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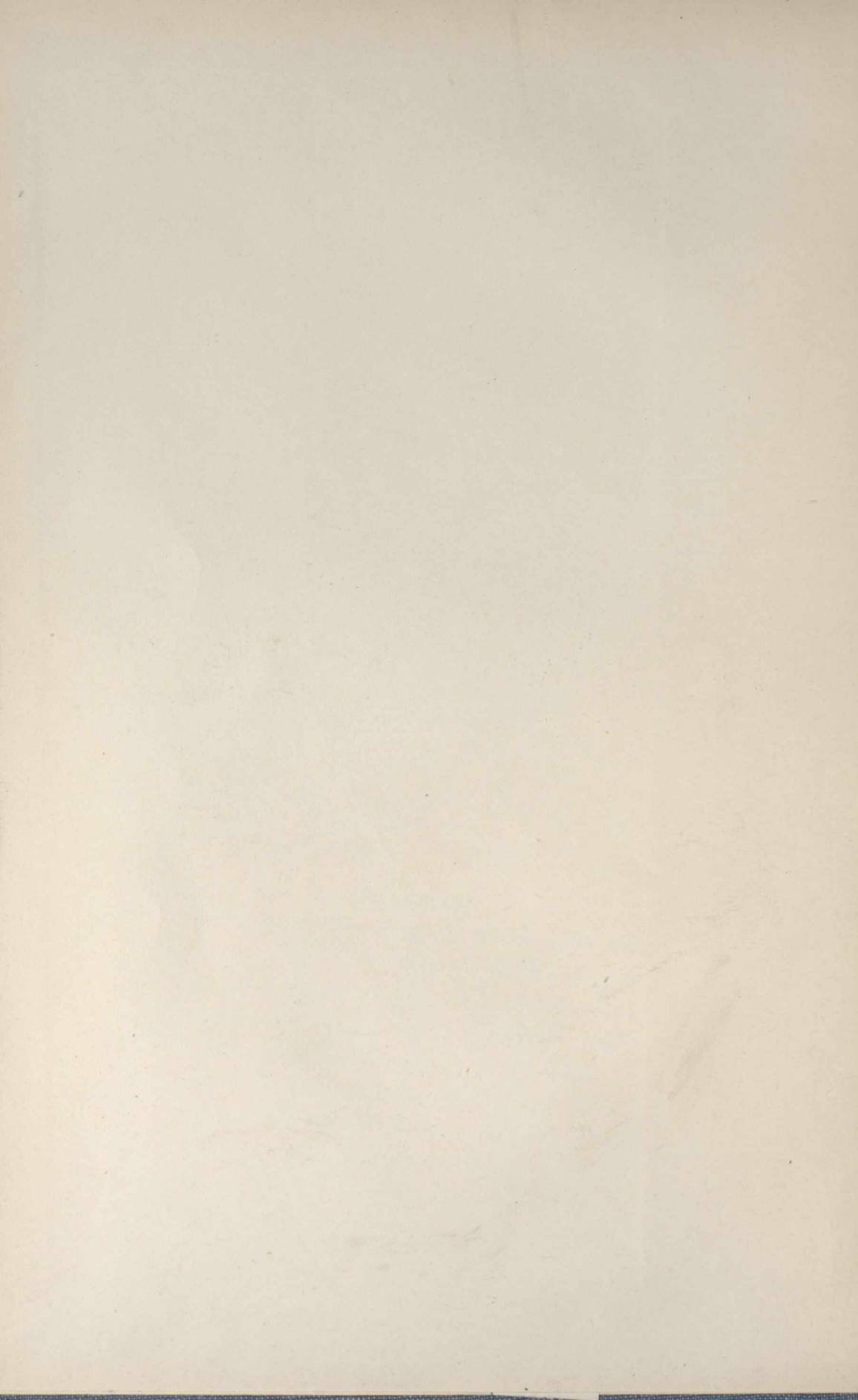
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SESSION 1942
HOUSE OF COMMONS

SPECIAL COMMITTEE
ON

WAR EXPENDITURES

MINUTES OF PROCEEDINGS

No. 1

TUESDAY, MAY 5, 1942
THURSDAY, MAY 7, 1942
FRIDAY, MAY 29, 1942
FRIDAY, JUNE 26, 1942

Including
FIRST AND SECOND REPORTS TO THE HOUSE

OTTAWA
EDMOND CLOUTIER
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1942

ORDERS OF REFERENCE

HOUSE OF COMMONS,

THURSDAY, April 30, 1942.

Resolved.—That a Select Committee be appointed to examine the expenditure defrayed out of moneys provided by parliament for the defence services, and for other services, directly connected with the war, and to report what, if any, economies consistent with the execution of the policy decided by the government may be effected therein, and that notwithstanding Standing Order 65 the committee shall consist of twenty-four members, as follows:—Messrs. Abbott, Bereovitch, Black (*Cumberland*), Boucher, Bradette, Chevrier, Cleaver, Douglas (*Weyburn*), Fournier (*Hull*), Gladstone, Golding, Graham, Harris (*Danforth*), Homuth, Johnston (*Bow River*), Macdonald (*Halifax*), Mayhew, McIlraith, Picard, Pottier, Reid, Ross (*Moose Jaw*), Sissons, Winkler, with power to send for persons, papers and records; to examine witnesses and to report from time to time to the House.

Attest.

ARTHUR BEAUCHESNE,

Clerk of the House.

TUESDAY, May 5, 1942.

Ordered.—That the said Committee be empowered to determine the manner and extent to which the evidence and proceedings shall be printed or typed, and that where the same are ordered to be printed there be printed 500 copies in English and 200 copies in French and that Standing Order 64 be suspended in relation thereto.

Ordered.—That the said Committee be given permission to sit while the House is sitting and to adjourn from place to place.

Ordered.—That 8 members of the said Committee constitute a quorum and that Standing Order 65 (3) be suspended in relation thereto.

Ordered.—That the said Committee be empowered to appoint subcommittees, to fix the quorum of any such subcommittee and to refer to such subcommittees any of the matters referred to the Committee; that any such subcommittee so appointed have power to send for persons, papers and records and to examine witnesses; to sit while the House is sitting, and to adjourn from place to place, and to report from time to time to the Committee.

Attest.

ARTHUR BEAUCHESNE,

Clerk of the House.

REPORTS TO THE HOUSE

FIRST REPORT

TUESDAY, May 5, 1942.

The Special Committee on War Expenditures begs leave to present the following as its First Report.

Your Committee recommends:—

1. That it be empowered to determine the manner and extent to which the evidence and proceedings shall be printed or typed, and that where the same are ordered to be printed there be printed 500 copies in English and 200 copies in French and that Standing Order 64 be suspended in relation thereto.

2. That it be given permission to sit while the House is sitting and to adjourn from place to place.

3. That 8 members of the Committee constitute a quorum and that Standing Order 65 (3) be suspended in relation thereto.

4. That the Committee be empowered to appoint subcommittees, to fix the quorum of any such subcommittee and to refer to such subcommittees any of the matters referred to the Committee; that any such subcommittee so appointed have power to send for persons, papers and records and to examine witnesses; to sit while the House is sitting, to adjourn from place to place, and to report from time to time to the Committee.

All of which is respectfully submitted.

ALPHONSE FOURNIER,
Chairman.

SECOND REPORT

MONDAY, June 29, 1942.

The Special Committee on War Expenditures has received from its subcommittee No. 3 the following report on "Munitions Contracts" which it has considered and adopted with amendments as its Second Report to the House:—

FIRST REPORT OF SUBCOMMITTEE NO. 3

This Committee was set up on May 7th and was directed *inter alia* to enquire into all matters relating to contracts and production and, in addition, if considered expedient, to resume the enquiry into the following matters:—

- (a) Headquarters establishments and Pay and Allowances.
- (b) Financial controls over Army, Navy and Air Force expenditures.

The Subcommittee begs leave to present its first report of findings and recommendations with respect to these subjects.

MUNITIONS CONTRACTS

The Department of Munitions and Supply is essentially a procurement agency. It procures for the Army, the Navy and the Air Force of Canada, the United Kingdom, the United States and all the other united nations commodities

and materials required by these. It is not an originating agency, but essentially a procurement branch. It may be divided into four main groups:—

1. The wartime industries control group.
2. The production group.
3. The purchasing group.
4. The Crown companies group.

The Wartime Industries Control Group, under the Chairmanship of the Priorities Officer, is in complete control of the supplying and allocation of commodities and materials essential to the war effort. This Group sees to it that the raw materials which are required or may be required for war purposes are not used by civilians. They place controls over civilian consumption and find ways and means of increasing the production of raw materials.

The Production Group do not produce themselves. They cause things to be produced. They make arrangements for the production of material that is not ordinarily produced in this country, such as aircraft, merchant and naval ships, tanks, guns, ammunition, etc. This Group has a number of directors-general, whose duty it is to organize for maximum production the branches over which they preside. The main subdivisions of this Group are: aircraft production, ammunition, arsenals and small arms ammunition, automotive, gun, tank, chemicals and explosives, gauge and cutting tools, naval armaments and equipment, industry and sub-contract co-ordination, and ship building.

The third group is the purchasing group. Its function is to purchase for the three services, the Army, Navy and Air Force, the commodities generally required by them. Its object is the procurement of military stores and it handles generally any commodities which are ordinarily produced in Canada and can be taken off the shelf. It purchases commodities such as food, clothing, boots, shoes and all things generally that are normally produced in this country. These commodities are purchased according to sound commercial company practice.

The Crown companies have been incorporated and certain tasks have been delegated to them by the Minister, i.e., the Merchant Cargo Ship program falls under the jurisdiction of Wartime Merchant Shipping Limited, the procurement of rubber under Fairmont Company Limited, silk, under Plateau Company Limited, machine tools under Citadel Merchandizing Company Limited. There are at present twenty such companies.

Intimately associated with the Production Group is the Production Committee, which has been set up recently. Its purpose is one of co-ordination. It is its business to see that the Directors-General of Production work towards a common goal and by means of discussion arrive at common policies. These directors from time to time meet in committee and devise ways and means to obtain production as fast, as efficiently, and as satisfactorily as possible. Another function of the production committee is to act as a Board of Review on new projects.

The Production Group is not responsible for specifications. This is the prerogative of the Army, Engineering and Designing Branch, which is limited in its functions to certain parts of the automotive production activity and the tank production activity. The specifications in general are those of the Army, Navy and Air Force of Canada, or the Army, Navy and Air Force of Great Britain or the United States. It is the duty of the Production Group to see that the contractor produces the materials according to the requirements of the Inspection Board. There has been set up what is known as the Inspection Board of the United Kingdom and Canada, which is an independent body, not connected with the Department of Munitions and Supply. In the Munitions and Supply Department is a branch known as the Munitions Contract Branch, whose object is to supervise the granting of munitions contracts. A few years prior to

the war, a thorough canvass was made of the manufacturing facilities of this country, with particular reference to the requirements of the Army and this Department fell heir to that national survey. Munitions contracts are, where possible, given by tender and the competitive system is used to establish prices, but as will be seen later, this is not always practical.

In cases where it is practical the manner of procedure in the Munitions Contract Branch is as follows:

The Production Branch of the division concerned is asked for a list of the names of possible manufacturers of the particular material or commodity—a list of, say, six or eight or more manufacturers is then given. Afterwards the Inspection Board is asked to forward to these six or eight, or more, manufacturers, the drawings and specifications. To them is also sent a two-page tender form, which is an invitation to bid on the job, on or before a specified date.

When the tenders arrive, they are sent to the tendering room, which is in charge of a reliable officer, and are not opened until five o'clock on the last day for the receipt of the tenders. The opening of the tenders is presided over by the officer referred to above, in his presence and in the presence of two others, who later certify that the tenders were opened and were sealed when opened. Tenders are then tabulated, setting out the name and address of the contractor tendering, together with the price, the date of delivery and any variation from the specifications which might be suggested by the tenderer. After tabulation, the tenders are submitted to the Production Branch concerned. This Branch decides whether it is satisfied that the lowest tenderer can do the job and make delivery.

In general, the contract is awarded to the lowest tenderer. Occasionally, however, although the lowest tenderer may be able to do the job, he might be loaded up with other work. In such case, if it is felt that lowest tenderers will be unable to produce the work in the time required, then the second or the third lowest tenderer is considered. The practice is to go back to the second or third lowest tenderer and ask him if he will not reduce his price to that of the first lowest tenderer. Sometimes this is done but often the Department does not succeed in getting the second or third lowest tenderer to reduce his price to that of the first lowest tenderer. Occasionally, if there is a wide margin between the lowest tenderer and the second and third lowest tenderer, the Munitions Contract Branch may suggest that the price cannot be accepted without having an audit made of the actual costs after completion of the job.

If the audit discloses that an unfair and an unreasonable profit has been made, a certain portion of the profit is turned back to the government. There are various forms of audit clauses used for this purpose. The substance of these audit clauses is that the contractor agrees with the government that at an appropriate time the government may send in its auditors to check thoroughly the costs of doing the work, and it is agreed that in the event of the auditors discovering a spread between the price quoted and the actual cost, which is too high, the contractor covenants with the government that he will return that part of the profit which is regarded as unfair or unreasonable. Some of these audit clauses stipulate that 5 per cent is deemed to be a fair and reasonable profit. Appendix I to this report lists the four types of audit clauses in use.

In many cases, however, it is not possible to obtain competitive bidding. For instance, the Production Director-General may have decided that there is only one company that can do the job satisfactorily. This happens in certain cases in connection with guns, tanks, small arms, ammunition and the like. There must, in a case such as this, be a determining factor, which is known as entrepreneurial ability or capacity. The only way to make a decision is to rely upon the judgment of the Director-General in charge, combined with the judgment of the Production Committee. It is not the possession of the plant, nor the machinery or buildings, which is the determining factor, but rather the capacity, the experience and the ability of the management.

The Production Committee, after having carefully considered the ability of the company to perform the task, and having accepted it, there is then the all important question of the price. How is the price to be fixed when the cost to manufacture the item is not known? The first step as a rule is to ask the manufacturer for his quotation. If it is an item which has never been manufactured in Canada, it will be quasi impossible for him to submit a price. He does not know what it will cost to manufacture the article, therefore he cannot give a price. Conversely if he is able to give a price, the department cannot accept it because it too does not know what it will cost. Generally what is called the "Target Price" method is suggested.

If the price of the British manufacturer converted into Canadian dollars is, say \$2 per item, the department suggests that for the first 10 or 20 per cent, the manufacturer will be paid his cost plus a small profit, which prices are subject to audit. If the manufacturer becomes efficient and is able to produce for less than \$2, he is given his costs, plus profit of say 5 per cent, plus a quarter or a half of all the amount by which the actual cost is less than the target. This is an inducement to the manufacturer in order to obtain efficiency, and it is always subject to audit.

It follows from this that there may be several types of contracts.

(a) *Fixed Price Contracts*

These contracts are on an agreed set price not subject to change, regardless of what the contractor's costs may be; that is, if he loses it is his loss; if he is able to manufacture more cheaply, it is his gain.

Fixed prices are usually arrived at on the basis of competitive tender. Nevertheless, even on fixed price contracts sometimes costs of a company are audited so that in future the lower fixed price may be arrived at if it is found that the contractor is making too much profit.

(b) *Ceiling Price Contracts*

These contracts are usually entered into only when the department is not satisfied as to what a proper price should be and are subject to revision downward only if it is found that the contractor is by virtue of the ceiling price receiving cost plus a profit which is deemed by the minister to be in excess of what is fair and reasonable. The contractor's costs are audited and although the contract provides that he is to receive this ceiling price it is on the understanding that the price may be reduced if a profit is in excess of a fair and reasonable price or an agreed percentage.

(c) *Target Price Contracts*

In this case a target price is set, that is, something for the contractor to shoot at. The contractor is granted his costs of production plus a profit. If his costs are less than the target then he gets his cost plus the said fixed fee plus a percentage of his savings. If his costs exceed the target then he gets his costs and his fee or profit is reduced. Example: Suppose the target is \$100 and the agreed fee per unit is \$5. If his costs are exactly \$100 he will get \$105 per unit. If his costs are \$80 he would get \$80, plus \$5, plus say, one-half of his savings, that is \$10 so that in total he would get \$95 for the article. If his costs were \$110 he would get his costs but his fee would be reduced to, say, \$2.50, so that he would get \$112.50.

(d) *Cost Plus a Fee*

This type of contract is divided into two classes, namely, cost plus a management fee and cost plus a fee per article. In the cost plus a management fee, this is usually where a contractor is providing the management for a

government owned plant. It provides the management and accordingly gets the costs of the operation plus a straight management fee of so much per year. For example, costs plus \$50,000 a year. In the cost plus a fee per article, he may still be operating a government owned plant, for example, a tank arsenal, and get the complete cost plus, say, \$2,500 per tank.

(e) *The Variation of the Cost Plus Fixed Fee Scheme*

The variation is the addition of an incentive for reducing the cost below a certain level. For instance, if the cost of a gun mounting is \$6,000, the contractor gets a fixed fee of \$180, but if he succeeds in getting the cost down to \$5,500, he will receive the original \$180 and an additional \$180 more for reducing his costs. It is possible that under this scheme, one-quarter or even one-half of what he saves he will receive.

(f) *Cost Plus Percentage Scheme*

This is the least desirable of all contracts but it is inescapable where there exists a variation of a great number of parts on which no cost basis can possibly be made. There are instances of certain guns having as many as 2,400 parts and it is impossible to make an accurate estimate of the costs of each of these parts. In such a case resort is had to the cost plus percentage contract.

It is to be noted that in all cases where a contractor gets costs, such costs are determined by Government Cost Accountants in accordance with Costing Memorandum, M. & S. 433, attached to this Report as Appendix II.

Controls over actual expenditures, arising out of these contracts, is decidedly important. There are three interlocking and overlapping checks on controls.

1. Munitions and Supply representatives who are technically trained engineers or production men, are posted and resident at the plant performing the contract work. These men devote all of their time to the control of expenditure. They operate on all large jobs where it is on a Cost Plus Fee, or a Cost Plus Percentage Contract. They adopt efficient methods and maintain a close liaison between the company and the production executives of the department. Specific instructions are given to these men. Appended hereto and marked III is a copy of such instructions.

2. The second control, or check, is to be found in the Director-General and his Production Staff who have attached to them a number of engineers and production men. Their business is to obtain efficient increased production and decreased costs. These men go from one plant to another and compare methods, and while they analyse the most economical method to obtain the fastest possible production, speed is the dominant factor.

3. The third check is the Treasury Cost Accountant.

(This dealt with by subcommittee No. 3 in its 1941 Report.)

The Munitions Contract Branch of the department dislike cost plus percentage contracts, and prefer a fixed price contract arrived at after competition or private audit. The cost plus a fixed fee is also preferable to the cost plus percentage because it destroys any incentive to deliberately pad costs, and by giving an incentive to speed, achieves the objective of low unit cost because speed means efficiency and therefore cost reduction.

This Committee strongly criticizes the use of the cost plus percentage contract but realizes that in some instances, resort must be had to it.

The Committee feels that the checks and controls exercised over the cost of contracts, do not operate as well in practice as they appear to in.

theory. It feels that they are not really as effective as they should be because there are not nearly enough technically trained engineers exercising these controls. It recommends that greater economy could be effected if a larger number of men were employed by the Department to check costs in various plants. Every effort should be made to get these men, if available.

The Committee is further of opinion that delays, sometimes too lengthy, are occasioned by inspection.

The Committee recommends that an officer of the Department of Labour, with practical experience in the problems of Labour, should sit on the Production Committee.

All of which is respectfully submitted.

ALPHONSE FOURNIER,
Chairman.

APPENDIX I

DEPARTMENT OF MUNITIONS AND SUPPLY

INSTRUCTIONS (No. 29) ISSUED BY DEPUTY MINISTER, FEBRUARY 18, 1942

AUDIT CLAUSES

In order to clarify and consolidate all instructions issued to date with respect to the insertion of Audit Clauses in Invitations to Tender and Acceptances of Tender, the following shall be considered to be effective as from this date:—

1. In any case where it is decided to provide that a Government audit of the contract or order may be made one of the following Audit Clauses is to be inserted in the Acceptance of Tender:—

(a) *Audit Clause No. 1*

It is understood and agreed that the price quoted in this order is a "ceiling price" and is subject to adjustment as hereinafter provided.

You agree to keep such records with respect to this order as are required by Costing Memorandum Form M. & S. 433 attached hereto, and that such records may be audited by a Government Auditor if the Minister of Munitions and Supply shall deem it advisable that such audit be made.

It is understood and agreed that if such an audit should be made and should disclose that the profit accruing to you on this order is in excess of . . . % on your actual cost determined as aforesaid, the price herein quoted shall be adjusted downward so that the profit on this order shall be not more than . . . % on such actual cost, and that if any payment shall have been made hereunder before the making of such audit and any price adjustment based thereon, the amount (if any) overpaid to you will be repaid by you upon demand, or, at the option of the Minister, may be deducted from any amounts thereafter becoming payable to you under this order or from any other moneys payable to you by His Majesty.

(b) *Audit Clause No. 2*

It is understood and agreed that the price quoted in this order is a "ceiling price" and is subject to adjustment as hereinafter provided.

You agree to keep such records with respect to this order as are required by Costing Memorandum Form M. & S. 433 attached hereto, and that such records may be audited by a Government Auditor if the Minister of Munitions and Supply shall deem it advisable that such audit be made.

It is understood and agreed that if such an audit should be made and should disclose that the profit accruing to you on this order is in excess of a fair and reasonable profit, the price herein quoted shall be adjusted downward so that the profit on this order shall be such as is, in the opinion of the Minister, a fair and reasonable profit, and that if any payment shall have been made hereunder before the making of such audit and any price adjustment based thereon, the amount (if any) overpaid to you will be repaid by you upon demand, or, at the option of the Minister, may be deducted from any amounts thereafter becoming payable to you under this order or from any other moneys payable to you by His Majesty.

(c) *Audit Clause No. 3*

It is understood and agreed that the price quoted in your tender of which this document is an acceptance is a "ceiling price" and that such "ceiling price" is estimated by you to contain not more than a fair and reasonable profit. You agree that you will keep sufficient and adequate records of the cost of this work so that such cost may from time to time be determined in accordance with the provisions of the Department of Munitions and Supply Form M. and S. 433 entitled "Costing Memorandum" and that such records may at any time and from time to time be audited by a Government Auditor to ascertain the actual cost of the work then performed for this order. Such audit or audits shall be made at any time or times at the discretion of the Minister, but not later than four (4) months after the Company has notified the Minister that the said records of the work then completed are sufficiently complete to enable the cost of the said work to be determined. Provided that if the said records are complete as aforesaid and any such audit be not made within four (4) months after notification as aforesaid, the Minister agrees to accept the certificate of the auditors of the Company as to the actual cost; determined as aforesaid, of any such completed work.

It is further understood and agreed that the right to make the audit hereinbefore referred to shall be in addition to any rights of His Majesty and does not limit and shall not be taken to be a limitation of any rights of His Majesty to make an audit of the Company's books which may now or hereafter exist otherwise than hereunder nor shall the acceptance of the certificate of the auditors of the Company as above provided in any way limit the right of His Majesty to make an audit of the Company's books under any authority other than this provision.

It is further understood and agreed that, if such audit should establish that the profit accruing to you on this order is in the opinion of the Minister in excess of a fair and reasonable profit, the said quoted price shall be adjusted downward so that the said profit shall be, in the opinion of the Minister, fair and reasonable. If the Company shall not consider the profit as so determined by the Minister fair and reasonable, the matter shall be referred for decision to two arbitrators, one to be appointed by the Minister and the other by the Contractor. In case the two arbitrators so appointed cannot agree, they shall appoint a third and the decision of any two of the three so appointed shall be binding upon the parties hereto. In case the two arbitrators so appointed cannot agree upon the appointment of the third arbitrator, such third arbitrator shall be appointed by the Exchequer Court upon a reference being made to such Court. A party who has not appointed an arbitrator after the other party has appointed one shall do so within five (5) days after being notified in writing by such other party so to do, and in default of appointment such other party's arbitrator may act as sole arbitrator and his decision shall be binding. If the arbitrator appointed by either party shall fail to proceed with the consideration of the matters in dispute within five (5) days after being required in writing by the other party's arbitrator so to do, such other party's arbitrator, if a third arbitrator has not been appointed shall be at liberty to act as sole arbitrator, and his decision shall be binding, or the other two arbitrators, if a third has been appointed, may forthwith appoint an arbitrator in lieu of the one who has failed to proceed and the decision of two of such three arbitrators shall be binding. The Contractor shall not stop, suspend or delay work under this contract pending the outcome of any arbitration proceedings taken hereunder.

(d) Audit Clause No. 4

In all Acceptances of Tender issued to General Motors Products of Canada Limited, the Ford Motor Company of Canada Limited, Chrysler of Canada Limited, covering purchases of "Transport Equipment" (which term shall mean wheeled transport vehicles, their components, and spare parts, and such other stores as are necessary to equip such vehicles; universal carriers Mark 1 and parts, the following clauses are to be inserted:—

(a) On Acceptances of Tender issued to General Motors Products of Canada Limited and Chrysler Corporation of Canada Limited. It is understood and agreed that this order shall be subject to the provisions of an agreement dated the 11th day of January, 1941, made between His Majesty the King in right of Canada and His Majesty the King in right of the United Kingdom of Great Britain and Northern Ireland and yourselves.

(b) On Acceptance of Tender issued to the Ford Motor Company of Canada Limited. It is understood and agreed that this order shall be subject to the provisions of an agreement dated the 11th day of January, 1941, and amended June 30, 1941, between His Majesty the King in right of Canada and His Majesty the King in right of the United Kingdom of Great Britain and Northern Ireland and yourselves.

2. In some cases it may be known at the time of the sending out of the Invitations to Tender that it will be necessary to place in the Acceptance of Tender one of the foregoing Audit Clauses. In any such case the following statement is to be inserted in the Invitations to Tender:

If your Tender is accepted the following Audit Clause will be inserted in the Acceptance of Tender issued by the Department and will form a condition thereof:

Then quote in full the one of the foregoing Audit Clauses which it is proposed thus to insert.

G. K. SHEILS,
Deputy Minister.

M&S 433

APPENDIX II

COSTING MEMORANDUM

The general rule is that the cost of performing a particular contract shall consist only of expenditure made by the contractor in connection with the contract, and shall be the sum of:—

- (1) Direct materials.
- (2) Direct labour.
- (3) Direct expenses.
- (4) A proper proportion of applicable indirect costs (including a reasonable proportion of management expenses).

GENERAL ELEMENTS OF COST

No definitions of the elements of cost may be stated which are of invariable application to all contractors, but in general the elements of cost may be defined as:—

(1) Manufacturing Cost.

i Direct Materials

ii Productive Labour

iii Direct Engineering Labour

iv Miscellaneous Direct Factory Charges

v Indirect Factory Expenses

vi Other Manufacturing Cost

} See "Particulars" for
further explanation of
these items.

(2) Miscellaneous direct expenses.

(3) Miscellaneous indirect expenses.

But there shall not be included as cost of the following:—

(1) Allowances for interest on invested capital, bonds, debentures, bank or other loans.

(2) Entertainment expenses.

(3) Dues and other memberships other than regular trade associations.

(4) Donations (except as stated in Section 3, Subsection (b) hereunder).

(5) Losses on other contracts.

(6) Losses from sale or exchange of capital assets.

(7) Depreciation on buildings, machinery or equipment paid for by the Crown.

(8) Fines and penalties.

(9) Amortization of unrealized appreciation of values of assets.

(10) Expenses, maintenance and/or depreciation of excess facilities.

(11) Increase in reserves for contingencies, repairs, compensation insurance and guaranteed work.

(12) Federal and Provincial income, excess profits or surtaxes.

(13) Unreasonable compensation for officers and employees.

(14) Bond discount or finance charges.

(15) Premiums for life insurance on the lives of officers.

(16) Legal and accounting fees in connection with reorganizations, security issues, or capital stock issues.

(17) Losses on investments, bad debts and expenses of collection.

(18) Advertising and selling expenses.

PARTICULARS

1. I. Direct Materials

Includes, in addition to materials purchased solely for the contract and processed by the contractor, or material obtained from subcontractors, any other material purchased for stock which may subsequently be used and becomes a component part of the contract.

All materials shall be charged to the contract at the net laid down price after deducting all discounts and other similar items.

Costs shall be credited with the fair market value of all scrap produced from materials charged to the contract, either in manufacturing processes, rejects, due to design changes, or from any other cause.

II. Direct Labour

Production labour which is performed directly on and is properly chargeable to the contract.

III. Direct Engineering Labour

Compensation of professional engineers and draftmen properly chargeable to the contract.

IV. Miscellaneous Direct Factory Charges

Items properly chargeable direct to the contract, but which do not fall within any of the above categories. As an example, a royalty payable.

V. Indirect Factory Expenses—“Factory overhead or burden”

- (a) *Labour*: supervision and inspection, clerical, timekeeping, stores tool crib, cleaners, watchmen, etc.
- (b) *Materials and supplies*: shop fuel, lubricants, waste, non-durable tools and gauges, etc.
- (c) *Service Expenses*: expenses of a general nature such as power, heat, light, operation and maintenance of general plant assets and facilities.
- (d) *Fixed Charges*: recurring charges such as property taxes, rentals and provision for depreciation. In making provision for depreciation, consideration may be given the number and lengths of shifts, but the provision shall not be inconsistent with the regulations imparted by Commissioner of Income Tax.
- (e) *Miscellaneous Indirect Factory Expenses*: items not directly chargeable to the contract, such as purchasing expenses, employees' welfare, employers' payments to any Federal unemployment or health funds but shall not include
 - (1) Payments deducted or chargeable to employees
 - (2) Pension and retirement payments.

VI. Other Manufacturing Costs

Includes items not properly or satisfactorily chargeable factory costs, but which, upon a complete showing of all pertinent facts, are properly to be included as a cost of the contract, such as:

Experimental and development charges.

2. Miscellaneous Direct Expenses

Sundry items: fees paid for tests, travelling expenses applicable to the contract, etc.

3. Miscellaneous Indirect Expenses

(a) Indirect engineering expense “Engineering Overhead” consisting of labour, materials, and miscellaneous expenses.

(b) Administrative expenses including salaries of corporate and executive officers, office salaries, janitors, cleaners, miscellaneous office and administrative expenses, such as stationery and office supplies, postage, normal contribution to local charities and other necessary office expenses.

ALLOCATION OF INDIRECT COSTS

No general rule is applicable to all cases. The proper proportion of indirect costs chargeable to the contract will depend on the ascertaining of all facts and

circumstances relating thereto, subject, however, to a requirement that all items which have no relation to the contract shall be eliminated from the amount to be allocated.

Provided the articles produced for the contract are of the same general class as the concurrent production of the plant, then allowable indirect expenses may be distributed on the basis of the proportion which the direct productive labour on the contract bears to the total productive labour of the particular section wherein the contract work may be carried out, except that if indirect expenses are incurred in different amounts and in different proportions by the various producing departments, consideration shall be given to such circumstances to the extent necessary to make a fair and reasonable determination. Administrative and other general expenses may be dealt with in a like manner.

In cases where the product is essentially different to the concurrent production, indirect costs wherever possible shall be segregated and the proper items thereof charged direct to the contract.

ACCOUNTS

Contractors' accounts shall be kept in such a manner as to clearly disclose the nature and amounts of the different items of cost pertaining to the contract, and all records of original entry must be preserved in form available for ready reference until released for disposal by the Minister.

APPENDIX III

DEPARTMENT OF MUNITIONS AND SUPPLY

INSTRUCTIONS (No. 37) ISSUED BY DEPUTY MINISTER, OCTOBER 16, 1941

DUTIES OF MUNITIONS AND SUPPLY REPRESENTATIVES IN GOVERNMENT OWNED

MUNITIONS PLANTS

General

In the production of the large quantities of complicated types of munitions required by modern warfare, it becomes necessary from time to time for the government to make heavy expenditures for the erection and equipment of new plant, entirely exclusive of any private capital, and to make arrangements with an experienced and competent industrial concern or group to manage it in return for a fee. Such arrangements are put into legal form as a contract but such a document cannot be expected to cover specifically all the various situations which arise in the carrying out of such extensive work. Accordingly, experienced men, bearing the title of Munitions and Supply Representatives, are appointed in these plants to assist the Directors General of the Production Branches of the Department in becoming aware early of new developments and, in general, seeing that correct interpretations are placed on the contract terms as operations proceed. Included in the work of these representatives is the responsibility for maintaining close contact with the expenditures which are made, so as to ensure that these are in keeping with the contract terms.

The managements of these government owned plants are selected because of their outstanding skill, knowledge and efficiency in their line and their generally high standing. Munitions and Supply Representatives must not lose sight of this fact. They should bear in mind at all times that courtesy, tact and due consideration of the management and staff are essential. A smooth-running and harmonious relationship as between the management and its organization on the one hand and this Department's officers on the other hand should be maintained in order that the fundamental principle of production at the greatest

possible speed may prevail. Representatives should endeavour to cultivate a relationship such that mutually friendly and frank discussion may occur on any feature of the operations at any time.

The representatives should be careful not to interfere in respect of managerial matters. If they consider that a course of action is not in the government's interests or not in accordance with the intent of the contract, they should discuss the matter with the management themselves, not with workmen, foremen, clerical employees or others of junior rank. This applies at all times, but is of particular importance if any criticism is deemed necessary.

Representatives should dispose of as many matters as possible *without* reference to the Department at Ottawa, so as to keep correspondence at a minimum, but they should nevertheless consult freely with the Director General concerned, particularly when in any doubt.

Representatives naturally will make very careful studies of the terms of the contracts in hand and make sure that they thoroughly understand what is intended, consulting the Department in case of doubt. In order that they may carry out their work it is, of course, essential that they should have free and continuous access to all accounts and records related to the operation, including purchase orders, payrolls, employment forms for new employees and shop or work orders.

Resident Cost Accountants are appointed in these government owned plants by the Comptroller of the Treasury on the recommendation of the Chief Cost Accountant attached by the Treasury to this Department. This, of course, means that Resident Cost Accountants are not under the supervision of the Department of Munitions and Supply, but serve the Department of Finance. It is clear, however, that complete co-operation must exist between Munitions and Supply Representatives and Resident Cost Accountants, as their functions interlock in many ways.

Duties

It is not possible to lay down a definite set of instructions to apply to all Munitions and Supply Representatives, but certain points are common to all their activities and these are outlined below:

Construction, Additions, and Repairs to Plant

Construction work on government plants is under the supervision of the Director General of the Defence Projects Construction Branch of the Department, but Munitions and Supply Representatives should maintain a contact with the work and make their services available to the Director General of the said Branch. They should bring to his attention any matters of interest as, for instance, suggestions for savings in cost or improvements in layout. This, of course should be accomplished in consultation and co-operation with the management. Any deviations from approved plans and specifications on the part of the building contractor should also be reported to the said Director General.

Machine Tools

These are purchased by the management only after approval of Citadel Merchandising Company, Limited, which has copies of all M.B. Reports giving lists of machinery estimated to be needed. As a rule, the machine tools are bought by Citadel but sometimes it is arranged that the management shall buy certain items. Transfers from other plants or projects may also be arranged by Citadel and substitutions may be made by Citadel on being agreed to by the management, always provided that the estimated total expenditure is not exceeded. It is expected that Munitions and Supply Representatives will maintain contact with all developments in this regard. Where the contract provides that the expenditure on machine tools, equipment, etc., is an estimate only, and

there are indications that the total will be exceeded, it is the responsibility of the Munitions and Supply Representatives to endeavour to see that any additional expenditure which appears necessary is placed before the Department for prior consideration. Where it seems that additional expenditures not contemplated originally will pay for themselves quickly in cost reduction or in increased production, it is the duty of the Representatives to study the matter thoroughly and make a full report and recommendation to the interested Director General, of course in consultation with the management who will also be expected to submit the matter themselves to the Director General.

Jigs, Tools, Dies, Fixtures, Gauges and Installation Expenses

All commitments covering these items should be passed upon by the Munitions and Supply Representatives, who are required to see that the limits of the authorization for expenditures from the Department are being observed. The Representatives have authority to approve, without reference to Ottawa, any substitutions considered advisable, provided such substitutions do not increase the original cost estimate beyond the allowance for contingencies provided in the M.B. Report, due allowance, of course, being made for the possibility that other contingencies will arise.

Office Furniture and Equipment

It is the policy that purchases of office furniture and equipment should be made through the Directors-General of the General Purchasing Branch of the Department. Signed requisitions for such items are necessary. It is not the duty of the Munitions and Supply Representatives to pass on such requisitions. They are handled by the Resident Cost Accountants.

Production Material

Representatives should satisfy themselves that the Management is maintaining an adequate, but not excessive, supply of raw materials and that schedules of purchases are such as to ensure no risk of shut-down through shortage of raw materials, components or packing materials. Any difficulties in this regard and any long term commitments necessary to guarantee continuity of supply should be referred to the Director-General in charge. It is most important that the Director-General should be kept fully informed on this subject and that any unfavourable priority rulings should also be reported promptly.

Prices and Sources of Supply of Materials

All materials must be purchased on a strictly competitive basis and Representatives have the authority to approve orders of this nature. When it is deemed necessary to procure materials on other than a competitive basis, explanation must be given to the Director-General and authority granted by him.

The foregoing is subject to the following qualifications: (a) that notwithstanding that it may be possible to obtain materials in the United States cheaper than similar materials can be obtained in Canada, if the difference in the laid-down cost of such materials is not more than fifteen per cent, such materials should be obtained from sources in Canada; and (b) that in any case where the Company should deem it inadvisable to accept the lowest tender, the matter must be referred to the Director-General concerned for approval before any action is taken.

