then be completed and assembled at the central plants, engines shipped from Britain installed and the

craft flown across the Atlantic. Pilots for the British flying service will in the first place be trained at the government training school at Camp Borden and thereafter as the plan expands other training schools will be established for the purpose right across Canada. The success of both these branches of work would seem to be assured by the splendid records Canadian aviators and aircraft manufacturers have already made.

Of at least equal and possibly greater significance as a measure of Empire defence is the virtual assurance given today that Canada will become the Empire's long-sought source of oil supply. The countries of the British Empire have been almost entirely dependent upon external sources of supply for oil, being responsible for only about two per cent of the world's oil production. The situation as regards Canada has been serious enough. Ranking second only after the United States among countries of the world in per capita consumption of petroleum products, utilizing in a single year a volume worth in excess of \$100,000,000. at wholesale prices, all her crude petroleum has had to be imported, three-quarters of it from the the United States, the \$46,000,000. annually expended in this manner constituting the largest single item on the import list.

The situation as regards Britain and the rest of the Empire has been yet more serious. In addition to the vast annual domestic consumption of the Motherland, the Dominions and the colonies is the fact that the British army is being increasingly mechanized and the navy is to a large and growing extent dependent upon oil for its operations. While this dependency upon sources outside the Empire for oil is not a comfortable matter in normal times it might

become one of the utmost seriousness in case of war, with present supplies cut off, the working of neutrality laws, or the imposition of other measures of restriction.

An adequate source of oil within the Empire has long been the dream of governments and the object of unceasing investigation and search over the wide-flung area. Now suddenly, it seems practically certain this source of supply has been found and Alberta looms up as likely to be called upon to substantially furnish the Empire's oil in case of war. The year 1938 was the significant period for the Turner Valley oil field. Pro-rated to about fifty per cent of its capacity production, due to inability to market beyond the confines of the prairies, new wells continued to come in until during the present winter a potential capacity of 100,000 barrels a day was reached, adequate to meeting Canadian domestic requirements. Negotiations were opened with the railroads and refining companies looking to the introduction of measures to enable oil to move beyond the prairies towards the Pacific coast and industrial east, the greatest consuming territories when an unexpected factor was introduced into the situation promising to change the destiny of Alberta oil.

The Turner Valley oil field was visited in the summer of 1938 by Sir Edward Ellington, Air Marshal, from whose subsequent report developments were expected. The come with unexpected rigidity. The crisis in which Britain faced the prospect of having her principal sources of oil - the Syrian and Persian oil fields - cut off in the event of war in the Mediterranean and, after the confiscation in Mexico, that she might not be able to rely upon foreign oil fields for

her needs, had the effect of crystalizing interest in the Alberta field as of great commercial and strategic importance to the Empire. The result of this was to hasten plans slowly maturing and the announcement that the British government would probably cooperate in the construction of a pipe line from Calgary to Vancouver which, it is estimated, will cost \$16,000,000. and can be completed in six months. Instead of being primarily used to eliminate domestic imports it looks very much as though the rising production of Canadian oil is first to be turned to purposes of Empire defence.

Oil from Alberta is yet, of course, greater in potentiality than actuality, but the present capacity, which is steadily being augmented, would prove of immense value to Britain and the Empire in case of war. It is the opinion of experts of the Government Geographical Survey Department that another field of crude oil other than the Turner Valley will be found in Alberta before long, and compared with the mere strip of twenty-five miles which comprises the Turney Valley producing field it has been estimated that 100,000 square miles in Alberta is favorable for oil development. The important thing is that oil in volume is today an actuality in Alberta, within the Empire, relatively inaccessible to enemy attack. As part of Britain's rearmament program one can expect to see investigation and drilling continue at a very much accelerated rate.

Canada, pursuing her peace-time ways since playing a magnificent part in the Great War, has grown stronger, richer, more resourceful. Not alone by reason of her geographical position but on account of the development which has taken place in the post-war period in mineral investigation and exploitation, in the progress of the various phases of aviation, and in industrial expansion she is a greater

Empire asset today, capable of an enlarged service. Contemplating the troubled state of the world the Dominion is revealed as occupying a place of new and greater importance in the scheme of Empire defence or in the prosecution of a possible war in which the Empire is involved. Quite apart from the organizing of a militant force Canada's aid is invaluable, indispensable. It is well this is being increasingly recognized.

A
CONCERT

in the

MAYFAIR LOUNGE

AT 9.30 p.m. SUNDAY, JULY 30, 1939.

BY THE EMPRESS ORCHESTRA

Musical Director : EDGAR E. AVANZI

Collection will be made for the benefit of Seamen's Missions and Orphanages

Selection	"Desert Song"	<i>Romberg</i>
Entr'acte	"Sizilietta"	<i>Blon</i>
Excerpt	"Carmen"	<i>Bizet</i>
Song	"The Organ, the Monkey and Me" EDWARD GARRON	<i>Clarkson</i>
Pot-pourri	"Music Hall Scrap Book"	<i>Arr. Bayford</i>
Pianoforte Solo	"Automne" EUGENE BEATY	<i>Chaminade</i>
Rythmic Paraphrase	"Fantaisie Orientale"	<i>Nussbaum</i>
	"God Save the King"	

"Empress of Britain"

TELEPHONE:
WHITEHALL 8207 (3 LINES)

TELEGRAMS:
"UNIPATRIA, PICCY, LONDON."

ALL COMMUNICATIONS
TO BE ADDRESSED
"THE SECRETARY"

SECRETARY'S OFFICE,
BRITISH EMPIRE CLUB,
12, ST JAMES'S SQUARE,
LONDON, S. W. 1.

31st July 1939.

E. Winslow Spragge, Esq.,
Queen Anne's Mansions,
St. James's Park, S.W.1.

Dear Sir,

On the nomination of Mr. G.H. Ward, I have pleasure in enclosing a card extending to you the privileges of temporary Honorary Membership of this Club. I hope that you will be able to take advantage of this, and I look forward to meeting you, and shall be pleased to show you round the Club premises when next you are able to call here between 10 a.m. and 5 p.m.

Yours faithfully,

*H. J. E. Smith
H. J. E. Smith*

Secretary.

Another list of people

CANADIAN MANUFACTURERS' ASSOCIATION MISSION

to

UNITED KINGDOM

(a)

(1) Arrived "EMPRESS OF BRITAIN" Southampton August 3rd. 1939

London Address, unless otherwise specified,
QUEEN ANNE'S MANSIONS,
St. James's Park, S.W.1.

Mr. E. Holt Gurney,	President, Gurney Foundry Co. Limited, Toronto. Ont., and Chairman, Ontario Research Foundation.
Mr. H. G. Bertram,	President, The John Bertram & Sons Company Ltd. Dundas. Ont.
Mr. E. Winslow-Spragge,	Vice-President and General Manager, Canadian Ingersoll-Rand Co. Limited, Montreal. Que.
Mr. J. G. Morrow,	Chief Inspector and Metallurgist, The Steel Company of Canada Limited, Hamilton. Ont.
Mr. Guy T. M. Bevan,	Chief Engineer, Massey-Harris Co. Limited, Toronto. Ont.
Mr. S. M. Finlayson,	Deputy General Manager, Canadian Marconi Company, Montreal. Que.
Mr. John E. Goodison,	Vice-President, The John Goodison Thresher Co. Ltd. Sarnia. Ont.
Mr. Philip S. Gregory,	Assistant General Manager, The Shawinigan Water & Power Company, Montreal. Que.
Mr. John M. Evans,	The Shawinigan Water & Power Company, Montreal. Que.
Mr. J. T. Stirrett,	Assistant General Manager, Canadian Manufacturers' Association, Toronto. Ont.
Mr. Hugh Dalton,	Secretary, British Columbia Division, Canadian Manufacturers' Association, Vancouver. B.C.

(2) The following are with the mission:-

Major-General A. G. L. McNaughton,	President, National Research Council, Ottawa. Ont.
---------------------------------------	--

Mr. A. F. Gill, i/c Codes and Specifications,
National Research Council,
Ottawa. Ont.

Mr. O. W. Ellis, Director of Engineering and Metallurgy,
Ontario Research Foundation,
Toronto. Ont.

Colonel Noel Carr, Director of Mechanization and Artillery,
Department of National Defence,
Ottawa. Ont.

(b) Mr. Harold Crabtree, First Vice-President,
Canadian Manufacturers' Association;
President,
Howard Smith Paper Mills Limited,
Montreal. Que.

Mr. A. R. Goldie, Director,
Babcock-Wilcox & Goldie-McCulloch Ltd.
Galt. Ont.
c/o Piccadilly Hotel, W.1.

Mr. Paul F. Sise, President,
Northern Electric Company Limited;
President,
Canadian Associated Aircraft Limited;
Director,
Dominion Engineering Co. Limited;
Director,
Dominion Bridge Company Limited,
Montreal. Que.

Mr. R. J. Magor, President,
National Steel Car Corporation, Ltd.
Montreal. Que.

Mr. A. W. Fraser)
Mr. O. H. Anderson) National Steel Car Corporation, Ltd.
Montreal. Que.

Mr. Victor Drury, President,
Canadian Car & Foundry Co. Limited,
Montreal. Que.
c/o Berkeley Hotel, W.1.

Air Commodore W. Mulock, Canadian Car & Foundry Co. Limited,
Montreal. Que.
c/o Berkeley Hotel, W.1.

Mr. Victor G. Bartram, Vice-President and General Manager,
Shawinigan Chemicals Limited,
Montreal. Que.
Vice-President,
Dominion Carbide Exporters Ltd.
Montreal. Que.
c/o Park Lane Hotel, W.1.

Mr. Morris S. Lambe, The Ottawa Car Mfg. Co. Limited,
Ottawa. Ont.

Captain I. B. Bullen,
represented by
Mr. F. A. Welling.

London Representative of the
Dominion Steel & Coal Corp. Limited,
Address: Brettenham House,
Lancaster Place, W.C.2.

Mr. David Pritchard,

Canadian Industries Limited,
Montreal. Que.

Mr. W. Lambert,

Marine Industries Limited,
Montreal. Que.

Mr. J. H. MacDonald,

President,
British Columbia Manufacturing Co.Ltd.
New Westminster. B.C.
Address: 22, Ryder Street, S.W.1.

Mr. A. S. Ellis,

Ford Motor Co. of Canada Limited,
Windsor. Ont.
(arriving later date)
c/o Savoy Hotel, W.C.2.

(c) Authorised to co-operate with the mission:-

Mr. J. C. Patteson,

European Manager,
Canadian Pacific Railway Company,
Trafalgar Square, W.C.2.

Mr. P. A. Clews,

European Manager,
Canadian National Railways,
17/19, Cockspur Street, S.W.1.

← Canada Toronto →
~~Did Henry B die?~~

London Representative of the
Dominion Steel & Coal Corp. Limited,
Address: Brompton House,
Langdon Place, W.C.2.
Canadian Industries Limited,
Montreal, Que.

Metals Industries Limited,
Montreal, Que.

British Columbia Manufacturing Co. Ltd.
New Westminster, B.C.
Address: 22, Ryder Street, S.W.1.
Ford Motor Co. of Canada Limited,
Windsor, Ont.
(arriving later date)
c/o Savoy Hotel, W.C.2.

European Manager,
Canadian Pacific Railway Company,
Trafford Square, W.C.2.
European Manager,
Canadian National Railways,
1210, Portman Street, S.W.1.

Captain I. B. Bullen,
represented by
Mr. F. A. Weir.

Mr. David Ritchie,

Mr. W. Lambert,

Mr. J. H. Macdonald,

Mr. A. A. Ellis,

Mr. C. Patterson,

Mr. A. A. Claws,

Send letters
I thank
@ Send gift
to each

CANADIAN INDUSTRIALISTS MISSION TO THE UNITED KINGDOM

COMMITTEES

Appointed
Sat Aug 5/39

COMMUNICATIONS

Mr. S. M. Finlayson (Chairman).
General A. G. L. McNaughton.
Squadron Leader F. V. Heakes.

(noel carr's opposite
number (on aircraft)
attached to Mr. Masson's
office - on liaison.

STEEL

Mr. J. G. Morrow (Chairman).
Mr. F. A. Welling.
Colonel Noel Carr.

MACHINE TOOLS AND GAUGES

Mr. H. G. Bertram (Chairman).
Colonel Noel Carr.
Mr. A. F. Gill.
Mr. A. Fraser.

NON FERROUS METALS (including Cartridge Cases and Fuses).

Mr. O. W. Ellis (Chairman).
Colonel Noel Carr.
Colonel G. P. Loggie.
Mr. S. M. Finlayson.
Mr. G. T. M. Bevan.
Air Commodore W. Mulock.

SPECIFICATIONS

Mr. J. G. Morrow (Chairman).
General A. G. L. McNaughton.
Air Commodore W. Mulock.
Colonel Noel Carr.
Mr. A. F. Gill.

POWER AND HEAVY CHEMICALS (including Explosives).

Mr. P. S. Gregory (Chairman).
Mr. V. Bartram. (Shawmeyer Chemicals)
Mr. Pritchard. ~~FOR~~ C.S.I. E.M.
Mr. Evans.