Labour and Rates of Wages

Labour policy and control and the direction of employees are among the prime responsibilities of Management, and it is intended that in the exercise of these functions the Management should have a free hand. Matters

affecting the safety of employees, employment conditions, wage incentive plans, etc., etc., also are Management functions. These are all matters, however, in respect of which the Representatives should keep themselves informed. Payrolls require their certificate as a matter of course and no general change in policy, e.g., the introduction of a new incentive plan, should be put into effect without prior approval from the Director-General. In some cases it will be advisable that the Munitions and Supply Representatives should make reports to the Director-General of the Labour Relations Branch, copies of any such reports being sent to the Director-General in charge of the project.

Salaries and Wages

Representatives are authorized to concur in the appointment by the Management of additional salaried employees or wage earners at rates not in excess of \$3,600 per annum, and to approve of increases in pay where the resultant rate of remuneration does not exceed \$3,600 per annum. All appointments or proposed increases which would establish rates of pay in excess of \$3,600 per annum must be approved by the Director-General in charge of the project.

It should be arranged with the Resident Cost Accountant whether he or the Representative will make a periodical spot check of payroll cards in each section of the plant to make sure that payroll conditions are as they should be.

Reports for Directors-General in Charge of Projects

Reports on production are required in Ottawa every fortnight and are to conform with the needs of the Director-General in charge of the project. Production difficulties and delays should be analysed and their causes reported.

Expenditure for Maintenance

Representatives have authority to approve of incidental expenditures for plant maintenance, providing that such do not exceed \$2,000 for any one item. Amounts in excess of that sum must be referred to the Director-General in charge of the project.

Approval of Monthly Accounts

Munitions and Supply Representatives must consider all monthly accounts for all expenditures as prepared by Resident Cost Accountants and sign these if they concur or otherwise state their criticisms. Joint consideration of expenditures with the Resident Cost Accountants is an important portion of the work of Munitions and Supply Representatives.

Security and Guarding of Plant

All questions re this should be referred to the Director General of the Industrial Security Branch of the Department, copies being sent to the Director General in charge of the project.

Insurance and Fire Prevention

Problems of this nature should be communicated to the Secretary of the Department.

Central Inventory Records Division

Representatives are responsible for proper recording and tagging of all machinery and equipment by the Management, as required by this Division of the Department. Full instructions as to procedure will be submitted on

request, if not already on hand. Transfer of machinery and equipment to and from plants may only be done under instructions of the Director General in charge, but the Representatives must see that the C.I.R.D. is advised on proper forms of all such transfers.

Inspection

Inspection is not the responsibility of Representatives but that of the Resident Inspector of the Joint Inspection Board of U.K. and Canada. Should any undue delays be experienced in shipments of completed work because of lack of inspection facilities, Representatives should refer the problem to the Director General in charge of the project.

Inactivity of Machine Tools and/or Equipment

Any excess of Machine Tools and/or Equipment should be reported in detail to the Director General in charge of the project.

Cost Reduction

Although costing is within the province of the Resident Cost Accountant, ways and means of reducing costs are a legitimate subject for study by Munitions and Supply Representatives. It is their duty to gain an understanding of the manufacturing processes and be on the alert for suggestions from the Management or elsewhere as to improvements in methods which might be expected to result in lower costs. Any indications of waste in respect of material should be studied in conjunction with the Management. This, also, should be done with respect to labour, Munitions and Supply Representatives should be particularly on the alert for signs of disaffection or unrest on the part of labour and should communicate promptly both to the Director General in charge of the project and to the Director General of the Labour Relations Branch any information on these subjects which might be of value to them.

Conclusion

It is not intended that the above should represent a complete outline of all the points in respect of which Representatives are held responsible. Circumstances of each operation differ somewhat from those of all the others. The Representative should be interested in anything which will permit of higher speed of output and lower cost without sacrifice of quality. An effective Representative will gradually become established as an asset in the minds of the Management and will be welcomed to their inner councils. He will see Management's problems as well as the Department's viewpoint and will serve to bridge difficulties, eliminate misunderstandings and generally contribute to the efficiency of the operations.

J. P. PETTIGREW
for Deputy Minister.

MINUTES OF PROCEEDINGS

TUESDAY, May 5, 1942.

The Special Committee on War Expenditures met at 11 a.m.

Members present: Messrs. Black (*Cumberland*), Boucher, Bradette, Chevrier, Cleaver, Douglas (*Weyburn*), Fournier (*Hull*), Gladstone, Golding, Graham, Harris (*Danforth*), Macdonald (*Halifax*), Homuth, Johnston (*Bow River*), Mayhew, McIlraith, Pottier, Reid, Ross (*Moose Jaw*), Sissons, Winkler.—21.

On motion of Mr. Golding, seconded by Mr. Harris, Mr. Fournier (*Hull*), was selected as chairman of the committee.

Mr. Fournier took the chair, and after thanking the committee for the honour conferred upon him, made a brief statement on the scope of the Order of Reference.

A verbatim report of further proceedings follows:—

The CHAIRMAN: Gentlemen, to my mind members would be wise to study the order of reference which gives our committee power to investigate and examine the expenditures defrayed out of the moneys provided by parliament for defence services and other services directly connected with the war, and to report what, if any, economies consistent with the execution of the policy decided by the government may be effected therein.

I see no limitation in our power to investigate into any expenditure made by the government for war purposes. As to the report to be made, it reads: "To report what, if any, economies consistent with the execution of the policy decided by the government may be effected therein." That is the basis of our organization. Last year we sat in a committee of the whole for, I believe, twelve or thirteen sittings and heard evidence from officers of the Department of Munitions and Supply and from war headquarters. Then the committee decided to appoint subcommittees to which were assigned specific topics. It will be for the committee to decide what the procedure shall be this year. I would like members to feel that they are free to discuss any matters coming under the order of reference, and I would be the last man to hinder or stop any progress of the inquiry.

Now, the first motion which the committee should pass, would be to ask power to sit while the house is in session because I do not think we shall have enough time if our committee or subcommittees sit only in the mornings and cover very much ground.

Mr. HARRIS: Mr. Chairman, before you put that motion, I quite agree that that was the first order presented at last year's opening session of the War Expenditures Committee, but it was not perhaps the proper order. If you will recall, in many committees in which we have sat, the order, following the general remarks of the chairman, has always been that the committee be empowered to print 500 copies in English and 200 in French. Last year for some unknown reason we left that to the last order. Could we not get that straightened out now?

The CHAIRMAN: I have a draft motion to that effect. I could read it. This is only a suggestion.

Mr. HARRIS: Let us get back to a proper order of business.

The CHAIRMAN: The motion would read: That the committee be empowered to determine the manner and extent to which the evidence and proceedings shall be printed or typed and that where the same are ordered to be printed there shall be printed 500 copies in English and 200 copies in French, and that standing order No. 64 be suspended in relation thereto.

Mr. Ross: Mr. Chairman, speaking to that suggestion may I say I was on the committee last year and I notice that the first meetings were open meetings but that nothing was printed except what appeared in the newspapers, and if somebody in the committee got up and mentioned that there was some rule there was a headline in the papers, and if someone suggested something else, there was a headline in the papers, all of which had nothing whatever to do with what we were doing or intended to do. I have noticed that when committees of this house—and the House of Commons itself—make a *Hansard* then you finish the efficiency of a committee because too many people want to talk for the record and for publication. As far as I am concerned, I am against the printing of the evidence. I am not against keeping a record such as we kept last year in connection with different important things that came before the committee, but I am against sitting in open sessions of this committee. I was here all last summer during the heat and we worked hard in this committee—those of us who were here—and certainly if this committee intends to hold open sittings I do not intend to waste my time here listening to stuff being stated for publication in the newspapers and I intend to ask the House to be relieved of my duty on this committee if we sit in open session.

The CHAIRMAN: This motion only empowers the Committee to do certain things. It empowers the Committee to determine the manner and extent to which the evidence shall be printed or typed and when the same shall be ordered to be printed 500 copies will be printed in English and 200 in French. This is a general power that we are asking for in the House this afternoon.

Mr. JOHNSTON: Speaking to that motion, is there a great deal of difference in the cost of having the proceedings printed in both English and French?

The CHAIRMAN: I do not know what the cost is; the proceedings will be printed by the Printing Bureau.

Mr. JOHNSTON: Would that entail any further cost, or do they have a sufficient staff to undertake anything of that nature? Have we the translators employed anyway?

The CHAIRMAN: Yes, we have the translators.

Mr. HARRIS: That motion has been changed considerably, from Mr. Cleaver's motion of last year. Mr. Cleaver's motion last year read that the Committee request permission to print, as the Committee may determine from time to time, 500 copies and so on. This time you use some other words; what is the idea?

The CHAIRMAN: Last year we had quite a discussion about the way we would sit and the way the proceedings would be prepared, and I thought this year we would ask the House for power to determine as we go along the way we should proceed.

Mr. HARRIS: What is the objection to last year's motion? The usual motion has been moved here ever since parliament originated.

The CHAIRMAN: We had to go back to the House when we desired to set up subcommittees with power to print or type so many copies.

Mr. HARRIS: All right.

(Motion agreed to).

The CHAIRMAN: Now we have a motion: that the Committee request permission to sit while the House is sitting.

Mr. CLEAVER: Would you consider an addition to that; that the Committee have power to adjourn from place to place. It may be that during the scope of our inquiry, even while the House is sitting, we would want to visit war establishments in some place other than Ottawa, and I think we should have that power at once.

Mr. REID: We had that power last year.

Mr. CLEAVER: We are starting afresh. I think we should have power to adjourn from place to place.

Mr. MAYHEW: Would that mean we would have to have an appropriation?

Mr. CLEAVER: No, that is all covered.

The CHAIRMAN: The order of reference gives us power to examine witnesses without stating exactly where we will examine those witnesses.

Mr. CLEAVER: I think that a parliamentary Committee only has power to sit in the House of Commons unless we take additional power to sit elsewhere; and why not take all the power we need.

Mr. GLADSTONE: I think Mr. Cleaver's point is well taken.

The CHAIRMAN: Before the adjournment of the House on June 10 last year we did get this power: "That the Committee be empowered to sit notwithstanding any adjournment of the House, to adjourn from place to place and sit in camera or otherwise."

Mr. CLEAVER: Why not take that power right now?

The CHAIRMAN: We should add to this motion that the Committee request permission to sit while the House is in session and to adjourn from place to place.

Mr. ROSS: And add that we should sit in camera, if that is not in that motion. I want to be definite about that. It is for this Committee to say when they want to sit in camera.

The CHAIRMAN: Perhaps that matter could be discussed later and we could complete this part of our proceedings.

Mr. MAYHEW: If we are going to sit from place to place you will have to have some money because you will want to take with you secretaries and those who would not want to pay their expenses.

The CHAIRMAN: In the ordinary estimates there is an amount of money for committees. That is in the general estimates. It was not there for sittings during the recess, but there is some money for committee work during the regular session.

Mr. CLEAVER: I move that the committee request permission to sit while the House is sitting and to adjourn from place to place.

Motion agreed to.

The CHAIRMAN: Now, generally at the first meeting of a committee we fix the quorum and I have a suggestion that we request parliament to fix the quorum of this committee at eight members and that standing order No. 65, paragraph 3, be suspended in relation thereto. We had eight members as a quorum during the session and six during the recess when we sat.

Mr. GOLDING: I think eight should be sufficient and I shall so move.

Motion agreed to.

The CHAIRMAN: Now, here is a power that we passed last session also: "That the committee request power to appoint subcommittees and to fix the quorum of any such subcommittees, to refer to such subcommittees any of the matters referred to the committee; that any such subcommittee so appointed shall have power to send for persons, papers and records and to examine witnesses, to sit while the House is sitting and to report from time to time to the Committee." Perhaps we could add "adjourn from place to place."

Mr. HARRIS: I am not so anxious about joyriding from place to place, but if that suggestion was not included last year I shall be glad to have it done this year.

Mr. CLEAVER: We visited a number of different places and I can tell Mr. Harris that none of those trips were joyrides. Now, I wonder whether there

should be a general clause to generally delegate to the subcommittees all powers vested in the main committee. We have not covered the question of sitting in camera and I think that a subcommittee should have a right of itself to determine whether it will sit in camera or in the open.

The CHAIRMAN: We are still dealing with our organization, and these are the powers we are going to ask the House for this afternoon.

Mr. CLEAVER: You are not asking the House to vest in these committees the right to sit in open or in camera and I think that power should be asked for.

The CHAIRMAN: There is nothing in the reference which says we should sit in open or in camera. These are the powers we are asking to the House now.

Mr. HARRIS: They are the usual powers of the main committee.

Mr. CLEAVER: My point is this: while it is perfectly true that the Committee can determine how it shall sit I doubt if it has the power to delegate to a subcommittee how a subcommittee shall sit.

Mr. GOLDING: We did that last year.

Mr. ROSS: Can a subcommittee do anything that the main committee can do?

The CHAIRMAN: We can delegate all our powers to a subcommittee.

Mr. CLEAVER: That is what I was suggesting. You should add the words: "And generally to delegate to any subcommittee any powers awarded to the main committee."

Mr. GOLDING: It is all right to do that but it is not necessary.

The CHAIRMAN: With regard to sitting in camera, to my mind we have that power without going back to the House.

Mr. CLEAVER: Yes, the committee has that power, but we cannot delegate it to a subcommittee unless we take that power.

The CHAIRMAN: When we are authorized by the House to appoint subcommittees we will receive power to transfer our power to the subcommittees.

Motion agreed to.

The CHAIRMAN: There was a motion concerning the appointment of a subcommittee to prepare an agenda—a steering committee or an agenda committee.

Mr. GOLDING: We had a subcommittee last year that did very excellent work in arranging a program from day to day, and I have here a motion that a subcommittee consisting of Messrs. Fournier, Cleaver, Graham, Bradette, Chevrier, Boucher, Douglas and Johnston, be appointed to prepare an agenda and report from time to time to the main committee.

The CHAIRMAN: This subcommittee generally sat and prepared the work that was handed out to the subcommittees or the work that would come before the main committee. I should like to hear any suggestions that could be made on that, if you believe it is the proper way to proceed.

Mr. HOMUTH: I should like to move that Mr. Harris' name be substituted in the place of Mr. Boucher on that list.

Mr. HARRIS: Before you find a seconder to that motion, I may say that I was rather happy to think that I was excused.

Mr. BOUCHER: It is my first attendance in this Committee, Mr. Chairman, and I think the man on that subcommittee should be one experienced with the workings of the Committee last year. It would be a great help to them. I am very anxious to have Mr. Harris take my place on that subcommittee.

Mr. GOLDING: That is all right with me.

Mr. ROSS: Carried.

The CHAIRMAN: Are there any other changes you wish to have on that agenda or steering committee?

Mr. CLEAVER: Is the Social Credit group or the C.C.F. group represented?

The CHAIRMAN: Yes, by Mr. Douglas and Mr. Johnston. Moved by Mr. Golding and seconded by Mr. Reid. Is that motion agreeable to the committee?

Mr. ROSS: Carried.

The CHAIRMAN: I declare the motion carried. This concludes the ordinary formalities and powers we are to request from the House before starting our sittings.

Mr. JOHNSTON: May I ask a question? I do not know whether this is the proper place that it could be brought up but you have been speaking of subcommittees, and I have in mind that you may be guided by what you did last year in appointing about three subcommittees. When these three subcommittees are appointed, each one will have a special work delegated to it, I presume. I think that it is unfair to ask a subcommittee to carry on work on which each of the parties is not represented. So I would suggest that we ask the house—I do not know if this is the proper procedure—to be allowed to increase the membership of the committee to the extent that each of the parties have an additional representation and be represented on each of these subcommittees. May I give an illustration of what I have in mind. I do not think it would affect the power of the Committee if the C.C.F. or Social Credit were allowed additional memberships so that they would have representation on each of these subcommittees. That representation would not be sufficiently strong to offset your Liberal representation, because they would be far in the majority. That is not my purpose. My purpose is not to have a greater number of ours on the committee. But I do think when these subcommittees are being divided, each of the parties should have representation on them.

Mr. CLEAVER: And the New Democracy too?

Mr. JOHNSTON: Yes, one from the New Democracy and one from the C.C.F.

Mr. CLEAVER: And one from the Social Credit?

Mr. JOHNSTON: Well, Social Credit is New Democracy.

Mr. CLEAVER: What about Lacombe's party?

Mr. JOHNSTON: My point is this. If there is work going on in a subcommittee, it would necessarily be a very important piece of work; and I do not think it is fair to have this work going on without ourselves and the C.C.F. being represented on that. I think the Committee would agree with me that that would not be such a great addition that it would upset your over-riding of the major party.

Mr. GOLDING: All the committees are set up on the basis of representation in the House. The Standing Committees and so on are set up in that way.

Mr. JOHNSTON: I do not think that should have any bearing on it.

Mr. GOLDING: It is not what you think; that is the situation and that has always been the situation.

Mr. JOHNSTON: That might have been true in the past, but I think we could extend the privileges of the two smaller groups to be permitted to have sufficient members to sit on each of the subcommittees. If you are only going to have one subcommittee or two subcommittees rather, then it would only be two from each of the smaller groups, so that they would have representation on each of the subcommittees. I think the members will realize that it is not fair representation, because one man cannot be in three subcommittees.

Mr. ROSS: The record from each of these subcommittees is generally kept. It comes back and all their findings come back to the main committee. Their report is discussed in the main committee before anything is passed by the committee as a whole.

Mr. JOHNSTON: But at the same time one man could not be expected to carry on all that work.

Mr. HARRIS: Mr. Chairman, I should like to support what Mr. Johnston has to say. It is quite true that it comes back from the subcommittee and all that sort of thing, but it just comes back and is given a decent burial and that is the end of it. I should rather support it from another point of view. Having had the pleasure of being in attendance on some of the committees during the last session, I have found this position, that on perhaps a score of occasions a suggested motion occurred to me which I had perhaps in some cases the privilege of moving; but unfortunately, for some unknown reason, I could not find a seconder in the committee, with the result that the subject matter of the motion could not be brought before the committee. Now and again we were able to get a seconder, but not very often, which makes it very difficult. In supporting the suggestion of Mr. Johnston I might say that surely there must be some merit in some of the ideas that my hon. friend and others of us might have, sufficient at least that we could get them before this committee for discussion. In the absence of a seconder to each motion we were just stalled and the child died at birth without going any further.

Mr. CLEAVER: Of course, there is another way in which you could entirely cure that problem, and that would be that where your subcommittee is a small subcommittee, no motion should require a seconder.

The CHAIRMAN: That is the rule in committee meetings, at all events; a seconder is not necessary.

Mr. HARRIS: I have often been asked for one.

Mr. JOHNSTON: I think you have missed my point. I think Mr. Cleaver has missed my point. I am not particularly interested in that angle of it. What I am concerned with is this. These subcommittees must be important. Otherwise, there would be no use in setting them up. There is going to be a good deal of work required from each one of these. I think it is out of the question to say, "Well, each one of these subcommittees makes a report back to the main committee and then you have a chance to discuss it". As one individual like myself, you just simply cannot keep track of all the work that goes on in any of those subcommittees, nor can you review it sufficiently when it comes back to the main committee. I believe that, without any partisanship entering into it, members should realize that there should be representation on these committees for the smaller groups. You simply cannot do the work otherwise. I think that is necessary if we want to get results from the committee, and that is my main concern. It would not interfere with the proportionate power of the other major parties. I think that would be fair.

Mr. POTTIER: What would you suggest for Mrs. Nielsen's party, the unity party or the national party?

Mr. JOHNSTON: I think Mr. King made this remark, that they did not have sufficient representation to be recognized as parties. Certainly if there were only one in the group, you could not extend it because where would you get your representation from?

Mr. HOMUTH: You could put Lacombe on. He could jump from place to place.

Mr. ROSS: I am not against other parties having representation on these committees or anything else. But after all, we have been appointed here as a War Expenditures Committee. I think this, that if you get away from your press and get away from your records that are going to be printed throughout the country, politics would not be connected with it at all. I think each member who is here has come here for the purpose of trying to do what he can to assist with the work of this committee, with no partisan view in the thing at all. You and I are both from Western Canada, for instance. All right. We are both westerners. We are both Canadians and let us forget about party and politics.

Mr. JOHNSTON: That is right.

Mr. ROSS: What do we need to have more representation in this committee for?

Mr. JOHNSTON: That is my point. If we are going to do away with party stuff, which I think should be done, and there are going to be no more headlines or publicity given to this thing, let us get down and do the work among ourselves. That, I think, is only fair. Having that in mind, as Mr. Ross has suggested, I think that we should be entitled to a representative on each of these subcommittees. I can see no object in headlines. I think we should have the welfare of the work in mind.

Mr. ROSS: There is just as much reason to say you should have a geographical allocation.

Mr. BOUCHER: The Prime Minister has already said in the House that this Committee had very broad powers and it was a fact-finding committee, that we would have power to enlarge our members and that we should have as thorough an investigation as possible. I am entirely in agreement with what Mr. Ross and Mr. Johnston have said. There should be no politics in it at all. If the Committee is formed upon representation in the House, as to percentages, we cannot help but feel that that has some political flavour. I am not saying that in any disparaging sense, but I draw that to the attention of the committee in the sense of upholstering the argument of Mr. Johnston. You have three major groups in the House, each representing a political line of thought, each with some contribution to give to this Committee for national welfare. Surely it would be only fair that each group has some representation on each committee. We all know that the subcommittee does the main work, the spade work. A report is brought to the committee at large and the idea of discussing the facts and details of these things already investigated by the subcommittee, by the whole committee at large, is not a practical one unless considerable insight is given to the members. But there is considerable secrecy and necessarily so. There is a considerable number of things that should not be discussed in the open and should not be brought into publicity. Would it not be an advantage to that very theory that each of the three major groups have representation on each subcommittee, even if it be necessary to spread representation on this committee as per the national representation? I would say that we in the opposition group have four members now. I suggest we could very well extend our representation to six and have each of the other groups given another representative. I believe if we started this with a full spirit of one hundred per cent co-operation, and in a constructive manner, that we would appreciate the position the group is in with one or no members on a subcommittee compared to a large subcommittee of eight or ten members. I would, therefore, very much express my viewpoint in favour of supporting Mr. Johnston.

Mr. MAYHEW: May I suggest that this discussion be laid over until after we have heard as to how many subcommittees it is thought we should have.

The CHAIRMAN: The agenda subcommittee will decide on that and report to this committee.

Mr. BLACK: I believe we should have discussed what particular line of investigation this committee, the parent committee, desires to take up, and that would indicate to the steering committee just what recommendations they should make. I went on this committee last year, and from the very beginning my aim was to co-operate with all my associates on the committee and I carried that through. There have been tremendous expenditures since. Tremendous expenditures are being made now—about \$10,000,000 a day. The Prime Minister and Mr. Thorson and our chairman here state that there is no limit to the responsibilities set upon this committee. We have an obligation now to investi-

gate, to some extent, every expenditure that has been made since the beginning of the war. That imposes a tremendous responsibility upon us. I think we should have a general discussion as to under what headings and classification all investigations are to take place, and then we should get a report from the steering committee. This session is about half, we hope, completed now. The amount of work that the public expects, the House expects and the Prime Minister expects this committee to do is impossible for us to discharge. I think we also should have some discussion before we deal with Mr. Johnston's proposal, as to whether we are going to have subcommittees and what work is to be assigned to those subcommittees. I feel, and feel very strongly, that the regular opposition should have at least two members on each committee. That was not feasible last year. I do not feel that I am capable or that it should be expected of me that I should sit on any subcommittee that is sitting here and not have one of my associates sitting on that committee with me. I am in agreement with the suggestions made by Mr. Johnston that the opposition groups should have their representation on this main committee increased, one from the Social Credit, one from the C.C.F. and I think the regular opposition should have say, two more. The public expects more from the opposition. I think that is a fair statement to make. No matter how determined we are or desirous we are of working together, the public expects more of the opposition than they do of the government members. I feel we should make a recommendation to the House that the membership of this committee be increased by four, and that that increase of four should come from the opposition groups, two from the regular opposition and one from the C.C.F. and one from the Social Credit.

Mr. GOLDING: Mr. Chairman, just in reference to the observations made by these gentlemen, I wish to say that the fact is that there are quite a lot of committees sitting now and they have asked leave to sit while the House is sitting. Only a few days ago the leader of the opposition complained to the House about wanting these committees staggered in some way so that their supporters could attend these meetings. If you are going to have these various select committees functioning day after day while the House is sitting, you are going to have difficulty. Take, for instance, the Social Credit group or the C.C.F. group. There is only a small number in each. You will find them objecting to sitting because they have got to be in the House to carry on the work in the House. It has always been the practice that you have your representation on committees according to your representation in the House, and I think that is a well established fact.

Mr. BOUCHER: Not an established fact. It is a custom.

Mr. GOLDING: You know yourself, Mr. Boucher, that the leader of the opposition complained the other day about that very thing.

Mr. BOUCHER: I think you will agree with me that this is by far the most important Committee set up by the House.

The CHAIRMAN: May I suggest one thing. Last year when the first Committee on War Expenditures was set up, a very lengthy discussion took place in the House. I can see members here who took part in that debate, both from the opposition and from the government benches. They all discussed the suggestion that opposition members should have an increased number of members on the Committee. It was mentioned in the debate on the motion setting up this Committee in the House. In the Committee here I do not see that we are doing very much useful work by recommending an increase of the membership of the opposition party, because I cannot see any good result. In the House the government took a stand on this motion. The Prime Minister spoke on it. The members spoke on it and it was decided the committee would be composed of twenty-four members.

Mr. BLACK: Did the Prime Minister not state that he would be favourable to increasing the membership of this Committee?

The CHAIRMAN: I cannot recall that.

Mr. BOUCHER: It was stated on Wednesday last.

Mr. DOUGLAS: In *Hansard* last Thursday the Prime Minister said, at page 2232, "I should be wholly favourable to having the Committee on War expenditures enlarged if that is going to help further the work for which the Committee was intended. I shall be glad to take up that matter with my colleagues; I think they will view it sympathetically; and if the Committee itself, after a meeting feels that its work could be better performed by having its membership enlarged to some extent, I for one shall be prepared to do what I can to have that recommendation favourably received by the House."

The CHAIRMAN: Yes, but do you not understand that if we are to enlarge, they would add on so many government members to so many members of the opposition parties.

Mr. BOUCHER: Let us give them a chance to do that, then.

Mr. McILRAITH: There seems to be two main lines of thought arising out of the point taken by Mr. Johnston. Mr. Johnston's point, as I understand it, was simply with respect to the different smaller groups; contending that one man could not be in three places at the same time, assuming that there were three subcommittees. His point was quite simple. As I followed his arguments he did not suggest that the relative strength should be changed nor did he come in conflict with the principle that has been followed in the appointing of these committees, of granting representation on the committee in accordance with representation in the House of Commons. That is the only possible objection I can see to giving the smaller groups representation. Possibly some arrangement could be worked out whereby only one member of each subcommittee in the smaller groups would appear in the main committee when that matter was before it for discussion. Perhaps he would agree to make some suggestion along that line.

Mr. BOUCHER: I do not get your point.

Mr. McILRAITH: My point is this. You now want one representative on the main committee of twenty-four. Is there any objection or any formula whereby two additional members appointed to this committee would not appear on the main committee except when their own matter was before the main committee?

Mr. BOUCHER: How could they be members of the subcommittees and not members of the main committee?

Mr. McILRAITH: That is the point I was suggesting you might have something to say on. Another suggestion was made by Mr. Boucher and Mr. Black, which raised a different point altogether, or a new principle. It was that the opposition parties should have additional representation and that the principle of representation according to the representation in the House should not be followed. That is a principle that I imagine will not be accepted by the House. I should be amazed if it were. They have no difficulty in their party with respect to representation on the individual subcommittees because there is one in each one, and it struck me that there was a distinction there, and that possibly you might have some suggestion.

Mr. JOHNSTON: The only thing I was concerned with was that I think the work is sufficiently important that every party should be represented on that committee; every subcommittee should have a party representative on it. I quite agree with the statement that possibly the government should have the majority on each of these committees. I am not concerned about that. The only thing I am concerned about is that in each of the smaller groups, as well as on the others, they should be represented on these subcommittees.

Mr. CLEAVER: Mr. Chairman, we have had a general discussion now. Would it be wise to just postpone any further discussion and let us all think it over until the steering committee brings in its report? I just have two little thoughts I should like to pass on to Mr. Johnston. I think you have been looking on it entirely from your own viewpoint and you have forgotten one thing which is that the War Expenditures Committee was set up for two purposes; one, to find economies and two, to give to private members of the House an opportunity to contribute to Canada's war effort. It is a much sought-after committee. There are many Liberals who would like to be on this committee. Are we to say to the Liberal members in the House "Because you are a Liberal you are not eligible to your pro rata representation. If you were in opposition you would be eligible".

Mr. JOHNSTON: No, I would not say that.

Mr. CLEAVER: You have forgotten that. There are scores of Liberals who want to be on this committee and who want to work. Then there is this other fact. In reply to a question of, I think, Mr. Adamson, the Prime Minister indicated that every member of the House is welcome at every sitting of every committee, subcommittee and main committee. When an item is coming up such as, for instance, wartime housing, which Mr. Nicholson has a special interest in, there is no reason why he should not sit in on that committee and be present when they come to wartime housing. There is no reason why he should not make a special report to your group on wartime housing and acquaint you with the facts so that you can deal with it. If we are going to enlarge this committee, and we have four subcommittees, that means you are asking for six more members from your group. On a pro rata basis, that means increasing the size of this committee by about thirty. You see where we would get. We would get it so top-heavy we would not get any work done. Do not be entirely selfish about this thing. Put yourself in the position of a Liberal member who has earned his representation in the House and who wants to sit on this committee, but who is denied the right to sit on the committee because he is a Liberal.

Mr. JOHNSTON: You have my point entirely wrong. I have no desire whatever that the Liberals should not have the majority on each of these committees.

Mr. CLEAVER: We are not looking for the majority. But the Liberals want to work and want to help the war effort just as much as your people do.

Mr. JOHNSTON: You see the impossible situation you are placing the small groups in.

Mr. CLEAVER: Let Mr. Nicholson sit in when the wartime housing is being discussed.

Mr. HOMUTH: Speaking to the suggestions of Mr. Johnston, while I realize that they are at a disadvantage, and I am not so sure but that I agree with him that they ought to have representation on each of these subcommittees, the question arises as to how many subcommittees we are going to have.

Mr. POTTIER: Yes.

Mr. HOMUTH: The question also arises: are you going to carry on your committee as it was last year with three subcommittees with certain references made to them? How broad is this order of reference? When I accepted nomination on this committee much against my will—and I say that quite candidly and sincerely—I did it because I felt that this committee could do a very great work, not only in trying to find economies insofar as dollars and cents are concerned, but the greater economy which will result through our efforts by expanding, for instance, the production of war materials in this country. If we are going to decide on the question as to whether we are paying too much for such and such a thing, should we not also decide on the question as to whether

we are paying enough for something in order to get the production that we require? Why is it that a considerable percentage of industry in this country to-day is not on war work? Why is it that other industry in this country is running night and day, twenty-four hours a day, seven days a week, with orders that they will not fill for a long time? Because they have had the advantage of being able to go and bid on contracts, while others who were not tooled up—in fact, some of them were even tooled up at government expense—are perhaps only given a unit price without ever putting in their tender. We have manufacturers in this country who have spent hundreds and hundreds of dollars working out tenders, coming to Ottawa, interviewing departmental officials, and when the final contract is let, these men have not been able to get a contract because they could not compete against those who were already tooled up. I think it is the function of this committee—and a very important function—to see to it that instead of building up great industries in certain sections of this country, we ought to take the work to the industries that are already established and able to carry on some of this work. I think that is an economy, a very great economy. Perhaps if more of that had been done, we would not have had to have as much wartime housing as we have. Then I realize the practice has been to go on accepting the lowest tender in giving contracts. All right. I realize what the public would say if some one got up in the House and said, "Here is a government that is not accepting the lowest tender and they are distributing the work to others who tendered at a higher price." But the fact of the matter is that in the manufacture of many of our munitions of war we are doing that very thing. We are doing that very thing in some industries in this country—one industry at a disadvantage perhaps in distance from raw material and things like that. But the auditors go into these industries and see to it that at least their profit is limited. Their cost of production may be more, but their profit on that cost of production is limited, and in that way a great deal of production has been brought about in this country simply because they have worked it out in that way.

This committee, representing all the groups of the House, could make representation to the House and say that such a way was the way we believe this should be done. We all accept the responsibility for giving the contract to some industry at a higher price than that obtaining in the case of someone else, but at least we distribute the work and get production; and that is the thing we have got to do. I believe this committee could so work that every industry in this country would be doing something for the war effort. Let us consider a contract for a completed machine or a contract for shell boxes. One company may not be able to do all the work in connection with those shell boxes so they sublet their work and they go to Jones and they say: Here we want you to do this. Jones will give a price and that price works out all right. Now, when that private industry wants more work done they will go to others and they will say that it costs so much but Jones will do it for 27 cents while you want 29; can you meet the 27-cent price? There is no reason why the Department of Munitions and Supply, as the result of the recommendations of this committee, should not say to a man: This is a unit price at which we can give you this contract. But up until now and from the start of the war it was impossible either in the House or through the medium of the departmental officials to get any idea as to the cost per unit of the various things required in our war effort because they felt it was not the right thing to do.

The CHAIRMAN: I do not want to intervene but we are on a motion to see if we are to increase—

Mr. HOMUTH: That is what I am speaking about.

The CHAIRMAN: I will ask you to limit yourself as much as possible.

Mr. HOMUTH: How many subcommittees are we going to appoint?

The CHAIRMAN: Why don't you leave that to the agenda committee. You have a representative on that committee. Every party has a representative

and that committee will decide how many subcommittees we shall have. That is the way it has been decided this morning. That committee will report back to the main committee and if the report is not satisfactory then you can give your reasons.

Mr. HOMUTH: I think it would be a good idea to advise the agenda committee before they start establishing their subcommittees as to the views some of us hold.

The CHAIRMAN: How many would you wish to have?

Mr. HOMUTH: I do not know, but I do say this; I do think that some committee in going into the production of munitions and supplies ought to go into those very things I have stated this morning, because I think they are far more important than deciding whether or not we are paying a cent or 2 cents too much for some particular thing that we are using in our war effort. Let us get all our industries going first.

Mr. REID: I suggest that we leave the matter to the steering committee and when it brings in its report we can decide these matters.

The CHAIRMAN: I think that is the proper course.

Mr. JOHNSTON: Would that prevent us from going back to the House and asking for permission to do something else?

Mr. REID: Oh, no.

The CHAIRMAN: When we are discussing the report of the steering committee these facts will be brought out. Is there any objection to adjourning until such time as we have a meeting of the agenda committee?

Mr. DOUGLAS: Mr. Chairman, judging from the remarks of both the Prime Minister and the Minister of Munitions and Supply this committee is being given a very big task. The Minister of Munitions and Supply said at one time during his remarks that if there was any criticism due at all it was to this committee because his whole department had been open for investigation. If we are to be charged to investigate the whole of our war expenditures that is going to take a great deal more time than any member can give to such a task. We have to put some time in the House and some of us have a large amount of correspondence and other responsibilities. Even if this committee were to sit twelve or fifteen hours a day from now until the House closes or a month or so after the House adjourns we could not begin to do more than scratch the surface. I am therefore going to suggest that the committee take into consideration the advisability of securing the services of a secretariat or a cost accountant or a lawyer or some person who knows something about purchasing and contracting. I do think there ought to be counsel for this committee. There is excellent precedent for it. The Public Accounts Committee which investigated the Bren Gun contract—and that was only one contract—had one or two legal counsel. I think at first there was one and later he was given assistance—and we could not have done the work which that committee did if we had not had that assistance because we were able to go to him and say that we wanted certain figures worked out, and certain particulars and so and so and we would get the information. None of us had time to complete those figures even if we had the ability. If we have not got that assistance we are only playing at this thing.

The CHAIRMAN: If we are to investigate the Department of Munitions and Supply I can tell the committee that the department will have here at the disposal of all subcommittees their best experts to help in the work of the committee. I saw the Minister yesterday and I said, "Now, it seems that the trend is that we should investigate munitions in the sittings of these subcommittees"; and he said, "That is all right." I said, "We will need help from your department"; and he even named a Mr. Covert who would dispose

of all his time to help the members of the committee and of the subcommittees. He is an experienced man who has been in the Department I think since its inception and could give far better advise than we would get by bringing in legal counsel because such counsel would have to study the whole organization first. We will get any help from that Department that we wish.

Mr. REID: I do not think Mr. Douglas means legal counsel; I think he means expert.

Mr. DOUGLAS: I cannot accept that as an alternative proposal at all. This is not an examination of the Department of Munitions and Supply by the Department of Munitions and Supply, it is an examination of the Department by a committee of the House of Commons.

The CHAIRMAN: Certainly.

Mr. DOUGLAS: A committee of the House of Commons ought to have its own secretariat. The Department will come and present figures and data to this committee, but we ought to have our own secretariat who will make investigations from our own viewpoint. We may want the whole question of capital expenditures that have been made by the government—some five hundred million dollars—viewed in a certain light and have the figures considered on a certain basis. Their officials are going to have those figures considered on their basis and from their point of view.

Mr. BRADETTE: You do not mean the Government you mean the Department.

The CHAIRMAN: We could start in with the witnesses we call and every member would have a right to examine those witnesses completely on everything they want to know, and if we find we are in difficulties then I think would be the proper time to get accountants and legal men.

Mr. DOUGLAS: I would appreciate an expression of opinion on it by the committee. To suggest that we can leave this matter in abeyance until we run into some situation is not adequate at all. The committee is already too late in starting, more than half the session has passed, and if we are going to wait until we run into a given situation then we shall have to find a secretary and acquaint him with the particular problem he will have to study and by that time the session will be over. I suggest that we should have a small secretariat which would give its full time to gathering data for this committee and making investigations. It has been done before. I had the pleasure of working on the committee that investigated the cost of farm implements, and Mr. Graham, who is a member of this committee, was counsel for that committee, and I am not giving him any bouquets when I say that that committee would never have done the work it did had it not been that Mr. Graham worked for that committee as counsel, and he did an excellent job gathering data and presenting it to the committee, and he was able to give us information which was helpful to us in asking questions of the witnesses who appeared before us.

Mr. REID: This matter will have to be discussed by the agenda subcommittee.

The CHAIRMAN: It has been suggested to me that all members of the committee should transmit to the members of the agenda committee any suggestions which they have in mind. I believe the agenda committee will sit tomorrow afternoon at 4 o'clock and I am sure the agenda committee will welcome any suggestions from the members of the main committee.

Mr. HOMUTH: Would you name the three subcommittees you had last year?

The CHAIRMAN: They were known as subcommittees 1, 2 and 3. The main committee gave them special work. The subjects allocated to them were as follows:—

Subcommittee No. 1.

- (a) Contracts with civilian flying clubs, associations or companies;
- (d) Airport, aerodrome and Air Force buildings construction, specifications and designs for such products, and inspection thereof during construction;

Subcommittee No. 2.

- (a) Medical, dental and hospitalization services in the Army, Navy and Air Force;
- (b) Food supplies for the forces, inspection thereof, catering and salvage of waste.
- (c) Army and Navy buildings construction;

Subcommittee No. 3.

- (a) Headquarters establishments and pay and allowances;
- (b) Financial control over Army, Navy and Air Force expenditures.

Now, I gathered from speeches which were made in the House that it was the intention that we should investigate Munitions and Supplies, especially. Now money is spent in that Department in three broad and general ways; first, by contracts; second, by capital assistance; thirdly, by government owned companies. If you read the report that was made by subcommittee No. 3 you will find that division of the way expenses are met in that Department.

Mr. REID: Might I suggest to the agenda committee that the matter of contracts could very well be divided into three parts because contracts are so numerous and so great. For instance, there are shipping contracts and there are food contracts and munitions contracts and gun contracts. There might be fifty contracts under the heading of contracts alone. We are thinking of putting contracts under one subcommittee and capital expenditures under another.

Mr. BRADETTE: You are not going to go into every one of those contracts, surely; you have to standardize them.

Mr. HARRIS: With regard to Mr. Reid's remarks I might say that it is impossible for this Committee to cover the whole field of investigation, yet, in your opening remarks, Mr. Chairman, if you will read them over carefully, you will find that you intimated that the whole field is wide open. I did not like to interrupt you when you were making your opening statement. However, you said the field was wide open and that it might be possible for us to explore that whole field and to point out the ways in which economies might be effected. Now, I hope we do not go away from this room with the idea that it is possible for us to do that; we can only deal with cases here and there and you; we cannot possibly cover the whole field. Let us be fair about that. We must realize that. But your opening remarks would lead us to believe that everything is wide open: come in and look it all over. Now, when we are all through with this Committee we will be asked to sign the auditor's certificate at the foot of the balance sheet saying that everything is fine. As one member I do not purpose signing that for the reason that we are unable to audit the whole picture. We can just make a little test audit here and there and do the best we can in the interests of Canada and in the interests of the war effort. We will not be able to do what you led us to believe, Mr. Chairman, in your opening remarks.

The CHAIRMAN: You have implied that I said we would cover the whole ground; what I said was that we had the power.

Mr. HARRIS: Quite; and that the whole ground is open to us. Let us understand that we are not able to do that.

The CHAIRMAN: Coming back to the suggestion concerning the three divisions: you do not mean that you are going to enter into every contract or even every phase of contract or every phase of capital assistance; but it would seem to be a logical division for subcommittees to work upon since in the Department itself the money is spent in those three different ways. I did not want to leave

the impression that we are going to look into everything in the two or three months we are going to stay here because we have not the time and we have not the strength to go through the whole matter.

Mr. GLADSTONE: I would like to throw in a few thoughts for the consideration of the agenda committee. We have been sitting only a short time, but I might point out that four members have already left to attend other committee meetings. One criticism that followed at the conclusion of the sessions last year was that there were very infrequent meetings of the committee of the whole. The committee of the whole last year was seldom called and I think we should guard against that this year. I think it is possible that this committee of the whole should be called very frequently. I believe, Mr. Chairman, that you would do well not to follow the procedure followed last year when the chairman of the committee of the whole was also a chairman of a subcommittee. I believe you will find that you have all you can do without undertaking the chairmanship of a subcommittee.

With regard to a steering committee, I sometimes think that more of the work that is undertaken by that committee should come before the committee as a whole.

Now, in connection with the remarks made by Mr. Douglas, I just wonder whether the services of Mr. Graham who had such wide experience with the Agriculture Committee on the farm implement matter should not in some way be tied up in a large way in the preparation of work than would be the case if he were chairman of a subcommittee as he was last year.

Thinking along those lines before this meeting and without consultation with anybody I have mapped out an outline which I will give to the committee for whatever it is worth: (a) that we should have a committee on preparation and follow-up. That preparatory work would be to some extent the work that is undertaken by the agenda committee. The follow-up work is something that was mentioned in the House and I think it is very important. The subcommittees should report occasionally to the general committee when definite recommendations for economy and efficiency are made; and at the same time we should have some sort of a follow-up action so that appropriate action could be taken with the appropriate Minister. I suggest that the preparatory committee should consist of three members—three alert-minded members who have had experience in business, and that the chairman, naturally, would be one member, and I think Mr. Graham's experience would lend itself to making him a very valuable member of that committee. I would therefore suggest that consideration be given to that matter of a preparation and follow-up committee. I suggest also that the subcommittees do not be designated by names but that they be designated simply by numbers, for the reason that this year in connection with a larger field of investigation, namely, munitions and supplies, it is quite possible that all three or whatever number of subcommittees we may have may at one and the same time be working on different contracts or different features which come under the Department of Munitions and Supply; and it would be my thought that this preparation committee would designate a certain investigation to No. 1 committee or No. 2 committee or No. 3 committee, and that no committee would be barred by its specific beforehand reference from taking on the work of some investigation of contracts under Munitions and Supply.

Another thought I had has reference to sittings of the Committee during the recess. In the striking of these subcommittees consideration should be given to the fact that some members may be unwilling to sit during the recess and others may be willing to sit for a limited time only. Already I have heard members say that they could not sit for any lengthy period after parliament adjourned. I think if we knew beforehand just what month members would be willing to sit after the recess they could probably be grouped accordingly into subcommittees so that if certain subcommittees could not sit during the recess there would be no hindrance to some other subcommittees sitting during the recess.

Mr. MAYHEW: You are assuming that there will be a recess.

Mr. GLADSTONE: With regard to the evidence, this is an economy and an efficiency committee and we should free ourselves as far as possible from procedure that has no real value; so can we not find some means of avoiding the taking down of every spoken word? This practice caused delays last year in that the subcommittees could not sit until the recording staff caught up with the transcribing. It seems to me that in a well ordered business it has never been found necessary to take down each word that is said by each member of the board of directors; the vital thing is to get the conclusions and recommendations. It seems to me that if we had one stenographer attending a session, rather than having several stenographers working in relays, that stenographer could take from the dictation of the chairman the essential facts and recommendations necessary for the record. Ninety per cent of the recorded evidence of last year has gone into cold storage and it will never be seen again. I think we should limit this recording to things that are essential and that we should adopt the system in our committees such as would be followed in any well ordered business.

Mr. BLACK: Now, it is taken for granted that we are going to be divided up into subcommittees, and I agree with Mr. Johnston and others who have expressed their views that the opposition group should have a larger representation than it had on the committee last year. In view of the work that has been assigned to us I do not feel it is humanely possible with our small representation to discharge the responsibility placed upon us. There should be a larger representation of the opposition group on the subcommittees if they are going to function properly and if those of us who are assigned to these subcommittees are going to do the work expected of us. Therefore, I am going to make a motion that we should recommend to the House that the membership of this committee be increased by four, it being understood that two of the new members should be from the official opposition and one from the C.C.F. and one from the Social Credit groups. Otherwise, as one member of this committee from the opposition I do not feel it would be competent for me to sit on these committees and discharge the duties that are expected of me.

Mr. REID: I do not want to raise any objection to Mr. Black's remarks, but I think that is a recommendation for the steering committee.

The CHAIRMAN: I understood that these matters were to be sent to the agenda committee for discussion and then we would discuss them when we got the report of the agenda committee.

Mr. BRADETTE: I would ask Mr. Black to withdraw the motion. I am open-minded on that score, and I would go further than Mr. Johnston or Mr. Black. I would be in favour of having a good doctor or a good construction engineer to help us and I would also be willing to have an additional four members added to the Committee.

Mr. BLACK: This is a very important matter and I think this is the time to deal with it, but if it is the wish of the committee that consideration should be given to it later, and if it necessary to make a report to Parliament in order to get action upon it, I repeat I do not feel it is competent for me to sit on one of these subcommittees and discharge the duties and responsibilities which are expected of me as a member of this committee with our small membership in the opposition group.

The CHAIRMAN: Would you allow your suggestion to go to the agenda committee and in the meantime we will have an opportunity of thinking over what you have said.

Mr. REID: Nobody knows how many subcommittees there are going to be; there might be five or four or two; and until the agenda committee deals with the matter we do not know what is going to happen.

The CHAIRMAN: I am asking Mr. Black if he has any objection to withholding his motion until we get the report of the agenda committee.

Mr. ROSS: Have we got to get the report of the agenda committee back before we can report to the House?

The CHAIRMAN: No, the agenda committee cannot sit without authority—well, it could sit—but we are asking for power to set up subcommittees in the report to-day. We have not the power to set up subcommittees now; but we expect to receive that power from the House this afternoon.

Mr. ROSS: Have we not got to get the agenda report back to report to the House?

The CHAIRMAN: No. The agenda committee cannot sit—it could sit but we are asking power to set up subcommittees in the report to-day. We have not power to set up subcommittees right now, unless we receive power from the House this afternoon.

Mr. BOUCHER: Would it be possible to postpone application to the House for further power until the agenda committee has brought in its recommendation, so that we could put it in all at one time?

The CHAIRMAN: In order to appoint subcommittees we need power from the House. Why should we meet as an agenda subcommittee to set up subcommittees without having power to do it?

Mr. BOUCHER: To recommend that they be set up.

The CHAIRMAN: That is what we are asking the House.

Mr. BOUCHER: There is no necessity of going to the House of Commons to ask power to set up a little subcommittee within ourselves to make suggestions to this committee.

The CHAIRMAN: You are right there.

Mr. BOUCHER: Therefore that agenda committee could definitely meet and suggest what committees they think should be appointed and bring back to this committee a report, and we could defer our application to the House for further powers until this steering committee or agenda committee has brought in its recommendation.

The CHAIRMAN: Here is what we are asking of the House this afternoon—the powers to appoint subcommittees. That is the general principle and nothing else. We could discuss it at length but to-day you have decided we would ask the House for power to appoint such committees.

Mr. BOUCHER: Actually we are going to the House apparently asking power to appoint subcommittees when we do not know what subcommittees we want to appoint.

The CHAIRMAN: We do not even have to appoint subcommittees. We are only asking for power to do so. There is nothing obligating this committee to appoint subcommittees, if they do not feel like it.

Mr. REID: It is just like asking the House for power to sit while the House is sitting.

Mr. BOUCHER: I appreciate that.

The CHAIRMAN: Is Mr. Black agreeable that this motion stand?

Mr. BLACK: If that is your wish. But I think it is the very basis of the work of this committee. It would seem to me, in view of what the Prime Minister has said, and in view of the strong views expressed by the opposition group, that now is the time to deal with it. But if you wish to postpone it, I am not going to insist upon it now.

The CHAIRMAN: Then will someone move that we adjourn.

Mr. GLADSTONE: I move that we adjourn.

The committee adjourned at 12.35 p.m. to meet at the call of the chair.

R. ARSENAULT,
Clerk of the Committee.

THURSDAY, May 7, 1942.

The Special Committee on War Expenditures met at 4 o'clock p.m., the Chairman, Mr. Fournier, presiding.

Members present: Messrs. Abbott, Bercovitch, Boucher, Bradette, Chevrier, Cleaver, Douglas (*Weyburn*), Fournier (*Hull*), Gladstone, Golding, Graham, Harris (*Danforth*), Johnston (*Bow River*), Macdonald (*Halifax*), McIlraith, Pottier, Reid, Ross (*Moose Jaw*), Sissons, Winkler.

The Chairman submitted a report from the agenda subcommittee which was considered and amended to read as follows:—

The Agenda subcommittee of the Special Committee on War Expenditures recommends:

1. That a subcommittee (No. 1) be appointed to inquire into the operations of government-owned companies, and, in addition, if considered expedient, to inquire into the following matters:

- (a) Contracts with civilian flying clubs, associations or companies.
- (b) Airport, aerodrome and air force buildings construction, specifications and designs for such projects, and inspection thereof during construction.

That such subcommittee consist of Messrs. Cleaver, Chairman; Black, Boucher, Golding, Pottier, Reid, Winkler, and that the quorum be 3.

2. That a subcommittee (No. 2) be appointed to inquire into the subject of capital assistance to contractors and, in addition, if considered expedient, to resume the inquiry into the following matters:

- (a) Medical, dental and hospitalization services in the army, navy and air force;
- (b) Food supplies for the forces, inspection thereof, catering and salvage of waste;
- (c) Army and navy buildings construction.

That such subcommittee consist of Messrs. Sissons, Chairman; Graham, Gladstone, Harris, Mayhew, Macdonald, Picard, and that the quorum be 3.

3. That a subcommittee (No. 3) be appointed to inquire into all matters relating to contracts and production, and, in addition, if considered expedient, to inquire into the following matters:

- (a) Headquarters establishments and pay and allowances;
- (b) Financial controls over army, navy and air force expenditures.

That such subcommittee consist of Messrs. Chevrier, Chairman; Abbott, Bercovitch, Bradette, Douglas, Homuth, Johnston, McIlraith, Ross, and that the quorum be 4.

4. That each of the subcommittees do report their findings and recommendations to the Committee.

5. That the Chairman be ex-officio a member of all subcommittees above referred to.

6. That the sittings of the said subcommittees be *in camera* except as the subcommittee may otherwise from time to time determine, and that four (4) copies only of the proceedings and evidence in sittings *in camera*

be made in typed script, one for the Chairman of the whole Committee, one for the Chairman of the subcommittee, one for the Clerk of the Committee, and one sent to the witness for correction and return; all copies to be in charge of the Clerk of the Committee when not in use.

Mr. Ross moved that the Report, as amended, be adopted.

Mr. Harris moved, in amendment thereto, that the report be further amended to the effect that the subcommittees be allowed to select their own respective Chairman.

The question being put on the amendment, it was negatived on the following division: Yeas, 6; Nays, 10.

Main motion carried.

The question of increased representation on the Committee of minority parties in the House, brought up at the last sitting, was further discussed.

Mr. Pottier moved that no addition to the present membership of the Committee be recommended.

Motion carried on the following division: Yeas, 14; Nays, 4.

With respect to the question of securing professional assistance for the Committee, it was generally agreed, after further discussion, that should the subcommittees require any such assistance in the course of their inquiries, they could report accordingly to the Committee.

On motion of Mr. Cleaver, the Committee adjourned to the call of the Chair.

R. ARSENAULT,
Clerk of the Committee.

FRIDAY, May 29, 1942.

The Special Committee on War Expenditures met at 10.30 a.m., the Chairman, Mr. Fournier, presiding.

Members present: Messrs. Bercovitch, Black (*Cumberland*), Boucher, Chevrier, Cleaver, Fournier (*Hull*), Gladstone, Golding, Graham, Harris (*Danforth*), Johnston (*Bow River*), Macdonald (*Halifax*), Mayhew, Picard, Pottier, Reid, Ross (*Moose Jaw*), Sissons, Winkler.

The Chairman reported on behalf of the Agenda subcommittee, recommending that in addition to the subjects of inquiry previously referred to subcommittee No. 1, the said subcommittee be empowered to inquire into (a) aircraft production and contracts, and (b) shipbuilding.

Discussion followed, in the course of which the Chairmen of the three subcommittees reported briefly on the matters being inquired into by their respective subcommittees.

A re-allocation of subjects to be inquired into by the three subcommittees was suggested and, on motion of Mr. Ross, it was *Resolved*,—That the reference to each subcommittee be re-allocated as follows:

To subcommittee No. 1:—

- (a) Wartime Housing
- (b) Aircraft
- (c) Shipbuilding

To subcommittee No. 2:—

- (a) Salvage
- (b) Medical services and hospitalization

To subcommittee No. 3:—

Gun production

The Chairman read a communication from Mr. Gladstone, requesting that he be transferred from subcommittee No. 2 to subcommittee No. 3.

Mr. Johnston also requested his desire to follow the inquiry being made by subcommittee No. 1.

On motion by Mr. Bercovitch,—

Resolved,—That Mr. Gladstone be a member of both subcommittees No. 2 and No. 3; and that Mr. Johnston be a member of both subcommittees No. 1 and No. 3.

On motion by Mr. Harris,—

Resolved,—That the name of Mr. Sissons be added to the list of members on the Agenda subcommittee.

On motion of Mr. Pottier, the Committee adjourned to the call of the Chair.

A. ARSENAULT,
Clerk of the Committee.

FRIDAY, June 26, 1942.

The Special Committee on War Expenditures met at 11 o'clock a.m., the Chairman, Mr. Fournier, presiding.

Members present: Messrs. Bradette, Chevrier, Cleaver, Fournier (*Hull*), Gladstone, Graham, Macdonald (*Halifax*), Reid, Sissons.

Mr. Chevrier, Chairman of subcommittee No. 3, presented the First Report of the said subcommittee relating to "Munitions Contracts".

The said Report having been considered and amended, Mr. Chevrier moved: That the First Report of subcommittee No. 3, as amended, be adopted as the Committee's Second Report to the House.

Motion carried.

The Committee adjourned to the call of the Chair.

R. ARSENAULT,
Clerk of the Committee.

SESSION 1942

HOUSE OF COMMONS

SPECIAL COMMITTEE

ON

WAR EXPENDITURES

MINUTES OF PROCEEDINGS

No. 2

FRIDAY, JULY 10, 1942

WEDNESDAY, JULY, 15, 1942

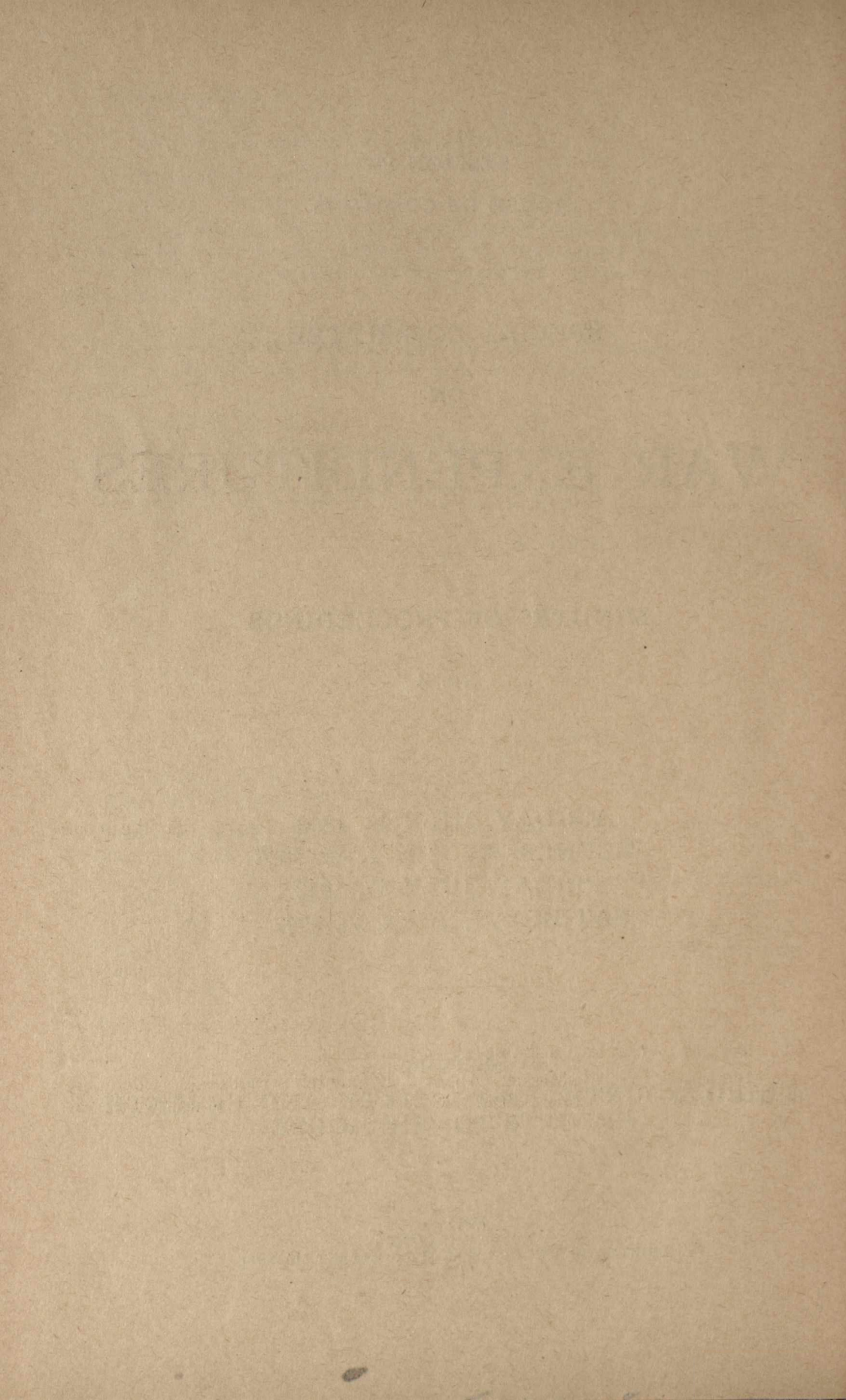
FRIDAY, JULY 17, 1942

SATURDAY, JULY 18, 1942

Including

THIRD, FOURTH, FIFTH, SIXTH AND SEVENTH
REPORTS TO THE HOUSE

OTTAWA
EDMOND CLOUTIER
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1942



MINUTES OF PROCEEDINGS

FRIDAY, July 10, 1942.

The Special Committee on War Expenditures met at 11 o'clock, a.m., the Chairman, Mr. Fournier, presiding.

Members present: Messrs. Bercovitch, Bradette, Chevrier, Fournier (*Hull*), Gladstone, Graham, Reid, Ross and Sissons.

Mr. Chevrier, Chairman of Subcommittee No. 3, presented the Second Report of the subcommittee, dealing with Gun Production.

The Committee proceeded to the consideration of the said Report.

Mr. Graham moved that the report be adopted as the Committee's Third Report to the House, with the understanding that production figures or any other information contained therein may be deleted if considered expedient in the national interest after consultation with the proper authorities.

Motion carried.

The Committee adjourned to the call of the Chair.

WEDNESDAY, July 15, 1942.

The Special Committee on War Expenditures met at 10 a.m., the Chairman, Mr. Fournier, presiding.

Members present: Messrs. Bercovitch, Bradette, Chevrier, Cleaver, Fournier (*Hull*), Gladstone, Golding, Pottier, Reid, Sissons, Winkler.

Mr. Cleaver, Chairman of Subcommittee No. 1, presented the First Report of the subcommittee, on Wartime Housing, Limited.

The said report having been considered, Mr. Cleaver moved that the report be adopted as the Committee's Fourth Report to the House.

Motion carried.

The Committee adjourned until Friday, July 17, at 11 o'clock, a.m.

FRIDAY, July 17, 1942.

The Special Committee on War Expenditures met at 11 o'clock, a.m., the Chairman, Mr. Fournier, presiding.

Members present: Messrs. Abbott, Bercovitch, Black (*Cumberland*), Boucher, Chevrier, Fournier (*Hull*), Gladstone, Graham, Harris (*Danforth*), Homuth, Johnston (*Bow River*), Macdonald (*Halifax*), Pottier, Reid, Ross (*Moose Jaw*), Sissons, Winkler.

Mr. Sissons, Chairman of Subcommittee No. 2, presented the First Report of the subcommittee on "Salvage".

The report having been considered Mr. Chevrier moved that it be adopted as the Committee's Fifth Report to the House.

Motion carried.

The Chairman having invited suggestions relative to the future activities of the Committee, Mr. Gladstone moved:—

That, in the opinion of the War Expenditures Committee, the work that can be undertaken is such as to warrant the Committee continuing its sittings after the House adjourns.

After having obtained an expression of opinion from all members present, the Chairman read a communication from Mr. McIlraith, a member of the Committee presently on military duties, stating that he would be unable to sit during the period of adjournment if the Committee should decide to do so.

The Chairman reported similarly on behalf of Mr. Picard, also a member of the Committee, unavoidably absent from the meeting.

The question on Mr. Gladstone's motion being put, it was carried on the following division: Yeas, 7; Nays, 6; the vote being recorded as follows:—

Yeas: Messrs. Bereovitch, Boucher, Gladstone, Johnston (*Bow River*), Pottier, Reid, Winkler.

Nays: Messrs. Abbott, Chevrier, Graham, Macdonald (*Halifax*), Ross and Sissons.

On motion of Mr. Winkler,

Resolved,—That the House be requested to fix the quorum of the Committee at 6 members for the adjournment.

On motion of Mr. Abbott,

Resolved,—That the Chairman be authorized to report to the House requesting other necessary powers required by the Committee for its sittings during adjournment.

Mr. Sissons stated that a second report of Subcommittee No. 2 would be ready to be considered by the Main Committee to-morrow, and the Committee adjourned to meet at 10 o'clock, a.m., to-morrow, Saturday, July 18.

SATURDAY, July 18, 1942.

The Special Committee on War Expenditures met at 10 o'clock, a.m., the Chairman, Mr. Fournier, presiding.

Members present: Messrs. Black (*Cumberland*), Boucher, Fournier (*Hull*), Gladstone, Golding, Graham, Harris (*Danforth*), Johnston (*Bow River*), Macdonald (*Halifax*), Reid, Ross (*Moose Jaw*), Sissons, Winkler.

Mr. Sissons, Chairman of Subcommittee No. 2, presented the Second Report of the subcommittee on "Catering and Messing."

The said report having been considered, Mr. Sissons moved that it be adopted as the Committee's Seventh Report to the House.

Motion carried.

The Chairman presented the Committee's proposed Fifth Report, pursuant to the resolution adopted at the previous sitting with respect to sittings during the impending adjournment of the House.

On motion of Mr. Macdonald, the report was adopted.

The Committee adjourned to the call of the Chair.

R. ARSENAULT,
Clerk of the Committee.

REPORTS TO THE HOUSE

THIRD REPORT

THURSDAY, July 16, 1942.

The Special Committee on War Expenditures has received from its Subcommittee No. 3 the following report on "Gun Production" which it has considered and adopted as its Third Report to the House:—

SECOND REPORT OF SUBCOMMITTEE NO. 3

On May 29, 1942, a re-allocation of subjects was adopted by the Special Committee on War Expenditures. Gun Production was assigned to Subcommittee No. 3.

This committee had already started its investigation into gun production on May 27, 1942. It held 15 sittings and heard 5 witnesses. It visited the Canadian Elevator Equipment Co., the John Inglis Co., and the Small Arms plant at Toronto; the Otis-Fensom and the Canadian General Westinghouse plants at Hamilton.

The subcommittee begs leave to present its second report of findings and recommendations.

All of which is respectfully submitted.

LIONEL CHEVRIER,

Chairman of Subcommittee No. 3.

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GUN PRODUCTION

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 - (b) Machine tools
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- IV.
 - (a) Bren Light Machine Gun.
 - (b) .303 Browning Machine Gun (aircraft type).
 - (c) Boys' anti-tank rifle.
 - (d) 2-inch Bomb Thrower.
 - (e) No. 4 Rifle.
 - (f) Sten machine carbine.
 - (g) 25 PDR. Q.F. Equipment.
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 - (i) 6 PDR. Anti-tank gun.
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- V. The Industry and Sub-contract Co-ordination Branch.
- VI. Findings.

GUN PRODUCTION

One of the important divisions of the Department of Munitions and Supply is the Production Group. It is subdivided into a number of branches, one of which has to do with the production of guns. The Director-General of Gun Production for Canada is Mr. H. J. Carmichael.

The story of gun production in this country is a fascinating one. At the outbreak of war Canada was not producing guns. To-day it is able to manufacture many types of weapons which are being used in every theatre of war. It is surprising to note the facility with which industry in this country has been able to shift from peacetime to wartime activity. When one considers that the art of manufacturing guns and ordnance is a new art in Canada and that the achievements and success in that art have been tremendous, one must come to the conclusion that the manufacture of guns in this country is one of the greatest industrial achievements of all times. Great credit for this reflects upon the ingenuity and willingness of Canadian men and women. They have worked hard and persevered until they have acquired the difficult technique of manufacturing weapons.

In order to accomplish this task, many obstacles had to be circumvented. Bottlenecks in industry were constantly in the way and almost as constantly overcome. It is proposed to consider under three headings the bottlenecks which had to be met in order to ensure maximum production. They are:

I. Materials.

II. Machine Tools.

III. Labour.

I. *Materials*

Iron and steel enter largely into the manufacture of guns. Priorities had to be placed upon these raw materials in order to divert them from civilian to war use. Industry was organized into groups.

Prior to the war Canada's maximum output of high grade steel of types and kinds necessary to produce guns and armaments, as well as high-grade cutting tools, amounted to a maximum of 15,000 tons per year. The present requirements exceed 400,000 tons per year. This obstacle was overcome by the expansion of Atlas Steels Limited at Welland, Ontario, who formerly were the only producers in this country. Their production has been increased from 15,000 tons prior to the war to over 200,000 tons per year. Dominion Foundries and Steel Limited, of Hamilton, were expanded to 100,000 tons per year. At Sorel, Quebec, there was installed a new high-grade steel foundry capable of turning out 50,000 tons per year.

The malleable iron castings group was set up and expanded.

In the drop forging industry the same procedure was followed. All commercial drop forgers were utilized. All companies having hammers that had never entered the commercial field were listed and booked to capacity before new facilities were purchased and set up.

There were delays from time to time in the program. These were not due to lack of planning or lack of co-ordination, but rather to overproduction. In machine shops, not only was the peak of production reached, but it was doubled and some times trebled on account of intensive training. In many cases the output far exceeded the forecasts.

For the balance of requirements high-grade quality open hearth steel is being substituted in the place of electric furnace steel. All of this tremendous expansion was accomplished without shutting down any of the existing plants. On several occasions during 1941 and 1942 plants were not able to work to

full capacity because of the lack of this very essential material. From the magnitude of the task, the bottleneck in materials could not have been overcome without the assistance of the steel industry and when the history of gun production in this country is told, it will be found that the steel industry has played a leading part.

II. *Machine Tools*

The second serious bottleneck facing industry in the expansion of gun production was and still is to a degree the scarcity of machine tools. Prior to the war, machine tools were practically all purchased from the United States. Our purchases from the United States have averaged over \$5,000,000 per month for the past eighteen months. The position is becoming increasingly difficult because the Americans have entered the war and the rapid acceleration of their program on priorities has a higher rating from an urgency standpoint, than our unfinished programs. In order to obviate this difficulty, Canadian industry has had to use a larger number of Canadian manufactured machine tools so as to make our programs more-self-sustaining.

In the month of May, 1942, our requirements were for 970 new machine tools. Of these, 500 would be made in Canada. This was a great stride. The ingenuity displayed by various contractors was such that the American Government has sent in to our plants their own technicians to study the methods adopted. In order to meet the demand old machine tools had to be used, revamped, new bearings put on, special jigs and fixtures added in order to do precision work. As a result, machine tools, costing \$30,000 and \$40,000 each, have been replaced by mass production tools at a cost of 25 to 30 per cent lower. These tools are standardized and will do a much more rapid production job than the high class universal machine tools and what is more, they do not need the skilled help required of these.

The introduction of single purpose machine tools is one of the most remarkable accomplishments of Canada's war effort. This program is being rapidly expanded to assist manufacturers and eliminate, wherever possible, the necessity of obtaining machine tools from the United States and/or England. It will be interesting to note that over half of our new machine tools ordered in the last sixty days were purchased from Canadian manufacturers. Furthermore, during the last six months there has been shipped from Canada to the United States approximately 1,000 Canadian manufactured single purpose machine tools to assist that country in its rapidly expanding program. As time goes on, these shipments of Canadian made machine tools will increase.

Only recently United States ordnance officers were diffident about placing contracts in Canada because of the fact that Canada, less than a year ago, had obtained all its machinery for making small arms ammunition in the United States. When it was agreed to supply 80 per cent of the new machine tools, these officers were amazed and, on the basis of this undertaking, a very substantial contract for small arms ammunition for the U.S. Ordnance was given this country.

Notwithstanding the rapid increase in the production of machinery, it was impossible to keep pace with demands of war industries. Reliance had to be placed upon thousands of small shops, to which various parts were subcontracted, making use of their existing machines and, at times, loaning them certain tools temporarily in order to hasten the completion of a contract. This service grew to such a proportion that there was set up what is known as the Industry and Subcontract Co-ordination Branch, of which more later.

III. *Labour*

The great expansion in all types of manufacture for the new mechanized warfare has resulted in a decided shortage of skilled mechanics and technical and supervisory personnel. As the program expands this problem becomes more

acute and the needs of the armed forces in all branches becomes greater. There has been a really remarkable accomplishment in the training of men and women for mass production on the part of our technical schools and colleges. Hundreds of our manufacturers have also instituted special training classes and schools to try to solve this specific problem and, to date, there has been experienced little difficulty in keeping the ranks of this type of worker well up to schedule by a well conceived plan of training personnel to meet the requirements as the schedules increase.

In a desperate endeavour to meet the shortage of skilled mechanics, men and women are being trained in the tool rooms as specialists. They become proficient—very proficient at single operations, but by no stretch of the imagination can they be termed skilled mechanics. They are, however, filling the gap in a very fine way.

Hundreds of female operators are being trained to become specialists in the grinding of precision tools, which eliminates the use of skilled mechanics. Apprentices are doing all the rough work on jigs, fixtures and tools, so that the skilled tool makers simply do the highly skilled final operations, thereby conserving their abilities to adjust the essential features. Every other ingenious method known is being employed to meet the program.

Your Committee was able to view this situation for itself. At the John Inglis plant, in Toronto, which it visited, it saw these female operators at work. In the month of March, 1941, there were employed at this plant 2,400 employees. Of this number, less than 5 per cent were female operators. To-day there are approximately 11,000 workers—8,000 of whom are female operators and by the end of July, 1942, it is estimated that of 15,000 workers the majority will be female. The same thing can be said of the Small Arms plant at Long Branch, which was also visited by your Committee. There, 50 per cent of the employees are female.

In the manufacture of guns, difficulties are constantly arising, but because of the exercise of various controls, it has been found possible to meet and overcome these obstacles. The Steel Controller, the Machine Tools Controller, the Power Controller, and various other controllers, have had to co-operate with the Director of Gun Production in order to meet the ever-increasing demands upon industry. Together they have accomplished a great achievement.

TYPES OF GUNS PRODUCED IN CANADA

There are thirty guns being produced in Canada. They are as follows:—

1. The 2-pound anti-tank gun manufactured by Dominion Engineering, now become obsolete and replaced by the 6-pound anti-tank gun.
2. Carriage to go with the 2-pounder gun and a change over of carriage to go with 6-pounder guns.
3. 40-mm. Bofors anti-aircraft gun—Otis Fensom Company.
4. 3·7 anti-aircraft gun—Hamilton Munitions Ltd., a subsidiary of Canadian General Westinghouse Company.
5. 90-mm. anti-aircraft gun barrels and 4·5 anti-aircraft gun barrels.
6. Mobile mounting—Canadian General Electric.
7. Trailer No. 27—carries ammunition for the 25-pounder gun—Frost and Wood Company Limited.
8. 4·5 and 5·5 artillery gun carriage—National Railway Munitions Ltd.
9. 0·5 Twin Vickers Naval Mount—Bata Shoe Company.
10. 2-pounder, Mark 8 Naval Mount—Canadian Locomotive.
11. 12-pounder "A", Mark 5 Naval gun—Canadian Pacific Railway.
12. 12-pounder, Mark 9 mount—Canadian Pacific Railway.

13. 2-pounder, Mark 8—Vickers Naval pompom gun—Dominion Bridge Company.
14. 2-inch, Mark 3, Secret mountings—Dominion Bridge Company.
15. 2-pounder, Mark 7, Quadruple mounting, which fires four of the 2-pounder, Mark 8 guns simultaneously—Dominion Engineering Company. This is the most difficult mounting made any place in the world.
16. 4-inch, Mark 19, twin mount—Trenton Industries.
17. 12-pounder, Mark 9 mount—Canadian Pacific Railway.
18. 12-pounder "A" Mark 5 gun—Sawyer Massey Limited.
19. 25-pounder gun and carriage complete—Sorel Industries Ltd.
20. 4-inch, Mark 16, Naval gun—Canadian National Munitions.
21. Bren Gun.
22. Browning .303".
23. Boys anti-tank rifle—John Inglis Company Limited.
24. Lee Enfield No. 4—Small Arms Ltd.
25. Sten sub-machine gun—Small Arms Limited.
26. 2" bomb thrower—Canadian Elevator Equipment Company.
27. 2" trench mortar bombs—The Holt Machine Company.
28. 3-inch trench mortar bombs—The Hall Machinery Company.
29. Browning M.G. 1919, tank machine gun—Border Cities Industries.
30. .5" Vickers Machine guns—Ottawa Car and Aircraft.