Montreal, July 28, 1939

Memorandum to Mr. E. Winslow-Spragge,
General Manager
MONTREAL

*About 1914
was effort in a
general way - written
officially -
planes
with Can Manufacturers Ass.*

Subject: Trip to England

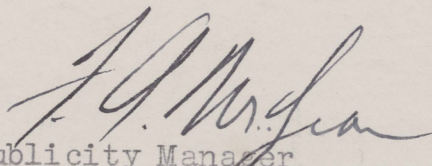
In accordance with your instructions, I looked up the publications on the manufacture of munitions in Canada during the Great War period and have marked the following passages in the books by Carnegie and Vaughan.

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- Carnegie - Page 138 - Canadian Ingersoll-Rand as largest producer of 8" high explosive shells.
- Vaughan - Page 2 - Meeting on September 2, 1914, attended by E.S. Winslow, Geo. W. Watts, Alex Bertram, Alex Goldie, etc.
- Vaughan - Page 9 - Introduction of magnetic detector for determining the critical temperature of steel, introduced by E.S. Winslow.

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I am including two copies of Mr. Chicanot's paper with the material for your London trip, as some of the material dealing with the production of munitions in Canada during the war period may be helpful to you. I have marked these paragraphs on Pages 3 and 4. I think that some of the material in the balance of the article (from Page 5 onward) may be helpful to you as it outlines Canadian natural resources and raw materials which would be valuable in connection with the manufacture of war munitions, aero-plane parts, etc.

Yours truly,



Publicity Manager

FAMcLean:md

GUNS

Mr. Victor Drury (Chairman).
Mr. H. G. Bertram.
General A. G. L. McNaughton.
Mr. R. J. Magor.
Colonel Noel Carr.
Mr. W. Lambert.
Mr. M. Lambe.
Mr. E. Winslow-Spragge.

TANKS (including Machine Guns, Carriers - Caterpillar).

Mr. G. T. M. Bevan (Chairman).
Mr. J. E. Goodison.
Mr. O. W. Ellis.
Mr. A. R. Goldie.
Mr. R. J. Magor.
Also Ford representative.

SHELLS (including Mines and Sinkers).

Mr. R. J. Magor (Chairman).
Mr. A. R. Goldie.
Mr. G. T. M. Bevan.
Mr. E. Winslow-Spragge.
Colonel Noel Carr.
Mr. H. G. Bertram.
Mr. Victor Drury.
Mr. J. E. Goodison.

TRENCH MORTARS.

Mr. J. E. Goodison (Chairman).
Mr. M. Lambe.
Mr. Hugh Dalton.

SHIPS

Mr. W. Lambert (Chairman).
Mr. A. R. Goldie.
Mr. Hugh Dalton.

COMMITTEES

Original Draft

Friday Aug 4/39

COMMUNICATIONS

Mr. S. M. Finlayson (Chairman).
General A. G. L. McNaughton.

Memo Optical Instruments

McNaughton will make
enquiries + report

STEEL

Mr. J. G. Morrow (Chairman).
Mr. F. A. Welling
(representing Dominion Steel & Coal Corp. Ltd).
Colonel Noel Carr.

MACHINE TOOLS AND GAUGES

Mr. H. G. Bertram. (Machine Tool)
Colonel Noel Carr.
Mr. A. F. Gill.
Mr Fraser (Nat^l Steel Car)

NON FERROUS METALS (including Cartridge Cases and Fuses)

Mr. O. W. Ellis (Chairman).
Colonel Noel Carr.
Colonel G. P. Loggie.
Mr. S. M. Finlayson.

Mr Bewan
Mr Muloch

SPECIFICATIONS

Mr. J. G. Morrow (Chairman).
General A. G. L. McNaughton.
Air Commodore Muloch.
Colonel Noel Carr.
Mr. A. F. Gill.

POWER AND HEAVY CHEMICALS (including Explosives).

Mr. P. S. Gregory (Chairman).
Mr. V. Batram.
Mr. Pritchard.
Mr. Evans.

Ships
(including fast small craft)

Mr Lambert (Chairman)
Mr Dalton
Mr Goldie (re tables)

GUNS

Mr. H. G. Bertram (Chairman).
General A. G. L. McNaughton.
Mr. Victor Drury. Chairman
~~Mr. J. E. Simard.~~
Mr. R. J. Magor.
Colonel Noel Carr.

Mr Lambert ← (Walter Lambert)
Mr M. Lambe (Ottawa Car)
Winslow Spragge

TANKS (including Machine Guns, Carriers - Caterpillar).

Mr. G. T. M. Bevan (Chairman).
Mr. J. E. Goodison.
Mr. O. W. Ellis.
Also Ford representative.

Mr Goldie
Mr Magor

SHELLS (including Mines and Sinkers).

Mr. A. R. Goldie.
Mr. G. T. M. Bevan.
Mr. R. J. Magor. (Chairman).
Mr. E. Winslow-Spragge.
Colonel Noel Carr.
Mr. H. G. Bertram.

Mr Drury
Mr Goodison

TRENCH MORTARS.

Mr. J. E. Goodison. (Chairman)
Mr. M. Lambe. (Ottawa Car)
Mr Dalton

Mr. Drury
Mr. Bertram
Mr. Carr
Mr. Fraser
Mr. Lambe
Mr. Lambert
Mr. Magor
Mr. Morrow
Mr. McNaughton
X Mr. Winslow-Spragge

5th August 1939.

C.M.A. GUN COMMITTEE

An appointment has been made at Woolwich Arsenal for Tuesday, August 8th at 10.30 a.m. The party will leave by automobile from Queen Anne's Mansions, S.W.1. at 9.30 a.m. meeting at the entrance below the Committee Room.

A.F. Gill.

THE CANADIAN CHAMBER OF COMMERCE IN GREAT BRITAIN, INC.

[WITH WHICH IS ASSOCIATED THE DOMINION OF NEWFOUNDLAND.]

HONORARY PRESIDENT

THE HON. VINCENT MASSEY
HIGH COMMISSIONER FOR CANADA

HONORARY VICE-PRESIDENT

SIR GEORGE MCLAREN BROWN, K.B.E.

PRESIDENT

L. ANDREWS

SECRETARY

G. H. WARD

TELEGRAMS:-- CANCHAMCOM, PICCY, LONDON.

CABLES:-- CANCHAMCOM, LONDON.

TELEPHONE:-- WHITEHALL 2794

*British Columbia House
3 Regent Street.
London S.W.1*

Our reference
E.F.no.18/457

5th August, 1939.

Dear Sir,

For your information, I now attach a list of the Committees as agreed upon at last night's meeting.

I would also confirm Mr. Stirrett's advice this morning that the general work of the Mission during its stay in the United Kingdom will be conducted from this office, and I would draw your particular attention to the telephone number and telegraphic and cable addresses which appear on this letterhead.

You will recall to mind that Mr. Stirrett advised the meeting this morning, as you are already aware, that the High Commissioner has placed Mr. Pearson's Office at the disposal of the Mission for any meetings that may be necessary. The telephone number of Canada House is Whitehall 9741.

In conclusion, may I take this opportunity of informing you that this office is entirely at the disposal of the Mission and we will be very happy indeed to render any assistance within our power.

Yours very truly,

G. H. Ward

Secretary.

GHW/H
encl:

CANADIAN INDUSTRIALISTS MISSION TO THE UNITED KINGDOM

C O M M I T T E E S

COMMUNICATIONS

Mr. S. M. Finlayson (Chairman).
General A. G. L. McNaughton.
Squadron Leader F. V. Heakes.

STEEL

Mr. J. G. Morrow (Chairman).
Mr. F. A. Welling.
Colonel Noel Carr.

MACHINE TOOLS AND GAUGES

Mr. H. G. Bertram (Chairman).
Colonel Noel Carr.
Mr. A. F. Gill.
Mr. A. Fraser.

NON FERROUS METALS (including Cartridge Cases and Fuses).

Mr. O. W. Ellis (Chairman).
Colonel Noel Carr.
Colonel G. P. Loggie.
Mr. S. M. Finlayson.
Mr. G. T. M. Bevan.
Air Commodore W. Mulock.

SPECIFICATIONS

Mr. J. G. Morrow (Chairman).
General A. G. L. McNaughton.
Air Commodore W. Mulock.
Colonel Noel Carr.
Mr. A. F. Gill.

POWER AND HEAVY CHEMICALS (including Explosives).

Mr. P. S. Gregory (Chairman).
Mr. V. Bartram.
Mr. Pritchard.
Mr. Evans.

GUNS

Mr. Victor Drury (Chairman).
Mr. H. G. Bertram.
General A. G. L. McNaughton.
Mr. R. J. Magor.
Colonel Noel Carr.
Mr. W. Lambert.
Mr. M. Lambe.
Mr. E. Winslow-Spragge.

TANKS (including Machine Guns, Carriers - Caterpillar).

Mr. G. T. M. Bevan (Chairman).
Mr. J. E. Goodison.
Mr. O. W. Ellis.
Mr. A. R. Goldie.
Mr. R. J. Magor.
Also Ford representative.

SHELLS (including Mines and Sinkers).

Mr. R. J. Magor (Chairman).
Mr. A. R. Goldie.
Mr. G. T. M. Bevan.
Mr. E. Winslow-Spragge.
Colonel Noel Carr.
Mr. H. G. Bertram.
Mr. Victor Drury.
Mr. J. E. Goodison.

TRENCH MORTARS.

Mr. J. E. Goodison (Chairman).
Mr. M. Lambe.
Mr. Hugh Dalton.

SHIPS

Mr. W. Lambert (Chairman).
Mr. A. R. Goldie.
Mr. Hugh Dalton.

THE CANADIAN CHAMBER OF COMMERCE IN GREAT BRITAIN, INC.

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PRESIDENT

L. ANDREWS

SECRETARY

G. H. WARD

TELEGRAMS:-- CANCHAMCOM, PICCY, LONDON.

CABLES:-- CANCHAMCOM, LONDON.

TELEPHONE:-- WHITEHALL 2794

*British Columbia House
3 Regent Street.
London. S.W. 1*

8th August, 1939.

D I A R Y

Please note the following appointments have been made:-

Wednesday,
August 9th.

- 9.30 a.m. Meeting in the Conference Room for those available.
- 10.15 a.m. Power and Heavy Chemicals Committee and Shipping Committee both at Admiralty. Appointment with Rear Admiral Fraser.
- ✓ 11.30 a.m. Gun Committee and Steel Committee to meet Engr. Rear Admiral Sir Harold Brown at Adelphi House, Adelphi Terrace, W.C.2.
- ✓ 12 noon. The Defence Committee to meet Mr. E. Leslie Burgin, M.P., Minister of Supply, Adelphi House, Adelphi Terrace, W.C.2.
- 5.30 p.m. Non-Ferrous Metals Committee to leave 5.30 p.m. train from Kings Cross arriving at Newcastle at 9.30 p.m. Hotel reservation made at the Station Hotel.
- 5.30 p.m. General Meeting, Conference Room.

Thursday,
August 10th.

- a.m. Officers of the Royal Ordnance Department will meet the Non-Ferrous Metals Committee at the Hotel and take them through factory.
- 9.5 a.m. Gun Committee and Steel Committee will leave St. Pancras Station at 9.5 a.m. arriving at Nottingham 11.08 a.m. where the Committees will be met by officers of the Royal Ordnance Department and will proceed to factory.

SECRET

*Some interesting points
Remarks by E. W. S*

*Secret
Conference*

Summary of main features of Conference
with Canadian Mission on 9/8/59 of
which notes are attached.

Ref. to Notes.

Page

- 1, 4, 5, 10. Programme of visits, etc: Arrangements. Time to be occupied.
- 1, 2, 3, 4. Broad picture of emergency requirements: Request for information by Canadian Mission as to magnitude of task that might have to be faced.
- 5, 10. (It was agreed that this aspect should be further discussed at a later conference after the Mission had completed the arranged programme of visits and had had an opportunity of reviewing the position in the light of their investigations. All members of Mission then to be present.)
- 1, 2 Educational orders: Extent to which necessary. Steel instanced as a case in which not thought to be necessary. Unit plants.
- 3, 4. Steel and non-ferrous metals output in Canada.
5. Survey of Canadian industry: 1,500 firms surveyed.
- 5, 7, 8. Small Firms: Considerable number of small firms not included in survey thought to afford a large potential for small components. Production costs of small firms.
6. Limitations in production: Gun-work, more particularly rifling, heat-treatment, etc., and optical instruments. Otherwise nothing that could not be surmounted.
- 6, 8, 9. Gauge-making: Adequate for Canadian production. Difference of opinion whether any surplus available for Home production.
- 7, 8. Shell production. Certain to be required from Canada but not at expense of machine tool or gauge-making facilities, skilled labour, etc. Shell orders regarded by Canada as useful and important from financial viewpoint.
- 2, 3 9. Machine tools: Production in Canada slack for last 3 years John Bertram & Sons have capacity for large machines.

(It was agreed that particulars of the range of production of this firm should be given to D.G.M.P.)

NOTE OF A CONFERENCE

HELD AT THE ADELPHI ON WEDNESDAY, 9th AUGUST, 1939

REGARDING

PRODUCTIVE CAPACITY IN CANADIAN INDUSTRY

Present:

The Rt. Hon. Leslie Burgin, M.P.	Minister of Supply
Colonel J.J. Llewellyn, O.B.E., M.C., M.P.,	Parliamentary Secretary, Ministry of Supply
Sir Arthur Robinson, G.C.B., C.B.E.	Secretary, Ministry of Supply
Engr. Vice-Admiral Sir Harold A. Brown, G.B.E., K.C.B.	Director General of Munitions Production
Lt.-General Sir Maurice G. Taylor, K.C.B., C.M.G., D.S.O.	Senior Military Adviser, Ministry of Supply
Lt.-Colonel J.H.M. Greenly, C.B.E.	Chairman, Prime Minister's Advisory, Panel of Industrialists
The Hon. Vincent Massey.	High Commissioner, Dominion of Canada.

Canadian Mission

Mr. E. Holt Gurney	Gurney Foundry Co., Toronto. Head of Canadian Mission.
Maj-General A.G.L. McNaughton C.B., C.M.G., D.S.O.	Former Chief of Staff Canadian Forces President, National Research Council, Ottawa
Colonel Noel Carr, R.C.A.	Director of Mechanization & Artillery, National Defence Dept., Canada.
Mr. H.G. Bertram	John Bertram & Sons, Dundas
Mr. E. Winslow Spragge	Canadian Ingersoll Rand Co., Montreal
Mr. J.T. Stirrett	Asst. Manager, Canadian Manufacturers' Association, Toronto.

CANADA - EMPIRE ARSENAL.

By E.L.Chicanot.

The crisis of last September, when the British Empire seemed on the point of being plunged into another large-scale war, naturally raised the question of Canada's participation and contribution. While there was never the slightest doubt but that the Dominion would place the whole of her resources behind the Mother Country the exact manner of her doing so never came to an issue. However, the view was semi-officially expressed, and fairly widely entertained, that there was not likely to be any Canadian expeditionary force or combatants sent overseas beyond those freely volunteering for service with the British Forces, such as has been leaving the country in a steady dribble for some time. Canada's role in the waging of a war, it was fairly generally credited, would be rather as a supplier of food and armaments.

The crisis is passed but the fear cannot be altogether banished that war may have been only postponed. Countries are re-arming on a more extensive scale than ever, with Great Britain very much to the fore. And increasingly, as preparations are made for a war in which the British Empire may be involved, it would appear that this is the part Canada is destined largely to play. Long known as the Granary of the Empire she may come to be known as the Empire's Arsenal.

The logic of such a development from the standpoint of situation, if Canada is capable of playing the part, is immediately apparent when modern conditions of waging war are considered. Aerial bombing has rendered Britain's traditional measures of defence

1.

The Minister said that he had been informed of the arrival of the Mission, of its representative character, and of the immense potentiality which there appeared to be in Canadian Industry. He had also been given a note of recent conversations which he would study with interest. He added that he had had the pleasure of welcoming the Members of the Canadian Chamber of Commerce a few weeks ago.

PROGRAMME OF VISITS, ETC.

Sir Harold Brown in reply to the Minister said that a programme of visits etc. had been arranged for the Mission.

Mr. Gurney said that the programme arranged for the Mission was admirable and would keep them busy for the next few weeks. He wished to make it clear that each member of the Mission represented not his own particular firm or interest, but the whole field of his particular class of work in Canada. The Mission were anxious to have some idea of the extent of requirements and calls likely to be made upon Canadian industry in the event of a major war. It seemed most desirable to have this information now in order to avoid the wasted time inherent in planning after the outbreak of War.

BROAD PICTURE OF EMERGENCY REQUIREMENTS

The Minister said that the last war rather caught us unawares, but there had been a very considerable amount of planning against any further emergency; but Mr. Gurney's remarks did touch upon the important question of war potential. He enquired whether Mr. Gurney also had in mind educational orders.

EDUCATIONAL ORDERS.

Mr. Gurney intimated that the Mission were not primarily thinking of educational orders, but rather of the broad picture against which planning is considered necessary.

The Minister said that he appreciated the point - of having some idea of the background - but thought that educational orders would be necessary to provide Canadian Industry - managerial staffs as well as workmen - with experience of the difficulties of armament production. The acquisition of experience had certainly been found necessary at Home even with firms that had been thought capable of taking on the rather specialised production of munitions.

Sir Harold Brown said that it was intended that there should be in Canada at least some unit plants which would be capable of expansion in war. Without a nucleus of unit plants, expansion would probably be slow. He appreciated the Mission's desire to have some information as to the full extent of war commitments, but there were many factors to be taken into consideration, and the question was by no means free from difficulties. He added that there was already a shell plant in Canada. He suggested that the broader aspects of the problem might be further discussed at another meeting after the Mission had concluded the programme arranged and had had further opportunity to review the position in the light of the situation as they then saw it. He had already learnt with some surprise that the machine tool capacity available in Canada had not been fully utilized and had asked for particulars of the range of production.

UNIT PLANTS

MACHINE TOOLS

STEEL

Mr. Gurney - stated that in the matter of steel, educational orders were only necessary in the case of special steels. There was plenty of capacity for steel production in Canada and he thought that no extra plant would be necessary in the event of war.

The Minister noted that in the view of the Mission it was not necessary that Canada should have educational orders for steel.

Sir Harold Brown mentioned in this connection that the Departments were in touch with The British Iron & Steel Federation and that it was understood that the Home output of steel was considered to be adequate to cope with requirements so far postulated. Canada would, of course, be expected to supply steel for all munitions production in that country.

Sir Arthur Robinson pointed out that the position in regard to steel production had somewhat altered since the last war in that Home production had been considerably increased.

EMERGENCY
REQUIREMENTS.

Major-General McNaughton said that the feeling in Canada is rather one of uneasiness at not knowing the magnitude of the task that might face them in war. The aim of the Mission was to come to grips with this problem not only in relation to the specialised items such as guns, shells, fuzes, etc., but in relation to the whole resources likely to be needed in emergency. He endorsed the request put forward by Mr. Gurney that the Mission might be given some general picture of the full extent of the call on industry in the event of war - a picture in broad

terms that would enable Canada to study its own position and plan accordingly. It would then be possible to determine in which directions educational orders seemed necessary.

The Minister emphasized that as the Mission no doubt appreciated, it was not easy to formulate a picture of the full extent of anticipated commitments in emergency. There were many considerations and difficulties, and any attempt to arrive at a picture in relation to Canada necessarily involved a bigger picture.

Major-General McNaughton said that he was aware of the difficulties, having had occasion as C.G.S. to study the situation in some detail. The mission were desirous of showing quite frankly what the position was at present in Canada so that a conclusion could be reached as to how Canada could best render assistance. He instanced the growth of Canadian productive output in steel from 800,000 tons to 2½ million tons at present and non-ferrous metals (zinc, lead, copper etc. in which the increase in production has been from 2½ million tons to 10-fold).

CANADIAN OUTPUT
OF
STEEL & NON-
FERROUS METALS.

The Minister said that he fully appreciated the anxieties of the Mission and promised that he would do his utmost to help and facilitate their task. He enquired how long the planned programme would occupy them. Sir Harold Brown and Mr. Gurney thought that the programme would be completed in about a fortnight.

TIME TO BE
OCCUPIED IN
PLANNED
PROGRAMME

The Minister, having been assured by Sir Harold Brown that the programme for the Mission included contact with the Admiralty and Air Ministry in regard to the items with which the Ministry of Supply were not concerned, thought that if all concerned took a note of the points that arose during the visits and discussions by the various sub-committees during the next fortnight a further conference could then be held. On the occasion of that meeting he would, if Mr. Gurney favoured such a course, like to meet all the Members of the Mission. To take full advantage of the present meeting, he enquired whether there were any particular points on which a preliminary discussion might serve a useful purpose.

Mr. Gurney thought that the Minister might perhaps like to hear other Members of the Mission present put forward their own views on the problems at issue.

Colonel Carr said that the Canadian National Defence Department had surveyed 1500 firms. From this survey it was evident that the resources of Canada cover a very wide field of industry. The Department had not so far done anything to allocate tasks in the event of an emergency; it was felt that this would be wasted effort unless they had some idea of the broad picture of requirements. Another feature of the problem was that there were in Canada a large number of small firms not included in the 1500 surveyed that would have in the aggregate a large potential for small components. Production by components on a wide sub-contracting

FURTHER CONFERENCE
WITH FULL MISSION
PRESENT.

CANADIAN SURVEY
OF INDUSTRY.

SMALL FIRMS.

basis for central assembly had been resorted to in the last war.

LIMITATIONS OF
CANADIAN
PRODUCTIVE CAPACITY.

The Minister said that he learnt with interest and took note of the fact that 1500 Canadian firms had been investigated. He enquired what deficits in particular spheres of munitions production the survey had revealed. He understood that there was a deficit in productive capacity for gun work.

Colonel Carr agreed that for some armament processes and operations e.g. gun rifling, heat treatment, etc., there was little productive capacity in Canada; otherwise, except of course in the notable instance of optical instruments, he thought that there were no gaps in Canadian Industry which could not be surmounted.

GAUGE-MAKING
CAPACITY.

Colonel Greenly enquired whether Canada had any substantial capacity for gauge making.

Colonel Carr said that there was, and that it was not thought that gauge making would be a bottle neck.

Colonel Greenly suggested that Canadian gauge making capacity might be required to augment that available at Home.

Colonel Carr ^{thought} ~~that~~ that with the great variety of small producers in Canada there would be potentialities for gauge making over and above what Canada would require for her own production.

Sir Harold Brown interpolated that the programme for the Mission would include a visit to a gauge making factory.

The Minister pointed out that while

SMALL PRODUCERS
OF COMPONENTS.

small producers of components afforded a substantial source of capacity in the aggregate, they constituted a source of worry on account of their being widely separated and of the uneven flow of their deliveries. There had been some public pressure to broaden the basis of supplies, but it was not fully realized that extensive sub-contracting inevitably tended to delay deliveries. In this connection he had never forgotten a comment by Lord Weir that what counted was "the big unit and not the rat trap".

Mr. Winslow Spragge said that he had been present at the inception of the Shell Committee and had continued in close contact with the Shell Committee and with the Imperial Munitions Board in the last War. Those bodies had functioned remarkably efficiently and he thought that Canadian Industry had perhaps to some extent been over-nursed on that account. Canadian industry had merely indicated that they wanted so many shells etc. and those bodies had made all the arrangements for providing the materials etc. This might to some extent account for the fact that little approach had been made by Canadian Manufacturers in the present situation. Having regard to the arrangements in the last war they might have felt that it would be presumptuous on their part to initiate enquiries for orders, especially as regards shell. He added that shell production in Canada was particularly useful from a financial point of view because it brought quick payment; this was an important point. He thought that he could render some assistance on the problems now to be considered by way of arranging liaison

FINANCIAL
IMPORTANCE OF
SHELL ORDERS.

between the small Canadian manufacturers and the demanding authorities.

PRODUCTION COSTS
OF SMALL FIRMS.

The Minister enquired whether production costs in the case of small firms would be sufficiently low to afford a sound basis for development.

Mr. Winslow Spragge said that he might be better able to answer that point after he had learnt something of production and labour costs in this country, but added that there had been considerable advances in Canadian production methods since the last war.

Sir Harold Brown mentioned in connection with Mr. Spragge's reference to shell production, that shell was an item which Canada would certainly be required to produce.

GAUGE MAKING.

Mr. Bertram said that there was quite a good gauge production in Canada although perhaps it might not be so well organized as over here. Gauges were, for example, made for Bren guns, 18 pdr. and 4.5" shells etc. He rather thought, however, that Canada would need all the gauge making capacity available there for her own production. He mentioned that in the last war his firm had made shell thereby absorbing capacity which was normally utilized for machine tools.

MACHINE TOOLS AND
GAUGES:

UTILISATION OF
SKILLED MEN ON;
PROBABLY WORST
BOTTLE-NECKS.

The Minister pointed out that machine tools and gauges would be wanted from machine tool and gauge makers in preference to shell. He emphasized that it would be clearly undesirable to employ the skill of machine tool and gauge makers on anything else but their own special work. The worst bottle-neck would probably be machine tools and gauges.

SLACKNESS IN
CANADIAN
MACHINE TOOL
PRODUCTION.

RANGE OF PRODUCTION
OF J. BERTRAM & SONS.

GAUGE MAKING
POTENTIAL.

PROGRAMME
ARRANGEMENTS.

FURTHER CONFERENCE.

Mr. Bertram said that there need be no clash in production of the different items. The position in Canada was perhaps a little different because for the last three years or so machine tool production there had been very slack: production costs might have something to do with it as they were no doubt higher than in Great Britain. He undertook to provide details of the range of machine tools which his firm were able to make.