It is now proposed to study in greater detail those guns which are more urgently required by the armed forces. They are to be found in Canada, the British Isles and in every theatre of war. They are 11 in number.

THE BREN LIGHT MACHINE GUN

General Description

This air-cooled, gas-operated light machine gun of .303" calibre is essentially an infantry weapon, its chief characteristics being its power to deliver a volume of fire with the employment of relatively few men.

It is capable of a high rate of fire (550 rounds per minute), each gun being accompanied by a spare barrel. In order to preserve the life of each barrel they are interchanged after firing 10 magazines of 30 rounds each. The gun is equipped with a bipod and is normally fired from the prone position.

It is also used in the anti-aircraft role mounted on a tripod and fitted with a 100-round drum-type magazine.

This weapon is the backbone of infantry firepower in all of the Empire Armies.

Range

When fired from the bipod, the effective range is 1,000 yards. When fired from the tripod, given good visibility, this distance may be increased.

Maximum range is estimated to be 2,000 yards.

Three types of ammunition are used—Ball, Armour Piercing and Tracer.

Capital Assistance

Total capital assistance granted to the John Inglis Company for Bren Gun production amounts to \$9,004,544.86.

Cost

Since obtaining substantial production, monthly cost checks have been made. The degree of reduction achieved to date may be judged from the following:—

Date	Cost
Beginning of 1st Quarter, 1941.....	\$390 59
End of 1st Quarter, 1941.....	325 79
End of 2nd Quarter, 1941.....	278 04
End of 3rd Quarter, 1941.....	251 63
End of 4th Quarter, 1941.....	204 63
End of 1st Quarter, 1942.....	192 28

It is noteworthy that scrap value for April amounted to only \$3.48 per gun and that to date, only sufficient scrap parts have been available to complete 393 Drill Purpose guns—1.1 per cent of the total service guns produced.

Certain additional details concerning this gun cannot be published for reasons of security.

THE .303 BROWNING MACHINE GUN

General Description

This air-cooled pneumatically-fired, machine gun is standard equipment for Empire aircraft which may be equipped with 2, 4, 6, 8 or 12 guns depending on the type of plane and its tactical use.

Three types of Browning machine guns for aircraft are produced in Canada, for mounting in various types of turrets or in fixed wing positions.

Firing from belts containing 300 to 500 rounds, the Browning gun has the greatest destructive power of any weapon of this calibre. In combat, enemy planes can be literally sawn in two, and 5,000-ton merchant ships have been sunk by concentrated fire along the water line.

Range

The effective range is 600 yards, using Ball, Armour Piercing, or Tracer ammunition. For special assignments, incendiary ammunition may also be used.

Capital Assistance

Total capital assistance authorized to the John Inglis Company for the production of Browning Machine Guns amounts to \$9,506,367.00.

Cost

Progressive reduction in cost has been achieved as follows:

November 15, 1941.....	\$402 99
December 27, 1941.....	282 61
January 24, 1942.....	250 12
February 21, 1942.....	240 99
March 28, 1942.....	227 31
April 25, 1942.....	220 50

Certain additional details concerning this gun cannot be published for reasons of security.

THE BOYS ANTI TANK RIFLE

General Description

The Boys Rifle is a single shot, hand operated weapon with a simple bolt action, having a calibre of 0.55 inch, fired from a bipod.

It affords a means of protection against enemy light armoured fighting vehicles, having great accuracy because of the long barrel, and good penetration.

The relatively heavy recoil is largely absorbed by a recoil-reducer on the muzzle, an 800-pound buffer spring, and a sponge rubber shoulder pad.

Capital Assistance

Total capital assistance provided to the John Inglis Company for the production of Boys Rifles amounts to \$5,012,678.50.

Cost

This weapon is just passing through the initial production stage. Preliminary costs are now being determined but are not yet available.

Certain additional details concerning this gun cannot be published for reasons of security.

THE 2-INCH BOMB THROWER

General Description

The Bomb Thrower is used exclusively as defensive armament in Tanks for the purpose of laying down a smoke screen.

The barrel is flanged and jointed, the outer half being bolted to the Tank hull or turret and projecting from it; loading being accomplished by unlocking and swinging the inner half open. Firing is done manually by a conventional pistol grip firing mechanism. Canada is manufacturing all of the Bomb Throwers produced in North America, and installations are being made in both Canadian and American built tanks, in addition to shipment of Bomb Throwers direct to the United Kingdom.

Capital Assistance

Total capital assistance provided to the Canadian Elevator Equipment Company for the production of Bomb Throwers amounts to \$204,301.00.

Cost

The first cost was struck on completion of the first 1,000 units, resulting in a figure of \$155.45, which compares very favourably with the original estimate made on a small quantity and much lower production rate, of \$255.00 each.

Substantial further reductions are expected.

Certain additional details concerning this gun cannot be published for reasons of security.

THE No. 4 RIFLE

General Description

The No. 4 Rifle is the modern equivalent of the Lee-Enfield Rifle used in the First Great War. It is somewhat lighter than the Lee-Enfield and is equipped with a new style short bayonet, and simplified backsight. The Magazine holds two charges of five rounds each. Fifteen aimed shots can be fired per minute by trained personnel.

Some rifles, especially selected for accuracy are equipped with special Telescopic Sights for Snipers.

Range

Effective range is approximately 1,200 yards, with a maximum range of 2,000 yards. Ball, Armour Piercing and Tracer ammunition may be used.

Capital Assistance

Total capital assistance authorized to Small Arms Limited for the production of No. 4 Rifles amounts to \$7,130,328.57.

Cost

Comparative monthly costs provide a graphic measure of the effects of increasing volume and improvement in manufacturing efficiency as follows:—

Date	Cost*
September, 1941.....	\$97 43
October	82 91
November	73 99
December	62 15
January, 1942	61 11
February	59 35
March	57 13
April	47 43

* Includes Rifle, Bayonet and Scabbard.

Certain additional details concerning this gun cannot be published for reasons of security.

THE STEN MACHINE CARBINE

The 9-mm Sten Machine Carbine was developed in the United Kingdom during 1940-41 to meet requirements for large numbers of "Tommy" guns. The design was kept as simple as possible, in order to combine reliability with ease and cheapness in manufacture.

The photograph and all details concerning this gun cannot be published for reasons of security.

THE 25-PDR. Q.F. EQUIPMENT

General Description

Unlike the horse-drawn steel-tired 18-pdr. and limber of the First Great War, the modern 25-pdr. Equipment consists of the gun mounted on a pneumatically tired gun carriage and Trailers drawn by an Artillery Tractor capable of sustained cruising at 45-50 miles per hour on roads. A second ammunition Trailer accompanies each gun, two Trailers to one tractor.

The *gun and carriage* are designed primarily for flexibility and steadiness in action, combining the high velocity and long range features of a "gun" with the high-angle and steep descent characteristics of a "Howitzer". Complex in construction (2,500 different parts), but highly mobile and manoeuvrable in action, it is equally suitable for bombardment, barrage laying, demolition or anti-tank defence.

In action it may be revolved on a turn-table permitting rapid change in direction. The weight of the gun and carriage is 3,800 pounds. In transit, one *Trailer* is hooked to the gun-carriage in order to ensure flexibility of load behind the tractor, and carries 32 rounds of ammunition together with a number of small stores. It incorporates 750 parts and weighs some 3,400 pounds loaded.

25-pdr. *ammunition* is of the separate quick-firing type, that is, the cartridge case containing the propellant, and the projectile, are loaded separately in order to facilitate varying the charge. The projectile may be High Explosive or Smoke Shell having either time or percussion fuzes, or Armour Piercing shot, weighing 20 pounds.

Capital Assistance

The total capital assistance authorized to Sorel Industries Limited for the production of the 25-pdr. gun and carriage amounts to approximately \$7,500,000.

The total capital assistance for the production of No. 27 Artillery Trailers granted to Frost and Wood Limited amounts to \$286,112 and to Richardson Road Machinery Company, \$44,868.40.

Cost

The cost of a gun and carriage as produced by Sorel was \$14,263 as of April last. It is estimated that in each succeeding month a reduction approximating \$300 is being achieved. To the above figure must be added approximately \$9,000 to cover the cost of ancillary and free issue stores required to complete a 25-pdr. Gun and Carriage, the total cost thus approximating \$24,000.

Two No. 27 Artillery Trailers, including Ammunition Trays and free issue items amount to approximately \$3,000.

Sighting Equipment as manufactured by Research Enterprises Limited costs approximately \$1,200.

Thus the total cost of a 25-pdr. Equipment, consisting of one gun and carriage, two Trailers, Sighting Equipment and ancillary stores amounts to approximately \$28,200. This does not include the cost of a Tractor.

Certain additional details concerning this gun cannot be published for reasons of security.

2-PDR. EQUIPMENT—TANK AND ANTI-TANK AND 6-PDR. EQUIPMENT—TANK AND ANTI-TANK

General Description

These two guns are used for anti-tank defence, mounted on two-wheeled rubber-tired carriages. They are also mounted in tanks and are thus offensive as well as defensive weapons.

While in general appearance they do not differ materially from field guns except in size, their design is such as to permit high muzzle velocities and very rapid traverse. This rapid traverse enables the gun to be quickly aimed at moving objects, such as tanks and armoured fighting vehicles, and the high muzzle velocity, together with the solid shot used, makes possible armour-piercing results much greater than the calibres of the weapons would indicate.

Range

The range of the 2-pounder Gun at 12° is 5,000 yards.

The type of ammunition used in these two guns is a solid armour-piercing shot having, of course, no fuse but having a tracer, to show observers the flight of the shot.

Capital Assistance

The total capital assistance granted to the Dominion Engineering Works, Limited and Regina Industries, Limited, who are producing these two types of Equipment, is \$15,474,100, the latter Company having received \$3,873,312 of this for the production of Carriages for the guns.

Cost

While costs are not yet available, production efficiency at the Dominion Engineering Works can be judged by a comparison of the reductions achieved in man-hours per gun, as follows:—

2-pounder		6-pounder	
Gun Serial Number	Man-hours	Gun Serial Number	Man-hours
1	1219	30	930
200	872	100	630
585	631	200	530
1115	390	800	400
1535	372	Current	375
Current	350		

Certain additional details concerning this gun cannot be published for reasons of security.

THE 40 MM. BOFORS ANTI-AIRCRAFT GUN

General Description

The 40 mm. Bofors Anti-Aircraft Gun is a complicated weapon consisting of approximately 1,800 separate parts. Design is such that it can be fired single shot, as well as automatically, which is the usual type of operation.

Fire control equipment is arranged so that the gun is normally aimed by remote predictor control, although open sights are provided for direct sighting.

The gun is mounted on a four-wheeled carriage, thus being capable of rapid movement to any desired locality. In action, it is stabilized by the use of levelling jacks on arms extending to the left, right and in front of the mounting.

On account of its rapid rate of fire, it constitutes one of the best known defences against low-flying and dive-bombing airplanes.

Ammunition is loaded manually in charges of five rounds each.

The type of ammunition used is a high explosive shell with a percussion fuse and a tracer and igniter. The fuse causes the shell to explode on contact with an object, and, failing to hit an object, the shell is exploded by the action of the igniter, so that any damage caused by the bursting of the shell will take place in the air.

Capital Assistance

Total capital assistance granted to the Otis-Fensom Elevator Company, Limited, producing Bofors Equipment is \$14,332,751. This includes \$3,069,044 for the barrel plant, which has capacity for U.K. and U.S. orders.

Cost.

The original cost of the Bofors is being rapidly reduced, but details are not available at the present time. Illustrative of the improvement in production methods however, is the steady reduction in man-hours required to produce one-barrel, as follows:—

Date	Man-hours
October, 1940.....	186
January, 1941.....	96
March, 1941.....	77·4
August, 1941.....	70·7
November, 1941.....	57·3
February, 1942.....	54·8
June, 1942.....	44·8

Certain additional details concerning this gun cannot be published for reasons of security.

THE 3·7-INCH Q.F. ANTI-AIRCRAFT EQUIPMENT

General Description

Like the Bofors, the 3·7-inch A.A. Gun is mounted on heavy pneumatic tired wheels and thus has a high degree of mobility necessary under conditions of modern warfare. In action, the gun and mounting are stabilized by four levelling jacks, two extending to the front and two to the rear.

The gun is aimed manually by gunners, in response to dial indications of elevation and bearing which are supplied by a predictor serving a battery of either two or four guns. Fuses are set automatically for range by a fuse setting machine on the mounting, which is also operated by the predictor.

The type of ammunition used is a High Explosive shell, fused with a time fuse but having no tracer. This fuse is set to burst at a definite time and therefore at a definite distance from the gun and consequently the explosion takes place in the air whether or not the shell hits its target.

Capital Assistance

Total capital assistance granted to the Hamilton Munitions, Limited, for the production of the gun is \$11,894,310 and to the General Electric Company Limited for the mounting \$15,430,912. It should be noted that the capital assistance to Hamilton Munitions includes \$6,953,358 for the production of barrels with capacity for U.K. and U.S. orders.

Cost

A definite cost is not yet available, although it is estimated to be in the neighbourhood of \$60,000 per Equipment.

Certain additional details concerning this gun cannot be published for reasons of security.

INDUSTRY AND SUBCONTRACT CO-ORDINATION BRANCH

The Industry and Subcontract Co-ordination Branch was organized in July of 1941. It was set up by the Minister of Munitions and Supply to assist the Production and Purchasing Branches of the Department and all manufacturers. Its purpose is to speed the manufacture of all war materials by obtaining the maximum use of Canada's existing facilities.

Subcontracting may be defined as follows:—

Placing work, which would normally be performed in the Prime Contractor's plant, on equipment other than that owned by the Prime Contractor.

The guiding policy of the Branch is one of help and co-operation, governed by the following principles.

These eight principles are all subordinated to the necessity for making as much war material as possible, as soon as possible:—

1. When efficiency can be maintained, available machines must be put to work before more of the same type are recommended for purchase.
2. Whenever feasible, and efficiency can be maintained, plants shut down due to war restrictions shall be put into war production.
3. Whenever possible, contracts are to be broken down into sizes to suit the available productive capacity.
4. Whenever possible, shops are to be recommended for work similar to that to which they are accustomed and for which their machines and tools are adapted.
5. Good machines with skilled operators under experienced direction are to be employed before less efficient organization.
6. Shops must not be overloaded while other capacity is available.
7. Modern and efficient methods of production must be encouraged.
8. All services must be rendered with the utmost dispatch and with a minimum of formality.

Subcontracting is vital to our war effort when it enables us to get into production quickly without waiting months for machinery to arrive and be installed. In a great many cases it can get remarkable efficiency by using the facilities already available in Canada and without adding unnecessarily to the burden of our public debt. This is no longer a debatable point. It has been demonstrated so very often. The amazing motor car industry was built by subcontracting and still performs its miracles of war production by that method.

The Prime Contractors who are doing the best jobs are the ones who are doing the most subcontracting. So far this subcontracting has been undertaken voluntarily and should be continued in a democratic way. It must be realized now that the time for expanding productive facilities is past. From now out, if additional capacity is needed, use must be made of existing facilities whenever possible.

This Branch places no contracts by itself, nor does it tell the Prime Contractors where they must place their subcontracts. It is obvious that the Government cannot make a Prime Contractor responsible for carrying out a contract and then tell him where he must get his outside work done. It is important to understand this function of the Branch. Many people seem to be of the opinion that the Industry and Subcontract Branch has been set up for the purpose of obtaining work and contracts for smaller shops. That is a mistaken idea and it should not be thought that every machine in the country should be in full war production twenty-four hours a day. That is neither possible nor reasonable. Shops will remain idle because of shortages of steel and other raw materials. Frequent changes of design make it impossible to tool up a large number of shops. Industries, such as the sheet metal industry, can only take a limited share of the load, because this is not a sheet metal war. In order to recommend firms as subcontractors the following qualifications must be taken into consideration:—

1. Has it a skilled organization?
2. Has it good management and supervision?
3. Is there sufficient power?
4. Does it present transportation difficulties for raw materials and for supervision?
5. Has it the critical tools needed to do the job?

The I.S.C. Branch has a number of district offices located across Canada. These are to be found at Vancouver, Winnipeg, Toronto, Montreal and Saint John, N.B., with sub-offices being opened at the present time in Calgary, Windsor, Ont., Hamilton and Halifax. Machine owners have a definite responsibility to keep the nearest district office of the I.S.C. Branch constantly informed as to their available idle hours. They should give the nearest district office of the I.S.C. Branch an estimate of future idle hours every thirty days.

The I.S.C. Branch maintains a constant liaison with the Production and Purchasing Branches of the Department of Munitions and Supply.

This Branch has done excellent work with reference to displaced industries. The war economy, with its controls and restrictions, has forced many industries to curtail or to abandon their normal peacetime production. These conditions have created an economic problem unique in Canadian Industrial history. The economic implications of industrial displacement are, of course, broad. The impact of the dislocation is being felt throughout the whole national economy.

In view of this and of a number of cases coming before the I.S.C. Branch for consideration, it was found necessary to establish a subdivision of the Branch to handle these cases. This has been set up, is now in operation and is called the Displaced Industries Division of the Industry and Subcontract Co-ordination Branch and its special problem is trying to work displaced industries into the war production scene.

The purpose of the Division is twofold. First, it ascertains what industries are displaced, and second, it assists, where possible, in the conversion of these industries to wartime production.

The following questions are immediately raised by the previous paragraph:—

1. When does an Industry become displaced?
2. What can be done about it by:
 - (a) The Department of Munitions and Supply, and
 - (b) The Industry itself?

An industry becomes displaced when it curtails or ceases its normal production and does not offset this through conversion of some other type of production. Obviously there are various degrees of displacement. An industry is wholly displaced if all of its facilities are idle. It is partially displaced if some

of its facilities are idle. A plant utilizing its facilities eighteen hours per day is not displaced. Profits do not enter the picture at all. Displacement relates to idle capacity and idle labour. It does not relate to Profit and Loss.

When displacement occurs, there are several courses of action which might be followed:—

1. The industry might substitute non-essential raw materials for the critical materials which it has used in its products.
2. The industry might convert from one line of civilian goods to another, which does not require critical raw materials.
3. The industry might convert in part or in whole to the production of war stores.

It is only in the third case that the Department can be of assistance, and even then, there are definite limitations to the assistance which can be rendered. The Displaced Industries Division has neither the authority nor the facilities for nursing sick businesses. In the first report of this Committee it has been found that the Department of Munitions and Supply is solely a procurement agency. It lines up sources of supply and buys the goods of war. It follows then that the only way in which the Displaced Industries Division can assist a displaced industry is to buy needed war supplies from them—when they can do so in accordance with sound purchasing policy. The first report of our sub-committee further pointed out that the Department of Munitions and Supply purchases not only for the armed forces of Canada, but for all of the United Nations. United States dollars and British pounds cannot therefore be used to subsidize Canadian non-war industry.

One of the common misconceptions on the part of potential subcontractors is that it is the duty of the department, particularly of the I.S.C. Branch, to get small plants into production and to spread the work. This is an erroneous conception of the whole situation.

The duties of the I.S.C. Branch are to find sources of production for Government Purchasing Departments and for Prime Contractors, when required, and to undertake such functions of co-ordination as were possible.

It cannot be too strongly emphasized that this Branch does not place contracts. Under no circumstances has the I.S.C. Branch any authority to grant contracts. Its business is to seek out sources of supplies for Government Purchasing Branches and for Prime Contractors and it is the duty of the Government Branch to find the Prime Contractor and when he has been found to subcontract it where he sees fit. The responsibility for production rests upon them and not upon this branch. The I.S.C. Branch is frequently entrusted with investigating applications for capital assistance. In the course of these applications subcontractors have been employed in order to avoid purchase of machines and the erection of buildings. Great savings have been effected by this method.

The branch is also in complete charge of machine tool rentals. It is its business to investigate the application for machine tools from Citadel Merchandising Company and to report to the Production Committee on them. If the machine tools are rented to the subcontractor, then the I.S.C. Branch is responsible for periodic inspection and for reporting as to the conditions of the machines and the use being made of them.

FINDINGS

1. Your Committee has completed an inquiry into the production of guns. It finds that the art of manufacturing guns is difficult and intricate. It is of opinion that this Branch of Munitions and Supply has done a magnificent job both in the manufacture and production of weapons.

2. Your Committee further finds that there is duplication and overlapping in the inspection of guns and recommends that this be eliminated. Originally, there were two groups of inspectors in one plant; that is, Canadian inspection and British inspection. This, naturally, gave rise to difficulties. At a later stage it was agreed that the United Kingdom and Canada Inspection Board, under General Locke, should handle all inspection both for the Canadian and the British program, so that inspection as it stands to-day is entirely under the jurisdiction of that Board.

3. There is, however, a responsibility for inspection on the part of industry and it has been the practice of industry to have on hand a large number of inspectors who inspect each part of a gun separately and then, later, the gun itself after it has been completed. Once that inspection is over, there must still be a further inspection by the United Kingdom and Canada Inspection Board. There exists, therefore, two classes of inspectors, one representing industry and the other the U.K. Board. In the plants visited by your Committee, hundreds of inspectors were seen at work going over parts of these guns. In the same plant are to be found a similar number of U.K. inspectors who have to repeat the same operation. Your Committee learned of one plant where there were 600 inspectors representing industry and 800 representing the United Kingdom Board.

4. When this country started out to manufacture guns, inspection at that time could not be too rigid. Every precaution had to be taken in order to ascertain efficiency in the weapons and in order to establish for the manufacture of Canadian arms a reputation in which confidence could repose. In those days it was necessary that both industry and the U.K. Board should carefully inspect each part of every gun manufactured here, but we have now reached the point where our ability and our efficiency in the production of weapons should warrant a relaxation, so far as inspection is concerned. This Committee feels that one Group only of Inspectors should be employed. The other Group should confine itself to the final inspection and technical problems. Inspection of the nature heretofore held is extravagant from a cost angle.

5. The present inspection methods are predicated on a peace-time system prevailing in England, and are not in accordance with the latest up-to-date practices prevailing in wartime in England.

This we feel calls for an immediate change. The Canadian inspection should be put on the same basis as that prevailing in England under the existing urge of wartime necessity.

6. Your Committee recommends that, in view of the increased knowledge attained in the art of manufacturing munitions, a complete system of spot inspection and final inspection of the completed article should be set up. It feels that, at the present time, that is all that is required in most instances. The executive management over inspection should be placed in the hands of the Production Committee. If this recommendation is adopted, several thousand inspectors could be profitably employed elsewhere in the production of guns. Since labour is one of the bottlenecks referred to in our report, a great saving could be made in this regard. By the adoption of this recommendation hundreds of thousands of gauges could be taken from the Inspection Branch and used profitably in another branch. If this recommendation is put into effect, the Committee believes that the economies effected might easily run into several millions of dollars.

7. Your Committee approves of the system which has already been set up in the Gun Production Branch to effect savings on accessories to small arms. In addition to a month-to-month reduction in the cost of various small arms weapons, studies of accessory items have been made to effect economies through:—

- (a) Simplification of design.
- (b) Elimination of non-essential items.

By putting this method into operation great savings have been effected. Thus far, the method has been employed only in connection with small arms. Your Committee feels that it should be extended to the heavier guns.

8. The Industry and Subcontracting Branch was set up for the purpose of speeding the manufacture of war materials by obtaining the maximum use of Canada's existing facilities. It has often been called the "bits and pieces" program. It is not a duty of this Branch to find industries for any locality. Their job is that of procurement—procurement for the Army, Navy and Air Force of Canada, Britain and the other United Nations. It has been suggested that the I.S.C. Branch might come to the rescue of small shops who find themselves out of work or displaced to some extent by requiring the prime contractor to subcontract to those smaller shops. This, we find, would be impracticable because, as has already been said, the prime contractor cannot be made responsible for carrying out a contract and then be told where he should get his outside work done; but your Committee does recommend that there be added in the contract with the original contractor a clause requiring the prime contractor to subcontract items where it is possible to do so consistent with efficiency and economy and requiring the prime contractor to utilize the facilities of the I.S.C. Branch to that end.

9. Your Committee is further of the opinion that no machine tools should be supplied to any prime contractor, where it is known that there exists an unused capacity of machine tools of the type required and which can be economically and efficiently utilized.

10. Your Committee feels that it is preferable to persuade prime contractors to subcontract rather than force them to do so. So far as the general public is concerned, it is necessary to explain to them the difficulties involved in subcontracting and the necessity of having work placed where it can be produced efficiently rather than being placed for the purpose of relieving economic distress; consequently your Committee recommends the expansion of the educational program of the I.S.C. Branch:—

- (a) to Prime Contractors
- (b) to the General Public

All of which is respectfully submitted.

ALPHONSE FOURNIER,
Chairman

FOURTH REPORT

THURSDAY, JULY 16, 1942.

The Special Committee on War Expenditures has received from its Subcommittee No. 1 the following report on "Wartime Housing, Limited" which it has considered and adopted as its Fourth Report to the House:—

FIRST REPORT OF SUBCOMMITTEE NO. 1

This Subcommittee was re-appointed on May 7, 1942, and was directed *inter alia* to inquire into the operations of Government owned companies. The Subcommittee has not completed its inquiry but begs to make an interim report with respect to Wartime Housing, Limited.

In making its inquiry into the operations of this company the Subcommittee has followed the practice of the British Committee on War Expenditures and, as a consequence, in addition to receiving evidence of the actual expenditures made by this company the Subcommittee has also checked the magnitude and

causes of our present housing shortage with a view to determining both the efficiency and the adequacy of the operations of Wartime Housing, Limited to cope with the housing problem. In making its study the Subcommittee, while constantly keeping in mind the fact that in time of war not one unit of labour and not one pound of essential war material should be needlessly consumed for domestic purposes, has also kept in mind the fact that careful planning now will, when the war is over, enhance the salvage value of present housing construction.

Wartime Housing, Limited (a wholly owned Government company) was incorporated on February 28, 1941, with its Head Office at 55 York Street, Toronto. The company was incorporated for the purpose of building homes for workers on munitions and supplies and defence projects. The directors of the company are as follows:—

Mr. J. M. Pigott, President and General Manager of the Pigott Construction Company, Hamilton, Director of the Dominion Bank, Director Canada Steamship Company, Director Landed Banking and Loan and other companies.

Mr. W. L. Sommerville, F.R.I.C.A., Past President, Royal Architectural Institute.

Mr. Charles David, President, Quebec Architectural Association.

Mr. Robert Gourlay, President, Beaver Lumber Company.

Mr. Headley Wilson, Manager, Maritime Trust.

Mr. W. I. Tidds, Director, Halifax Relief Commission.

Mr. A. Ingles, Secretary, Dominion Trades and Labour Congress and head of the International Electricians Union of Canada.

This company was given the responsibility of erecting a large quantity of suitable housing units in those parts of Canada where war industries have created a serious housing shortage; this shortage having reached a point where production of war industries would be seriously interfered with unless additional housing accommodation was supplied. The size of the problem is difficult to determine. The Subcommittee heard evidence from many of the mayors of large cities where war production is concentrated and finds that in one city, since the outbreak of war, the population has increased by over 20,000 inhabitants. The Subcommittee finds that the housing shortage caused by this temporary movement of labour from its normal residence to locations where war industries are concentrated has resulted in very serious congestion. Many instances were given to the Subcommittee of 8, 9 and 10 families living in 8, 9 and 10 room houses, one room per family and one bathroom per house.

Detailed surveys were immediately made by Wartime Housing, Limited in all parts of Canada where serious housing shortages had developed as above indicated. Studies were also made to determine the most suitable type of house to build that would be uniform across Canada, sufficiently attractive in appearance to satisfy the workers, having good living facilities and at the lowest possible cost. Since incorporation the company has secured approval by Orders in Council of many building projects totalling 11,842 homes and 85 staff houses and other special buildings at a total estimated cost of \$45,021,761.56, under which projects 5,385 homes and 72 staff houses and other buildings have been completed at a total cost of \$33,448,715.93 and are now occupied.

In every municipality where Wartime houses are to be built, local advisory volunteer committees are set up to assist in regard to the choice of site, the erection of the buildings and the management of the buildings after they are completed. These local committees act as a small board of directors and are composed of outstanding, public spirited men in the different local communi-

ties; merchants, bankers, service club officers, etc. Appreciation of the voluntary services of these local advisory committees should be expressed for the valuable contribution they are making. These advisory committees employ a manager and necessary office staff. At the end of April, 1942, nearly a half million dollars had been collected in monthly rentals with a rental loss written off of \$317.16.

After making a very thorough study of the entire problem the directors of Wartime Housing, Limited, decided that the most appropriate type of house to build to meet the emergency was a frame dwelling on posts, semi-prefabricated in construction, of three different standard types only, H. 1, H. 11 and H. 22, subject to different exterior modifications to obviate monotony in design. The reason assigned for the choice made of a semi-sectional house was to increase post-war salvage value and to cheapen construction costs. The homes have two or four bedrooms, are fully insulated and equipped with three-piece bath, electric light and hot air circulating heater. They rent from \$22.00 to \$30.00 monthly. By way of comparison it should be noted that monthly payments to retire principal, interest and taxes with respect to permanent homes built under the National Housing Act and furnishing similar housing accommodation are from \$20.38 to \$26.50 monthly on a twenty-year basis. It should also be noted that the monthly payments made by Wartime Housing tenants do provide for principal retirement but no property rights accrue to the tenant. The Subcommittee has made inquiries of some of the existing tenants and finds that heating costs are low and that the homes furnish healthful housing accommodation for their occupants. Isolated instances have occurred where defects in construction require correction. The average cost across Canada for all of the homes built by Wartime Housing, Limited and occupied down to April 30 last without including cost of local improvements such as water mains, trunk sewers, etc., is \$1,897 per home for the two-bedroom house and \$2,600 for the four-bedroom house. In addition to the cost of the house the average cost per dwelling unit for local improvements is \$705. The cost of the sectional feature of houses built by Wartime Housing, Limited, being just the rough frame work, does not exceed 25 per cent of the total cost of the house. The Subcommittee has not been able to obtain any satisfactory evidence as to the salvage value of the houses at the conclusion of the war. Undoubtedly, heavy loss will occur when the problem of salvaging these Wartime houses arises. The Subcommittee believes that this problem should be carefully studied and that it may be possible to substantially increase salvage value by the sale of houses and lots to owners who will turn them into permanent homes by building basements underneath them.

The general policy of the Company, as ascertained by agreements which have been entered into with many of the local municipalities, is that all of the houses built by Wartime Housing, Limited will be torn down or moved away within six months after the cessation of hostilities. The reason assigned by Wartime Housing, Limited, for this policy is that the present housing shortage is not a permanent problem and that if the houses were built as permanent homes they would not only cost more money to build but would cause a post-war glut on the market in the respective communities where they are built.

Some of the Mayors of city municipalities appearing before the Subcommittee expressed strong views that Wartime houses should be removed at the conclusion of the war on account of the fear that they would become slum areas. The Subcommittee finds that, in the main, these houses are constructed in such a manner that a slum condition would not necessarily follow if these houses were built on permanent foundations with cellar accommodation.

In view of the temporary nature of the homes and in order that the highest possible return to the Government of moneys expended should be achieved, agreements have been negotiated with the different local municipalities interested

providing for the payment of small yearly sums ranging from \$10.00 to \$30.00 per home and providing for no further form of municipal taxation. These agreements have since been validated by special legislation passed by the different Provincial Legislatures.

In view of the temporary nature of the projects, the building sites have not been bought outright where suitable lots could be leased at nominal rentals. These leases terminate six months after the cessation of hostilities. In view of the average cost of the installation of local improvements amounting to \$705.00 per lot the Subcommittee recommends that some provision should be made to secure substantial reimbursement to the Government of this expenditure.

Owing to the urgency of the need and owing to the fact that semi-sectional houses must be built in large quantities if they are to be built economically, contracts for the erection of these homes were let to large general contractors in lots of not less than 50 at a time and almost without exception sites were chosen of sufficient size to permit full blocks of houses to be built in one location.

While some instances have come to the attention of the Subcommittee where it would appear that mistakes have been made in connection with this large building program, yet in the light of all of the circumstances and particularly in view of the time element which was constantly demanding immediate results, the Subcommittee finds that this corporation has performed a difficult task with surprising expedition.

Criticism has occurred owing to the fact that total costs, grouping both cost of houses and cost of local improvements, have from time to time been publicized and proper care has not been taken when dealing with these figures to indicate that an average of \$705 per housing unit is included for cost of local improvements. Local improvements which include water mains, sewer mains, street grading, etc., in ordinary practice are collected either in general taxation from the whole assessable value of the municipality or by way of long term taxation in local improvement rates and are not quoted as part of the cost of the house.

The Subcommittee has carefully studied the present housing shortage and finds that it has arisen from two distinct sources. As a result if the problem is to be properly treated two different remedies should be applied. Wartime Housing, Limited, is not to be criticized for its failure to give expression to this fact because by its incorporation Wartime Housing was restricted to the supply of housing units for workers on munitions and supplies and defence projects, and was, consequently, not concerned with Canada's general housing problem.

The Subcommittee finds that the following are the two main causes of the present housing shortage in Canada:—

- (a) The mass movement of labour from its normal residence to localities surrounding the districts where war industries are concentrated;
- (b) The substantial housing shortage which existed at the outbreak of war has been greatly accentuated through increase in the national income. Since September, 1939, the national income has increased about \$1,800,000,000. At the time war was declared many families in Canada were doubled up and many still on relief. The increased national income has taken most families off relief and has enabled many thousands of families to move from their then existing congested living conditions into single family dwellings.

Insofar as the present housing shortage may be temporary in its character as indicated above in subparagraph (a) the Subcommittee recommends that the need should be met by the construction of temporary homes under Wartime Housing, Limited, and further recommends that such additional powers should be given to this Company to enable it to meet the temporary problem in its entirety.

Insofar as the present housing shortage is permanent in its character as indicated in subparagraph (b), and the Subcommittee finds that more than half of our present housing shortage is of this character, this permanent problem should be solved by the erection of permanent homes under the National Housing Act.

The Subcommittee as a result of its inquiry finds that there is no apparent shortage of the masonry materials, such as brick, stone and concrete, which are peculiar to the erection of permanent homes as opposed to temporary homes. The present existing shortage of materials is confined principally to steel, iron, copper and lumber.

As a result of its investigations to date the Subcommittee makes the following recommendations:—

- (1) That a nation-wide campaign be organized, supported by local committees, composed of volunteer workers, to make any existing surplus living accommodation in occupied homes available to families which are homeless;
- (2) That a plan of loans for financing the conversion of old single family homes into two and three family apartments on a basis similar to the Home Improvement Plan should be inaugurated. Money made available by this plan should provide for instalment repayments spread over a period of at least five years. Assistance to individual home owners should be provided in this regard.
- (3) That a survey should be made to determine the number of permanent homes which can be built without endangering a post war surplus in the different urban centres where a serious housing shortage exists and to this extent that the present housing shortage should be met by the construction of permanent homes, under the National Housing Act, where it can be demonstrated that by the use of building materials which are non-essential for war purposes, or by the use of building lots already serviced by local improvements, an actual saving in labour and essential war materials can be effected through the construction of permanent homes rather than those built by Wartime Housing.
- (4) That a careful study be made by Wartime Housing officials as to the wisdom of erecting temporary houses of either standard or ready-cut construction rather than semi-prefabricated construction now in use so that the unit cost of houses to be built by Wartime Housing, Limited may be substantially reduced:—
 - (a) by the use of scattered vacant lots already serviced by local improvements.
 - (b) by the awarding of building contracts in groups of substantially less than 50 houses in order to enlist the services of small home building contractors.
- (5) That in all localities such as Nobel, where when the war is over, there is no possibility of use being made of the homes now being built to house war workers the present house plans should be modified to reduce their cost to the lowest possible point commensurate with proper living accommodation. It must be borne in mind that in these localities the houses now being built will have practically no salvage value.
- (6) That dependents of soldiers serving overseas; civil servants, both married and single; and Canadian workmen who are indirectly servicing war workers urgently require low cost housing accommodation and this accommodation should be provided.
- (7) That wherever title to land held by Wartime Housing, Limited permits, or can be acquired, sales of homes built by Wartime Housing, Limited should be made now to occupants desiring to buy them.

The Subcommittee has been unable with the time at its disposal to complete a thorough study of Staff Houses. These buildings are large temporary hotels for workmen. In some localities the operation of these Staff Houses has been very satisfactory while in other places results have been disappointing. The Subcommittee recommends that Staff Houses should be further studied and dealt with when final report is made on the operations of Wartime Housing, Limited.

This report is an interim report on the operations of Wartime Housing, Limited and further inquiries should be continued and a final report made.

All of which is respectfully submitted.

ALPHONSE FOURNIER,
Chairman.

FIFTH REPORT

SATURDAY, July 18, 1942.

The Special Committee on War Expenditures begs leave to present the following as its

FIFTH REPORT

Your Committee being of the opinion that the enquiry entrusted to it should be continued notwithstanding the impending adjournment of the House recommends:—

1. That the Committee continue its enquiry notwithstanding such adjournment.
2. That six members of the Committee constitute a quorum during the said adjournment notwithstanding an Order of the House of May 5, 1942, fixing the quorum at eight members.
3. That any subcommittee appointed by the Committee have power to sit notwithstanding any adjournment of the House and to adjourn from place to place.
4. That the Committee be empowered during the said adjournment to employ such secretarial, clerical and other assistance as it may deem necessary.

All of which is respectfully submitted.

ALPHONSE FOURNIER,
Chairman.

SIXTH REPORT

SATURDAY, July 18, 1942.

The Special Committee on War Expenditures has received from its Subcommittee No. 2 the following report on "Salvage" which it has considered and adopted as its Sixth Report to the House:—

FIRST REPORT OF SUBCOMMITTEE No. 2

Subcommittee No. 2 of the Special Committee on War Expenditures begs leave to present the following as its report on

SALVAGE

A. *Scope.*

The Committee was at all times impressed by the importance of this enquiry and this appreciation has grown as the Committee has noted the progressive development which has taken and is taking place in the field.