Mr. Winslow Spragge thought that Mr. Bertram put Canada's gauge making potential too low. In his view there should be capacity available in Canada over and above her own needs.

The Minister said that he was perturbed to hear that machine tool production in Canada had been going slow for three years.

Mr. Gurney said ~~that~~ in conclusion that the Mission much appreciated the staff work being undertaken on their behalf more particularly as they realized that everybody was very busy. If they could be given some sort of broad estimate of what is likely to be required in the event of war, they would indeed be glad to have it.

The Minister said that it was being left to the Mission to decide whether they carried out their visits alone or accompanied by Departmental representatives. In the latter event Sir Harold Brown would be quite ready to make the necessary arrangements. His own feeling was that it would be better for the Mission to see the programme through first and then when they would undoubtedly have a much better idea of the situation, outstanding points could be focussed for discussion at a further conference.

THE CANADIAN CHAMBER OF COMMERCE IN GREAT BRITAIN, INC.

(WITH WHICH IS ASSOCIATED THE DOMINION OF NEWFOUNDLAND.)

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HIGH COMMISSIONER FOR CANADA

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SIR GEORGE McLAREN BROWN, K.B.E.

PRESIDENT
L. ANDREWS

SECRETARY
G. H. WARD

British Columbia House
3 Regent Street.
London, S.W.1
9th August, 1939.

D I A R Y

of the

CANADIAN MANUFACTURERS' ASSOCIATION MISSION TO THE UNITED KINGDOM

Please note the following appointments have been made:-

Thursday,
August 10th. a.m. Non-Ferrous Metals Committee at Newcastle.
9.5 a.m. Gun Committee and Steel Committee at
Nottingham.
10. a.m. Steel Committee, Queen Anne's Mansions.
5.30 p.m. General Meeting in the Conference Room
for those available.

Tuesday,
August 15th. 3. p.m. Plywood. The Committee dealing with this
will meet at the Air Ministry, Berkeley
Square, S.W.1., with Major P. L. Teed,
Chief Inspector of Materials, Room B2033.

Potential appointments to be confirmed -

Sunday,
August 13th. Tank Committee. Leave for Birmingham.
Stay Queens Hotel.

Monday,
August 14th. Nuffield Mechanisation for Tanks,
Birmingham. Leave Monday night for
Manchester. Stay Midland Hotel.

Tuesday,
August 15th. Vulcan Iron Works, Newton-le-Willows.
Ferranti Limited, Manchester.
Midland Hotel Manchester Tuesday night.

Wednesday,
August 16th. a.m. for Elswick. Stay Royal Station Hotel,
Newcastle.

Thursday,
August 17th. Thornycroft, Basingstoke.

P.S. It may be necessary to revise
Wednesday and Thursday programme.
Chairman of Committee will confirm
later date.

THE CANADIAN CHAMBER OF COMMERCE IN GREAT BRITAIN, INC.

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PRESIDENT
L. ANDREWS

SECRETARY
G. H. WARD

*British Columbia House
3 Regent Street.
London. S.W.1*

10th August, 1939.

D I A R Y

of the

CANADIAN MANUFACTURERS' ASSOCIATION MISSION TO THE UNITED KINGDOM

Please note the following appointments have been made:-

FRIDAY, AUGUST 11th

Mr. Ellis and Mr. Morrow at Samuel Osborne Works, Sheffield.

9.30 a.m. General Meeting, Conference Room, Queen Anne's Mansions, S.W.1.

10.30 a.m. A meeting has been arranged with Mr. Warhurst of the Admiralty, at Lansdowne House, 2, Fitzmaurice Square, at 10.30 a.m. to discuss MINES and BOMBS. Any member of any Committee interested is asked to attend and those going will assemble after the General Meeting in the Conference Room at 9.30 a.m.

5.30 p.m. General Meeting, Conference Room, Queen Anne's Mansions, S.W.1.

NON-FERROUS METALS Committee
Messrs. Ellis, Carr, Loggie,
Finlayson, Bevan, Mullock. at Birmingham.

ADVANCE APPOINTMENTS CONFIRMED

POWER AND HEAVY CHEMICALS (including Explosives).
Messrs. Gregory, Bartram,
Pritchard, Evans.

Monday,
August 14th. 11 a.m. Ministry of Supply, Adelphi House, Adelphi Terrace, W.C.2., Room 283.

inadequate and centres of armament manufacture will in the future be subject to attack. Canada is reasonably safe from such hazard and at the same time the most accessible of the outlying parts of is immediately apparent when modern conditions of waging war are considered. Aerial bombing has rendered Britain's traditional measures of defence inadequate and centres of armament manufacture will in the future be subject to attack. Canada is reasonably safe from such hazard and at the same time the most accessible of the outlying parts of the Empire to Britain. Travel between the two countries involves no possibility of trouble with another nation and the route can be afforded a substantial measure of protection. Additional supporting factors are that the extent and variety of Canada's natural resources render them of peculiar value in such an emergency, while the Dominion has made such progress in diversified manufacturing as to have laid a very sound base on which to build war industries.

Just what Canada today might be capable of in this direction is faintly foreshadowed in her record of accomplishment during the Great War. The achievements of the 595,000 soldiers Canada raised and the 418,000 she sent overseas, as well as the thousands who served with the Royal Air Force, tend to overshadow the accomplishments of those who served no less in other fields.

Marvels were effected in augmenting the food provision, to make greater shipments possible. This was attributable to the efforts of patriotic Canadian farmers with a very depleted labor force, supplemented by those of a host of town and city men who gave up their holidays to engage in what for them was exhausting physical labor. Campaigns for increased food production resulted in the

ADVANCE APPOINTMENTS CONFIRMED (continued)

TANKS Committee

Messrs. Bevan, Goodison,
Ellis, Goldie, Magor, and
Ford representative.

and

NON-FERROUS METALS Committee

Messrs. Ellis, Carr, Loggie,
Finlayson, Bevan, Mulock.

Sunday,
August 13th.

Leave for Birmingham, stay at Queens Hotel.

Monday,
August 14th.

Nuffield Mechanisation & Aero Limited.
Company will have cars at Queens Hotel 9.30
a.m. The Executive of the Company is Mr.
Oliver Boden.

Deferred — Leave Monday night for Manchester. Stay
Midland Hotel.

Tuesday,
August 15th.

Leave Exchange or Victoria Station, Manchester,
(the proper station to be verified at Midland
hotel) at 9.40 a.m. arriving at Newton-le-
Willows 10.08. Vulcan Foundries Limited will
have cars at station to convey Committees to
their works. The General Manager is Mr.
Saunders.

PLYWOOD Committee
Messrs. MacDonald,
Bartram, Gill, Dalton.

Tuesday,
August 15th. 3 p.m.

Will meet at the Air Ministry, Berkeley Square,
S.W.1. with Major P. L. Teed, Chief Inspector
of Materials, Room B2033.

SPECIFICATIONS Committee
(Messrs. Morrow, McNaughton,
Mulock, Carr, Gill.

Wednesday,
August 16th. 12 noon.

Meeting with Air Ministry, Berkeley House,
Berkeley Square, W.1.

Prospective appointments for Tanks and Non-Ferrous Metals Committee awaiting confirmation:-

TANKS Committee
Messrs. Bevan, Goodison,
Ellis, Goldie, Magor and
Ford representative.

and
NON-FERROUS METALS Committee
Messrs. Ellis, Carr, Loggie,
Finlayson, Bevan, Mulock.

Wednesday,
August 16th.

Vickers Armstrong Limited, Elswick.
Stay Royal Station Hotel, Newcastle.

Thursday,
August 17th.

Thornycrofts, Basingstoke.

NOTE: Details in regard to these appointments
will be furnished later.

ARRANGEMENTS IN HAND BUT NOT CONFIRMED:-

COMMUNICATIONS Committee
Messrs. Finlayson, McNaughton,
Heakes.

Meeting with Admiralty on Monday, 14th,
or Tuesday, 15th.

STEEL Committee
Messrs. Morrow, Welling,
Carr.

Confirmation expected for a visit of
this Committee to the English Steel Works,
Sheffield, on Monday, August 14th.

THE CANADIAN CHAMBER OF COMMERCE IN GREAT BRITAIN, INC.

[WITH WHICH IS ASSOCIATED THE DOMINION OF NEWFOUNDLAND.]

HONORARY PRESIDENT:-
THE HON. VINCENT MASSEY,
HIGH COMMISSIONER FOR CANADA.

HONORARY VICE-PRESIDENT:-
SIR GEORGE M^o LAREN BROWN, K.B.E.

PRESIDENT:-
L. ANDREWS.

SECRETARY:-
G. H. WARD.

TELEGRAMS:- CANCHAMCOM, PICCY, LONDON.
CABLES:- CANCHAMCOM, LONDON.
TELEPHONE:- WHITEHALL 2794.

*British Columbia House,
3, Regent Street,
London, S.W.1.*

11th August, 1939.

Mr. E. Winslow-Spragge,
Queen Anne's Mansions,
S.W.1.

Dear Mr. Winslow-Spragge,

I am desired by Mr. Magor, the Chairman of the Shell Committee to advise you that it has been arranged for the Committee to visit Portsmouth to-morrow, for the purpose of inspecting a plant on the production of bombs, mines and sinkers.

For your information, I would inform you that the party will leave Queen Anne's Mansions by car at 8 a.m. sharp, and it will be appreciated if you will be on hand.

I am also requested to inform you that the Shell Committee will leave for Birmingham on Sunday night. Reservations have been made at the Queen's Hotel, Birmingham. The Committee will meet at the central lobby of the hotel at 9 a.m. on Monday, 14th August, for the purpose of starting out on tour.

For your information, I would inform you that the following trains leave for Birmingham on Sunday night :-

Euston.

5.10 p.m.
7.50 p.m.
8.10 p.m.

Birmingham.

7.20 p.m.
10.17 p.m.
10.42 p.m.

Yours very truly,

G. H. Ward.
Secretary,

THE CANADIAN CHAMBER OF COMMERCE IN GREAT BRITAIN, INC.

(WITH WHICH IS ASSOCIATED THE DOMINION OF NEWFOUNDLAND.)

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THE HON. VINCENT MASSEY
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HONORARY VICE-PRESIDENT
SIR GEORGE MCLAREN BROWN, K.B.E.

PRESIDENT
L. ANDREWS

SECRETARY
G. H. WARD

*British Columbia House
3 Regent Street.
London. S.W. 1*

Our reference
E.F.no.18/457

12th August, 1939.

Dear Sir,

At the suggestion of Mr. R. J. Magor, Chairman of the Shell Committee, it has been decided to consolidate the work of the Tanks, Steel, Guns, Shell and Non-Ferrous Metals Committees in the Birmingham and Midlands area on August 14th, 15th, 16th and 17th.

Mr. Magor is arranging the programme in consultation with Mr. R. P. Stott, Area Progress Officer, Naval Armament Supply Department, 48 Corporation Street, Birmingham, Telephone no. MIDLAND 0239.

Other Committee Chairmen are asked to consult with Mr. Magor.

Enclosed is the revised Diary.

Yours very truly,

G. H. Ward

Secretary.

GHW/H

Monday,
August 14th.

9.30 a.m.

BIRMINGHAM

Shells, Guns, Steel, Tanks, Non-Ferrous Metals Committee.
Nuffield Mechanisation & Aero Ltd.
Have arranged for cars to call at Queens Hotel 9.30 a.m. Executive of Company Mr. Oliver Boden.

Return to Queens Hotel for luncheon.

2.15 p.m.

New Crown Forgings Limited will send cars to Queens Hotel at 2.15 to proceed to Wednesbury. The Committees will be met by either Major Matthews, Mr. G. S. McLay or Mr. Cooper.

Proposed visit to the Monitor Oil Co. Time to be announced by Mr. Magor.

COMMUNICATIONS COMMITTEE

Messrs. Finlayson, McNaughton, Heakes.

Tuesday,
August 15th.

11. a.m.

LONDON

To meet Captain Glover, R.N., Director of Signal Department, Admiralty, Room no. 27, Old Block, Ground Floor, Whitehall, S.W.1.

SPECIFICATIONS COMMITTEE

Messrs. Morrow, McNaughton, Mulock, Carr, Gill.

Tuesday,
August 15th.

12 noon.

To meet Colonel W. S. Cave, D.S.O., Room B6030, Air Ministry, Berkeley Square House, W.1. Telephone no. GROsvenor 4050. Ext. 2228.

PLYWOOD COMMITTEE

Messrs. MacDonald, Bartram, Gill, Dalton.

Tuesday,
August 15th.

3. p.m.

To meet Major P. L. Teed, Chief Inspector of Materials, Air Ministry, Berkeley Square House, W.1. Room B2033.

BIRMINGHAM

For those Committees in Birmingham appointments will be arranged by Mr. Magor, and for information the following firms will be visited:-

J. Sankey & Son; Horsley Bridge & Thos. Piggott; Bulpitt & Son Ltd; Wolseley Sheep Shearing M/c Co; W. T. French & Son; Fisher & Ludlow.

TRENCH MORTARS COMMITTEE

Messrs. Goodison, Lambe,
Dalton.

Wednesday,
August 16th.

10. a.m. Messrs. Prins Smith & Stal,
Keighley, Yorks.

Guns, Steel, Non-Ferrous Metals
and Tanks Committee in Birmingham.
Programme as arranged by Mr. Magor.

NON-FERROUS METALS COMMITTEE

Messrs. Ellis, Carr, Loggie,
Finlayson, Bevan, Mulock.

Thursday,
August 17th.

2.30 p.m. To meet Mr. V. Ferranti, Ferranti
Limited, Manchester. Committee to
make own arrangements for
transportation.

Guns, Steel and Tanks Committees
in Birmingham. Appointments will
be arranged by Mr. Magor.

STEEL, TANKS, GUNS and
NON-FERROUS METALS COMMITTEES

Friday,
August 18th.

Vickers Armstrong Limited, Elswick.
Details of this to be confirmed.
Stay Royal Station Hotel, Newcastle.

NOTE: Since the issue of the last Diary, the following
gentlemen have arrived in London and joined the
Mission:-

Mr. Harold Crabtree, First Vice-President of the
Canadian Manufacturers' Association
and President, Howard Smith Paper
Mills Limited, Montreal.
c/o Dorchester Hotel, W.1.

Mr. A. S. Ellis, Ford Motor Co. of Canada Limited.
Windsor. Ont.
c/o Savoy Hotel, W.C.2.

C.M.A. Shell Committee.

Town of Wed

Visit to New Crown Forgings Ltd., Wednesbury, Nr. Birmingham.

Works Manager, Major A.B. Matthews.

Monday, Aug 14/39

This plant is devoted to the production of 3.7" anti-aircraft shells. Its output approximates 180 per hour, amounting to about 17,000 per 94 hour week. 250 machine operators are employed together with 550 others, including 80 inspectors, making a total of 800. The man hours per shell are thus approximately 2.2 (note: this includes the shell unfilled without fuse mechanism or nose).

The shell billets are received in the plant from the steel mill in sections approximately $3 \frac{13}{16}$ " square. These are cut to length of $9 \frac{5}{8}$ " with circular saws. Four such saws are used.

There are three billet heating furnaces, gas-fired, with two doors each. Billets are removed by hand, descaled by hand and given a preliminary taper by squeezing the corners over half the length. A Wellman mechanically-driven punch-press forms the hole in the billet. This press is equipped with three mandrels which are automatically interchanged.

The hollow billet is removed from the press by hand and descaled by turning in a jet of water, after which it is passed to a horizontal die press (Wellman), also mechanically driven, which reduces it to a diameter of $4 \frac{1}{16}$ " and extends it to a length roughly of 16". This press is equipped with four mandrels and brings the cavity to a smooth condition and final size. A few grammes of graphite are added to the cavity prior to this last operation. Both forging presses operate at a rate of 3 to 4 shells per minute.

The rough forgings pass to the machining section where rough turning is done on two semi-automatic horizontal lathes equipped with four side cutters, which are followed by two automatic end cutters. The side cutters take the diameter to $2 \frac{3}{4}$ " in a single pass and also leave a bulbous nose end to allow for subsequent swaging. The tools are of tungsten carbide and operate at incipient red heat.

The rough machinings then return to the forging shop for swaging of the noses. Heating is done in a battery of small gas-fired, batch-type furnaces holding a total of 30 shells at a time, the latter being inserted and removed by hand. Two hydraulic presses each operable at four shells per minute, forge the nose in one operation.

The shells then pass back to the machining end and go through the following sequence of operations:

(1) Rough and finished turning of the noses inside and out is done on 16 John Phillips turret lathes.

(2) Final turning of the shell periphery is done on 4 (?)

vertical semi automatics in one operation. (T. Ryder & Son Ltd., Bolton).

(3) The butts (resulting from the original rough turning), are removed and weight adjusted. (5 machines).

(4) The rivetting burr is formed in one operation. (Three machines).

(5) The base-plate groove is formed in one operation. (Five machines - J.B. Corrie and Co. Ltd.)

(6) The grooving for the driving band is formed on semi-automatics (Six machines).

(7) The nose is finish drilled (Six machines).

(8) Copper driving bands comprising sections of seamless tubing are shrunk on. They are heated in small continuous gas furnaces and swaged in a semi-automatic hydraulic machine.

(9) Base plates, which are received as blanks, are faced to size, chamfered on 6 general purpose machines and rivetted in one operation. (Three machines, J.W. Flower).

(10) The burr is removed and the base rounded in one operation. (Three (?) machines.)

(11) The shell is cleaned by solvent extraction in a tank of about 400 c.ft. external dimensions and is then sand blasted.

(12) Interior varnish is then applied (consumption one gallon per 600 shells), and the varnish is baked in a continuous kiln conveyor equipped at 330°F.

(13) The thread for the fuse mechanism is formed in one operation on 9 millers.

(14) The fuse set screw is drilled and tapped on four machines used interchangeably.

(15) The bands are turned to dimensions on five machines. (last operation).

False noses are screwed into the shells before delivery is taken. They are shipped in 'egg-crate' type packing cases.

Shells are moved between operations by hand, small trucks being largely used.

All the machining equipment in this plant is Government owned and it is understood that the forging plant is also.

Inspection is provided by 40 men per shift at all stages of manufacture, the principal inspection beginning after the finish drilling on the nose. Billets as received weigh 37 lbs. and the finished shell weighs 23 lbs, (tolerance not known).

The area of this plant is approximately 110,000. sq.ft. It is about 1,050 ft. long, 110 ft. wide, with some 30,000.sq.ft. used as stores.

An interesting feature of this plant was the provision made for air raid shelters. These are in close proximity to the main building and comprise underground chambers with concrete floors, brick walls and brick arched roofs, 9 inches in thickness, overlain by about 3 ft. of cinders. One of these shelters is designed to receive casualties and has decontaminating chambers and full plumbing equipment. It is proposed to use this shelter for routine First Aid purposes.

A.F. Gill.

C.M.A. Gun Committee, Visit to Nuffield Mechanizations
and Aero Ltd., Birmingham, Monday 14th August, 1939.

Re Tanks and Carriers.

Conducted by Mr. Oliver Bowden, Works' Manager, and
Mr. Luyks, Assistant Works' Manager (?).

This plant had been erected and placed in operation during the past 15 months. It is devoted to the design, machining and assembly of parts for the Bren machine gun carrier and a 14-ton tank. Production capacity is approximately 60 of the former and 20 of the latter per month. The visit was confined to the machining and assembling operations.

(a) Machining. This section is employed chiefly for the construction of transmission gears and engines of the 14-ton tank, the power plant and gears for the Bren gun carrier being standard Ford V 8 equipment. The engine manufactured is a modification of the Liberty motor, giving approximately 450 h.p. at 1800 r.p.m. and it is a twin 6, 60°, separate cylinder type. Not all operations are done in this plant, but those noted included machining of valves and cylinder heads, crank shafts, connecting rods, crank cases and cutting of gears. The gears are heat-treated before finishing and were said to have a hardness of 55 - 60 as worked.

Equipment noted in the machine shop included:
Herbert, and Warner & Swasey, (Turret lathes);
Drummond Bros., and Werner, (Gear Cutters);
Cincinnati, (Millers);
Karl Hurth, (Drilling Machines);
Lumsden, (Enclosed surface grinder for gears);
Archdale, (Drilling Machines);
Graffenstaden, (Millers);
Potter & Johnston, (Turret lathes);

Mas, (Millers);

X Rabonna, (Drill presses);

Orcutt, (Gear grinders);

This shop had very little crane equipment and was of a concrete floor, light steel frame construction, with brick curtain walls.

(b) Assembling Section. This comprised five large bays with complete crane equipment of 9-20 ton type.

(i) Bren Gun Carriers, Mark III, also termed 'machine gun carriers', 'scouts' and 'general purpose tanks'. These consist of chassis of plate construction, about 10 ft. long and 6 ft. wide of rivetted construction. Sides and ends are of approximately 3/8" bullet-resisting armour plate. The tolerance was understood to be as small as 0.0005" on the joints in order to prevent splitting by projectiles. This armour plate is machined and drilled before being received. Interior brackets are of carbon steel, exterior brackets designed to deflect bullets from the driver's port, are of armour plate. The operating gear, built up round the Ford V.8. engine and differential, drives the caterpillar through single sprockets at each side. Three rubber tyred wheels rest on the caterpillar on the ground level with a fourth elevator in the forward end, at each side. The caterpillar is tightened by means of a small idler with spring compression. The caterpillar treads are of interest: they are made of malleable iron segments, cyanide-case-hardened, and cast without any machining. The rated speed of this vehicle is 40 miles per hour. Flexibility of operation is attained by automatic clutching and braking on the two caterpillars independently. The vehicle carries one Bren machine gun.

of Munitions in the last six months was incurred in that country. She has manufactured nearly every type of shell from the 18 pounder to the 9.2 inch. In the case of the 18 pounder no less than 55 per cent of the output of shrapnel shells in the last six months came from Canada and most of these were complete rounds of ammunition which went direct to France. Canada also contributed 42 per cent of the total 4.5 inch shells, 27 per cent of the 6-inch shells, 20 per cent of the 60 pounder H.E. shells, 15 per cent of the 8 inch shells, and 16 per cent of the 9.2 inch."

A further idea of what Canada was able to do for the British army in the field in the way of supplying munitions is furnished by the following production figures: 1914 - \$28,164; 1915 - \$57,213,688; 1916 - \$296,505,257; 1917 - \$388,213,553; 1918 - \$260,711,751. In addition, as a result of industries new to Canada established under the direction of the Imperial Munitions Board, shipbuilding contracts were awarded to the extent of \$70,000,000 and some 2,900 aeroplanes were built.

All this was accomplished by a country totally unprepared, with a substantial part of its manpower actually in the field of hostilities, and having to learn a great deal about many lines of production. To-day the possibility of hostilities is anticipated and plans have been laid, only some of which it is reasonable to conclude have been disclosed, which would immediately put Canada on a war footing as the arsenal of the British people. In every physical way she would be found better prepared and equipped to play the role than she was in 1914-1918.

Primarily Canada would be expected to appear again in her

(ii) 14-ton tank, Mark A.30.

The rated speed of this vehicle is five miles per hour greater than the Bren gun carrier, viz. 45 miles per hour. Its construction is much heavier. The chassis is built up of mild steel plate with channel sections disposed on the side walls and ends and with 3/4" armour plate over all. The space between the mild steel and the armour plate, approx. 4 3/4", is used in part for fuel. A variation of this tank, in which armour plate is used on the inside as well as the outside, raises the weight to 17 tons, but it is understood that the latter vehicle is not being made ^{this} in/plant.

The running gear, as above indicated, is built up round the 450 h.p. Liberty-type motor with a gear box made in this plant. The traction mechanism comprises double driving sprocket with double tractor wheels, rubber tyred, corresponding with the four mentioned on the Bren gun carrier, on each side. The wheels are of cast aluminium with Timkin bearings, and the caterpillar segments are malleable cast iron, cyanide-hardened. The holes in these segments, as contrasted with those on the Bren gun carrier, are machined; they are joined by nitralloy pins held in by lead plugs. (These cast segments are said to have been found much better than drop forgings or stampings of alloy steel). The take-up in the caterpillars is provided by eccentric ratchets acting on the forward wheel. The tank is equipped with cylindrical hydraulic shock absorbers (Newton).

This tank carries one 2-pounder anti-tank gun and one Vickers machine gun in the same mounting. The 17-ton tank carries two additional machine guns.

The guns are mounted in a revolving turret hydraulically

operated, reversible and of variable speed with a fine hand adjustment as well. The turret operates in a ring of some 5 ft. in diameter believed to be of welded carbon steel.

The top speed of this tank is apparently about 50 miles per hour insofar as the engine was said to be restricted to 2000 r.p.m.

Both of these tanks appear to be suitable for Canadian manufacture provided an economical source of engines could be obtained. In respect of the Bren gun carrier no difficulties need be anticipated. The 14-ton tank however, requires a power plant of considerable size. The fact that this plant was apparently engaged in the manufacture and assembly of no more than 5 engines per week, would probably be accounted for by the supposition that the plant was not intended for engine construction, but that it was found that a number of operations could be carried out there with the machinery that was installed. This machinery is of a non-specialised nature with one or two exceptions, including the edge grinders. A considerable amount of it had been brought from other plants.

Mr. Bowden expressed the opinion that the proposal that various operations be sub-divided among different Canadian plants, was entirely feasible, and he agreed that the chassis could readily be undertaken on the production basis by Canadian methods, with which he had some familiarity.

Mr. Bowden agreed to supply data on the floor space required per unit, both for machining and assembling together with man hours, sub-divided between chassis and power plants.

He also agreed to sub-divide the man hours on forgings, castings etc. on ferrous and non-ferrous parts together with assembled weights in mild steel and armour plate. He also agreed to supply their specifications for gear steels and for non-ferrous castings.

He mentioned that the Government has ten to twelve types of tank in production and recommended that visits be made to operations at the Vulcan Iron Works, Vickers' (Ellswick) plant, and Beardmores.