The Committee found not a static field of enquiry but one in a state of flux and as the Committee explored new avenues the horizon limiting the enquiry receded and the field broadened to embrace both the war economy and the national economy.

The conclusions reached are such as seemed to the Committee to flow naturally at this time from the evidence presented.

B. *Salvage Agencies Studied in Enquiry.*

The Committee in the course of its study enquired into the operations of the following salvage agencies:—

1. Salvage Officer of Comptroller of Treasury.
2. Army Salvage and Disposal Board under Master-General of Ordnance.
3. Army Supply and Transport Directorate under Quartermaster General.
4. Air Member for Supply, R.C.A.F.
5. Director of Naval Stores.
6. Scrap Disposal Branch of Munitions and Supply.
7. Steel Controller, of Department of Munitions and Supply.
8. Wartime Salvage Limited.
9. Wartime Prices and Trade Board and Administrators.
10. Fairmont Company Limited.
11. Salvage Division of Department of National War Services.
12. Scrap Dealers.

C. *Brief Outlines of operations of various Salvage agencies studied.*

A brief outline of the operations of each of the above salvage agencies, together with some comments and observations, is given as follows:

1. *Salvage Office of Comptroller of Treasury.*

This Salvage Office was established in 1921 under the Government Contracts Committee. After that Committee was disbanded the Salvage Office still continued to function and was directly responsible to the Minister of Finance. In October, 1936, the office was placed under the Comptroller of the Treasury.

As pointed out in last year's report by this Committee, lists of salvageable goods were furnished to the Chief Salvage Officer, whose duty it then was:

- (a) to see if any other department of Government could make use of the material, and
- (b) in the event that this could not be done, to dispose of same by sale.

"The Chief Salvage Officer performed this task not only for the military branches of the government but for all civilian departments as well, and his list of salvage items embraced everything from buildings, vessels, scrap steel and automobiles to clothing, boots and shoes, etc."

This office has, and will continue to have, an important role to play and its work has increased considerably since the outbreak of the war and for the fiscal year 1941-1942 the transfers and sales amounted to \$1,024,990.95 divided as follows:

Sales	\$814,976 78
Transfers	210,014 17

The total for the fiscal year 1939-1940 was \$262,500.87 and for the year 1940-1941 was \$547,273.35.

The staff of the office consists of four men and seven girls.

The army in June, 1941, set up an Army Salvage and Disposal Board which makes its own sales. However, this Board before arranging a sale inquires of this Salvage Officer whether the article can be made use of by any other Department of Government.

The Air Force and Navy still make their sales of salvage through this Salvage Officer.

2. *Army Salvage and Disposal Board.*

The Committee in its report of last year referred to the setting up of this Board by Order in Council, P.C. No. 4649 of June 25, 1941.

It was recognized by the Department of National Defence that it had certain Army Stores which were or might become obsolete and other stores which had been or would be converted to Produce.

The object in setting up the Army Salvage and Disposal Board was to convert where possible such stores and equipment into articles capable of being used by the Naval, Military and Air Forces and to dispose of the balance by prompt and appropriate measures.

It was felt that it was desirable for this purpose and in the public interest to adopt some special procedure for disposal rather than deal through the Salvage Officer of the Comptroller of the Treasury.

An Obsolete Stores Committee was set up to investigate stores reported to be obsolete or which the Committee considered might on investigation prove to be obsolete, to inspect and examine any stores and report obsolete stores and recommend their disposal.

All such stores are then dealt with by the Army Salvage and Disposal Board.

The Board first seeks to convert such obsolete stores and stores which have been converted to Produce into other articles of stores and equipment capable of being used for Naval, Military or Air Force purposes.

The residue and by-products remaining after conversion, and all stores and equipment not capable of being converted, are sold but only after the Salvage Officer of the Comptroller of the Treasury has advised that such goods are not required and can not be utilized by any other Department or Agency of the Government or by any charitable or welfare organization.

In addition to the transfers to other Government Departments carried out by the Salvage Officer, arrangements are in effect whereby the District Stores Officers of the Navy and Air Force are given an opportunity to examine Disposal Stores and secure transfers where desired.

The Committee heard evidence as to the Salvage Operations carried on by the Board, repairing of clothing and boots, conversions made and steps taken to prevent waste.

An interesting story was told of conversions being made and the Committee was impressed by the inventiveness shown in converting obsolete stores and material into useful and necessary articles.

The Committee was pleased by evidence to the effect that there was an obviously growing interest in Salvage shown by men of all ranks.

3. *Army Supply and Transport Director*

The chief inspector of catering and messing, working under the Director of Supplies and Transport, under the Quartermaster-General, is charged, with other duties, with the responsibility of the inspection of kitchens to guard against waste and to encourage salvage of grease, fats, bones, containers, etc. District and unit catering and messing officers are charged with the same responsibility.

Disposal is with the approval of the Chief Salvage Officer of the Comptroller of the Treasury.

There are three main items of salvage: bones, suet, rough fat and kitchen grease; swill; food containers.

Evidence was given that, due to educational work carried on and the training of cooks, much fuller use is being made of fats. It was stated that the men are now getting about 91 per cent of the full value of their meat and fat ration, through the use of these fats in making sausages and bolognas and chopped meat dishes and the making of pies, cakes, etc. This has also resulted in a marked saving in the purchases of lard and shortenings.

Soap is being made, in some camps, from remaining fats, unedible greases and oils, and a considerable saving effected in this way.

The Committee was pleased to note that there appears to be a progressive improvement in the disposal of swill. There has been on the part of some farmers a prejudice against feeding swill to hogs and on the part of others an indifference to the possibilities of this feed. This has been in part overcome through the co-operation of the Department of Agriculture and other educational work carried on. In some camps central swill houses have been set up to do the cooking of the swill.

The Committee feels that more can still be done towards securing profitable disposal of swill and that efforts should be made to secure a better price for this produce.

4. *Air Member for Supply, R.C.A.F.*

Salvage operations within the Royal Canadian Air Force are under the Air Member for Supply.

Disposal is through the Chief Salvage Officer of the Comptroller of the Treasury and the Committee was informed that this service has been found to operate quite satisfactorily.

Small quantities of domestic salvage such as paper, cartons, etc., are handed over to the local voluntary salvage organization in the localities where the salvage arises.

Aeronautical engineering officers and equipment officers are responsible for conditioning of equipment. There is provision for periodic returns of equipment appearing surplus to requirements. Quarterly surveys of stocks are made by a Travelling Surplus Board in each command.

Evidence was given the Committee of the emphasis being placed on the importance and necessity for salvage and conservation of materials and particulars were furnished of a number of salvage and conservation operations.

Repair organizations are being set up at the central equipment depots for the conditioning and repair of part-worn uniforms, clothing and boots.

All crashed aircraft are forwarded to repair depots to be salvaged for use either in the service or by issue to manufacturers.

Special efforts are made through trained personnel to secure the maximum results from kitchen salvage.

Contracts for swill are arranged with the assistance of the Department of Agriculture. At one point in Newfoundland, where it was not possible to secure a contract, the service is going into the hog-raising business itself.

5. *Director of Naval Stores.*

The Naval Stores Branch in both the British and Canadian Navy is, and always has been, civilian. This branch supplies the stores, goes aboard and checks all store accounts and receives stores worn out or of no further use to the service and returned to the dockyard. The Naval Service has always had standing instructions regarding return of unserviceable stores to the dockyard.

The Dockyards are the storing bases for the ships and establishments. The stores for each ship are classed (1) Permanent and (2) Consumable. The main source of salvage material is returned permanent stores. These are surveyed in the Dockyard by qualified inspectors who determine whether (a) serviceable

(b) repairable (c) convertible or (d) to be reduced to produce, i.e., scrap. The stores are then dealt with accordingly.

The Naval Service pays a kit upkeep allowance rather than issue new for worn clothing; boots, etc., and therefore have not the same problem as the other services in this connection.

There is monthly stock-taking of stores and after six months slow moving stock is surveyed to determine (a) serviceable (b) obsolete (c) convertible or (d) unserviceable due to age or deterioration.

There is a civilian salvage officer in each Dockyard who arranges for repair, conversion or disposal. He is assisted by a Naval Technical Officer and lately a committee has been set up representing all branches at each Dockyard to coordinate the campaign for salvage.

Before reporting any material for disposal, the list is referred to all using branches in the Dockyard, to other Dockyards or outposts or branches to ascertain if it can be used.

Disposal is through the Chief Salvage Officer of the Comptroller of the Treasury.

The Committee was advised that the staff of the Director was being strengthened by the addition of qualified business executives for the purpose of planning and organizing in more detail the stock control systems including future developments of Naval Salvage work.

6. Scrap Disposal Branch of Munitions and Supply.

Order in Council P.C. 45/9130 dated November 22nd, 1941, gives the Minister of Munitions and Supply exclusive power and authority to deal with, exchange or otherwise dispose of all scrap and articles surplus to current requirements derived from contracts entered into by or being carried out under the direction and control of the said Minister and relieves the Salvage division of the Comptroller of the Treasury from all responsibility in connection therewith.

The Scrap Disposal Branch was set up and deals with scrap under the following classifications:—

1. Ferrous and non-ferrous metals.
2. Surplus or obsolete equipment, machinery and construction plant and materials.
3. Surplus waste materials.

The first two groups are reported to and only disposed of by the Scrap Disposal Branch and the third group is disposed of by Contractors, Government-owned Companies and Management Fee Companies and disposal reported to the Branch.

The Staff of the Branch consists of the Director General, a chief clerk and two stenographers.

All items previously reported to the Salvage Officer of the Comptroller of the Treasury are now required to be reported to this Scrap Disposal Branch.

The Committee was not satisfied that all available scrap was being promptly and systematically reported and suggests that there should be more specific instructions as to the reports required to be made to the Branch, of available scrap.

The operations of the Branch to date have been largely in connection with the salvaging of scrap metals from government owned, management fee or capital expenditure projects.

When possible the scrap metal is contracted direct from the plant to the consumer at the base prices fixed by the Metals Controller or Steel Controller. In some cases it is necessary to arrange for breaking down of the scrap and crushing machines are being installed in some plants.

There is disposal by invitation to tender where this is necessary. Evidence was given the Committee that the majority of consumers preferred to buy

through the scrap dealers for the reasons that there is no individual source of supply sufficient for the requirements of the consumer and the scrap dealers have the facilities for gathering, sorting and preparing the scrap.

7. *Steel Controller, of the Department of Munitions and Supply.*

The Committee was interested, for its purposes, in the operations of the Steel Controller in so far as these operations related to the salvaging of scrap metal.

"Steel" as defined in Order in Council No. P.C. 2742, dated June 24, 1940, authorizing regulations respecting steel and appointing a Steel Controller, includes Scrap Metal.

The Committee had before it the Supervisor of Steel Scrap Control under the Steel Controller.

The Steel Controller has, among other powers, those of taking possession of scrap metal wherever found, of fixing maximum prices or maximum mark-ups at which it may be sold or offered for sale, and of fixing or limiting or directing the sale or distribution of it.

The Committee was advised that there is a very urgent need for scrap metal and that almost every possible ton must be secured in the next 12 or 14 months if Canada is to maintain her war production.

It recently became necessary, because of the fact that much available and needed scrap metal was not coming to market for various economic and geographic reasons, for the Steel Controller to extend his activities to the actual procurement of such scrap metal. This was done through the Agency of Wartime Salvage Limited.

The present responsibility of the Steel Controller is two-fold; to promote through Wartime Salvage Limited the movement of scrap metal from the source to the dealers, and then to move the scrap from the dealers to the consumers.

The Steel Controller has been able to make arrangements for the salvaging of street car rails in some municipalities, with the steel companies absorbing the difference between the cost of salvaging these and the set price.

8. *Wartime Salvage Limited.*

Wartime Salvage Limited is a Crown company set up under the Wartime Prices and Trade Board.

The Wartime Prices and Trade Board is interested in supplies, and waste paper having become a supply problem Wartime Salvage Limited was primarily set up to allocate the supply of waste paper and create an orderly market.

The Company has general power:—

To purchase or otherwise acquire, import, export, exchange, hire, market, change, sell or otherwise dispose of, grade, press, allocate, distribute, store, transport, process and generally deal in waste or used matter and goods, wares and merchandise of all kinds.

The Company is financed by an appropriation under the War Appropriations Act of five million dollars, to be drawn as an accountable advance in amounts as required.

When the Steel Controller was faced with the necessity of financing the purchase of scrap metal at the source he made use of this company rather than set up a separate purchasing agency.

The activities of the company have been confined, to date, to waste paper and collapsible metal tubes and, recently, scrap metal.

Existing trade channels were used by the Company in the acquisition of waste paper. The enthusiastic response to the campaign for waste paper was greater than anticipated and this, together with the shutting off of the Western United States market, has created a surplus of collected waste paper particularly in Western Canada.

Under the Order respecting the salvaging of collapsible metal tubes, all such tubes shall, upon leaving the possession of the user thereof, be deemed to be the sole property of Wartime Salvage Limited and no person shall destroy or throw away any such tube or dispose of it in any manner other than to deliver it to a retail drug store, cigar store, general store or department store, or in such other manner as directed by the Administrator of Used Goods. The tubes are forwarded direct to the smelter and payment made to Wartime Salvage Limited.

The provinces of Western Canada and the mining fields of Northern Ontario and British Columbia contain the bulk of available scrap metal. Prohibitive transportation costs prevented this scrap reaching the market through the regular trade channels.

Wartime Salvage Limited has entered into an agreement with the Western grain elevators who will purchase scrap metal from the farmers in the three prairie provinces at the rate of seven dollars per ton. The elevators will weigh it and load it and will be paid \$8.50 per ton by Wartime Salvage Limited. The difference of \$1.50 is to cover the costs of handling, loading and financing and if there is any profit in this it will be turned over by the elevators to some war charity. The scrap is shipped to central points, is inspected and then passes to the dealers, who are allowed \$3.00 per ton for their services.

Other arrangements are being made for the salvaging of scrap metal from abandoned mines and remote areas.

The steel companies are contributing by absorbing a great deal of the freight from Western Canada.

9. *Wartime Prices and Trade Board—Administrators*

The Wartime Prices and Trade Board also come into the salvage picture through the fixing of prices on articles of salvage.

There are also a number of administrators of the Board whose activities relate to salvage as:

- Used Goods Administrator
- Waste Paper Administrator
- Oils and Fats Administrator
- Wool Administrator

These Administrators are Directors of, or work in co-operation with, Wartime Salvage Limited.

In addition they work in their specific spheres in encouraging and regulating the salvage and flow of particular articles.

The Used Goods Administrator, for instance, has under him the administrators of junk shops and junk pedlars and looks after used goods generally, including second-hand bags, bottles, steel, machinery, roofing rags, wiping rags, silk rags, etc.

10. *Fairmont Company Limited*

Fairmont Company Limited is a Crown company incorporated by the Department of Munitions and Supply with the primary object of being the exclusive agency in the purchase of crude rubber.

The company recently was given the task of acquiring scrap rubber.

Scrap rubber is used to make reclaim. Until the crude rubber shortage developed Canada secured its requirements of reclaimed rubber from two Canadian plants and from United States reclaimers. Our Canadian capacity was 7,500,000 pounds and has been increased since January 1, 1942, to 20,000,000 pounds. We imported from the United States reclaims for the following amounts:

1939	14,918,000 pounds
1940	16,063,000 pounds
1941	18,457,000 pounds

The scrap used to make reclaim was collected from (a) rubber manufacturing plants who accumulated scrap in their process of manufacturing rubber products and (b) by the collection of scrap from areas where the freight made such collection economical.

Our imports from and exports to the United States of Scrap Rubber are as follows:

	Imports	Exports
1939	6,068,000 lbs.	12,285,000 lbs.
1940	6,283,000 lbs.	13,060,000 lbs.
1941	6,928,000 lbs.	17,584,000 lbs.

Scrap rubber produces reclaim only to approximately 70 per cent.

Owing to war necessities, the requirements of reclaim became greatly increased, being estimated for 1942 at 36,000,000 pounds, as against 26,000,000 pounds in 1941.

To secure this 36,000,000 pounds of reclaim there will be required 51,000,000 pounds or 25,500 tons, of scrap rubber. As Canada had never in its history collected more than 24,000,000 pounds, or 12,000 tons, of scrap rubber in any year the urgency of the problem is apparent.

On March 15th, 1942, a Scrap Rubber Division was set up by the Department of Munitions and Supply to operate in co-operation with the National Salvage campaign in organizing the campaign and Fairmont Company Limited was asked to handle the shipping, storage, distribution and financing of the collection of the scrap rubber.

Scrap dealers, outside of Ontario and Quebec, were not dealing in scrap rubber as the freight rates were so high as to make collecting an uneconomic business. It is to these remote areas that the campaign has been directed.

Fairmont Company Limited pays uniform prices F.O.B. carload shipping points anywhere in Canada and absorbs that portion of the freight that could not be collected from the reclaimers.

Voluntary Salvage Organizations are doing the collecting and when a carload is gathered it is billed to Fairmont Company Limited. Some collecting is also being done by or through Scrap dealers.

The results to date indicate the collection of 25,000,000 pounds of scrap rubber of which 20,000,000 pounds have been collected since the campaign started on the 1st of May, 1942, and that Canada is safe in her scrap rubber supplies for at least a year.

It is estimated that the cost of the campaign to the Government will probably be \$100,000. In addition \$40,000 was spent by the Salvage Division of National War Services in the advertising campaign.

On July 1, 1942, the Scrap Rubber Division was discontinued and the promotional work taken over by Fairmont Company Limited, and the company has engaged and is now schooling a missionary staff of seven men who will establish personal contact with communities to promote the collection of scrap rubber by local salvage corps and by other means and particularly to facilitate the movement of rubber scrap accumulations.

The Committee enquired as to why the tires from all pleasure cars were not being taken at this time. The answer was that the bulk of the rubber in a tire for reclaiming is not in the tread but in the carcass and side walls on which there is little wear. After the tread is worn off 80 per cent as much reclaimed rubber is secured as would be secured if the tire was taken when new. As most tires when thrown aside are only partly worn the average loss is about 10 per cent. If these tires were taken now there is no place in Canada where such a quantity could be stored under protection from sun and rain and wind and dryness and so on and the loss from the ravages of time in reclaim value would be as much as the loss in reclaim value would be by running them. It was therefore thought advisable to leave these tires on the cars as a reserve source.

11. *Salvage Division of Department of National War Services.*

This Division is in the course of reorganization. The present staff numbers twenty-four. This will be increased to thirty-five, made up as follows:—

Director
 Associate Director
 Industrial Organizers, 2
 Assistant to Director
 Administrative Secretary
 General Office Staff, Ottawa, 9
 Provincial Organization, 20.

The Committee was advised that it was not intended at this time to launch any further national advertising campaigns (unless some emergency should arise requiring a special drive for some particular commodity). The Division has handled the advertising for Wartime Salvage Limited and Fairmont Company Limited.

This Division has charge of the voluntary salvage campaigns. Fifteen hundred Salvage Committees are registered with the Division of which only 40 per cent have actually reported quantities of material collected and moneys derived therefrom.

In accordance with the provisions of the War Charities Act the net financial returns are applied by the voluntary committees towards war charities.

Some use is now being made of municipal agencies in collecting scrap, and this is being developed.

This Division has, from the very nature of its activities, a very difficult task. It is dealing with some fifteen hundred voluntary salvage committees many of which are loosely organized. The work is largely voluntary and this in itself creates problems. The members of these voluntary committees are often inexperienced at such work and this causes difficulties.

On the other hand these voluntary salvage committees afford an outlet for the energies of many patriotic people who feel that they are, as indeed they are, in this way making a contribution to the country's war effort. Some of the voluntary salvage organizations have attained very marked efficiency and many others are with experience gaining greater efficiency. More important still, these voluntary salvage organizations fill a gap in the salvage set-up and their enthusiastic efforts have made the public more salvage conscious and do contribute to worthwhile contribution to the war effort and to the national economy.

12. *Scrap Dealers*

Scrap Dealers are of three classes:—

The pedlar.

The "B" dealer who has some facilities for sorting and preparing.

The "A" dealer who has adequate facilities for all kinds of sorting and preparing.

The Committee recognizes that there is in many quarters a strong prejudice against scrap dealers and a belief that in war salvage activities these dealers seek to take advantage of the patriotism of the public in order to make exorbitant profits for themselves. Those holding such views advocate the setting up of some organizations to take all scrap and dispose of it direct for the benefit of the war effort without making use of any middleman.

The evidence taken by the Committee tended to show that it would not for the most part be practical or in the interest of the war effort to dispense with the services of the scrap dealers who have the plants, equipment, personnel and experience to do their jobs efficiently. The prices of essential war scrap, and the profits which the dealers can make, are controlled. The Committee approves of this and is of the opinion that this control should be constant and continuous.

D. *General Conclusions*

The following are the natural conclusions which appear to the Committee to flow from its enquiry and the evidence presented to it:—

I. The Committee was greatly impressed by the inherent possibility in proper salvage and by the importance of the salvage operations being carried on and the beneficial results both to the war effort and to the national economy. The war effort is aided directly by the repair and further use of used articles, by the conversions being made, by the savings thus effected of materials and labour which would otherwise be used in the making of new goods, by the returns from produce sold, by the acquisition of vital war supplies from salvage. There is national gain in the recognition of the value in this discarded wealth, in the lessons taught of thrift and carefulness, and in the appreciation of the wasteful weaknesses shown to exist in our national economy.

II. The Committee feels that the solution for such unnecessary duplication or over-lapping as may exist or may develop lies in that co-operation which arises from mutual interest in a common cause and the desire to serve the larger interests of the state. The evidence showed that there does exist a considerable measure of co-operation between the agencies and a considerable measure of co-ordination of activities and that this co-operation and co-ordination is developing naturally and progressively. More can be done in this direction. There are in the salvage agencies men of broad outlook, clear vision, keen minds and wide experience and the Committee feels that these men themselves are best fitted to work out that measure and means of co-operation and co-ordination which would be most advantageous to the salvage agencies and the state. The Committee recommends that some arrangement be worked out for conferences between the salvage agencies, and between those agencies interested in particular problems, for the purpose of exchanging ideas, discussing mutual difficulties, passing on information, studying new approaches to methods of salvage, examining instances of duplication, exploring possible new or overlooked sources of salvage, and generally for the purpose of securing the maximum of co-operation and of co-ordination of activities.

III. The evidence taken by the Committee showed that the unused accumulation of scrap metal, scrap rubber and waste paper was in Western Canada. The same would appear to be true of bones, rags and many other articles of salvage. Prohibitive transportation costs have prevented this salvage from moving to the Eastern market, the only market available. The Government, and industry, is now compelled by the necessities of war to subsidize the movement of this scrap metal, scrap rubber and waste paper. The situation speaks for itself: there exists here an unhealthy economic condition. It is clearly wasteful and not in the national interests that this salvage should in normal times and under normal conditions be without a market. The Committee therefore recommends that careful study be given to this situation and to the possible establishment in Western Canada of industries which could absorb this salvage.

IV. The Committee recognizes that its inquiry is by no means completed. It has not even been able to complete its study of some of the avenues opened up. It feels that indeed there can be no finality to an inquiry into such a subject as wartime salvage; the changing nature and new developments in the matter do not allow of any last word being said. Salvage operations are of great importance now; they will be of even greater importance as the war goes on and in the period after the war. The Committee is strongly of the opinion that the subject is well worthy of further and continuous study.

V. The Committee recommends that particular and continuous study should be given to the problem which the country will face in post-war salvage. An immense task will confront the country in the use or sale and disposal of military equipment and supplies and of plants and equipment from war plants. It is obvious that great loss will occur if this salvaging is not efficiently handled

and that a great gain to the country will result if the most profitable use and disposal is made of this material. The Committee recognizes that it is probably not possible at this time to chart and blueprint the complete solution of the problem but it feels that there is need of present study being given it before the problem becomes too immediate and acute. The problem will be of a different nature from that of wartime salvage but in some respects the one will run into the other. It is possible that there is now being trained in the war salvage agencies and in the armed services and war industries the personnel which can best handle the problem of post-war salvage. It is possible also that the post-war situation may lend itself more readily and advantageously to co-ordination and a long range policy.

All of which is respectfully submitted.

ALPHONSE FOURNIER,
Chairman.

SEVENTH REPORT

MONDAY, July 20, 1942.

The Special Committee on War Expenditures has received from its Subcommittee No. 2 the following report on "Catering and Messing" which it has considered and adopted as its Seventh Report to the House:—

SECOND REPORT OF SUBCOMMITTEE NO. 2

Subcommittee No. 2 of the Special Committee on War Expenditures begs leave to present the following as its report on

CATERING AND MESSING.

The committee reviewed the progress made in this matter since its last report.

Ration List

The committee in reporting last session recommended that the ration list governing the issue of food to the Air Force be reconsidered in the light of the relative sedentary duties performed by the flying personnel of the Royal Canadian Air Force.

This recommendation was carefully considered by a committee of competent individuals and as a result a standard ration has been recommended for the use of both the army and air force. The committee was informed that the effect of this new ration would be a reduction of the authorized issue of potatoes, bread, beef and the alternatives of pork, and mutton, sugar, cheese and cereals. In compensation ham has been added as an alternative to beef; Canadian grown green vegetables when available as an alternative to the present issue of fresh vegetables; the issue of canned tomatoes as a standard ration item rather than as an alternative for fresh vegetables; an increase in the milk ration; the addition of oranges once per week and grapefruit juice three times per week; the addition of vinegar and salad oil (to be used with the green vegetables); and the adoption of Canada Approved white bread.

Army Cookery Schools

Cookery schools are being increased in number as the demand for trained cooks becomes apparent.

The committee is of the opinion that to a considerable extent the preparation and conservation of food and the salvage of kitchen waste can be improved if the cooks in charge of the service kitchens are well trained in their task.

The committee was pleased to be informed that men properly trained as cooks in the cookery schools have been given promotion to commissioned rank as officers in charge of catering and messing at different centres and believes that as a result encouragement will be given to others to become properly trained in catering and messing.

Canteens

The committee inquired into the matter of the operation of canteens. The evidence submitted would indicate, and your committee is of the opinion, that the canteen system would be improved if all purchases were made by a district or area central organization thus eliminating the intrusion in the camp of salesmen and other individuals with commercial interests.

Consumption of Alcoholic Beverages

The committee was furnished with evidence indicating the very great importance to the National Treasury of the physical condition of the men and women in our armed services. It was pointed out that in the last war many pensionable cases later arose as a result of improper dietary habits formed while in training in Canada.

For the above reason and because of the great public interest in the matter the committee inquired into the question of the consumption of alcoholic beverages by the members of our armed forces.

The committee desires to preface its comments by expressing its condemnation of exaggerated, unjustified and unfair statements made by some in regard to this matter. It is definitely of the opinion that any intemperance is confined to a very few and that on the whole the conduct of our Military Forces, in this regard as in others, is a credit to Canada.

The committee is of the opinion that the first principle to be recognized is that the military camp should be so equipped and conducted that all reasonable requirements can be satisfied within the camp lines. It is apparent that the alternative would be to encourage the members of our armed forces to seek those things denied to them in the camp in other less suitable places not under military discipline and control. The committee is of the opinion that the prohibition of alcoholic beverages to the men of our armed services is impractical and inadvisable.

The committee is further of the opinion that the key-note to a proper solution of any problem in this connection is to be found in the words, "temperance" and "education".

Certain suggestions made to the committee appear to have merit. These were:—

- (1) That the excessive consumption of beer or soft drinks immediately prior to meal hours militated against the full enjoyment and resultant value of meals;
- (2) That the regulation in force in some camps, that all canteens be closed for a reasonable period before meal hours, should be given general application;
- (3) That no wet canteen be opened until six o'clock in the evening;
- (4) That any regulations made applicable to the wet canteens of the men should be observed in the messes of the commissioned and non-commissioned officers.

The committee recommends that the above suggestions be given immediate and careful consideration by the proper authorities and if found practical and helpful put into effect.

The committee recommends that a well considered and sustained educational program be instituted in each branch of our armed services.

The selection of those in charge of such a program should be made with the utmost care and be such as would recommend the individuals so selected to the young men and women of the services. Further those selected should be persons who would be instinctively liked and respected by those in our military forces and should possess a wise and sympathetic understanding of human nature.

The co-operation of all ranks in each service should be encouraged as it is through such co-operation that the greatest good could be accomplished.

Such an educational program should emphasize:

- (1) The contribution each soldier can make to the Nation's war effort by the practice of self-discipline;
- (2) Respect for himself and the uniform which he wears;
- (3) The increased mental and physical health resulting from temperance;
- (4) The reward that will accrue to the individual of temperate habits in the postwar period by the greater opportunity of employment and advancement;
- (5) That in the business, professional, athletic, and social world of to-day intemperance imposes a great handicap on the individual;
- (6) The contribution each individual can make by his own example to the welfare of the younger members of our armed forces;
- (7) That commissioned and non-commissioned officers should encourage and practice temperance thus giving the leadership expected of them by reason of their rank.

The committee is of the opinion that all wet canteens should be in charge of men especially chosen for the task. Such men could by wise, friendly and acceptable methods minimize the consumption of alcoholic beverages and do much to encourage an atmosphere where the "proper thing to be done" was to practice temperance.

The committee was pleased to note that in some camps the consumption of milk as a beverage exceeds that of alcoholic beverages. This indicates that many of our young men recognize the value of temperance and suggests the probable value and resultant benefit of a proper educational program.

The committee points out the high average of intelligence of the enlisted men and women and expresses the conviction that they are quite capable of recognizing the value of temperance if the case in favour of this is properly and intelligently presented to them.

All of which is respectfully submitted.

ALPHONSE FOURNIER,
Chairman.

SESSION 1942-43
HOUSE OF COMMONS

SPECIAL COMMITTEE

ON

WAR EXPENDITURES

MINUTES OF PROCEEDINGS

No. 3

September 3, 4, 1942

October 9, 1942

November 13, 1942

January 18, 19, 22, 25, 26, 1943

Including

EIGHTH, NINTH, TENTH, ELEVENTH and
TWELFTH REPORTS TO THE HOUSE

OTTAWA
EDMOND CLOUTIER
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
1943

ORDERS OF REFERENCE

HOUSE OF COMMONS,

TUESDAY, July 28, 1942.

Ordered,—That the said Committee continue its enquiry notwithstanding the impending adjournment of the House.

Ordered,—That six members of the said Committee constitute a quorum during the said adjournment notwithstanding an Order of the House of May 5, 1942, fixing the quorum at eight members.

Ordered,—That any sub-committee appointed by the said Committee have power to sit notwithstanding any adjournment of the House and to adjourn from place to place.

Ordered,—That the said Committee be empowered during the said adjournment to employ such secretarial, clerical and other assistance as it may deem necessary.

Attest.

ARTHUR BEAUCHESNE,
Clerk of the House.

FRIDAY, July 31, 1942.

Ordered,—That the names of Messrs. Fournier (*Maisonneuve-Rosemont*) and Coldwell be substituted for those of Messrs. Abbott and Douglas (*Weyburn*) on the said Committee.

Attest.

ARTHUR BEAUCHESNE,
Clerk of the House.

MINUTES OF PROCEEDINGS

THURSDAY, September 3rd, 1942.

The Special Committee on War Expenditures met at 2.30 p.m., the Chairman, Mr. Fournier (*Hull*), presiding.

Members present: Messrs. Bercovitch, Boucher, Chevrier, Cleaver, Coldwell, Fournier (*Maisonneuve-Rosemont*), Fournier (*Hull*), Gladstone, Golding, Graham, Harris (*Danforth*), Homuth, Johnston (*Bow River*), McIlraith, and Picard—15.

On motion of Mr. Homuth, seconded by Mr. Picard.

Resolved.—That the following persons be employed by the Committee at the same rates of pay and subject to the same terms and conditions as apply to members of the Stenographic Staff of the House of Commons during Sessions, namely:

Commencing on September 3rd, 1942, and until further notice:

Fernande Angrignon, Agnes E. Anderson, Vera A. Barton, Mary G. Beattie, Mary E. Blakely, Agnes Culross, Stella Garneau, Ann Ernst, Gwen Hudson, Isobel M. Perazzo, Dorothy Wagget, Pauline Déchéne, Violet M. Jackson, Paule Chaussé.

Commencing on September 10th, 1942, and until further notice:

Grace L. Bennett.

Commencing on September 28th, 1942, and until further notice:

Gladys G. Macdonald, Louise Nash.

On motion of Mr. Coldwell, seconded by Mr. Gladstone,

Resolved.—That the following persons be employed as dictaphone operators for the Committee Reporters' Staff at the same rates of pay and subject to the same terms and conditions as during the sessions, namely:

Commencing on September 4th, 1942, and until further notice:

Helen Charleson, Zita Armstrong.

Commencing on September 8th, 1942, and until further notice:

Cécile Sabourin, Olive Wood and May Bingham.

Mr. Cleaver moved that the Chairman with Messrs. McIlraith and Boucher be appointed as a special Sub-committee to interview His Honour the Speaker and the Clerk of the House of Commons, in view of obtaining authority to properly compensate the clerks and reporters of the Committee for their work in connection with the Committee's sittings during the adjournment of the House.

Motion carried.

Mr. Bercovitch, seconded by Mr. Golding, moved that the Agenda Sub-committee appointed on May 5th and May 29th, 1942, with the substitution of the name of Mr. Coldwell for that of Mr. Douglas, be re-appointed, namely:

Messrs. Fournier (*Hull*), Cleaver, Coldwell, Bradette, Chevrier, Graham, Harris, Johnston and Sissons; the said Sub-committee to convene immediately and report to the main Committee at its next sitting.

Mr. Harris having requested that he be replaced on the said Sub-committee by Mr. Homuth or Mr. Boucher, the motion was amended by substituting the name of Mr. Homuth for that of Mr. Harris, and adopted as amended.

On motion of Mr. Golding the Chairman was authorized to interview the Clerk of the House to request that during the Committee's sittings the Post Office hours be extended from 4 o'clock p.m. to 6 o'clock p.m., and that two messengers of the House be kept on duty until 6 o'clock p.m.

The Committee adjourned until 10.30 a.m. to-morrow, Friday, September 4th.

R. ARSENAULT,
Clerk of the Committee.

FRIDAY, September 4, 1942.

The Special Committee on War Expenditures met at 10.30 a.m., the Chairman, Mr. Fournier (*Hull*), presiding.

Members present: Messrs. Bercovitch, Boucher, Cleaver, Coldwell, Fournier (*Hull*), Gladstone, Golding, Graham, McIlraith and Picard—10.

The Chairman submitted the report of the Agenda Sub-committee as follows:—

FRIDAY, September 4th, 1942.

The Agenda Sub-committee of the Special Committee on War Expenditures recommends:

1. That Mr. Graham be Chairman of Sub-committee No. 2 until the return of Mr. Sissons.

2. That the reference to each Sub-committee be re-allocated as follows:—

To Sub-committee No. 1.

- (a) Wartime Housing
- (b) Aircraft production
- (c) Shipbuilding
- (d) Government-owned Companies.

To Sub-committee No. 2.

- (a) Salvage
- (b) Medical Services and hospitalization
- (c) Food services—catering.

To Sub-committee No. 3.

- (a) Arsenal and small arms ammunition production
- (b) Chemicals and explosives production
- (c) Tank production.

3. That Messrs. Coldwell and Fournier (*Maisonneuve-Rosemont*) be members of Sub-committee No. 3.

All of which is respectfully submitted,

ALPHONSE FOURNIER,
Chairman.

On motion of Mr. Graham the report was adopted.

Mr. Graham moved that the name of Mr. McIlraith be added to the list of members of Sub-committee No. 2.

Motion carried.

The Committee adjourned to the call of the Chair.

R. ARSENAULT,
Clerk of the Committee.

FRIDAY, October 9, 1942.

The Special Committee on War Expenditures met at 11 o'clock a.m., the Chairman, Hon. Mr. Fournier (*Hull*), presiding.

Members present: Messrs. Bercovitch, Bradette, Chevrier, Fournier (*Hull*), Gladstone, Graham, Mayhew, McIlraith, Sissons.

Congratulations were extended to the Chairman on the occasion of his recent appointment as Minister of Public Works.

Mr. Chevrier, Chairman of Sub-committee No. 3, presented the Third Report of the Sub-committee, being its findings and recommendations on the matters referred to it by the Main Committee on September 4th, viz:—

- (a) Tank production.
- (b) Small arms ammunition production.
- (c) Chemicals and Explosives production.

The report having been considered and amended, Mr. Graham moved:

That the report, as amended, be adopted, subject to any deletions which might be considered advisable by the proper National Defence officials, in the interest of national security.

Motion carried, and the Chairman of Sub-committee No. 3 was authorized to submit the report to the proper officials of the Department of National Defence.

On motion of Mr. Bercovitch,

Resolved,—That the account of \$27.90 submitted by W. E. Elliott, C.S.R., for reporting proceedings of the Committee, be approved for payment.

By unanimous decision of the Committee, the Clerk was instructed to notify the following members of the Committee's stenographic staff, that their services would not be further required after Friday, October 16, 1942, viz:—

Mrs. M. G. Beattie,
Miss Fernande Angrignon.

On motion of Mr. Chevrier,

Resolved,—That Mr. Coldwell and Mr. Bradette be transferred from Sub-committee No. 3 to Sub-committee No. 2; and Mr. Fournier (*Maisonneuve-Rosemont*) from Sub-committee No. 3 to Sub-committee No. 1.

The Committee adjourned to the call of the chair.

R. ARSENAULT,
Clerk of the Committee.

FRIDAY, 13th November, 1942.

The Special Committee on War Expenditures met at 11 o'clock a.m. Hon. Mr. Fournier (*Hull*), the Chairman, presided.