A.F. Gill.

VISITS ARRANGED FOR
CANADIAN INDUSTRIAL MISSION

Aug 15/39

TUESDAY, 15th August, 1939.

Leave Birmingham 9.30 am	Joseph Sankey	Mines MK.XV.
Arrive Wellington 11.0 am approx.	and Sons, Ltd.	" " XVI.
Leave " 12.0 noon "		Charge Cases MK.I*
Arrive Tipton 2.30 pm approx.	Horseley Bridge Mines	Mines MK.XIV.
Leave " 3.30 pm "	& Thos. Piggott,	Ltd.
Arrive Birmingham 4.0 pm approx.	Bulpitt &	Primers, Mine L.
	Sons, Ltd.	" Depth Charge.

note EWS did above

WEDNESDAY, 16th August, 1939.

Arrive 9.30 am approx.	W.T. French	Primers, Mine CE 1-1b.
Leave 10.30 am "	& Son, Ltd.	" " MK. XII.
Arrive 11.0 am approx.	Fisher &	Sinkers, MK.XVII* ^a .
	Ludlow, Ltd.	Depth Reels, MK.XV.
		Stirrups & Spares.
		Bungs Flooding MK.XVII.
Arrive 2.30 pm approx.	Wolseley Sheep	Horn Switch MK.I and
Leave 3.30 pm "	Shearing	Spares.
	Machine Co. Ltd.	Mechanism Plate type P.
		" " MK.IV.B.
		Protectors Horn.
		Sprockets MK.II and
		Spares.
		Holder's Detonator MK.I.
Arrive 4.0 pm approx.	Monitor Oil	At the request of
	Appliances, Ltd.	Mr. Magor.

* EWS had to leave Birmingham 6²⁰ PM Tuesday Aug 15 to keep appointment with special committee and meeting with Massey and so missed the Aug 16th appointments.

Birmingham

Aug 15/39

Memo

Mr R. J. Magor suggested (and I passed suggestion along to Mr Holt Gurney) that

1. We send letters of thanks

2. We send small gift as memento

to the managers of plants and to Lord Muffield for the hospitality and help they have extended to us.

Note Aug 29/39 - Imperial Defence Committee
Stewart says Canada when she was given
the opportunity appointed no one to this
committee - Australia appointed her High Commissioner

Aug 15/39
Birmingham
Aug 15/39

We appear to require a

Co-ordinator of Defence Supplies

n 2

Co-ordinator of Defence-Industrial Division

This post should be kept continually filled no matter how long the period of peace

The general expense might be divided 50-50 between the British + Canadian Government or it might be divided $\frac{1}{3} - \frac{1}{3} - \frac{1}{3}$ with industrial members carrying an equal share so as to provide for greater economy of operation.

The co-ordination would be

(a) as between Canadian manufacturers ~~but also~~ (b) as between manufacturers & Govt Arsenal but also a co-ordination should be developed & maintained with other suppliers in Britain & in the United States.

The payment for supplies would depend partly on the ~~the~~ country of origin of the supplies & partly on the point of delivery of supplies and this division should be left somewhat flexible, the main object ^(in this connection) being that Canada should be allowed a slightly favourable balance of trade

1. C Govt act as agent
2. Imp Munition Board Smt
3. War Purch Board act in dual capacity
4. Individual orders
5. CMA cannot act

Cabinet meetg 23rd ~~24th~~ Prefatory meetg 22

by existing Canadian manufacturers
but certain new equipment reqd.

do not think necessary to specify exact requirements

requirements
larger than last war

orders can be obtained

" are ~~ready to be~~ offered (placed)

~~to~~ should immediately be placed

will (inevitably) come up

stellar part of emergency food provider. She would start out from a much more favorable position than she did in 1914. With her population but slightly augmented the Dominion has added nearly 10,000,000 acres to the extent of possible food production to the artificially swollen figure of 1918. She is still able to export more than 80 per cent of the wheat she raises, which has amounted to half a billion bushels in a single year.

War-power still depends largely on minerals and the outstanding feature of Canadian economics since the signing of the Armistice has been the expansion of the mineral industry. Camps have multiplied in remarkable manner and the annual value of minerals produced more than doubled. Canada is still producing 87 per cent of the world's supply of nickel, a mineral in the greatest demand for war purposes. In addition she accounts for 11 per cent of the world's copper, 11 per cent of the lead, and 9 per cent of the zinc. The iron and steel industry, which under wartime stimulus reached an output figure of 1,195,551 tons a year, is presently equipped under peace-time demand to produce 1,500,000 tons annually. Upon the emergency wartime construction of aircraft has been built a substantial industry to meet domestic requirements, which is capable of considerable and rapid expansion. The investigation and development of natural resources, which proceeds unceasingly in Canada, have in the post-war period revealed new possessions of the utmost value to the Empire in the event of war.

Both before and since the September crisis indications have been given by the British government of the recognition of all these facts, that it was expecting Canada to play the part in any future

war she had in the last war, supplying those things without which a successful war cannot be waged, but on a substantially extended scale. Accordingly Canada is to share substantially in carrying out Britain's rearmament program, which is intended to preserve the peace through exhibiting a preparedness for war. While putting under way an increased though still very modest defence program of her own Canada is inclined to think of the possibilities of hostilities in terms of workers rather than of soldiers.

Long before the crisis it was revealed as the hope of the British government to encourage creation of rounded out war supplies industries, that could be expanded substantially in case of emergency such as war, through obtaining Canadian government cooperation and increased participation in defence expenditures. It made the placing of business in the Dominion contingent upon Canada's cooperating in the matter of expense through contributing to Empire defence. Under this understanding the British government undertook to supplement any Canadian government orders with additional orders sufficient to make it worth while for Canadian companies to install additional machinery and make other plant changes necessary for development of armament manufacture.

The first business to develop under this arrangement was the manufacture of 5,000 Brenn machine guns for the British government by a private manufacturer consequent upon the Canadian government contracting to take 7,000 guns. In view of Britain's speed-up in the armament program since the crisis it is expected that the British stipulation regarding Canadian government cooperation will be amended and much more important business will result. Much attention is being given to the plant facilities of leading companies

which obtained experience in armament production during the Great War and whose ability to handle war supplies work is known in government circles as a result of complete plan surveys in recent years.

It has been revealed that plans exist for the rapid transformation of these factories from their peacetime occupations to the making of shells, so that they could get into their stride much more rapidly than they did in the Great War, while naturally, owing to the industrial development of the post-war period, they could account for a much greater volume of production. This production has been laid out so that the high degree of accuracy demanded would be provided by the tools and machines rather than by the workmen, so that 75 per cent of the labor employed might be semi-skilled and unskilled, and in this way workmen could be replaced by girls in case of necessity, avoiding the injury to armament manufacture consequent upon the withdrawal of man-power for active service, as in the last war.

More immediate is the cooperation between Canada and Britain in preparations for war in the air. Geographical position alone makes this a logical development since Canada is the only Dominion accessible by air to Great Britain without involving passage over any foreign country while, though remote from any likely theatre of war, planes manufactured in Canada can be flown to Britain without the need of even extra fuel tanks. It is equally logical from the standpoint of the apparent air-mindedness of Canada and the remarkable progress of post-war aviation in the Dominion. During the Great War Canadians came to constitute nearly one-half of the personnel of the

Royal Air Force and since the end of the war Canadian airmen have written an unique chapter in the annals of aviation in the northland and chalked up some remarkable records. Federal and provincial government and commercial aviation requirements in the post-war period have developed a substantial manufacturing industry, to which Britain and the United States have contributed, capable of considerable expansion. The Commercial Air Transport and Manufacturers Association, established in 1934, comprises sixteen operating companies, fifteen manufacturing companies, and eight associate member firms providing equipment or service to the industry.

Plans recently concluded involve not only the placing of large-scale and long-term contracts with private Canadian plants for the manufacture of bombers but for the training of fliers from Britain in Canadian schools. Nine of the Dominion's leading industrial organizations have formed a central organization and are building two plants, one near the St. Hubert Airport at Montreal and one at Malden, near Toronto, for the construction of these bombers, existing plants being found insufficiently large for the contracts of the British government. The preliminary order for long-range bombers involves an expenditure of nearly \$100,000,000. which may be compared with the \$14,000,000. spent by the Imperial Munitions Board for the construction of planes in Canada in 1918. In addition orders for training craft in large quantities are also anticipated from the British government.

Individual manufacturers in Canada are to build parts for the bombing planes and the ships will then be completed and assembled at the central plants, engines shipped from Britain installed and the

Must be gone over some interesting August 16/39
First Draft (later improved and sent) Aug 16

The Mission of the Canadian Manufacturers Association who arrived on August third have given the British Government a comprehensive summary of the manufacturing capacity of Canada and the potentialities of Canada as an additional source of supplies (stop)

They have been cordially welcomed and have created a remarkable impression (stop)

The British Government through the Admiralty, War Office and the Air Ministry, have given the Mission unusual and extensive opportunities to obtain information (stop)

Committees of the Mission have been visiting government and private manufacturing plants. Individually and collectively, they have been given access to scientific and technical data needed and private British manufacturers have disclosed particular processes and have co-operated very generously (stop)

The Mission are unanimous that the information and experience obtained are most valuable (stop)

Orders amounting to many millions of dollars, covering wide range of articles, are offered for immediate placement in Canada (stop)

These orders include field gun liners, small anti-aircraft guns, heavy machine guns, sights and fire control gear, light tanks, motor transport, marine mines, bombs, shells, communication equipment, small ships, and fast motor boats (stop) Mission states that manufacturing these articles will provide employment at once for many thousands skilled and unskilled Canadian workers. (stop)

Most articles required are formed of products which would come together from diverse individual firms (stop)

For example, Air Ministry seeks two million rounds of two pounder ammunition estimated to cost about ^{ten} million dollars (stop)

The Canadian Manufacturers Association and the Mission clearly recognise that they are not the appropriate bodies to take and distribute orders (stop)

It is considered a matter of extreme urgency to determine the method by which arrangements between British Supply Ministry and Canadian producers may be completed (stop)

It is not practicable for large numbers of Canadian producers to come to London, examine specifications, tender and spend time necessary to complete contracts (stop)

The Mission's opinion is that organisation in Canada might take one of two general forms (stop)

7
First, the British Government could send a mission to Canada to make their own arrangements for the placing of orders (stop)

Second, the Defence Purchasing Board might undertake the task of purchasing and co-ordinating both British and Canadian orders (stop)

Mission say that second seems preferable to British departments (stop)

The Mission have been told that these orders must be placed immediately either in Canada or elsewhere consequently they ask that prompt action be taken to establish and operate satisfactory machinery for handling orders in Canada (stop)

20
21
It is considered urgently necessary to know your views at the earliest possible date, as the Mission ^{will} expect to complete their visits to factories ~~at the end of~~ this week and the Minister of Supply will meet them early next week when the question of allocation of orders will inevitably come up (stop)

I am informed that the British Cabinet meets on August twentythird and that Minister of Supply wishes to recommend procedure to be followed in placing these orders in Canada.

Another and far more serious aspect arises from the receipt of private information that, in the event of hostilities, Canadian food supplies, primary products, as well as manufactured goods, will be needed promptly and on a larger scale than in the last war

TELEPHONE:
WHITEHALL
6262.

Queen Anne's Mansions & Hotel Ltd.

ST. JAMES'S PARK, LONDON, S.W.1


N. Winston Spragg Esq

16th August 1939

Cheques to be made payable to QUEEN ANNE'S MANSIONS. No receipt valid unless given on a printed adhesive form.

	10			11			12			13			14			15			16		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
DAILY TOTAL, Brt. forward ...	7	12	.	8	13	.	10	2	2	3	11	2	4	9	2	5	7	2	6	4	5
To FURNISHED RENT ...		18		18		18		18		18		18		18		18		18		18	
BREAKFASTS ...	3			3		3													3		
LUNCHEONS ...																			4	10	
DINNERS ...																					
BISCUITS, SANDWICHES & FRUIT ...																					
TEA, COFFEE, MILK, &c. ...																					6
VISITORS' BOARD ...																					
SERVANTS' BOARD & ROOM																					
WINES ...																					
SPIRITS ...																					
ALE & STOUT ...																					
MINERALS ...																					
FRUIT JUICE ...																					
CIGARS & CIGARETTES ...																					
ELECTRIC LIGHT ...																			2	3	3
ELECTRIC FIRES & POWER...																					
UNFURNISHED RENT ...																					
THEATRE & RAILWAY TICKETS ...																					
DAILY TOTAL, Crd. forward ...	8	13	.	10	2	2	11	3	2	4	9	2	5	7	2	6	4	5	7	14	.
CREDIT																					
Carried forward ...							3	11	2												

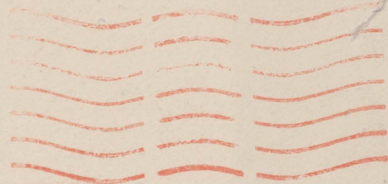
No. 375 *Aug 19 1939*
RECEIVED WITH THANKS
FROM *N. Winston Spragg Esq*
£ 7.14 ...
FOR
QUEEN ANNE'S MANSIONS & HOTEL LTD
BY CHEQUE. BY CASH. *kd*
CASHIER



The groups were taken over by Mr. E. S. S. Baker, Assistant in charge of the Gun Shops, and we were able to see big naval guns up to 14" in the making, as well as small guns down to the 2 pounder. The process known as auto-frettage developed in the last few years was of particular interest. This consists of forcing a mixture of glycerine and water into the inner gun tube at pressures ranging between 30 and 45 tons per square inch, which is about twice the pressure exerted at the breech when a naval gun is fired. This high pressure actually expands the tube and the process causes the inner portion of the tube to be in compression and the outer portion in tension and enables a steel of lower yield to be used than would be possible without auto-frettage process. Actually the tubes for these big guns are made of nickel chrome molybdenum steel of about 40 ton yield. When we came to the small guns such as the 2 pounder, it is possible to obtain this same steel with 60 ton yield and this being the case the auto-frettage process is not required.

There is apparently some difficulty in obtaining sufficient breech rings. The old circular type took about 1300 hours to produce, but the new ones which are rectangular in design call for no less than 2400 hours for a 4.7" gun. For the 5.25" they are made from a chrome vanadium molybdenum forging which is produced from an ingot with dimensions 47" at the top, 46" at the bottom and 92" long. This finishes into a breech ring 24.5" x 24.55" x 22.55" and the ingot is sufficient for four. Captain Hunt suggested that he would rather have an ingot for 2 than 4. For the 3.7" the ingot is 47" at the top, 46" at the bottom by 100" long and produces four rings. It was stated that a Press of 2,000 tons per square inch will produce the forging required. This is evidently a portion of the gun for which they would like to have a source of supply in Canada. The ingot and forging are large and the amount of machining afterwards is also very considerable as can be seen by the number of hours required (that is 2400 for a 4.7") and it is recommended that these smaller breech rings be considered for Canada. It was stated that no attempt was made to relieve internal strains after heat treatment of these forgings, but that forgings were very rough machined (the skin was broken) for this purpose.

LONDON E.C.
7 1/2 P.
15 AUG
1939
GIBRALTAR OFFICIAL
PAID



Invitations

*Plan
V. G.*

E. Winslow-Spragge, Esq.,

Queen Anne's Mansions,

St. James's Park,

S.W. 1.

on occasion
Great^{of} Britain Mission





To meet Canadian Industrialists

His Majesty's Government in the United Kingdom of
Great Britain and Northern Ireland

request the honour of the company of

Mr E. Winslow - Spragg

at Luncheon at the Carlton Hotel,

on Monday, the 21st August, 1939, at 1.15 p.m. for 1.30 p.m.

The Right Hon. Leslie Burgin, L. D., M. P.,

Minister of Supply, will preside

An early answer is requested to
The Secretary, Government Hospitality,
Treasury Chambers, Whitehall, S. W. 1.
Telephone: Whitehall 1481.



*The Chairman & General Committee
of the British Empire Club
hope that*

Mr. E. Winlow Magge

*will consider himself an Honorary Member of the Club
during the period 4th August
to 24th September 1939.*

P.S.V.P.

*The Secretary, British Empire Club,
12, St. James's Square, S.W.1.*

PRINCIPAL PLACES VISITED BY COMMITTEES OF THE
MISSION OF THE CANADIAN MANUFACTURERS'
ASSOCIATION TO THE UNITED KINGDOM
AUGUST, 1939.

Navy, Army and Air Force Departments, Arsenal, Works and Yards.

New Crown Forgings, Ltd.	Wednesbury.
Royal Ordnance Factory	Birtley
Ferranti, Limited,	Manchester
Standard Telephones and Cables, Ltd.	New Southgate
Nuffield Mechanizations and Aero, Ltd.,	Birmingham
Vulcan Foundry, Ltd.	Newton-le-Willows, Lancashire.
Royal Ordnance Factory	Woolwich
Royal Ordnance Factory	Nottingham
Alfred Herbert, Ltd.	Coventry
English Steel Works,	Sheffield
J. Sankey and Son	
Horsley Bridge and Thos. Piggott	
Wolseley Sheep Shearing Mfg. Co.	
W. T. French & Son	Birmingham
Fisher and Ludlow	
Bulpitt and Son, Ltd.	
Prins, Smith and Stahl	Keighley, Yorkshire
Vickers-Armstrong, Ltd.	Elswick
Samuel Osborne Works	Sheffield
Thorny Crofts	Basingstoke
Royal Ordnance Factory	Ardeer

Canadian Manufacturers' Association Mission to the United Kingdom

A SMALL party of representatives of the Canadian Manufacturers' Association sailed on Saturday, July 29, to Great Britain to discuss the co-ordination of the British and Canadian industrial systems for the production of war and other supplies. It is hoped that the party will be able to assist in arranging for a British mission to visit Canada in the near future to continue consultations.

The subject was discussed at length during the Annual General Meeting and a report was published in the July number of *Industrial Canada*.

The party consisted of the following:

(a) (1) **Sailing on Empress of Britain, Quebec, July 29, arriving Southampton, August 3.**

E. Winslow-Spragge, Vice-President and Managing Director, Canadian Ingersoll-Rand Company Limited, Montreal.

E. Holt Gurney, President, Gurney Foundry Company Limited, Toronto.

H. G. Bertram, President, The John Bertram & Sons Company, Limited, Dundas, Ontario.

J. G. Morrow, Chief Inspector and Metallurgist, The Steel Company of Canada Limited, Hamilton, Ontario.

G. T. M. Bevan, Chief Engineer, Massey-Harris Company Limited, Toronto, Ontario.

S. M. Finlayson, Deputy General Manager, Canadian Marconi Company, Montreal.

J. E. Goodison, President, The John Goodison Thresher Company Limited, Sarnia, Ontario.

Philip S. Gregory, Assistant General Manager, The Shawinigan Water and Power Company, Montreal, Quebec.

J. T. Stirrett, Assistant General Manager, Canadian Manufacturers' Association, Toronto, Ontario.

Hugh Dalton, Secretary, British Columbia Division, Canadian Manufacturers' Association, Vancouver, B.C.

(2) **The following are not members of the Canadian Manufacturers' Association but are with the mission:**

Major-General A. G. L. McNaughton, President, National Research Council, Ottawa, Canada.

A. F. Gill, i/c Codes and Specifications, National Research Council, Ottawa.

O. W. Ellis, Metallurgist, Ontario Research Foundation, Toronto.

Col. Noel Carr, Director of Mechanization and Artillery, Department of National Defence, Ottawa.

Note. W. D. Black, President, Otis-Fensom Elevator Company Limited, Hamilton, and immediate Past President of the C. M. A., intended to sail with the party but was unable to do so. He hopes to join the party later in England.

Harold Crabtree, First Vice-President.

(b) **Members of the Association or Canadian Manufacturers' Association, representatives who are now in England or will be in England and will join the mission there:—**

President, Howard Smith Paper Mills Limited, Montreal.

A. R. Goldie, Director, Babcock-Wilcox & Goldie-McCulloch Limited, Galt, Ontario.

Paul F. Sise, President, Northern Electric Company Limited, President, Canadian Associated Aircraft Limited, Director, Dominion Bridge Company Limited, and Director, Dominion Engineering Company Limited, Montreal, Quebec.

R. J. Magor, President, National Steel Car Corporation, Montreal.

Victor Drury, President, Canadian Car

and Foundry Company Limited, Montreal.

Victor G. Bartram, Vice-President and General Manager, Shawinigan Chemicals Limited, Montreal. Vice-President, Dominion Carbide Exporters Ltd., Montreal.

Morris S. Lambe, The Ottawa Car Mfg. Co. Ltd., Ottawa.

I. B. Bullen, London Representative of the Dominion Steel & Coal Corporation Limited.

(c) **Authorized to co-operate with the Mission:—**

J. C. Patteson, European Manager, Canadian Pacific Railway, Company, Trafalgar Square, London, W.C.2, England.

P. A. Clews, European Manager, Canadian National Railways, 17-19 Cockspur Street, London, S.W.1.

Industrial Canada

Aug. /39

Mr. E. Winslow Spragge

Mission



THE DEPARTMENT OF



DEPUTY MINISTER
JAMES G. PARMELEE

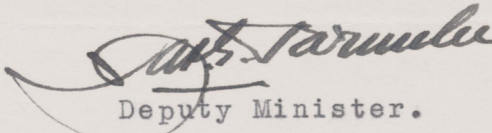
TRADE AND COMMERCE
CANADA

IN REPLY REFER TO FILE No. D.M.

OTTAWA September 9, 1939.

TO THE OFFICERS ON DUTY
HOUSE OF COMMONS, Ottawa.

The bearer of this letter, Mr. E. Winslow-Spragge, is calling on the Minister of Trade and Commerce, and I would be glad if you would allow him to enter the building in order that he may proceed to the Minister's Office in the House of Commons.


Deputy Minister.

JGP/V.

Govt
State of War
Sept 11/39

E.W.S.

Montreal Star Sept 11/39

①

London Sept 11

In a telegram to Premier Mackenzie King, Mr Chamberlain termed Canada's declaration of war a "profound encouragement".

Montreal Sept 11

② Mackenzie King announced a bill to create "a Ministry of Munitions and Supply"

③ Govt will raise \$100,000,000 for the following purposes.

(b) The conduct of naval military and air operations in or beyond Canada

(c) To promote the continuing trade, industry and business communications whether by means of insurance or indemnity against war risk or in any other manner whatsoever

(A) The carrying out of any measure deemed necessary or advisable in consequence of a state of war

(4) Part of the \$100,000,000 will be derived from new taxes

Sept 11/39

most notable, it is understood will be the excess profits tax on investment and production cost so that profits connected with the war will largely be diverted to the public treasury.

5 Income taxes in all the lower brackets will be increased

6 Higher Excise on tobacco & liquor

7 The Civilian Bureau, is for the purpose of sorting out all the offers of co-operation — — to see that full advantage is taken of such offers

E. Winslow-Sprague

A.B.

*Report of
Trip*



1404 Montreal Trust Bldg.,
67 Yonge Street,
Toronto 2, Ontario,
September 11, 1939.

*Gives very good story
of mission & why
formed.
L. S. W. S.*

E. Winslow-Spragge, Esq.,
Vice-President & General Manager,
Canadian Ingersoll-Rand Company Ltd.,
New Birks Bldg.,
Montreal, Que.

Dear Sir:-

Mission of the Canadian
Manufacturers Association to the U.K.

I am enclosing,-

- (a) Statement published on pages 66a and 66b of the September issue of Industrial Canada. This is based on the report submitted to the Prime Minister and his colleagues by a deputation from the Association in Ottawa on September 5th, 1939.
- (b) Copy of the remarks of the Prime Minister in the House of Commons on September 8th, 1939.

Yours faithfully,

Assistant General Manager.

JTS/FM.
ENCL. 2.

W



1404 Montreal Trust Bldg.,
67 Yonge Street,
Toronto 2, Ontario,
September 14, 1939.

E. Winslow-Spragge, Esq.,
Canadian Ingersoll-Rand Co. Ltd.,
New Birks Bldg.,
Phillips Sq.,
Montreal, Que.

Places visited

Dear Mr. Winslow-Spragge:-

I am enclosing a copy of a list of the principal places visited by committees of the mission of the Canadian Manufacturers Association to the United Kingdom.

Will you please look over this list and add any firms which you think should be included, indicating where they are located. Will you also please go over this list and the additions and insert two or three of the principal articles which were manufactured in the places you visited.

Yours faithfully,

J. H. Sturtevant
Assistant General Manager.

JTS/FM.

*mission 7/39
& after-*

*Discription ^{space}
Brit. Mission to
Canada*

Your Ref: E.F.-no.18/417

September 18th, 1939.

Canadian Chamber of Commerce
in Great Britain Inc.,
British Columbia House,
#3 Regent Street,
London S.W.1, England.

Att'n: Mr. G.H. Ward, Secretary.

Dear Mr. Ward:-

Thank you for your note of Sept. 4th attaching monthly
bulletin of the Canadian Chamber of Commerce, Volume 16 - #9, of Sept. 1939,
containing the description of the government luncheon to the Canadian Mission.

I am very glad to hear from you and to have this bulletin
as a memento of our visit.

We are greatly indebted to you for the assistance given us
by you and your staff.

~~Thank you also for your offer to be of further assistance.~~
No doubt you have heard that we arranged a favourable reception for Holt Gurney
and the second group and for the members of the British Mission, who have come
over to Canada. We arranged for them to be got through customs and immigration
without examination. The Government placed a private parlor car at their dis-
posal without expense and I provided tea and drinks en route, morning and after-
noon. I also telephoned to Mr. Ross McMaster, who arranged a private luncheon
at the Mount Royal Club, at which the leaders of Montreal banking and industry
were present. Mr. Jaquays, also of the Steel Company of Canada, arranged for his
wife to take General Locke's wife and daughter and the two stenographers to the
Forest and Stream Club, where they had lunch in Montreal before the whole party
re-assembled at the Windsor Station and proceeded to Ottawa.