Members present: Messrs. Black (*Cumberland*), Boucher, Bradette, Cleaver, Coldwell, Fournier (*Hull*), Gladstone, Golding, Graham, Homuth, Johnston (*Bow River*), McIlraith, Pottier, Reid, Sissons, Winkler.

On motion of Mr. Reid,—

Ordered,—That the account of \$32.40 submitted by Mr. W. E. Elliott of Ottawa for reporting proceedings of Sub-committee No. 2 on November 5 be paid.

On motion of Mr. Sissons,—

Ordered,—That the account of \$19.29 submitted by Mr. Ashkenazy of Montreal for attending Sub-committee No. 2 as a witness on November 2 be paid.

Mr. Reid and several other members expressed the opinion that, prior to presentation of committee reports in the House, all members of the committee should be supplied with copies thereof. It was decided that all untabled reports would be reviewed when the Committee re-assembles in January, 1943.

On motion of Mr. Graham,—

Resolved,—That when the Committee adjourns today it stand adjourned until Monday, January 18, 1943.

A letter having been received stating that Mr. Bercovitch could not attend this day's meeting on account of ill health, it was, on motion of Mr. Reid,—

Ordered,—That the Clerk convey an expression of regret to Mr. Bercovitch respecting his indisposition and the Committee's hope that his health will be speedily restored.

Upon the suggestion of Mr. Coldwell, it was agreed that the services of some of the stenographic staff should be retained at this time for a few days and that those members who require such assistance should immediately notify the Clerk of the Committee indicating the names of those required.

The Committee decided that the following members of the stenographic staff should be asked to report for duty on Monday, 18th January, 1943:—V. M. Jackson, A. E. Anderson, V. A. Barton, G. L. Bennett, M. E. Blakely, P. Dechene, A. Ernst, S. Garneau, G. Hudson, L. Nash, I. Perazzo.

The possibility of income tax deductions being made from the \$15 daily allowance granted to members was mentioned, and the following were named to make enquiries in regard thereto, viz. Messrs. Cleaver, Graham, Reid, Boucher, Johnston and Pottier.

The Clerk was instructed to notify the Clerk of the House that post office and messenger service after 4 p.m. would not be required in the interval between today and the 18th day of January, 1943.

Mr. Cleaver enquired if additional payment could be secured for the Committee Clerk and Shorthand Reporters for services rendered during the summer recess. The Chairman replied that such payment would not be authorized by the Commissioners of Internal Economy of the House.

The Committee adjourned until Monday, 18th January, 1943, at 11 o'clock a.m.

JOHN T. DUN,
Acting Clerk of the Committee.

MONDAY, 18th January, 1943.

The Special Committee on War Expenditures met at 11.00 o'clock a.m.

Members present: Messrs. Boucher, Cleaver, Coldwell, Gladstone, Golding, Graham, Homuth, Macdonald (*Halifax*), McIlraith, Sissons.

In the absence of Hon. Mr. Fournier, Chairman, and on motion of Mr. Coldwell,—

Resolved,—That Mr. Cleaver be Chairman.

Mr. Cleaver took the Chair.

On motion of Mr. Graham,—

Resolved,—That the Committee ratify the employment from December 30 for seven days of Miss Jackson to assist in the preparation of a draft report from Sub-committee No. 2, and authorize payment to her of \$35.

On motion of Mr. Golding,—

Resolved,—That, commencing today, Mrs. Anna Wolff be employed as Stenographer to replace Mrs. I. Perazzo.

On motion of Mr. Sissons,—

Resolved,—That, commencing today, Miss D. Wagget be employed as Stenographer.

On motion of Mr. Macdonald (*Halifax*),—

Resolved,—That, commencing today, Miss P. Chausse be employed as Stenographer.

Mr. Graham suggested that the Committee consider the advisability of curtailing stenographic appointments.

The Committee adjourned to meet at the call of the Chair.

JOHN T. DUN,
Acting Clerk of the Committee.

TUESDAY, 19th January, 1943.

The Special Committee on War Expenditures met at 11.00 o'clock a.m.

Members present: Messrs. Black (*Cumberland*), Boucher, Bradette, Chevrier, Coldwell, Fournier (*Maisonneuve-Rosemont*), Gladstone, Golding, Graham, Homuth, Johnston (*Bow River*), Macdonald (*Halifax*), McIlraith, Reid, Sissons, Winkler.

In the unavoidable absence of Hon. Mr. Fournier, Chairman, the chair was taken by the Vice-Chairman, Mr. Bradette, who on behalf of the Chairman, expressed the hope that untabled reports for presentation in the House would be ready this week.

Reference was made to the death of Mr. Bereovitch, and to the loss sustained by Mr. Harris in the death of his wife, and it was

Ordered,—That the sympathy of the Committee be conveyed to Mrs. Bereovitch and to Mr. Harris.

The question having arisen as to the re-employment of Mrs. Beattie, stenographer, and the Committee being of the opinion that sufficient stenographers were now employed, it was agreed, on the suggestion of Mr. Coldwell, that the Clerk of the Committee should ascertain if the services of Mrs. Beattie could be employed immediately by some Members other than those who belong to this Committee.

On motion of Mr. Reid,—

Resolved,—That the proposed Eighth Report (Third Report of Sub-committee No. 3) be now reviewed.

The Committee proceeded to the consideration of the said proposed Eighth Report.

The Committee adjourned at 1.00 o'clock p.m. until 3.00 o'clock p.m. this day.

The Committee resumed at 3 o'clock p.m. with the Vice-Chairman, Mr. Bradette, presiding.

Members present: Messrs. Black (*Cumberland*), Boucher, Bradette, Chevrier, Coldwell, Fournier (*Maisonneuve-Rosemont*), Gladstone, Golding, Graham, Homuth, Johnston (*Bow River*), Macdonald (*Halifax*), McIlraith, Reid, Sissons, Winkler.

The proposed Eighth Report was further reviewed.

On motion of Mr. Homuth,—

Resolved,—That the Committee approve of the proposed Eighth Report, as amended.

Ordered,—That the said Eighth Report of the Committee (Third Report of Sub-committee No. 3) be presented to the House.

The Committee adjourned at 4.40 p.m. to meet at the call of the Chair.

JOHN T. DUN,
Acting Clerk of the Committee

FRIDAY, 22nd January, 1943.

The Special Committee on War Expenditures met at 11 o'clock a.m. Hon. Mr. Fournier (*Hull*), the Chairman, presided.

Members present: Messrs. Black (*Cumberland*), Bradette, Cleaver, Coldwell, Fournier (*Maisonneuve-Rosemont*), Fournier (*Hull*), Gladstone, Golding, Graham, Homuth, Johnston (*Bow River*), Macdonald (*Halifax*), McIlraith, Pottier, Reid, Sissons, Winkler.

Mr. Sissons, Chairman of Sub-committee No. 2, presented a Third Report, the subject-matters of which were Conservation and Salvage.

The report was considered and amended.

On motion of Mr. Cleaver,—

Resolved,—That the Committee adjourn until 4 p.m. this day and that, in the interval, the members study the contents of the report.

The Committee adjourned at 11.50 a.m. until 4 p.m.

The Committee resumed at 4 p.m. In the absence of the Chairman, the Chair was taken by the Vice-Chairman, Mr. Bradette.

Members present: Messrs. Black (*Cumberland*), Boucher, Bradette, Cleaver, Gladstone, Golding, Graham, Homuth, Johnston (*Bow River*), Macdonald (*Halifax*), McIlraith, Pottier, Reid, Sissons, Winkler.

The Committee resumed consideration of the Third Report of Sub-committee No. 2. Further amendments were made.

On motion of Mr. Sissons,—

Resolved,—That the Third Report of Sub-committee No. 2, as amended, be adopted as the Ninth Report of the Committee.

Ordered,—That the Ninth Report be presented in the House.

The Committee adjourned until Monday, 25th January, at 3 p.m.

JOHN T. DUN,
Acting Clerk of the Committee

MONDAY, 25th January, 1943.

The Special Committee on War Expenditures met at 3 o'clock p.m. In the absence of the Chairman, the Chair was taken by the Vice-Chairman, Mr. Bradette.

Members present: Messrs. Black (*Cumberland*), Boucher, Bradette, Cleaver, Fournier (*Maisonneuve-Rosemont*), Gladstone, Golding, Graham, Homuth, Johnston (*Bow River*), Macdonald (*Halifax*), Mayhew, McIlraith, Pottier, Reid, Sissons, Winkler.

Mr. Cleaver, Chairman of Sub-committee No. 1, presented a Second Report, the subject-matter of which was "Airport Sites".

The said second report was considered and amended.

On motion of Mr. Cleaver,—

Resolved,—That the Second Report of Sub-committee No. 1, as amended, be adopted as the Tenth Report of the Committee.

Ordered,—That the Tenth Report be presented in the House.

Mr. Cleaver presented a Third Report from Sub-committee No. 1, the subject-matter of which was "Aircraft Production and Shipbuilding Production".

The said third report was considered and amended.

On motion of Mr. Cleaver,—

Resolved,—That the Third Report of Sub-committee No. 1, as amended, be adopted as the Eleventh Report of the Committee.

Ordered,—That the Eleventh Report be presented in the House.

The Committee adjourned until tomorrow at 11 a.m.

JOHN T. DUN,
Acting Clerk of the Committee

TUESDAY, 26th January, 1943.

The Special Committee on War Expenditures met at 11 o'clock a.m. The Vice-Chairman, Mr. Bradette, presided.

Members present: Messrs. Black (*Cumberland*), Boucher, Bradette, Cleaver, Coldwell, Fournier (*Maisonneuve-Rosemont*), Gladstone, Golding, Graham, Johnston (*Bow River*), Macdonald (*Halifax*), Mayhew, McIlraith, Pottier, Reid, Sissons, Winkler.

The members in attendance were invited to comment on the work accomplished by the Committee, having in mind that a similar committee may be set up next session. A summary follows of opinions and criticisms expressed:—

Committee lacks direction. Government would save money by employing expert assistance such as chartered accountants, statisticians, engineers, who could act in advance, on instructions. Recommendations cannot be made to House unless Committee sure of its grounds.

Too much work devolves upon Sub-committee Chairman.

Committee should be appointed earlier and should sit all session.

In the Government service, any good results achieved seem to come from what is done by witnesses after they return to their departments, rather than as result of recommendations made.

A permanent Chairman should be appointed.

Reports of Committee should be debated in House.

When House is not in session, Committee should be under direction of a Minister.

A resume of each day's sitting should be prepared and supplied to every member of Committee.

A Sub-committee should limit inquiry to one subject instead of to three or four.

It is impossible to prepare adequate reports when secrecy is imposed.

Committee shorthand reporters should receive additional payment for services when House in recess.

Committee should investigate subject of women in war industry in relation to family life. The two lady Members might serve.

On motion of Mr. Gladstone,—

Resolved,—That the existing Sub-committees be discharged.

On motion of Mr. Fournier (*Maisonneuve-Rosemont*),—

Resolved,—That notice be given to the stenographers whose services were authorized by resolutions of the Committee on 13th November, 1942, and 18th January, 1943, that their services will not be required after Tuesday, 26th January, 1943.

Mr. Bradette conveyed an expression of gratitude from the Chairman (Hon. Mr. Fournier) for the splendid work accomplished by the Committee.

The Committee adjourned, *sine die*.

JOHN T. DUN,
Acting Clerk of the Committee

REPORTS TO THE HOUSE

EIGHTH REPORT

27th January, 1943.

The Special Committee on War Expenditures has received from its Subcommittee No. 3 the following report on Tank Production, Small Arms Ammunition Production and Chemicals and Explosives Production, which it has considered and adopted as its Eighth Report to the House:—

THIRD REPORT OF SUB-COMMITTEE NO. 3

On September 4, 1942, a re-allocation of subjects was adopted by the Special Committee on War Expenditures. The following subjects were assigned to Subcommittee No. 3.

- (a) Arsenal and Small Arms Ammunition Production.
- (b) Chemicals and Explosives Production.
- (c) Tank Production.

This Committee started its investigation on the 8th of September, 1942. It held 15 sittings and heard 10 witnesses. It visited a small arms ammunition factory, two tank factories, an explosives plant, a gun plant and a shipbuilding industry.

The Sub-committee begs leave to present its Third Report of findings and recommendations, all of which is respectfully submitted.

Tank Production

Another of the important divisions of the production group of the Department of Munitions and Supply is the Tank Production Branch. The Director General of Tank Production is Mr. B. D. Beamish. Of all the major production programs, tanks have unquestionably represented the greatest and most difficult conversion.

The making of army trucks was a natural transition for the automotive industry from peace-time production to wartime production. In the case of guns, ships, ammunition and, to a certain extent, aeroplanes, there was a manufacturing tradition from which to start and guide our steps. It was possible in those cases to follow the experience in the British Isles where the manufacture of such weapons had been well understood and had been going on for a long time. Not so, however, in the case of the tank. It does not remotely resemble its Great War ancestor and most English-speaking people, even those in the British Isles, regarded the making of tanks as an art well forgotten. When to this is added the difference of opinion prevailing prior to 1941 between the United Kingdom and the United States regarding types and construction of tanks, it can readily be understood why the tank program was later getting into operation and into production than the majority of other programs.

In the first place the manufacture of tanks does not relate to any peace-time industrial activity. A fighting aeroplane differs greatly from a commercial aeroplane. However, there is some resemblance. Prior to the war, we had a small civilian aeroplane industry and the need for aircraft in war

was understood in the middle thirties. There was a great interest among industrialists in Canada in this subject. The production of small arms was under way in the Bren program before the war and the gun production obtained not only complete designs but process manuals from the United Kingdom.

The manufacture of shells is a somewhat traditional activity in wartime in this country and was even under way before the war started, at National Steel Car. This country has long had a shipbuilding industry and basic designs of naval vessels had been developed in Britain early in the war. As opposed to this, not only was there no fully developed tank industry in the United States or in Great Britain which could be followed, but the whole basis of tank design and use has been one of the most contentious matters in the munition strategy of the United Nations. A modern tank does slightly resemble a tractor in its running parts; however, it is built, not out of thin sheets bent to shape in a press and lightly welded together with the idea of getting the lightest possible structure to carry the load as in the case of an automobile, but it is essentially a solid box of armour plate or castings wrought patiently to shape like the door of a bank vault. It has a turret like a battleship with some very definite problems of its own. A tank is actually somewhat like a locomotive which lays its own rails in front of it, and picks them up behind. It is also like a submarine—a steel box packed with complicated equipment, with fighting men and ammunition, and designed to use the last cubic inch of space and the last pound of weight.

At the outset of the war the very basic principles of design were not decided upon. It was not agreed whether to stress weight of armour, or gun power, or mobility; whether to concentrate the gun power in a turret or distribute it; whether to make the track of steel or of rubber; whether to concentrate on large production of simple light tanks or to make fewer, heavier, more complicated ones.

The tank made its first appearance during World War No. 1. It was invented by Lieut. (now Major-General) E. D. Swinton, in the United Kingdom. His plans for a self-propelled armoured vehicle centred around the use of caterpillar treads which had appeared on certain vehicles around 1907. The first tank ever built was completed in 1915. On the proving ground it showed its possibilities to curious groups of officials from all the forces. They realized that its greatest effectiveness lay in the secrecy with which it was built and ultimately sent to face the enemy.

Tanks were first used as an auxiliary arm in a military thrust at the Second Battle of the Somme. It was not until the battle of Cambria, in 1917, that their use achieved telling effect. By 1918 the German High Command were explaining Allied victories because of their use of hordes of tanks.

After World War No. 1, the tank was regarded in the democracies as something well forgotten. As Europe began to arm in the thirties, Germany and the middle European countries placed great emphasis on the tank and its counterpart, the anti-tank gun. But France behind its Maginot Line and Britain behind its Navy produced few new designs and few vehicles.

Prior to the war, Germany, from extensive experience obtained in Spain, had developed four sizes of tanks from eight to twenty-two tons. They were lightly armoured but well armed. The hulls were of welded armour plate. The fighting compartments were small and cramped. The chassis was simple—almost crude—giving no steadiness to the gun platform, on the theory that the tank runs to position, stops, then shoots. They were, however, simple to build and to repair and production was well under way by 1939. There has been no very extensive alteration to these basic types except to add a fifth model somewhat heavier.

France had produced a considerable number of light tanks made of small armoured castings bolted together. They were simple and cheap, to carry a two-man crew. The French also had some very highly developed medium tanks which were, however, most complicated to build.

The British made a light tank and two widely different medium types. One, the infantry tank, which was intended to move with the infantry and assault fixed positions and the other a cruiser tank, which was intended to play the role of heavy cavalry. As the British had not developed welding to the point to which it was developed in Germany, nor armour castings as it was developed in France, these tanks were made of armour plate fitted together with bolts.

The medium infantry tank was the Mark 2—the famous Matilda—which won the first battle of Tobruk in February 1941. It was very slow travelling, approximately eight miles per hour, armed with only a two pounder gun, but very heavily armoured. It was followed by the Valentine, armoured as heavily, but lighter in total weight and considerably faster—a much better tank to fight in. The cruiser tanks were less heavily armoured and much faster. The pre-war model was the "Covenanter" which developed into the Crusader and finally into the Cromwell, which is now the standard of the British Army. But in 1940 the most promising type was the "Valentine".

In the late summer of 1940 it was decided that the Canadian Armoured Corps should be equipped with a cruiser tank, large, fast, and capable of ranging well ahead of the troops as did the German Panzer Divisions. Such a tank, the M3 medium, had been developed in the United States. The American Locomotive Company had a contract to build M3 tanks at Schenectady and an affiliated company, the Montreal Locomotive Works offered to build them in Canada. An order was placed and work commenced on a new tank arsenal and completed in September 1941. This is a Government owned plant operated by the Montreal Locomotive Works. This immense plant is second only in size to the Chrysler tank arsenal among tank arsenals in North America.

Canada has been manufacturing two types of tanks. They are the Valentine and the Ram 11 and are in production. The Valentine is a close-support infantry tank, intended for use in direct support of infantry movements. In actual battle it precedes the infantry advance clearing out barbed wire entanglements, and destroying heavily protected enemy positions, such as machine gun nests and fortified cupolas. Thus, it is not necessary that the Valentine have exceptional speed. What it lacks in speed, it makes up in manoeuvrability. It is capable of moving over the most difficult terrain.

There are three men in the Valentine crew—a commander, a driver and a gunner.

The Valentine is one of the best protected tanks built. The armour plate is heavy enough that only a direct hit can do much damage, and the angular design minimizes this possibility. Its low outline makes it a difficult target.

Valentines are assembled and a great many of the components built at the Angus Shops of the C.P.R. in Montreal, which employs many hundred men and an estimated eight million dollars of machine tools on this operation, in addition to taking care of essential locomotive repairs to keep the country's freight moving. In addition, another locomotive company machines heavy armour plate, a gear company manufactures the power trains, a third locomotive shop makes running chassis, an elevator company makes the electric gear for turning the turret, an iron and steel foundry casts the steel track shoes required in the hundreds of thousands, and some hundreds of other sub-contractors are working on smaller parts.

Many hundreds of Valentine tanks have already been shipped to Russia, each trainload of tanks carrying several box-cars of spare parts, box-cars of

ammunition, and a gondola car or so full of spare tracks. Each tank carries spare parts lists and instruction literature printed in Russian, and goes so complete that one consignment was reported to have been put into action within an hour of arriving at the base.

The Ram is designed to operate independently of the Infantry. A battalion of Rams probably would be quite some distance ahead of any other troops. Their job would be to clean out the well fortified enemy positions before any attempts are made at occupation. The Ram is very heavy in weight, sufficient to crush concrete cupola forts, or to demolish like enemy positions of almost any type of structure. A Ram tank would have little difficulty in drifting straight through an ordinary brick house, and with no appreciable damage to the tank.

As the Ram uses a good many components which are common to United States medium tanks, it fits in better with the continental war effort to have these supplied by large United States producers who specialize in one component only, and supply to several tank builders. This is the case with the engines, power trains, turret traverse gears. Many components, however, are made in the arsenal out of Canadian armour castings and armour plate, a rubber company produces track and tires, and there are many sub-contractors supplying parts. A number of these have been brought into the field though the "bits and pieces" program of the Department of Munitions and Supply.

DETAILED DESCRIPTION OF VALENTINE AND RAM TANKS

VALENTINE

General Description

The Valentine is a heavily armoured tank of low silhouette and great reliability intended principally to fight with Infantry in European terrain. The main armament is a 2-pounder anti-tank gun with which is mounted co-axially a Browning machine gun. There is also anti-aircraft protection. The chassis is of a complicated design and fitted with shock absorbers to give great stability to the gun platform and to permit shooting on the move. The tracks are wide in relation to the weight of the vehicle to permit operation in soft ground. The hull is made of very heavy armour plate throughout fitted with bolts. The turret is a heavy armour casting. This tank has a maximum speed of only 17 miles an hour as it is intended primarily for use with ground troops.

Use

Canadian-made Valentine tanks are being shipped to Russia where they have been used in quantity and are highly regarded, being of a type much more like Russian tanks than are tanks of American design. A few have been retained in Canada for training.

Components

The Valentine tank consists of a number of components each of which represents a small munitions program of itself—the hull, made of over 100 pieces of heavy armour plate meticulously fitted together; the turret and ball bearings ring on which it turns; the engine; the transmission, a complicated set of clutches, gears and brakes through which the tank is steered by applying power to either or both of the tracks; the suspension or chassis with shock absorbers; the track; the gun; the gun mount with buffer and recuperator; the driving and steering controls; the fighting platform attached to the turret with its traverse gear, the electric mechanism to turn it and the turret around rapidly or slowly; the periscopes; the machine guns and sighting devices; stowage items—a great variety of items stowed both internally and externally; the radio.

Capital Assistance

To Canadian Pacific Railway and its subcontractors—\$4,458,964.98.

Production

The first Valentine tanks were delivered to Canadian Ordnance in October, 1941. The first shipments to Russia were made in November, 1941. Shipments to Russia now total some hundreds complete with very extensive shipments of spare parts. Production is on a substantial scale.

RAM

General Description

The Ram tank is a heavy medium cruiser tank intended to fight with the troops or to be capable of independent action. The Ram II tank, the type now produced, is the prototype of the United States M-4 and is regarded by the United States Ordnance as one version of the M-4 series of cruiser tanks. The Ram tank has a lower hull of armour plate and an upper hull of a heavy armour casting. The main armament is in a large cast turret, supplied with power traverse. With the main armament is mounted one machine gun co-axially and another is placed in a cupola next to the driver. It is powered with a Wright Whirlwind engine. The tracks are now of rubber but will shortly be replaced by steel.

Components

This tank is composed of a number of components each with its own manufacturing problems. They are: the lower hull; the cast upper hull with cupola doors, etc.; the turret with ball bearing rings on which it rotates; the engine; the transmission which includes a synchromesh gear box and the steering mechanism whereby power is applied to either or both of the tracks; the suspension or chassis; the track; the main gun; the main gun mount with buffers and recuperator and mechanism for elevating and lowering it; machine guns and other secondary armament; periscopes; sighting devices; the fighting platform attached to the turret and the power traverse gear which turns both it and the turret; stowage items stowed both internally and externally and including even a cook stove; the radio.

Use

These tanks are being delivered to the Canadian Army in England, a considerable number having been provided for training in Canada.

Capital Assistance

To the Montreal Locomotive Works and sub-contractors and Electric Steels Limited—\$13,395,945.10.

Production

The first Ram tanks were delivered to the Canadian Army in November, 1941. Some hundreds have since been produced. The output will shortly exceed the requirements of the Canadian Army and excess production will be available to our Allies.

WASTE IN THE MUNITIONS INDUSTRY DUE TO EMPLOYEES BEING TEMPORARILY
NOT FULLY OCCUPIED

During its sittings your committee enquired into the oft-repeated statement that waste prevails in many plants manufacturing weapons of war. It examined the Director General of Tank Production on the subject of waste in the two plants under his immediate supervision. It examined him particularly with reference to certain periods of idleness, or temporary idleness, which are said to ensue from time to time, although not specifically in tank plants.

The Director General stated with respect to munitions plants generally that although actual cost is an important factor in the production of munitions, it is not the first consideration. The first consideration is the production of the greatest possible quantity of munitions and of as recent as possible a design. Munitions are produced to be wasted in total, and an additional cost in order to get faster production or in order to get production of a better type can, in the over all picture, result in an enormous saving. If the having of say 100 tanks at a given place at a given time saves the destruction of a city or the loss of a naval base, does it matter that these tanks cost \$50,000, \$100,000, or \$200,000, and if by doubling the cost of producing the tank one can also double its chances of survival in battle, along with the valuable soldiers in it, how can such be regarded other than as a saving.

Undoubtedly it is wasteful for workmen to be idle or partly idle; not so much in money as in the manpower resources of the country. Nevertheless, in the development of the munitions program, short periods of inefficient work or partial idleness must at times ensue. Anyone who is not a manufacturer is apt to overlook the point that munitions or any other kind of goods, are not made by machines but by people, and the building up of a properly skilled and properly directed team of foreman and workmen is every bit as important as having a factory filled with machine tools.

There are four cases in which temporary partial idleness is apt to arise:—

1. At the inception of a new program.
2. During a change-over based on a major design change.
3. During a temporary shortage of raw material.
4. During any hesitation in the program awaiting some military or economic decision which may be impossible to make instantly.

In the case of a new program three things must be undertaken simultaneously.

- (i) From the design drawings of a new piece of munitions, working drawings must be prepared, specifications studied and material ordered.
- (ii) Special machines and tools for the job must be ordered and the factory made ready.
- (iii) A new organization must be gathered and workmen trained for the job which they are to do.

Each one of these preparatory steps may be delayed, particularly in war-time, by circumstances entirely outside the control of the contractor or the Department.

- (i) The preparation of working drawings may be delayed by last minute design changes based on new invention or change in military tactics.
- (ii) The supply of certain vital materials may be delayed by conflict with another program, expressed in the United States by priorities.
- (iii) The delivery of machine tools may be delayed, or the preparation of the factory may be delayed by the discovery, half way through such preparation, of a very much better way to line up the work.
- (iv) Organization of the management or workers may be delayed due to the difficulty in finding the right men or to mistakes and misfits in placing executives.

It is obvious that if these three processes do not proceed with perfect synchronism, one of the three necessary functions will lag behind the others and one of these three conditions will result.

- (i) If the preparation of drawings or the ordering of materials based on these drawings lags there will be machines and workmen waiting for raw materials and jigs.
- (ii) If the ordering of machine tools and the preparation of the factory lags there will be materials and workmen waiting for machines.
- (iii) If the organization and workmen lag there will be machines and materials idle for men to work them or foremen to manage.

Obviously, there cannot be perfect synchronization in the starting of a new program. For example, at the commencement of the Valentine program, the finalization of drawings and obtaining of materials lagged slightly behind the preparation of the factory and the provision of the organization. In the case of the Montreal Locomotive Works, the organization of foremen and men lagged slightly behind the materials and machine tools. In neither case was the imbalance serious but it is apt to occur in any large complicated program. Synchronization is a matter of manufacturing skill on the part of the executives of the contractor and the production officials of the D.M.S.

In connection with the change-over from one program to another, the same considerations apply, only in this case the organization and usually the larger part of the machine tools already exist so that the delay is likely to occur in the study of the drawings and in the ordering and delivery of materials. When this happens the management is faced with a serious dilemma. Either it must sacrifice the organization of the labour team or it must continue to pay men temporarily for work which they cannot do at full speed because they lack materials and new shop specifications. It should be remembered particularly that the efficiency of a factory, like the efficiency of a football team, depends not alone upon the individual skill of the workmen but upon their capacity to work together as a team. To lay off workmen in any number without being certain of being able to recall them on demand, means, in the first instance, that it may be impossible to obtain on short notice workmen of equal skill, particularly for the specific job. Even if it were possible to obtain workmen of equal or superior skill, the fact that they are not the same individual workmen means inevitably that the building up of the team has to be done over again. If, therefore, there is a delay in a munitions program due to change of design or temporary shortage of material or to some military or economic indecision, it may very well be cheaper to maintain men in temporary idleness than to break up a valuable team.

Discontinuance of the Valentine Tank Program

The Valentine tank, essentially an infantry tank, was designed around the concept of modern warfare which has now altered. It is relatively slow. It is not heavily armed and is not capable of being heavily armed. Its good qualities—very heavy armour, low silhouette, high manoeuvrability are particularly suited to the kind of warfare now being fought in Russia and the Russians compare it favourably with other tanks which they have received up to date from their Allies. From the tactical point of view of the Canadian Army however, it is being superseded by tanks with greater speed and gun power.

The above illustrates the divergence of viewpoint between the heads of various allied commands in regard to the relative merits of different types of tanks. This is possibly due to the different terrain on which different types of tanks have been used.

The Committee was informed that after careful consideration and consultation with allied countries it had been decided that production of Valentine tanks should be discontinued in Canada.

Your Committee notes the divergence of viewpoint and expresses the hope that greater inter-allied consultation and exchange of information would eliminate such difficulty.

The Valentine program commenced at Angus Shops C.P.R. in June, 1940, was primarily for British requirements. The Canadian Army gave a substantial order in 1940, but preferred the cruiser type of tank, and when production of the latter was under way in 1941, the Canadian order was transferred to the British Ministry of Supply who were to take all the tanks except a few withheld for training, and undertook to be responsible for capital assistance. These tanks were assigned by the British Ministry of Supply to Russia at the end of 1941.

In March, 1942, a British Tank Mission, including the British Director General of Tank Supply and the Deputy Chief of the British General Staff, recommended that the production of the Valentine be discontinued after the then existing orders, which were to be shipped in their entirety to Russia, had been completed and that the facilities be utilized, if possible, in the manufacture of tanks of the U.S. M-4 type. Negotiations were at once commenced to incorporate the facilities of the C.P.R. into the tank building program of North America, but in this there were several insoluble problems. This led to a decision by the Joint Technical Sub-Committee on Tanks of the U.S.-Canadian Joint War Production Committee, that the facilities of the C.P.R. and its sub-contractors should, after the completion of the Valentine order, be no longer used for the production of complete tanks but as far as possible for the manufacture of components for M-4 tanks being made at the Montreal tank arsenal. It was later decided to use them partly for this activity and partly for production in connection with naval shipbuilding program, for which they are excellently suited. The reasons for this decision were as follows:—

1. The U.S. M-4 tank is very unlike the United Kingdom Valentine tank, and there are no components and almost no operations which relate to each other. The C.P.R. therefore, while still nominally making the same item of munitions, would be in fact starting on a program to make a quite different item of munitions.

2. As the North American tank program has developed, the facilities for assembling complete tanks have greatly outrun the facilities for making several critical components. These components require enormous capital facilities in relation to their value, and in 1940 and 1941 the requirements of cruiser tanks by the Canadian Army were not large enough to warrant development of these facilities in Canada. The facilities of the C.P.R. and its sub-contractors are not suitable for the making of any of these critical components and the program would, therefore, be dependent on receiving these from the United States. This could only be at the expense of some presently operating U.S. tank arsenal and would not contribute to the total number of tanks produced in North America.

3. In Canada, likewise, our facilities for the assembly of M-4 tanks exceed, not only our capacity to manufacture components but the requirements of the Canadian Army. The Montreal tank arsenal is a large new plant designed especially for the building of M-4 tanks and therefore more efficient for this purpose than the converted railway repair shops of the C.P.R. The capacity of the Montreal tank arsenal for assembling M-4 tanks and the present schedule of production is estimated to be substantially in excess of the requirements of the Canadian Army.

4. Since the Valentine tank is no longer required either by the Canadian Army or the British Army, and since we have more than adequate assembly facilities for M-4 tanks elsewhere, it was considered more advantageous to the war effort to devote these facilities to the manufacture of an operation which can in a large measure be self-contained rather than to the building of a larger number of tanks requiring critical components supplied from the U.S. for delivery again to the U.S. or some other Ally.

CONCLUSIONS

Tank production was one of the most difficult munitions undertakings for Canada to engage in, because it did not relate to any peacetime activity and because we, in common with our Allies, had to start the manufacture of tanks concurrently with finishing the design. The Canadian program is further complicated by the fact that in 1940, when a wartime industrial structure was being moulded, orders for Canadian cruiser tanks were not sufficient to warrant the setting-up in Canada of the exceedingly expensive facilities for making engines, transmissions, or enormous castings for which we are dependent on the United States.

In our study of tank production, therefore, a branch which is necessarily in the earlier stage of development than other branches of the munitions effort, we had the opportunity to observe the broad problems of munitions manufacture in Canada, not only those problems which had been overcome, but those problems which still face us.

The early problems were first, to obtain full information on authentic designs, to develop sources for vital materials, to train men and organize them into new industrial units, to obtain machine tools and to house them in factories, and to spread enormous programs over a wide range of sub-contractors. We observe that these problems have, in great measure, been overcome, in addition to the one peculiar to tank production; organizing heavy industry to the line production of vehicles of 20,000 parts or more, of rapidly changing design, and heavy spare parts requirements; and that we have in Canada built up an industrial structure for the production of munitions which is apparently capable of absorbing all the available man-power of the country. However, as is evident from our study of tank production, we now face in our munitions effort the problem of maintaining it as a uniform expansion.

Industrial development in wartime differs from industrial development in peacetime, chiefly in its enormous pace, in which the normal development of a year is collapsed into a month, but just as peacetime development does not occur without interruptions and even temporary retrogression, so in wartime the industrial structure, after its first great expansive surge, cannot be expected to progress in a straight line. This is exaggerated by the peculiar problems with which the allied nations are faced.

In the development of tanks and, therefore, presumably in the development of other weapons of land warfare, the Germans spent millions of dollars and thousands of lives in the Spanish War, which was for them an immense laboratory. During that war they evolved a policy with respect to tanks of producing four basic types which fitted in, not only with the industrial potentialities of Germany, but with a definite strategic conception of warfare, and it is surprising to discover that while emphasis of the German Army is now on its two heavier types of tanks as against emphasis on its two lighter types in the Battle of France, these basic types have not substantially altered.

On the other hand, the United Nations, without this preparation in land warfare, have apparently shown considerable divergence of military opinion as to the strategic concept and the consequent design of tanks, not only between

the Armies of different nations, but in the same Army from one time to another. Those who provide tanks, therefore, and this probably also applies to other items of land warfare, find themselves in the position of having large programs become obsolete, to be replaced by new ones requiring different combinations of machine tools, with the consequent temporary disorganization of great teams of labour in the assembly factories and the industrial teams of contractor and sub-contractors.

This continuous re-alignment of industry to fit new programs is likely to prove as difficult and as technically detailed a problem as the original setting up of it, and the problem is greatly complicated by the fact that we have not in Canada a completely rounded industrial economy. We do not, for instance, produce enough steel for our whole munitions effort. We do not produce several essential components to all munitions, such as certain alloy steels, ball bearings, certain electrical parts, etc., and the development of these things, always a lengthy process, would now be more lengthy. Therefore, not only are our programs changing, but the programs and each change in them must be continuously knitted into the wartime industrial structure of the United States. It is obvious, therefore, that in order to maintain the pace of our activity, it will be necessary to move considerable quantities of machine tools from one contractor to another, and to move labour from one industry to another, and it will, nevertheless, probably be impossible to avoid considerable industrial waste.

Observing these problems, your Committee is of the opinion that economy in the production of munitions of war will be dependent largely upon three things:

(1) The success with which the Army can reach and maintain a continuing strategic concept upon which tanks and other munitions can be based.

(2) The alertness of those executives both in Government and industry charged with design of munitions to interpret this strategic concept in a way to fit our resources.

(3) The skill with which our programs and resources can be fitted into the structure of North America, so as to make our greatest contribution without delay in obtaining essential materials.

These are all administrative functions, technical and diplomatic, and upon them depends economy, not in millions but in hundreds of millions. Your Committee therefore considers that it is unwise to concentrate on what might seem to be small savings in the administrative routine when such enormous sums turn upon the professional wisdom and maturity of those who administer the system. We offer, therefore, no specific recommendations.

SMALL ARMS AMMUNITION PRODUCTION

One of the best jobs done by the Department of Munitions and Supply is that of the Arsenal and Small Arms Branch. Its Director-General is Brigadier-General D. E. Dewar, who has had a vast experience in the manufacture of ammunition.

From the evidence obtained by your Committee, it is evident that the operation of a relatively small pilot plant in the production of small arms ammunition prior to the war was of very great benefit. It further appears that experimental work by industry as a pre-war effort was of great importance. A conclusion that one must inevitably come to is that ammunition of a very high quality is being produced in Canada and it is also apparent that production of small arms ammunition was developed soundly and rapidly with considerable attention to the economy of production. The training received in peacetime

by a relatively small number of key personnel contributed to a considerable extent to the very satisfactory condition which exists in Canada in the production of small arms ammunition for war purposes.

At the outbreak of hostilities in 1939 Canada was operating under the direction of the Minister of National Defence a small arms cartridge factory on a production basis of approximately three-quarters of a million rounds a month of one nature of ammunition. Old equipment was available for approximately fifty million rounds a year, and at the time war broke out much of this equipment had been overhauled and put in shape for the production of ammunition. This equipment had been retained by National Defence after the termination of the 1914-18 hostilities. This was the only factory in Canada actually in production on service types of small arms ammunition.

A private company was operating a small factory in the production of commercial types of ammunition. This company, on representation from the Department of National Defence, had carried out some development work in connection with a .303 ball ammunition production and had produced a small sample lot of this type of ammunition for trial purposes. This private company's cartridge had been accepted by Canada for wartime use and within a very short time after the outbreak of war the United Kingdom also accepted this cartridge. It may be said that this company's type of ammunition varies from the specification for the British ammunition and these variations were allowed in order to permit the company to utilize certain of the methods of production normally used by them in the production of their commercial ammunition. The only conditions imposed on the company at the time it was asked to develop the cartridge was that the ammunition must be satisfactory from the standpoint of accuracy, safety and functioning in military purposes.

This, therefore, was the situation which existed at the time war was declared. A year after the outbreak of war a Government factory was producing eleven times the amount of ammunition that it was at the outbreak of war. By the end of the second year of the war the Government factory was producing at the rate of thirty-six times the amount of ammunition produced at the outbreak of the war. By March, 1942, this factory was producing fifty-three times the amount of ammunition manufactured at the outbreak of war.

As regards development of production by industry, the first order was given in January, 1940, to D.I.L. By August of that year the plant was producing at the rate of approximately five million rounds a month, and by March, 1941, had reached a capacity of ten million rounds a month. By the end of 1941 industrial plants were producing at the rate of 445 million rounds of ammunition a year.

Development of production of new natures and increases in production of old natures are still proceeding. During 1942 the actual production of small arms ammunition will be 140 times that of the twelve months before the war.

When the various plants producing small arms ammunition in Canada reach visualized capacities some time in 1943 they will be producing over 400 times the amount of ammunition which was being produced when war was declared. At the outbreak of war only one type of ammunition was being produced and when these plants reach capacity they will be producing twenty-one different types of ammunition.

Small arms ammunition is described as all natures of ammunition with bullet diameters up to one inch. This ammunition is used with rifles, machine guns and revolvers. A complete round of small arms ammunition includes a brass cartridge case, percussion cap, propellant charge and bullet, or in the larger natures, a shell.

Small arms ammunition is produced by mass production, and it is of the greatest importance that the machines used are capable of ensuring great accuracy in this production.

There are several general types of modern small arms ammunition. These may be classified as follows:

1. Service Ball.
2. Armour Piercing.
3. Tracer.
4. Incendiary.
5. Proof.
6. Dummy.
7. Drill.
8. Blank.
9. High Explosive Incendiary.
10. High Explosive Incendiary Tracer.
11. Armour Piercing Incendiary.

Each of these natures of ammunition has been assigned a role according to the modern methods of warfare.

The calibres of small arms ammunition production in Canada conform to the calibres of the weapons used in the British Service. The following is a summary of the calibres and types of ammunition produced, with a general statement of the type of weapons in which the ammunition is used.

·303" Ball Mark VII

This is the standard British cartridge used for ground service by infantry against personnel in rifles and light machine guns. It is also used to a considerable extent from machine guns mounted in aircraft. As the nomenclature of this ammunition indicates, it is used with weapons having a ·303" calibre, such as the Lee-Enfield Rifle, Bren Machine Gun and the Browning Machine Gun. This type of ammunition was produced in Canada at the outbreak of war at the rate of nine million rounds a year. During 1941 four hundred and three million rounds were produced. Two different natures of ·303" Ball Mark VII are being produced. One contains a cordite charge, the other contains a powder charge. Ammunition which has a powder propellant is distinguished by the letter "Z" placed after Mark VII.

·303" Ball Mark VIII

This type of ammunition is very similar to the Ball Mark VII except it has a streamline bullet. It is used by the Land Services at long distances for firing over the heads of advancing troops against enemy targets. This ammunition is fired from machine guns which are specially sighted for the ammunition. No call for this type of ammunition to be produced in Canada was received until 1941. No production was carried out in 1941. A Canadian plant is now in production.

·303" Armour Piercing

This type of ammunition is used against light armour largely from guns mounted in aircraft. It can be fired from weapons of ·303" calibre. No call for this type of ammunition to be produced in Canada was received until the end of 1940. A Canadian factory commenced production in 1941.

·303" Tracer

This type of ammunition is used in weapons of ·303" calibre. It is largely used for ranging purposes. There are three different natures of Tracer currently in production, i.e., the G.IV, which is an Air Force type, and which is now being

replaced by a new type known as G.VI. Also there is the G.II type which is used by the Army. No call for this type of ammunition to be produced in Canada was received until 1940. A Canadian factory commenced production in 1941, and produced approximately one hundred and sixteen million, five hundred thousand rounds by the end of August, 1942.

·303" Incendiary

This type of ammunition is used in ·303" calibre weapons. It is used against material rather than against personnel, and the largest requirement is for use from Browning machine guns mounted in aircraft. No call for this type of ammunition to be produced in Canada was received until 1940. Owing to difficulties in securing equipment, no production was accomplished up to the end of 1941. The ammunition is now being produced.

·303" Proof

This type of ammunition is used by inspectors in testing the strength of new ·303" weapons. It contains a propellant charge considerably in excess of the normal charge contained in the ordinary types of ammunition. If the new weapons withstand the firing of the proof ammunition they will be safe to use with ordinary service types. No call for this ammunition to be produced in Canada was received until 1941. A Canadian factory commenced production in 1941.

·303" Dummy

This type of ammunition is used by inspectors for testing the functioning of new ·303" weapons. It is also used as an assembling component in connection with certain Bren gun magazines. It contains no explosive material. No call for this type of ammunition to be produced in Canada was received until 1941. A Canadian factory commenced production in 1942.

·303" Drill

This type of ammunition is used by the services for practice in teaching the operation of various types of ·303" weapons. It contains no explosive and the case is specially fluted so that army personnel may readily distinguish between the loaded cartridge and a drill cartridge. No call for this type of ammunition to be produced in Canada was received until 1940. A Canadian factory commenced production in 1942.

·303" Blank

This type of ammunition is used in manoeuvres. It contains a gun powder charge, but has no bullet. No call for this type of ammunition to be produced in Canada was received until 1941. A Canadian factory commenced production in 1942, and produced approximately three million rounds up to the end of August.

9-MM.

This is a ball type of ammunition fired from the Sten Sub-Machine Gun. No call for this type of ammunition to be produced in Canada was received until 1941. A Canadian factory is now in production.

·455" Revolver

This ammunition contains a ball bullet. To a large extent it is used by officers in the Navy from revolvers. No call for this type of ammunition to be produced in Canada was received until 1941. A Canadian factory will shortly be in production of this type.

·380"

There are two types of this ammunition, one is used for practice and contains a lead bullet,—the other is used by officers, both in the Army and Air Force. It contains a jacketed or hard bullet. This ammunition is fired from Service revolvers. No call for this type of ammunition to be produced in Canada was received until 1940. A Canadian factory has commenced production.

·22"

This ammunition is used for small ·22" weapons for musketry purposes in order to conserve the supply of the more expensive types of ammunition. No call for this ammunition to be produced in Canada was received until 1940 and by the end of 1941 the production was fifty-one million, six hundred thousand.

1" Aiming Rifle

This ammunition is used in training coast defence personnel, and is fired from a sub-calibre weapon fitted in the large coast defence guns. The purpose of this ammunition is to conserve the supply of the expensive coast defence ammunition. No call for this ammunition to be produced in Canada was received until 1940. Production commenced in 1942.

·50" Vickers A.P.

This type of ammunition to be used in a Vickers machine gun by the Navy against targets which carry light armour. No call for this ammunition to be produced in Canada was received until 1940. No production has yet been possible.

·55" Armour Piercing

This ammunition is fired from Boys Anti-Tank rifles against tanks. As the name indicates, it is armour piercing. No call for this type of ammunition to be produced in Canada was received until 1941. A Canadian factory is now in production.

20-MM. High Explosive Incendiary

This type of ammunition is fired from 20-MM. guns mounted in aircraft. A somewhat similar type of ammunition used in the Navy 20-MM. Oerlikon guns against aircraft is used. As the name implies, the ammunition has an incendiary effect, as well as a bursting effect on impact. No call for this type of ammunition to be produced in Canada was received until 1941. Canadian production will commence shortly.

20-MM. High Explosive Incendiary Tracer

This type of ammunition is used from the same weapon and against the same targets as 20-MM. High Explosive Incendiary. This ammunition has an incendiary effect as well as a bursting effect on impact. In addition, the shell traces in flight. No call for this type of ammunition to be produced in Canada was received until 1942. Canadian production will commence shortly.

20-MM. High Explosive Armour Piercing Incendiary

This type of ammunition is used for the 20-MM. guns mounted in aircraft. No call for this type of ammunition to be produced in Canada was received until 1942. Production will commence shortly.

Canada is turning out more small arms ammunition in one work shift than pre-war facilities could have produced in two months. Rifles and machine gun bullets are being produced from war company plants at twice the 1941 production rate.

From small beginnings Canada's capacity for the production of small arms ammunition has undergone such a swift expansion that it is now a

spectacular feature of the nation's munitions program, covering a wide range of types and calibres. The output is at the rate of 1,500,000,000 rounds a year or more than 60 rounds every second, day and night the year round.

Where 500 workers were once employed in one plant, now 30,000 workers in two government arsenals and many factories being operated by the government for private interests are turning out ammunition for the Bren Gun, Sten Carbine, Browning Machine Gun, Lee-Enfield Service Rifle and Boys Anti-Tank Rifle for the armed services of the United Nations. More than half the employees are women and girls.

The important feature of this year's program is the fact that there is available in Canada equipment and facilities for making many of the machine tools that once had to be brought in from the outside. Until recently, certain components had to be imported.

A new Canadian plant which has just gone into production of cores for armour piercing bullets is rated as one of the largest of its kind on the continent. Construction of this plant equipped with batteries of automatic screw machines now enables Canadian production of cores which once had to be imported. Arsenals and plant facilities in general are of the most modern type.

The current production of 1,500,000,000 rounds each year is being constantly enlarged. Output represents a value of \$1,000,000 a week.

Following the trend of modern warfare more incendiary and more armour piercing types are coming off the production lines. The production of Sten carbines will be quadrupled in the course of the next year; the output of 9-MM. ammunition for this weapon has been stepped up.

Production of .303" ball ammunition reached plant capacity early this year and now is 50 per cent above former objectives. Capacities for turning out .55" calibre ammunition have recently come into operation and various types of .50" calibre and 20-MM. ammunition will be coming off the lines shortly.

Production of .455" ammunition is scheduled for next year.

Canadian ammunition is in great demand in the United Kingdom. It might be interesting to quote in part a communication from the Director General of Small Arms Ammunition, Ministry of Supply, London, England, in which he says: . . . "I should like to take this opportunity of saying what a splendid job we all think you in Canada have done in solving the problem of rapidly increasing your production; at the same time making material of the highest quality".

Mr. H. E. Cline, the United Kingdom expert in the production of small arms ammunition sent by the United Kingdom to the United States in connection with the development of small arms ammunition in that country stated: ". . . . If I may be allowed to express an opinion it will be that this new arsenal (referring to a government arsenal producing .303 inch mark 7 small arms ammunition) is promising to be the finest and best equipped in North America. As you know, I have visited every plant, including Frankfurt Arsenal in the United States, who are manufacturing small arms ammunition and I say without fear of contradiction that the manner in which your new arsenal has been laid out and equipped is far ahead of any organization, either old or new, which I have come across during the last fifteen months."

"These same remarks apply, even more so, to the loading factory at. . . . This loading factory, to my mind, is better equipped and better laid out with all the modern methods and safety devices, especially in taking care of the safety and welfare of the worker than any loading factory which I have ever seen, either in America or on the continent of Europe. . . ."

The Committee was pleased to learn that Canada has established a fine reputation for the manufacture of small arms ammunition in Great Britain. It was given in evidence that ammunition from Canada was 100 per cent effective, gave no trouble in any respect and was, if anything, above the standard of that produced elsewhere.

CHEMICALS AND EXPLOSIVES PRODUCTION BRANCH

Explosives enter to a large extent into the manufacture of ammunition production and small arms ammunition production. In other words, explosives are a necessary component of shells and ammunition.

The Chemicals and Explosives Production Branch of the Department of Munitions and Supply came into existence in October, 1939. Its Director General is J. R. Donald. Since that date the work of this Branch has steadily continued to increase. The Branch acts in an advisory capacity to the Minister and the Department in relation to the supply of explosives and chemicals as required in the war effort, and generally directs the chemical and explosives program of the Department.

An additional important function has been the supply of pyrotechnic requirements, such as flares, signals, cartridges, etc., and special smoke-producing munitions. These are produced for the Canadian Army, Navy and Air Force, and also for export to various parts of the Empire.

More recently a new Division within the Branch has been created.

The large program of the Branch has, in the main, been created to meet the requirements of the United Kingdom for explosives and chemicals. Canadian facilities available at the beginning of the war for the production of military explosives and chemicals were small. To meet the large demand from the United Kingdom, it was, therefore, necessary to erect large explosive and chemical plants. To supply the intermediates and raw materials required by these main plants it was also necessary to create sources of supply for these products. This necessitated the creation of further plants and the expansion of existing industrial operations. It can be stated that, in addition to the new facilities provided since the outbreak of the war, the existing facilities of Chemical Industry in Canada have been practically entirely absorbed into the war effort.

As regards the explosives program, this has, in the main, been developed as subsidiary to the United Kingdom explosives program and as a reserve against loss of production in the United Kingdom. At the present time, Canadian capacity for the production of propellants and high explosives is nearly as large as that of the United Kingdom capacity, although further expansion in the United Kingdom is still underway. Canadian requirements represent a small percentage only of Canadian production and, consequently, the major output of our plants must go forward to the United Kingdom or our Allies, either in the form of bulk shipments of explosives or in finished ammunition.

The chemical program, as already indicated, has been built up, first to supply needed chemicals to the United Kingdom, and, secondly, to supply intermediates and raw materials required by the Canadian explosives and chemical program.

The ammonia and ammonium nitrate plants, which are regarded as part of the chemical program, were created to supply reserve capacity for the United Kingdom, but, at the same time, they supply the necessary ammonia which is an essential raw material in the manufacture of explosives.

To perform the functions required of it, the Branch has built up its organization along the following lines:—

1. An Explosives Division, generally supervising the supply of explosives, co-ordinating the requirements from the United Kingdom, Canada and other sources, and directing the distribution of the output of the explosives plants.

In addition to the explosives plants proper, this Division supervises the chemical operations which are subsidiary to the explosives operations. This Division works in close co-operation with Allied War Supplies Corporation, who are directly responsible for the operations of the Government-financed plants and who look to the staff of the Chemicals and Explosives Production Branch for instructions as to the quantities and kinds of explosives required and their final disposition.

2. A Chemical Division, which generally supervises the supplies of chemicals, other than those required in the explosives program, these also including chemical warfare requirements, which are becoming an increasingly important item in our program. This Division also works in close co-operation with Allied War Supplies Corporation.

3. A Pyrotechnic Division, which has general supervision of the supply of pyrotechnic and smoke munitions.

4. A Research and Investigation Division, which concerns itself with the development of processes, alternative supplies of raw materials, and the development of new products. The work of this Division is closely co-ordinated with the work of the Canadian National Research Council, the National Defense Research Committee of the United States, the Canadian Department of National Defence, and with the Ministry of Supply in the United Kingdom.

5. Service Division. This Division keeps the necessary records covering the production and distribution of the production and the various transactions involved. It co-operates with the Deputy Minister's Office in determining the policy to be adopted in regard to the charges to be made for production from Government-owned or controlled plants sold to other than the British or Canadian Governments. This Division can, in a general way, be said to look after the business and records side of the Branch, also closely co-operating with the Purchasing Branches of the Department of Munitions and Supply.

6. Ottawa Division. Since July, 1940, the headquarters of the Chemicals and Explosives Production Branch have been in Montreal to enable the necessary close co-operation with Allied War Supplies Corporation, who have been entrusted with the supervision of the operations of the Government-owned and Government-financed projects, which represent the major part of the chemicals and explosives program. To deal with the numerous matters requiring attention in Ottawa and also to keep in close contact with the other Branches of the Department and the Services, offices have been maintained in the Department of Munitions and Supply buildings in Ottawa. In addition to acting as liaison with the Montreal office, this Division acts in an advisory capacity to the Purchasing Branches of the Department in relation to the purchase of chemical stores.

The majority of the senior staff of the Branch consists of highly trained chemists and chemical engineers, a number of whom are on loan from their Companies. At practically all times the Branch has been understaffed and too much appreciation cannot be expressed of the loyal and untiring services, involving long hours and lack of holidays, which has characterized the staff as a whole.

A brief outline of the method of operation of the Branch is as follows:

Enquiries are received by the Department of Munitions and Supply from the United Kingdom Government, Allied Governments, or from other Canadian Government Departments, for the supply of certain explosives and chemicals. The various possibilities of obtaining these products in Canada are investigated, giving due consideration to existing facilities, the available technique, the raw materials required, and the general economic factors involved. If the material required is already made in Canada, the manufacturers are consulted and the possibility of obtaining the necessary supply from existing sources is investigated.

If the existing supply is inadequate, the possibility of expanding existing Canadian production is considered, or, if existing production cannot be suitably expanded, ways and means of installing entirely new capacity are considered. When a decision has been reached as to the most suitable method of providing the necessary supplies, a recommendation is made to the Minister, with a full statement of the reasons for the recommendation. If provision of the supply necessitates an entirely new Project, involving Government-financing and substantial expenditure, it is usually recommended that construction and operation of the project be placed under the supervision of Allied War Supplies Corporation.

One of the major activities of this Branch has been the thorough study of the supply position with a view to safeguarding the raw material requirements for the program.

As the various explosives and chemicals come forward, instructions for the distribution are given to either Allied War Supplies Corporation or to the contractor for shipment of the finished products as required.

In addition to co-ordinating our program with United Kingdom, Canadian and Empire demands, we have worked closely with United States Government Departments, endeavouring to avoid unnecessary duplication on either side of the Line. The general problem of co-ordinating demands with production and supply of raw materials has required constant attention and much forethought. Fortunately, to date, where United Kingdom requirements have fallen off, we have been able to maintain full operation of our plants by diverting our surplus production to the United States.

The first major undertaking of our program was the cordite and T.N.T. plant which was authorized in the early part of 1940. At the same time, the possibility of additional explosives' capacity in Canada was being studied and, also, the supply of such basic raw materials as ammonia and sulphuric acid. From February, 1940, onwards, demands from the United Kingdom began to make themselves felt, and, by the end of December, 1940, the larger main projects in our program had been started.

There has been a steady expansion of the program since December, 1940, but at a slower rate. Some of the more recent projects have been particularly interesting, reflecting new scientific developments and changes brought about by the course of the war, notably, alkylate plants, producing high octane blending agents required in aviation gasoline; a new carbide furnace to produce carbide required by the United Nations in the production of neoprene, a synthetic rubber; and a noteworthy Canadian development having to do with the manufacture of a new high explosive, by a process developed by our Research Division. This process has been carried from the laboratory test-tube scale in May, 1941, to full plant operation in August, 1942. This process has been adopted by some of the United Nations as the main process for the production of this new super-explosive.

In general planning of the program, careful consideration has been given to the desirability of making the program self-sufficient, as far as possible, within Canada. For example, at the commencement of operation, the cordite and N/C powder plants were dependent upon imported cotton linters. By successful co-operative effort, involving our Research and Investigation Division, the operating companies, and certain operating technique available in the United States, we have succeeded in almost entirely replacing cotton linters with wood pulp. Assuming full operations of the plants and current prices of linters and pulp, this will involve a saving of some \$2,000,000 per year and the supply of the raw material from Canadian sources. Similarly, in generally planning new production in Canada, consideration was given to the possible

post-war value of the proposed new plants and it was endeavoured to so locate the plants that they should be of maximum value to the Canadian economic structure. The establishment of the sulphuric acid plant to serve an explosives plant and the design of this plant to use Canadian pyrites is an excellent example.

Canadian Chemical Industry as it existed prior to the commencement of this war was largely the outgrowth of the 1914-18 war period. There is no doubt that the Canadian chemical and explosives program will have a marked effect on post-war Canadian development.

RECOMMENDATIONS

On June 29, 1942, your Committee filed its first report on Munitions Contracts. In that report it criticized the use of the cost plus percentage contract, pointed out that the Munitions Contract Branch disliked cost plus percentage contracts and preferred a fixed price contract arrived at after competition or private audit. It found further that the cost plus percentage contract, although the least desirable, was inescapable where there existed a variation of a great number of parts on which no cost basis could possibly be made. It referred, as an example, to certain guns having as many as 2,400 parts where it was impossible to make an accurate estimate of the costs of each of these parts. In those cases resort was had to the cost plus percentage contract.

Your Committee now finds that, while at the outset of the manufacture of certain munitions of war it was necessary to resort to cost plus percentage contracts, it has now become increasingly evident that these should be replaced by fixed contracts. Whereas in the past two years, especially, the military stores required by the fighting forces were so completely new to Canadian manufacturers and to the Department that no reliable advance estimate of production costs could be made, there was no alternative for a time to reimbursing the contractor for his actual costs and allowing him a limited margin, preferably by way of a fixed sum per unit of output, or, alternatively, by way of percentage. All this, however, has been preliminary to Government audits to arrive at fixed prices on repeat orders on an equitable basis.

Your Committee has considered the purchasing policy of the Department of Munitions and Supply and concurs in its fundamental view that fixed price contracts are the most satisfactory in the public interest, wherever an adequate basis exists for ensuring that undue profits are not allowed.

Your Committee finds that up until this time approximately 4/7's in number of the contracts awarded by the Department have been let through competitive bidding. The remaining 3/7's are those contracts in which competitive bidding is not possible and it is with reference to these that resort is had to the cost plus contracts of the various types. Your Committee strongly recommends that the cost plus contracts should be eliminated as soon as possible in favour of the fixed price contract. This contract is based on an agreed set price not subject to change and, regardless of what the contractor's costs may be; that is, if he loses it is his loss, and if he is able to manufacture more cheaply it is his gain.

Your Committee feels that if the policy of the Department to settle fixed prices wherever a proper basis therefor can be found is carefully applied, then a very large proportion of the contracts (possibly 90 per cent) will be granted on a competitive basis, which is by far the most satisfactory system.

Your Committee in its first report, also recommended that larger numbers of cost accountants should be employed in the various plants. As our investigation progressed, it became manifest that the work of cost accountants is increasingly important.

Your Committee finds that the establishment of fixed price contracts is due in large part to competent cost accounting. Hence the importance of competent cost accountants cannot be over-emphasized.

Your Committee visited the plant of D.I.L. at Brownsburg. In peacetime this was a modest plant operating in a small community and manufacturing ammunition for commercial purposes. To-day it is operating on a large scale. It produces .303" tracer ammunition and because of the surplus of population which has gathered there, many problems have been created. Your Committee wishes to draw attention to overcrowding which exists in this community on account of large scale war operations and particularly to problems concerning housing and education.

Your committee was impressed with the staff houses and workers' camps erected for the convenience of male and female employees. These staff houses and workers' camps are not elaborate, but they seem to take care of the immediate needs of the employees. They consist of housing accommodation for men and women, restaurant, laundry and other services. Your Committee was particularly impressed with the infirmary which is placed at the disposal of the employees.

Your Committee was favourably impressed with the communal centre erected at the DeSalaberry works, near Valleyfield, which it visited in connection with the chemicals and explosives program. This centre consists of housing accommodation for men and women, restaurant service, community hall, recreational centre, chapel, laundry and infirmary.

Your Committee strongly recommends that centres of a like nature be erected in all plants which are located some distance from a town or city. It realizes that the same necessity does not arise for these facilities in plants located in a city. At the DeSalaberry Plant there are many hundred employees, 475 of whom live in camp residences. The 250 houses built by Wartime Housing are all occupied. The remaining workers are conveyed from the area surrounding Valleyfield by bus service. At the Brownsburg plant, no such service appears to exist. In fact, many employees here, both male and female, are conveyed to and from their homes in motor cars. Many of them travel in large numbers in one car. Immediate consideration should be given to the establishment at the Brownsburg Plant of the same transportation facilities as exist at the DeSalaberry works.

Your Committee gave consideration to the protection which should be given to Government and other plants manufacturing war material and it listened with keen interest to the impressions given by the Director General of Chemicals and Explosives of the consequences in Great Britain of enemy air raids.

The sum total of destruction from air raids is enormous. Where concentrated bombing has taken place, complete devastation of the area has resulted. At the same time there is widespread damage over a much larger field. The effect on production within the area is very great, even if production facilities are not hit, due to loss of dwellings and general dislocation. Recently, a new type of incendiary bomb has been reported, containing half a pound of T.N.T. This is detonated by a delayed action fuse. As the war goes on, air raids will get worse as bombing becomes more effective, due to larger bombs and new types of incendiary devices. The devastating effects of the large 4,000 pound bombs now being manufactured must be great and, obviously, the use of such bombs must be anticipated.

Certain conclusions from this evidence seem to your Committee to be manifest.

1. This is a war of extermination with air warfare centred on civilian populations. Canada is not immune from aerial and submarine attack by the

enemy. Attacks of this nature may be expected here and constant consideration should be given by the departments charged with the responsibility for the provision of adequate protection to vital production plants.

2. North America has now become a great supply source for Allied nations in this struggle against the Axis powers with Great Britain an outpost which must be maintained and defended.

Having regard to these conclusions, it is apparent that too many precautions cannot be taken to safeguard all Government controlled and other plants manufacturing war material. Your Committee is of the opinion that, in order to protect our plants adequately, regard must be had to the following:

1. Fire, tempest and lightning.
2. Theft.
3. Carelessness.
4. Sabotage.
5. Attack by enemy.

Canada has, thus far, been very fortunate, inasmuch as few disasters have occurred through any of the above. There is, however, a certain danger in this sense that one might be tempted to assume an attitude of "It can't happen here".

With reference to the first three heads, the damage resulting therefrom has been negligible and at the plants visited by your Committee the methods adopted to cope with these hazards seem adequate.

Realizing that sabotage is always more likely to be internal than external, your Committee approves of the methods adopted to cope with this form of enemy tactics and recommends that they be carefully followed.

Your Committee pays tribute to the work of the Royal Canadian Mounted Police in this respect and cannot come to any other conclusion but that the lack of damage from this head is due to their close scrutiny and careful supervision.

Your Committee recommends that immediate consideration be given to the protection of plants from air attack. It realizes that for a time there was a shortage of anti-aircraft devices due to the necessity of sending them to the more vulnerable fronts of the Allied Nations. The present position is better than ever it was, but your Committee feels that greater protection should be given to certain material war industries in strategic locations.

Your Committee further feels that smoke screen generators are an effective protection from air attack and recommends that they be installed where deemed necessary.

Your Committee wishes to recognize the work of the universities of this country in training young technicians whose contribution in the fields of research, engineering and production has greatly impressed the members of your Committee.

Your Committee realizes the tremendous development played by chemical engineering in the modern life of the community. It recommends that consideration be given to the post-war use and disposal of these plants.

All of which is respectfully submitted.

ALPHONSE FOURNIER,
Chairman.

NINTH REPORT

27th JANUARY, 1943.

The Special Committee on War Expenditures has received from its Sub-Committee No. 2 the following report on "Conservation and Salvage" which it has considered and adopted as its Ninth Report to the House:—

THIRD REPORT OF SUB-COMMITTEE No. 2

This Sub-Committee resumed its sittings on September 29, 1942, and continued its enquiry into the Conservation and Salvage operations connected with the country's war effort.

Thirty-nine meetings were held and forty-three witnesses were heard.

The Sub-Committee begs leave to present the following as its Third Report.

All of which is respectfully submitted.

J. H. SISSONS,

Chairman of Sub-Committee No. 2.

CONSERVATION AND SALVAGE

The Committee has become more and more impressed with the subject matter of this enquiry. It is convinced that generally speaking Canada has failed to appreciate what is included in conservation and salvage. To a great many people it is confined to the collection of scrap and, while the Committee is fully aware of what an important matter this is both in the saving of materials and the moneys realized therefrom, it points out that this is only a small phase of an over-all wise conservation and salvage program.

Broadly speaking, it means the elimination of waste in our national and individual economy for the purpose of conserving material, time, labour and money. It can be divided into three large sections, (1) Wartime Conservation and Salvage, (2) Postwar Conservation and Salvage, and (3) Peacetime Conservation and Salvage.

WARTIME

Conservation and Salvage in wartime should have in mind:

- (1) Greater care in the use and operation of all existing plants and equipment with a view to prolonging the life of these;
- (2) The repair of used equipment and the greater utilization of used materials to relieve the demand for new, essential materials;
- (3) Salvage and proper disposal of material scrap, certain items of which are essential to war production;
- (4) Constant endeavour to effect conservation by cutting down non-essentials through simplification, making war materials go further by revising specifications and eliminating the use of scarce materials by substitutions.

The Progress Report of the Army Salvage and Disposal Board for the year ending July 31, 1942, has this to say:

"The customary criterion of successful salvage is the money saved. Money now has become second in degree of importance; material is first and foremost. It is now, and will be more so as time goes on, more important to recover and conserve material and labour than to reduce expenditures. Although these facts are true, the conservation and salvage measures which the Board has put into effect during the twelve months of its work are all worthwhile from a business point of view."

The Committee considers this to be a sound and proper approach.

The primary importance of material is obvious. Many sources of raw supply have been lost. Difficulties in shipping hamper the transport of other commodities. Shortages of manpower restrict the manufacture of new goods.

The Report of the Army Salvage and Disposal Board shows a net saving of nearly \$3,000,000 in addition to the gain from the steps taken to prevent waste of Army stores which cannot be valued in terms of money. An impressive story is told by the Report of conversion of obsolete stores to articles capable of further use; to the application of efficient modern factory methods to the repair of boots estimated to reach one million pairs per year; of the mending of clothing and the recommendation of changes of construction and design which will yield longer service from military clothing and equipment. The Board expresses the concept it has of its duties in these words:

"It is being recognized by the British, by the United States Army and, to some extent, in Canada, that salvage and recovery, such as are being developed by the Board, are not a matter of delousing clothing or of gathering up old paper and iron, but rather, a highly specialized service without which modern armies cannot adequately be supplied, and without which no nation can bear the cost of war."

POSTWAR

Postwar conservation and salvage will obviously be affected by the degree with which we properly conserve and salvage in our war effort. It is clear, however, that regardless of this, Canada will be confronted with a tremendous problem when hostilities cease. One has only to recall the aftermath of the last war and the problem presented in the disposal of government equipment and material by "fire sale method" to realize the magnitude of the problem with which this country will be confronted after this war.

Canada is spending billions of dollars in plant equipment, ammunition, armaments, ships and goods and commodities used in our war effort. Very great quantities of these of every description will be in the hands of the government at the cessation of hostilities. Plants now used for war production including the machine tools used, will, to some extent at least, not be required after the war. The proper use of such plants and equipment should be receiving the constant consideration of some governmental agency charged with this specific duty.

As an example, an immense amount of motorized equipment such as automobiles, trucks, etc., will have to be dealt with in a wise and economic manner, not only to secure for the nation as much value out of these as possible, but much more important, to fit these into the postwar economy so as to do the most good.

The United Nations will in their own interest be vitally concerned with the reconstruction of the war devastated world. Such surpluses of material may under a wise policy be of great use for this purpose.

The Committee feels that there is at present no agency considering this over-all picture of wartime and postwar conservation and salvage, and is convinced that such an agency should be set up, or the duty specifically assigned to some existing agency. The factual and technical information gained during the wartime period should be of great value in taking care of the postwar problem. In addition, it is from the individuals engaged in wartime salvage that may come the technicians and personnel best fitted to handle salvage in the postwar period.

Is an inventory kept? If so, does it indicate the present location of each item of material? How much is "consumed" and how much on hand?

What possibilities are there of making constructive use of any remainder? In Canada, or as an instrument of world rehabilitation? Where and with what effect will these accumulations fit into our postwar economy?

The above suggests some of the questions which will arise and some government agency should be in a position to give well informed and reasonably precise answers to these.

PEACETIME

The importance of salvage and conservation will not end with the war or with the disposal of all the surplus of war materials in the postwar period.

Salvage was before the war a hundred million dollar business in Canada and was capable of great extension. It will undoubtedly be greatly extended after the war.

Conservation will play an even more important role.

Canada has been extremely wasteful of her resources and the war has brought home to most Canadians how extremely costly this waste has been.

Inability to secure articles, shortages of goods hitherto taken for granted, controls through priorities and rationing, necessity of using again articles customarily discarded, the various salvage and conservation campaigns—are teaching Canadians a needed lesson.

The people of Canada will be ready for, and will expect, a well-considered policy for the conservation of their resources and this Committee suggests that immediate study should be given to this question.

PREVIOUS REPORT

In its report of July 18, 1942, the Committee reported on its enquiry into the operations of the following salvage agencies:

1. Salvage Officer of Comptroller of Treasury,
2. Army Salvage and Disposal Board under Master-General of Ordnance,
3. Army Supply and Transport Directorate under Quartermaster-General,
4. Air Member for Supply, R.C.A.F.,
5. Director of Naval Stores,
6. Scrap Disposal Branch of Munitions and Supply,
7. Steel Controller, of Department of Munitions and Supply,
8. Wartime Salvage Limited,
9. Wartime Prices and Trade Board and Administrators,
10. Fairmont Company Limited,
11. Salvage Division of Department of National War Services,
12. Scrap Dealers.

The Salvage Office of the Comptroller of the Treasury was established some years ago to receive lists of salvable goods from departments of government and to transfer these goods to other departments which could make use of the materials or to dispose of them by sale.

The salvage agencies in the Army, Air Force and Navy repair articles, convert where possible obsolete and other unusable stores into articles capable of being used by any Branch of the Services, make transfers to other services or to government departments, and dispose of the balance by sale. The activities of these agencies cover a wide range within the Services and efforts are made to prevent waste and to effect the maximum of salvage.

The Scrap Disposal Branch of Munitions and Supply controls the scrap from Government-owned and Government-financed companies.

The Steel Controller and the Metals Controller exercise various powers enabling them to secure scrap metal, regulate the movement of it and direct it to the consumers.

Wartime Salvage Limited is a Crown Company set up under the Wartime Prices and Trade Board with general power to deal in waste or used matter and goods, wares and merchandise of all kinds.

There are various administrators of the Wartime Prices and Trade Board, such as Used Goods Administrator, Waste Paper Administrator, Oils and Fats Administrator, Wool Administrator, who work in their specific spheres in encouraging and regulating the salvage and flow of particular articles.

The Fairmont Company Limited is a Crown Company incorporated by the Department of Munitions and Supply, which is the sole purchasing agency for scrap rubber.

The Committee in its earlier enquiry studied the operations of these various salvage agencies and also enquired into the Salvage Division of the Department of National War Services and also the position of the Scrap Dealers.

Other Conservation and Salvage Relations

The field of conservation and salvage is by no means limited to the specific agencies to which the Committee has given more particular study.

There are controllers, administrators and directors interested in many particular products. In some cases these are entirely second-hand products. In other cases they are new products which are being controlled, administered or directed. Those dealing with new products have, or should have, the same interest in conservation and salvage as there must of necessity be a close relationship between the new and second-hand products.

The Supplies Controller, the Construction Controller, the controllers over different phases of war production, those in charge of Industrial Planning and Production Planning, the Cost Accounting Officers of the Treasury, are some of the others who have a real interest in the conservation of materials and man-power.

Considerable has been done in Canada's war plants to conserve materials and man-power through the finding of satisfactory substitutes for critical materials, by enabling workers to produce more by new or improved methods, and by getting more production per machine by short cuts in operations. The following may be cited as an instance of this conservation: The changing of the old brass machined design to a zinc die casting machined design of the body, magazine, cap and striker pin for No. 119, mark 1, percussion fuse has meant the substitution of 12,510,000 lbs. of zinc for 43,605,600 lbs. of brass, the saving of 427,800 lbs. of bar steel annually and the saving of 996,780 standard hours of labour at peak production and releasing 18 machine tools. The estimated net annual saving on this item alone is \$5,698,390.

Salvage Division of Department of National War Services

The Committee during its present enquiry has studied more particularly the operations of the Salvage Division, the work of the voluntary salvage organizations and the services of the scrap dealers.

The Ottawa Staff of the Salvage Division consists of the following:—

Director
 Executive Assistant Director
 Industrial Organizer
 Assistant to Director
 Administrative Secretary
 General Office Staff, 8

There is the following provincial organization:—

Nova Scotia—1 organizer
 New Brunswick—1 organizer
 Prince Edward Island—1 (part-time) organizer
 Quebec—2 (proposed 1 Provincial Supervisor and 4 field men)
 Ontario—1 Provincial Organizer and 3 field men
 Manitoba }
 Saskatchewan } 1 Provincial Organizer and 4 field men
 Alberta }
 British Columbia } 1 Provincial Organizer and 3 field men

The Division has supervision over the voluntary salvage organizations which are required to be registered with and report to the Division. There are some 1,752 registered salvage committees, 69% of which have reported, and in addition, some 2,000 other organizations such as branches of Red Cross, Salvation Army, Canadian Legion, Knights of Columbus, etc., which do some voluntary salvage work.

The work of the Division is promotional. It carries on advertising and other educational campaigns to arouse the public to the importance of salvage materials, and engages in organization work to bring out the salvage commodities which it is instructed are required for the war effort.

Form of Organization of Voluntary Committees.

The Committee examined the types of voluntary salvage organizations operating in various communities in different parts of the country.

There is a considerable lack of uniformity in the form of organization and in the methods employed. This is not surprising and is not necessarily a weakness. Sectional and local differences must be considered and taken into account and that form of organization used which is best adapted to the community.

Success is largely dependent upon the organizing ability of the leaders in the voluntary committees and the enthusiasm of the workers. These essentials cannot be secured simply by setting up any particular type of organization.

Nevertheless, with those essentials present, a good form of organization will enable greater success to be achieved.

The Committee heard evidence concerning what are known as "The Citizens Committee Plan" and "The Block Plan for Volunteer Organization" and is of the opinion that these plans merit study by interested communities. The Block plan envisions a general Citizen Committee co-ordinating all local war auxiliary services with sub-committees, one of which is the Salvage Committee. Other committees relate to various auxiliary war services and proceeds from salvage are used to finance these services. The plans are primarily intended for an urban community, which for the purpose is divided into zones, sectors and blocks each with its leader.

To date some 60 communities across Canada have been organized on this basis and have found it an effective form of organization.