At Quebec they were met by Brigadier Renaud, in charge of the
military organization at that point, and by General Elkins, Master General of the
Ordnance, Mr. C.W. Sherman of the Defence Purchasing Board, Mr. Wiseman, British
Trade Commissioner, Mr. W.H. Measures, Department of External Affairs, as well as
by Mr. W.D. Black, Chairman of the Canadian Manufacturers' Association Standing
Committee on Munitions, Mr. Victor Drury, Mr. Homer Jaquays, and the writer. At
Ottawa we were met by Sir Gerald Campbell, British High Commissioner, General
McNaughton of the National Research Council, and a number of others. In making
arrangements for a suitable reception I had very prominently in mind the wonderful

Canadian Chamber of Commerce in Great Britain, Inc.

Sept. 18/39.

treatment accorded us in England and so was able to add my voice to that of Mr. Black when we were making our preliminary report to our Prime Minister, Mr. Mackenzie King, whom we found very ready to co-operate in every way. I am not able to tell you what has happened since the Mission reached Ottawa, but I hope that as a result of your efforts and of ours that before long actual contracts will be let and actual work got under way.

We all feel deeply concerned with regard to the situation which has been developing in England and on the Continent, but I hope that by the joint efforts of all concerned that we may be successful in what we have undertaken to do.

With kind personal regards.

Yours very truly,

CANADIAN INGERSOLL-RAND COMPANY, LIMITED.

EWS

General Manager.

EW-S/DS

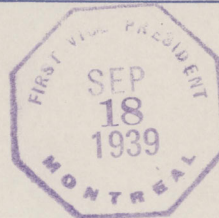
THE
CANADIAN CHAMBER OF COMMERCE
IN GREAT BRITAIN, INC.

BRITISH COLUMBIA HOUSE.
TELEPHONE: 3. REGENT STREET.
WHITEHALL 2794 LONDON, S.W.1.

4th September, 1939

Mr. E. Winslow-Spragge,
Vice-President and General
Manager,
Canadian Ingersoll-Rand Co.
Limited,
M O N T R E A L. Q U E.

Our reference
E.F.no.18/417



Dear Mr. Winslow-Spragge,

Enclosed you will find a copy of the current issue of our Monthly Bulletin and I would draw your special attention to the leader and to pages 173 and 175, which deal with the Canadian Mission to this country. I feel quite sure that same will prove of interest to you.

May I once again assure you that if there is any way in which we can be of assistance to you, you are to feel quite free to call upon us at any time.

Yours very truly,

Secretary.



LH/G

Toronto 2, Ontario,
September 18, 1939.



The Annual General Meeting of the Association decided to ask the Prime Minister to receive a special delegation to discuss the whole question of war production. The Annual Meeting also stated that the Association was willing to send a mission of its members to England for Production of War Supplies

Circular No. 852, dated July 27, 1938, suggested to members that if their plants had not been inspected by the Department of National Defence they should ask the Department to send inspectors. Over 1500 firms have been inspected to date.

At the November, 1938, meeting of the Executive Council in Montreal, the Executive Committee, in presenting a review of war materials production in the Great War, suggested that a British purchasing board should be established in Canada or that buying for British use should be done through some department of the Canadian Government.

On November 30th, 1938, by instruction of the Executive Council, representatives of the Association visited Ottawa and discussed the problems of production with members of the Government and Departments concerned.

On December 19th, 1938, about fifty members of the Association who had been engaged in the production of munitions in the Great War, met in Toronto and discussed the situation, and the following resolution was passed:-

"That this meeting request the Executive Committee to form a Committee, representing the different Branches, with the purpose of approaching the Canadian Government and also the British War Office, to obtain information with regard to the manufacture of munitions and to offer our co-operation." The Committee on National Defence was organized and instructed by the Executive Council to press forward with the double task of stimulating the production of war materials in Canada for Canada and also for Great Britain.

Conferences were held with Ministers and Departments during succeeding months.

Circular No. 867, dated March 8th, 1939, was sent to all members asking for information on which to compile a study of the capacity and availability of engineering and machinery firms for the manufacture of munition, guns, mechanized equipment and other articles requiring special engineering and technical skill and equipment and much preparatory work. A summary of the information received was compiled and submitted to the Department of National Defence, Departments of the British Government and the Federation of British Industries.

In March, 1939, the Association started negotiations with the Federation of British Industries to send a party of British industrialists to Canada to consult on the problem of production of war supplies. We were advised that an advance representative would come to Canada in May but the visit was postponed.

The Annual General Meeting of the Association, in June, 1939, decided to ask the Prime Minister to receive a special delegation to consider the whole question of war production. The Annual Meeting also stated that the Association was willing to send a mission of its members to England for the following purposes:-

1. To offer the intelligence, experience, skill and manufacturing capacity of Canadian industry to Great Britain in case of war and to explain to officials of the Naval, War and Air Departments, in personal interviews, what Canada could do; say that the inquiry was carried out in the most thorough-going way, and will prove of decided help to the
2. To consult the officials of these services and to learn from personal interviews and from visits to arsenals and munition plants the latest developments in manufacturing war materials;
3. To urge that a British mission should come to Canada as soon as possible to study our industrial capacity, to continue consultations, to co-ordinate the manufacturing production of Canada and the United Kingdom and to consider the problem of establishing methods of purchasing materials in Canada for the United Kingdom.

The delegation was received in Ottawa on June 28th by the Prime Minister and six members of his Cabinet and the co-operation of the Government was promised.

A Canadian mission was organized by the Association and went to the United Kingdom. For a brief summary of the work of the mission, please refer to pages 66a and 66b in the September number of Industrial Canada.

The members of the Mission were divided into the following committees,- Communications, Guns, machine tools and gauges, non-ferrous metals, plywood, power and heavy chemicals, shells, ships, specifications, steel, tanks and trench mortars. As much of the information obtained was confidential, the reports of these committees were sent through official channels to the National Research Council, Ottawa. They are being studied and the information which they contained will be made available to Government departments and contracting firms. It was proposed to establish, under the provisions of the War Measures Act, "A War Supply Board" responsible to the Minister. Generally speaking, the mission accomplished their objects. First, the members gave information in regard to Canada's industrial capacity to the Ministries and officials of the Navy, War and Air Departments; second, they visited the principal arsenals, dock yards and munition factories in the United Kingdom and obtained a great deal of information in regard to modern production methods; and, third, they helped to bring about the sending to Canada of the British Mission who are now here.

On September 5th, members of the Association's mission interviewed Premier King and his colleagues, reported their work in England, and discussed methods of production and purchasing.

Speaking in the House of Commons on September 8th, 1939,
Mr. King said:-

For the Canadian Forces, to the War Supply Board,
"With the concurrence of the governments of Canada and the United Kingdom, a delegation organized by the Canadian Manufacturers' Association and widely representative of Canadian industry recently visited the United Kingdom to study on the spot all forms of armament and munitions production with a view to the expeditious adaptation of Canadian industry to these forms of production. Representatives of the delegation recently presented to the government a report of their inquiries and conclusions. I may say that the inquiry was carried out in the most thorough-going way, and will prove of decided help to the governments both of Canada and the United Kingdom, and that it is a fine example of the capacity and readiness to cooperate of leaders in Canadian business.

Your Committee beg to thank all members who have co-operated
"A special British mission has just arrived from the United Kingdom to survey the munitions situation further. It has been authorized by the government of the United Kingdom to place certain orders in Canada on the lines explored in consultation with the Canadian mission and to make a further survey of the situation."

An Act respecting a Department of Munitions and Supply was passed by the House of Commons of Canada on September 12th, 1939, with the following explanation:

"The purpose of this Bill is to establish a Department of Munitions and Supply which shall have authority to mobilize the resources of the nation for the production of munitions and essential supplies and to take such action as may be necessary therefor, and to secure an adequate supply of commodities of all kinds necessary or desirable for the prosecution of the war, and to insure an equitable allotment of such supply among such agencies as may require same, and to control the making of contracts in connection with expenditures therefor."

This Act gives the Government the necessary power to set up a Department of Munitions and Supply when it is considered advisable to do so. In the meantime, it was proposed to establish, under the provisions of the War Measures Act, "A War Supply Board" responsible to the Minister of Finance, with comprehensive powers. The War Supply Board was authorized by Order-in-Council, dated The personnel and procedure of the Board are now being considered. The War Supply Board replaces the Defence Purchasing Board which was established to deal with production under peace conditions.

Communications in regard to the production or sale of war supplies should be addressed as follows:-

1. For the Canadian Forces, to the War Supply Board, Ottawa; and
2. For the British Forces, to Sir James Rea, Chairman, British Mission, Parliament Buildings, Ottawa.

The Association cannot deal with the placing of orders as its members are competing.

Your Committee, however, will continue to give attention to the question of war production and will endeavour to assist both the Canadian and the British Governments, as well as our own members, in every possible way.

Your Committee beg to thank all members who have co-operated with the work of the Committee.

Yours faithfully,



1404 Montreal Trust Bldg.,
67 Yonge Street,
Toronto 2, Ontario,
September 18, 1939.

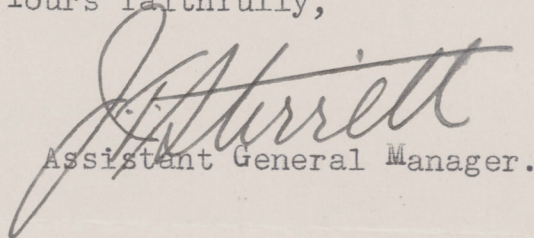
E. Winslow-Spragge, Esq.,
Canadian Ingersoll-Rand Co. Limited,
New Birks Bldg.,
Phillips Sq.,
Montreal, Que.

Dear Mr. Winslow-Spragge:-

At the request of Mr. W. D. Black, Chairman of the Committee on National Defence, I have drafted the enclosed circular which it is proposed to send to all members of the Association. As the condition is changing almost every day, it may be necessary to alter the circular before it is mailed.

I shall be obliged for your comments.

Yours faithfully,


Assistant General Manager.

JTS/FM.

Mining & Smelting
Trail.

September 19th, 1939.

Mr. D. C. Keefe,
President,
Ingersoll-Rand Company,
11 Broadway,
New York, N.Y.

Dear Dan:-

Subject: Consolidated Mining & Smelting Co.

Our Nelson Office reports great activity at Trail where over 900 men have been taken on since September 1st. Mr. Banks says he has never seen so much activity. Their Trail employees now number 3700 and they expect to increase their production very materially both at the mine and at the smelter.

Yours very truly,

W

EW-S/EC

First Vice President.

W.S.

*After discussion
good letter to
Can M. Ass. ~~BB~~*

September 19th, 1939.

Canadian Manufacturers Association Inc.,
1404 Montreal Trust Building,
67 Yonge Street,
Toronto 2, Ontario.

Att'n: Mr. J. T. Stirrett,
Assistant General Manager.

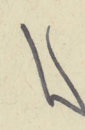
Dear Mr. Stirrett:-

I have just received your letter of September 18th with proposed circular dated September 18th, subject "Production of War Supplies", which circular you have drafted at the request of Mr. W. D. Black.

I consider this circular very timely. I consider that it gives a very comprehensive resume of the efforts of the Association and of the entire situation to date. I, therefore, feel it should immediately be sent out to our members, and I cannot offer any suggestion to improve it. I think it is a very good job.

Yours very truly,

CANADIAN INGERSOLL-RAND COMPANY, LIMITED.



General Manager.

EW-S/DS

*Duplicate of
Mun.*

ADMIRALTY

1. Admiral Sir Percy Addison

MINISTRY OF SUPPLY

2. Major General R. F. Lock
3. Mr. Crone
4. Mr. J. B. Gordon

AIR MINISTRY.

5. Mr. A. C. Boddis

RETURNING MEMBERS OF CANADIAN MISSION.

6. Mr. E. Holt Gurney (Chairman of the Mission in England)
7. Mr. Guy T. M. Bevan
8. Mr. Hugh Dalton

TECHNICAL ADVISORS (to the Canadian Mission)

9. Col. Noel Carr
10. Mr. O. W. Ellis

RECEPTION COMMITTEE

11. Mr. W.D. Black, Chairman Standing Committee on Munitions, C.M.A.
12. Mr. Victor Drury
13. Mr. Homer Jaquays
14. Mr. Winslow-Spragge
15. Mr. W.H. Measures, Department External Affairs.
16. Mr. Wiseman, British Trade Commissioner.
18. General Elkins, Master General of the Ordnance.
17. Mr. C.W. Sherman, Defence Purchasing Board.

19. Mr. Ross McMaster)
20. Mr. S.J. Hungerford)
21. Mr. Arthur Cross) Mr. McMaster, Host
22. Mr. Morris Wilson) and
23. Mr. Huntley Drummond) group representing Montreal at
24. Mr. Arthur Purvis) Mount Royal Club, Friday, August 8th.
25. Mr. W.F. Angus)
26. Sir Edward Beatty)