In many cases municipal authorities lend their aid to salvage work. The Committee is of the opinion that municipal governing bodies, urban and rural, are a permanent and local base around which salvage and war services campaigns should function. Their close contact with individuals in the community and their permanence of organization appear to make them particularly suitable for this purpose. The municipal body need not necessarily perform the salvage work itself but should assume the responsibility for the proper organization of such activities. Further, the active assumption of this responsibility in wartime would fit these bodies to be valuable agencies in postwar and peacetime salvage and conservation. The Committee, therefore, recommends that this suggestion be given careful consideration.

VOLUNTARY SALVAGE COMMITTEES

This Committee has had before it representatives of various salvage committees.

The activities of these committees have related to commodities which they have been encouraged to salvage, such as scrap metal, rubber, waste paper, rags, fats, greases and bones, glass.

Scrap Metal

Scrap metal is a vital essential to war production and is the most important item of salvage.

Modern war requires huge quantities of steel. Each individual soldier to-day requires an average 4,900 pounds of steel in the form of carried or supporting equipment. In the last war he needed only 90 pounds.

In the production of steel both pig iron and scrap steel are used. It takes about two tons of ore to produce one ton of iron. In open-hearth steel furnaces, one ton of scrap steel is used for each ton of pig iron. Usually 65% scrap is used in foundry furnaces to make castings. In electric furnaces 100% scrap is used.

The big problem in connection with scrap metal is getting it from the uneconomic areas to the consuming mills.

Wartime Salvage Limited some months ago arranged to purchase scrap metal through the elevators from the farmers in Western Canada at a price of \$7.00 per ton at the point of shipment. This arrangement has worked out satisfactorily and has brought in large quantities of scrap.

Recently arrangements were made to make use of the county wardens and the municipal councils and school districts in Ontario as the agency through which Wartime Salvage Limited would purchase scrap on behalf of the Steel Controller.

It is intended to make somewhat similar arrangements in the Province of Quebec and the Maritimes. Wartime Salvage Limited also operates through other arrangements in the Province of British Columbia and in Northern Ontario.

It also purchases direct from the dealers.

Some sources of scrap metal are still largely untouched, such as wrecked ships, rails of street railway systems no longer operating, ornamental fences, abandoned mill or mine equipment in remote areas. In some cases, it would not be possible to salvage this material without a larger subsidy than appears warranted while more readily accessible scrap is still available. These sources may be considered a reserve to be called upon as required.

Another remaining source of scrap metal is city dumps. It has been suggested that these should be dynamited to secure the buried scrap, particularly automobile bodies. Evidence was given that some dumps are being dynamited

as an experiment. There may be difficulties in the way, including the question as to whether the procedure might be dangerous from a health point of view. There is the uncertainty as to what the cost or the results in materials would be.

The Committee was informed of the situation existing on the Pacific Coast where there are undeveloped iron ore deposits, considerable quantities of scrap being shipped to the East, and steel plates being shipped from the East to supply a relatively large shipbuilding industry. It was argued before the Committee that the ore should be developed and a steel mill established, or that there should at least be facilities to process the available scrap. Against this view there were arguments advanced that such a project was not warranted at this time. The Committee was not in a position to examine all the factors involved.

Tin Cans

The salvage of tin cans, either for the tin content amounting to approximately one per cent or the steel content, has been a much discussed question by the public and government agencies.

The Committee attempted to explore the matter exhaustively as possible.

Approximately 300,000 tons of steel are consumed annually in the manufacture of tin cans in Canada.

When the tins have gone through an incinerator and the tin burned off, the steel can be used in steel furnaces when suitably baled but this does not make a good charge and the mills are reluctant to accept it. It will be noted that the tin content is lost in this process. Where incinerators are available local salvage committees should explore the possibility of reclamation of steel scrap from tin cans. The quantity available, transportation costs and proximity to a market should be taken into consideration.

The tin content, however, is the most urgently needed at the present in our war effort and the Committee therefore considered the problem from this point of view.

The problem is complicated by the fact that conservation measures are being taken to decrease the production of tin cans and to eliminate the use of these wherever possible. In addition, electroplating the steel plate with tin is reducing the amount of tin required to .5 per cent or less thus further decreasing the future reclamation value.

There are at present no detinning plants in Canada. However, a small experimental one has been set up and a close study is to be made of the results.

The United States is increasing its detinning plants by erecting four or five new ones at strategic points. These points are in the densely populated areas of the U.S., and where there would be a sufficiently large accumulation of tin cans to supply a plant economically. Canada has no comparative areas in density of population although Montreal and Toronto districts would be the nearest approach.

The expert opinion offered to the Committee was that at present it would be uneconomic and unjustifiable to erect detinning plants in Canada. The alternative suggestion is that in Canadian districts of great density of population it might be possible to collect the tin cans for shipment to the nearest U. S. detinning plant. Further study should be given to this suggestion.

It is quite apparent that the salvage of tin cans must be determined by the degree of urgency of need of (1) tin and (2) scrap steel.

Further surveys and analysis of the allied and particularly the North American situation with regard to these metals should be made so that the degree of urgency could be realistically determined.

Rubber

Fairmont Limited, a crown company, is the exclusive purchaser of scrap rubber.

Intensive campaigns have been put on to assist in the salvaging of this vital commodity and have met with a satisfactory measure of success. The Post Office Department has made use of its mail carriers in the Provinces of Ontario and Quebec to collect rubber and this brought very creditable results.

The Committee in its previous report dealt rather fully with the salvaging of scrap rubber and has nothing further to add at this time.

Waste Paper

Canada, before the war, was an importer from the United States of waste paper, although there were some exports from Canadian points some distance from consuming areas where paper board or paper mills were located in Canada.

In the fall of 1941 the Canadian demand for waste paper was extremely high and steps were taken to make Canada self-supporting in this regard.

A difficulty was that the mills could import more economically than they could extend the areas from which they received waste paper.

Wartime Salvage Limited was incorporated and served as a purchaser of waste paper and divided the costs of its operations, including freight charges, among the mills to whom the waste paper was delivered.

A campaign was put on by the Salvage Division encouraging the collection of waste paper.

It was not possible from an economic standpoint to bring waste paper from Western Canada to the East, and that paper was not being purchased by Wartime Salvage Limited but, outside of the Winnipeg and Vancouver areas where there were mills, was being exported to the United States.

A waste paper salvage campaign was also put on in the United States. In both countries the response was such that the markets were temporarily swamped. The United States shut off imports from Western Canada.

The Salvage Division was obliged to advise the people in Western Canada not to collect waste paper except in the areas where outlets existed.

Wartime Salvage Limited took over considerable quantities of waste paper which had been collected by western salvage committees and the paper mills underwrote the loss.

It appears that the result of the notice to discontinue the salvaging of waste paper, except where a local outlet existed, was not only to dry up the flow from the uneconomic areas but to impede it in some areas where there was an outlet. The Committee feels that this harmful result could have been avoided if the notice sent out had designated those areas where a local outlet existed and where the salvaging of waste paper or particular grades of waste paper should be continued.

The sorting of waste paper is a very technical business. There were formerly over 100 different grades of waste paper and with drastic reductions made there are still 59 grades. Almost 80 per cent of the collections from voluntary organizations was of newspaper, which does not make satisfactory board or roofing or paper.

There appears to be a demand for the better grades of paper properly sorted.

The sorting of waste paper stock is an exceedingly important function. On the sorting depends the ability of the mill to obtain maximum production or to revert to a minimum output. It is a technical job and inefficient sorting and grading can prove very costly. For instance, very little asphalt paper or board

in a bale may ruin five or six tons of board. Mixed waste paper may bring from \$6 to \$10 per ton. Properly sorted, the higher grades of paper in the mixed lot would bring from \$25 to \$40 a ton, or even more.

Greater use might be made of waste paper replacing chemical pulp, thus saving the raw material and manpower required to produce that pulp. Against this is the factor of electric power—the pulp mills are located, for the most part, in areas which are not short of electric power, while the paper and board mills are located in areas which are short. However, there is the other factor of conservation of metal, particularly tin, in packaging. The logical substitute may be paper board. There is under the Wartime Prices and Trade Board a committee on packaging investigating the whole question of packages, whether of tin, glass or paper, with the dual purpose in mind of replacing tin and at the same time making the most effective use of available substitute material. Restrictions are also being put into effect on the use of luxury packages.

The Committee recommends that research work and experiments should be carried on to find additional uses for waste paper.

Rags

Mixed household rags are divided approximately as follows:—

	Per cent
Roofing rags	60
Wiping rags	15
Cotton rags suitable for making of paper	5
Woollen rags	20

Roofing rags have a reasonably ready sale although some difficulty has arisen through the cutting down of the asphalt requirements of the roofing manufacturing concerns.

Wiping rags are badly needed as Canada still has to import possibly 50 per cent of her requirements.

There is a ready market for cotton rags suitable for the manufacture of paper.

That part of woollen rags which is shown as knitted rags, sweaters and knitted underwear, is needed very badly because it is required for military blankets and the freize and overcoating for the Services. There is difficulty in disposing of old overcoating rags which constitute about possibly 40 per cent of the 20 per cent, or about 8 per cent of the whole of household rags. This formerly went into the making of felts and civilian overcoats and these looms and cards are now devoted to war requirements.

Certain suggestions were made to the Committee that appear to have value. Owing to the shortage of wool, export licences are required before any wool can be exported. There are certain higher priced types of fine woollen rags and new clips which find no ready market in Canada, and the price therefore is much below that which can be obtained in the United States. Included in these are fine graded merino clips, fine felt wastes, certain types of paper makers' felts, fine botany knitted stock, both in solid and assorted colours, certain types of noils.

This type of stock is of little or no value in the Canadian war production program. It would appear, therefore, that the sensible course to follow would be to permit these to be exported to the United States and thus secure United States values in desirable United States currency.

It was further pointed out to the Committee that Canadian plants are inclined in normal times to use the best base material whereas war needs have indicated that inferior grades can be profitably and suitably used. The

plants show reluctance to experiment. An example is the use of shoddy wool where it has been found that by proper handling the shoddy can be made just as serviceable as the better and higher priced materials. The Committee recommends, therefore, that Canadian plants be urged to explore the possibility of making use of all available grades of scarce commodities. The Committee further recommends that a survey of our relationship with the United States be made to see if there are barriers to the export of any other commodities which are not required in Canada and which could be profitably exported to our Ally, the United States, and conversely as to the possible export of commodities from United States to Canada. This again illustrates the importance of close co-operation between Canada and the United States in co-ordinating for the purpose of the war effort the economies of the two countries.

Oils, Greases, Fats and Bones

Oils, greases, fats and bones are urgently needed.

The war in the Pacific has cut off the main sources of supply of vegetable fats and substitution must be effected to replace this loss in normal supply.

Fats are required to make glycerine required for explosives. Bones are also required for war industries, particularly for the making of glue.

Canada requires 35,000,000 pounds of fat a year.

A Fats and Bones Canada-Wide Salvage Campaign was put on, commencing December 1, 1942, by the Oils and Fats Administrator and the Salvage Division of the Department of National War Services.

The Canadian meat dealers, as a contribution to the war effort, have undertaken to accept salvaged fats and bones at their stores and see that they are forwarded to the renderers and meat packers.

The customer is paid 4½ cents per pound in Ontario and 4 cents per pound elsewhere for rendered drippings and 1 cent per pound for household scrap fat. The meat dealer is paid 1 cent per pound for his services. The householder may, of course, donate the fats and bones to the local Salvage Committee. Salvage Committees may ship direct to renderers and meat packers and receive the same price as paid meat dealers.

There is no payment to the customer for bones because the money value is negligible although they are extremely important to the war effort. The meat dealer or Salvage Committee is paid 25 cents per 100 pounds for either cooked or green bones.

Customers are asked to bring their rendered drippings in widemouthed tin containers—never in glass or paper. Cooked bones and green bones are required to be brought in separate cartons.

It is suggested that the householder should keep the drippings in refrigerator or a cool, dark place until at least one pound is collected.

The arrangement now in effect in Canada is similar to that in operation in the United States.

The Committee had some evidence before it indicating that salvage organizations had found difficulty in securing a market for fats and bones. This was before the present arrangement was made for disposal through the meat dealers. The plan is still in its initial stage and it is too early to express any conclusions as to its success.

Glass

Glass is salvaged for the most part in the form of bottles.

Bottles were previously not handled to any great extent as a second-hand article owing to the facts that the raw material was readily available and the manufacture was a cheap and simple matter. Dealers were only in

the larger centres and for the most part were small and not equipped to efficiently sort and wash the bottles. The facilities were not available to largely increase the handling.

Certain types of bottles find a ready market at prices even higher than that of new bottles, but a certain difficulty still exists owing to the labour required to sort and wash them.

Cullet, or broken glass, has a ready market as an ingredient in the manufacture of new bottles.

Bottles have not been considered as an important item of salvage. Care is being taken, however, not to discourage altogether the collection of bottles. This might have a deterrent effect on other vital salvage activities. Moreover, bottles may move into a more important position through the need to conserve labour used in the manufacture of new bottles and also the possible use of bottles as containers in place of tin cans.

Salvage of Waste Oil

The Committee investigated the salvage of used lubricating oil available from the Armed Services, having in mind the public interest as to whether such oil is being conserved to the maximum extent.

It is a popular misconception that the consumption of lubricating oil by the Armed Services represents a very high proportion of the total lubricating oil used throughout Canada, whereas, in fact, it has been established that the consumption is less than 10 per cent of the total.

Owing to the nature of the high speed and heavy duty equipment used in present day war training, the amount of oil burned up in operative use has necessarily increased, leaving only a small percentage of the total available for salvage. The Committee was advised that improvements in operating methods and equipment, together with improvements in the oil itself, still further reduce the percentage of waste oil.

The report, which this Committee submitted to Parliament in 1941, referred to an arrangement under which the Air Force was prepared to turn over to the Army waste oil to be reclaimed and used in Army vehicles.

It was disclosed to the Committee at the present enquiry that in the interests of oil conservation both the Air Force and the Army, in collaboration with the National Research Council, have carried out extensive investigations and tests over many months in order to determine how this waste oil could be best utilized. As a result of these investigations, it has been established that before this oil can be safely re-used, it is necessary that it be completely re-refined in a plant properly equipped and with full laboratory inspection and control. The evidence showed that all waste oil is being offered through the proper channels for sale to the refineries and civilian contractors on a competitive basis.

The Committee in its 1941 report urged that every possible care should be taken to ensure the safety of the personnel of our Armed Services and the maintenance of the very costly equipment placed in their charge, and that these should not be endangered by the use of oil of uncertain qualities. The Committee is still very strongly of this opinion and considers that every precaution should be taken to prevent this happening and that, therefore, what is ordinarily called reclaimed oil should not be used in the Services, particularly in view of the fact that a civilian use can be found for this commodity.

The Committee is of the opinion that the whole matter of salvaging waste oil is in essence a national problem instead of one restricted to the Armed Services, and that the whole problem should be given further detailed study from that angle.

Scrap Dealers

There appears to exist a rather widespread feeling against scrap dealers. The Committee is of the opinion that this is a prejudice or misunderstanding and that five reasons can be given for it.

1. Lack of appreciation on the part of the public of the importance of the scrap business as an economical part of our salvage setup.
2. An assumption that it is not necessary to have our salvage scrap go through the scrap dealers.
3. A suggestion of undue profit by the scrap dealers.
4. The allegation that scrap dealers are grasping and unfair in their practices and are seeking to make an exorbitant profit out of the patriotism of the public towards the war effort.
5. That the scrap business is generally in the hands of people of the Jewish race.

The Committee is convinced that the scrap dealers with their plants, equipment, personnel and experience do play an important and essential part in the preparation and sorting of scrap for disposal to the mills or other consumers. This sorting and preparation is often a matter requiring very considerable skill, experience and specialized knowledge. The returns from such scrap are greatly increased by the proper sorting, grading and preparation.

The need for sorting is obvious. For example, there are many different grades of iron and steel scrap alone and each is used for a different purpose. The mills require scrap cut or broken to charging box or cupola size and the sizes of the charging boxes vary with the different mills.

The scrap dealer, to fully and efficiently prepare the scrap, must have huge shears to cut the steel, oxy-acetylene torches to burn through it, baling presses to compress light steel, electric magnets for handling materials and enclosed drops where iron can be broken.

It is necessary and profitable in many cases for scrap to be sorted and prepared and in such cases the logical course of such scrap is through the hands of the scrap dealers. In cases where sorting and preparing is not required, shipments can be, and quite often are, made direct to the consumers. The Scrap Disposal Branch of the Department of Munitions and Supply often ships direct where they are handling particular scrap not requiring sorting or preparing. This is also done by Fairmont Limited and is the method followed also in the matter of collapsible metal tubes. However, even in some cases where the sorting and preparing can be done by others than scrap dealers, the mills prefer to deal through established dealers, and sometimes make their purchases through a sole dealer.

The prices of essential war scrap and the profits which the dealers can make are controlled and their operations are under close supervision.

It may be interesting to note the effect which the controls have had on scrap metals during this war, as compared with the last war. The following figures will afford this comparison:

	1915	1917	1918	1942
Electrolytic copper per 100 lbs....	....	\$38 62	....	\$11 55
Prime Western zinc per 100 lbs....	\$27 50	....	....	5 15
Pig lead per 100 lbs.....	....	14 62	....	5 00
No. 1 Heavy melting steel per gross ton.....	....	....	\$29 50	18 00

The scrap dealers appear to be sincerely desirous of making a real contribution towards the war effort and to merit the confidence of the public.

Evidence submitted to the Committee shows that some Jewish dealers at least clearly recognize that their race has most at stake in this war and are looking upon their salvage operations as a contribution to the war effort.

A suggestion was also made to the Committee by the Secondary Dealers' Association that the books of the scrap dealers and their operations should be audited and inspected by the Government in order to assure the public that undue profits were not being made.

Some misunderstanding and criticism occasionally arises where a scrap dealer receives an article as scrap and then resells it, after repairing, as a second-hand article for further use. The Committee feels that it is not true conservation to convert to scrap any article which can be put to further proper use and can save the materials and labour required to make a new article and is, therefore, unable to criticize this practice. However, the Committee does feel that a method should be found whereby the scrap dealer would give a strict accounting of any profit made on such transactions.

The Committee feels that more publicity should be given as to the part played by scrap dealers and also as to what is involved in proper sorting of scrap of various kinds.

Scrap Piles

The presence of piles of scrap in dealers' yards, on railway sidings or in the possession of voluntary salvage organizations often causes critical or discouraging comment.

It is advisable, of course, that scrap should be moved as expeditiously as possible to the point of consumption in order to avoid any feeling that it was a wasted effort on the part of the public to collect such scrap.

However, what is mainly required is the education of the public to appreciate that these scrap piles are the country's reserve to be drawn upon as required, and that the growth of these piles is not something to be afraid of or discouraged by, but something to be exceedingly encouraged by and viewed with pride and satisfaction.

It was suggested that signs should be placed on piles indicating that these were all a part of Canada's scrap reserve. Such signs as "Stock Pile for Victory" are in use in the United States. Publicity might also be given in other ways to impress upon the public the true nature of these scrap piles.

SALVAGE AND CONSERVATION IN UNITED KINGDOM

Salvage of material in the United Kingdom has long been an organized industry. Since the First Great War the recovery of salvable material has been under the direct supervision of local authorities. Since early in the present war, branches of the Ministry of Supply have been organized under the names of Economy, Salvage and Recovery, and Disposal branches. The functions of these branches are as follows:—

- (a) Economy branch..... Prevention of Waste
- (b) Salvage and Recovery branch..... Rescue from Waste
- (c) Disposal branch..... Disposal to best advantage

The functions of the Economy branch fall under three heads:—

- (1) Economy in use.
- (2) Economy in manufacture.
- (3) Substitutions.

Of these three branches, that dealing with Salvage and Recovery was of most interest to the Sub-committee. The functions of the branch can be classified under the following heads:—

- (a) Organization for the recovery of materials of which the nation is short— or is likely to be short;
- (b) Recovery of many kinds of domestic waste;
- (c) Salvage of industrial by-products and waste;
- (d) Salvage from the Armed Services;
- (e) Recovery and utilization of kitchen waste.

Under the British Plan, four principal steps in the recovery of materials are undertaken:—

- (1) Organization for discovery and assembly.
- (2) The preparation of material for transportation.
- (3) The problem of transportation.
- (4) Arrangements for delivery and utilization.

The Ministry of Works and Buildings acts as agent for the Ministry of Supply and provides the necessary labour to sort and make materials available for transportation to points where they can be utilized.

In Great Britain the Ministry of Works and Buildings, which corresponds to some extent to our Ministry of Public Works, has already in existence a complete Regional organization with executive control thus they are best able to engage labour most suitable for the work involved, and they are armed with authority through which they may requisition necessary premises.

The transport of material is arranged for by the Transportation Branch of the Ministry of Supply. Delivery instructions are given by the appropriate Control or by the Ministry of Works and Buildings. In certain cases the Ministry establishes storage dumps for material collected and awaiting utilization.

All local authorities with a population of over 10,000, or in the case of urban districts, over 5,000, are compelled to provide a regular and efficient service for the collection of waste paper, metal, bones and rags. They must make monthly returns as to collections and disposals.

Voluntary helpers have been enlisted to assist in the connection of salvable material; they are known as "Salvage Stewards."

Local merchants are compelled to save material of all kinds and their representatives meet regularly to assist the local authority.

Voluntary organizations of all kinds including the schools and Scouts are actively engaged in salvage projects.

Concentrators for the handling of household waste have been established and local authorities in their vicinity have been placed under compulsion to collect all kitchen waste and deliver it to the concentrator.

Industrial salvage is on a strict compulsory basis under the direction of the Ministry.

All usable material is carefully recovered and renovated in substitution for new material.

A National Stock List is prepared monthly listing salvaged material for use and sale. In addition, surplus general stores of new and reclaimed nuts, bolts, etc., are disposed of through an Exchange and Market Scheme. These are sold to contractors through Local Central Salvage Offices.

From the above it will be seen that the British Plan is a highly organized national and public enterprise suitable for a thickly populated country where salvage has always been an important industry. It has many features which the Committee recommends should be studied carefully in Canada.

SALVAGE AND CONSERVATION IN UNITED STATES

In the course of its enquiry the Committee had the liaison officer between the Canadian Government and the Conservation Division of the War Production Board of the United States appear before it to submit evidence as to his work and the manner in which the United States is carrying on its salvage and conservation program.

In the United States all such matters have been placed under the War Production Board. One of the subdivisions operating under the direction of the War Production Board is the Industrial Salvage Section, Conservation Division. The Conservation Division reports directly to the head of the War Production Board. It is divided into four sections: Salvage, Conservation and Substitution, Simplification and Specification. The Salvage Section is in turn divided into four sub-sections, to wit: General Salvage, Industrial Salvage, Special Projects and Automobile Graveyard. The Conservation Division has a very substantial field staff located throughout the United States, which for this purpose is divided into regions determined by geographic and economic reasons.

The Conservation and Substitution Section is composed of a group of technical experts on various raw materials used, such as steel, alloying elements, copper, lead, tin, chemicals, plastics, leather, textiles, paper and other like materials.

The Specification Section is also composed of a group of technical men—engineers—who survey a variety of specifications for buildings and materials all with a view to conserving critical materials.

The Simplification Section aims to simplify the design of as many articles as possible with a view to conserving critical materials through lessening of inventory, lowering costs through greater production, through standardization, and the increasing of production through standardization. Examples of the work done in this particular section are shown in plumbing equipment, storage batteries, electric cells, dry cells, baby carriages and a great variety of articles of this nature.

As has been already pointed out, Canada has a liaison officer attached to this Conservation Division of the War Production Board. He is, of course, located in Washington and his duties generally are to keep in touch with every development in the United States tending toward increased conservation and salvage, and to pass this information along to the different salvage agencies in Canada.

It is interesting to note that the Conservation Division of the United States feels that control of civilian production and use is fairly well under way, and that the profitable field remaining in which to produce results is that of the Armed Services, who, of course, are very great users of critical materials. This result is to be achieved by frequent consultations between the appropriate Service heads and the proper officials of the War Production Board. Apparently, the Service heads are aware of the necessity of conservation and are co-operating fully with the civilian government officials.

Great stress is laid on the statistical sections of the War Production Board. It has been found in the United States that a necessary adjunct of any wise conservation policy is the gathering together of the facts with regard to the problem being attacked.

It is interesting to note that the difficulties which presented themselves in the United States are very similar to our own. The salvage of paper, bottles, tin cans and scrap metal, appear to have met the same difficulties with which Canada has been faced. It is noted that the same prejudice against scrap

dealers exists in the United States as in Canada, and also in connection with the community scrap piles resulting from the salvage campaigns. In the United States considerable publicity has been initiated by the Conservation Division to educate the public generally with regard to these matters.

In the matter of the conservation of tin cans, the situation appears to be somewhat different to that in Canada because of the much greater quantities of salvage material, and because the population of the United States in certain areas is sufficiently dense to permit of a program in these areas to save the tin content and the steel scrap as well.

Generally speaking, the Committee notes the greatly expanded administrative setup of the Conservation Division of the War Production Board in the United States and the resultant greater cost of operation. To illustrate this, there are ninety-one senior officials receiving a total annual salary of \$509,000 attached to the Conservation Division, and this has been considerably increased since the date on which this was the case. Canada has made much greater use of voluntary organizations.

The Committee also notes that under the United States setup this particular work is co-ordinated under the War Production Board. This Board will, therefore, during the war be collecting information of great value in dealing with the problem of conservation and salvage in the postwar period.

From the general information received by the Committee, the Committee does not feel itself sufficiently informed to pass judgment on the relative merit of the United States and Canadian organizations charged with the like duty, but recommends that continuous study be made of developments in the United States.

Co-ordination of Canada's Wartime Salvage Agencies

There appears, at least on the surface, a lack of co-ordination or co-ordinating authority in Canada's wartime salvage operations. The very multiplicity of agencies suggests this. The Committee has been unable to ascertain that there is the necessary over-all surveying, studying and planning which the situation would appear to require, although some agencies have done excellent surveying and planning within their respective fields. There is a lack of knowledge on the part of some of the agencies of the work being done by other agencies, and in the case of some agencies, a lack of knowledge that such other agencies even existed. Lack of co-operation is evident in some instances where co-operation would be beneficial. It is quite probable there is some unnecessary duplication of effort. The boundaries of the respective fields of the various agencies are in some cases so indefinite that some overlapping and misunderstanding and friction is almost bound to occur. There is apparently no single agency with authority to take a long range view of postwar salvage and to integrate present salvage activities with the salvage activities which will become necessary at the end of the war.

On the other hand, the picture is neither so black nor so simple as the above might appear to indicate. In the case of the Armed Services, it is a sound principle, accepted by this Committee, that salvage within the Services is a Service matter and must be under Service control until at least an article is found to be of no further use to the Services. The same principle may be applicable to other agencies. The problems which the various agencies have to face are often entirely different and must be solved in different ways. The exigencies of the situation require many agencies and many of the agencies occupy a restricted and very specialized field. With salvage and conservation of necessity entering into almost every aspect of our war effort, and to a continually increasing extent, it is clear that complete co-ordination is difficult. In a field where so much depends on individual enthusiasm, ingenuity and resourcefulness, and where immediate results are often the paramount concern, enforced co-operation and co-ordination might easily prove detrimental rather than helpful. As a matter of fact, there is a considerable measure of co-operation between the agencies and this appears to be developing naturally. Such co-opera-

tion was not possible at the beginning where everything was in a state of flux and where emergency measures had to be taken to deal immediately with urgent situations. The agencies had to mature first before there could be much in the way of co-operation or co-ordination. Some of the troubles that appeared on the surface to be alarming were only growing pains. It is easy to point out and criticize instances of duplication and overlapping, but it is well to remember that the zeal which prompts one agency to encroach somewhat on the field of another may not always be a bad thing and that some duplication may be quite unavoidable without dangerous cramping of activities. It must be acknowledged to their credit that most of the agencies are at least virile and on the whole are doing a good job. Co-operation and co-ordination are only important as means to an end.

In its report of July 18, 1942, the Committee pointed out that co-operation between the wartime salvage agencies and co-ordination of activities were developing naturally and progressively. It was suggested that more could be advantageously done in this connection and recommended that means be found for closer co-operation between the agencies interested in particular problems.

The Committee finds at this time that such co-operation and co-ordination is still further developing.

The Armed Services within the past few weeks have brought about a fuller measure of co-operation and co-ordination by the appointment of an Inter-Service Committee on Boot Repairing and an Inter-Service Committee on Laundering. It would appear reasonable to expect the formation of a similar Inter-Service Committee on the Repair of Clothing. The policy might be possible of extension to cover the entire field of salvage, conversions and conservation within the Services.

There has been further natural development of co-operation and co-ordination between other wartime salvage agencies such as between the various Controllers and Administrators of specific commodities.

The trend should be, and no doubt will be, for more in the way of co-operation and co-ordination of the various wartime salvage agencies and their activities. It is probably true that to be most effective, this must come from the agencies themselves.

However, there are problems that the agencies are not adequately equipped to deal with either by themselves or through co-operation and in which direction must be given by a higher authority. These include the over-all surveying and planning of wartime salvage and conservation in both its national and international aspects; the immense problem of postwar salvage and conversion, and the peacetime program of salvage and conservation.

The Committee considers that in the same way as a war requires a Ministry of Supply, the postwar period will require ministerial direction to handle the salvage and conversion to the purposes of peace of the surplus war materials, plants and equipment which the end of the war will leave on the nation's hands. The plans in this connection should be made now.

It would also appear advisable that there should be ministerial direction to a current study of our entire wartime salvage and conservation operations including over-all surveys of our wartime salvage and conservation needs, and the examination of the possibilities of further co-ordination of the activities of the various wartime salvage and conservation agencies. There should also be thought given to the problems of peacetime salvage and conservation.

The above indicates the necessity of co-ordination in study and direction and the Committee recommends therefore that such task be made the responsibility of one Minister.

All of which is respectfully submitted.

ALPHONSE FOURNIER,
Chairman.

TENTH REPORT

27th January, 1943.

The Special Committee on War Expenditures has received from its 'Sub-committee No. 1 the following report on "Acquisition of Airport Sites" which it has considered and adopted as its Tenth Report to the House:—

SECOND REPORT OF SUB-COMMITTEE NO. 1

On October 14, 1942, this Sub-committee received a letter from the Minister of Transport, which reads as follows:—

"I beg to direct your attention to the enclosed editorial which appeared in the *Winnipeg Tribune* of September 24, 1942, and which refers to the purchase of an airport site at Gimli, Manitoba, by this Department. Certain other articles on the same subject have appeared in the same and other publications.

In view of the character of the criticism in question, we would be glad if an opportunity might be afforded to the valuers of this Department and, if you consider it advisable, those of the outside company which made an independent valuation, to appear before your Committee to present the facts, and to answer such questions as the Committee may desire to ask in relation to the land purchases referred to."

Last session, Sub-committee No. 1 was appointed on May 5, 1941, by the then Special Committee on War Expenditures, and directed *inter alia* to inquire into "airport, aerodrome and air force buildings construction, specifications and designs for such projects, and inspection thereof during construction". Reports were duly made by such Sub-committee on June 2, 1941, and August 20, 1941, with respect to a general study which it made in regard to the procedure for the acquiring of airport sites, and on November 3, 1941, these reports were presented in the House as the Fifth and Sixth Reports of the Committee.

Pursuant to the above-noted letter from the Minister of Transport, the Committee has heard evidence of departmental officials and valuers, as well as a statement by Mr. Hugh Phillips, K.C., who appeared before the Committee as solicitor for the *Winnipeg Tribune*, but for the reasons appearing in this report the Sub-committee did not hear evidence of the independent valuator or outside witnesses.

The Committee begs leave to present its report, findings and recommendations with respect to the procedure for the acquiring of airport sites.

All of which is respectfully submitted.

HUGHES CLEAVER,
Chairman of Sub-committee No. 1.

ACQUISITION OF AIRPORT SITES

1. In regard to the Gimli air field controversy raised by the *Winnipeg Tribune*, their solicitor has indicated that in the opinion of his principals a public inquiry should be held to accurately determine the value of the land acquired at Gimli; that expert witnesses should be called for and against the correctness of the actual purchase price paid for the land, in fact, that nothing short of an inquiry in the nature of a trial in public to determine the actual value of the land purchased would satisfactorily dispose of the matter. The Sub-committee has fully considered the scope of its authority and its reference by parliament. The Canadian War Expenditures Committee is patterned after the British War Expenditures Committee, and while its powers are in part somewhat wider than the powers conferred upon the British War Expenditures Committee, yet in the main its duty is to check Canada's war expenditures for the purpose of ensuring that all proper safeguards are set up in regard to the expenditure of public money. It is not the duty of this Sub-committee to supplant the responsibility either of the Public Accounts Committee or the civil courts. This Sub-committee does not express any opinion as to the need for further inquiry. In the light of the request made by the solicitor for the *Winnipeg Tribune* the Sub-committee believes that such an inquiry, if deemed necessary, could be more satisfactorily made as above indicated.

2. The Sub-committee recalled for examination Mr. J. A. Wilson, Director of Air Services, Department of Transport, and also heard evidence by Mr. Frank Thomas, Acting Right of Way and Lease Agent for the Department of Transport, in the acquisition of air field lands, Mr. J. H. Murphy, Mr. J. C. Kelly, Government Salvage Officer, and Mr. Clifford Johnson, District Right of Way Agent, C.N.R., for the western region including Manitoba.

In view of the charges which have been made that the purchase price paid for land at Gimli was in excess of its actual value, the Sub-committee has again reviewed the system now in operation with respect to the acquisition of land for airport sites and makes the following recommendation as an additional safeguard in the public interest:—

That whenever there is any evidence of the owners of property "ganging up" to demand prices for their lands in excess of the market price or when for any reason an independent valuation is required, then two independent valuers should be chosen instead of the present practice of appointing simply one independent valuator and that wherever possible their appointments should be on recommendation of the local real estate board. It is hoped that appointments of independent valuers made in this way would secure not only the best type of valuers but would result in making available to the valuers the combined experience and advice of experienced realtors in the district when necessary.

All of which is respectfully submitted.

ALPHONSE FOURNIER,
Chairman.

ELEVENTH REPORT

27th JANUARY, 1943.

The Special Committee on War Expenditures has received from its Sub-committee No. 1 the following report on "Aircraft Production and Shipbuilding" which it has considered and adopted as its Eleventh Report to the House:—

THIRD REPORT OF SUB-COMMITTEE No. 1

On September 4, 1942, Sub-committee No. 1 was allotted the following subjects in addition to the subject of Wartime Housing, Limited, already assigned to it:—

- (a) Aircraft Production
- (b) Shipbuilding
- (c) Government-owned Companies.

The Sub-committee has already made a report under date of July 15, 1942, with respect to Wartime Housing, Limited, which report was adopted as the Committee's Fourth Report and presented to the House on July 16, 1942.

Your Sub-committee has since proceeded with its inquiry into the subjects of Aircraft Production and Shipbuilding. In the course of its investigation since the adjournment of the Session, it has held sixty-nine sittings, has heard forty-seven witnesses, and has visited the factories of many aircraft producers in Canada as well as shipbuilding yards.

The Sub-committee begs leave to present its Third Report of findings and recommendations.

All of which is respectfully submitted.

HUGHES CLEAVER,

Chairman, Sub-committee No. 1.

Aircraft Production

During the years 1937 and 1938 small contracts for the construction of war aircraft were awarded to nine small companies organized for the purpose of aircraft production in Canada and as a result at the outbreak of war we had nine plants employing in all approximately 1,000 men and occupying a half a million feet of floor space. These plants at outbreak of war were producing a total of 40 planes annually. At outbreak of war the facilities of all of these plants, their organizations and personnel were available for expansion and in addition other industrial concerns have since entered the field of aircraft production. To-day Canada's aircraft industry employs over 75,000 employees, using a floor space of over five million square feet and produces over 400 planes monthly. In order to achieve this tremendous expansion in capital facilities and production the Government advanced very substantial capital assistance and in most instances little new private capital has been used. Commendation should be expressed with respect to the entire group from the Director of Aircraft production down to the youngest apprentice for the remarkable results which have been achieved.

The policy followed in the awarding of contracts was to give every existing aircraft industry a contract to produce the type of aircraft for which its plant and personnel were deemed to be best suited. The form of contract varies greatly with the type of plane.

As to the original contracts most of these were what has been commonly known as "cost plus." The so-called "cost plus" is a misnomer in regard to these contracts as the contractor does not profit by any increase in cost but simply receives a fixed fee per plane. The Sub-committee has carefully examined all of the contracts entered into with all of the companies for the production of aircraft and while it is the opinion of the Sub-committee that firm price contracts should be made as soon as sufficient production has been achieved in the different types of planes to render this possible yet the type of contract used would appear to be the best form of contract which could be devised in the circumstances. It is not in the public interest that definite price contracts should be negotiated until a proper price can be definitely ascertained by actual experience as any premature attempt to do this would doubtless result in either too high or too low a price being fixed, either of which results would be unsatisfactory. The Department of Munitions and Supply maintains an auditing staff of over 300 accountants who are constantly checking costs and supplying necessary data to the Director of Aircraft production and other government officials.

In visiting the different plants the Sub-committee made careful inquiries with respect to labour conditions to learn as to whether war industries are suffering through men being called up for the armed forces. The Sub-committee found that in some instances production has been seriously interfered with through the loss by industry of trained key men to the armed forces. It was found, however, in this regard that the Regional Boards under the National Resources Mobilization Act are working efficiently and that the difficulty has arisen owing to the fact that after a man has received one or two calls for service even though postponements were granted he becomes uneasy and enlists partly owing to the fact that he does not know as to whether further postponements will be granted, partly because he does not wish to be looked upon as a slacker and in part because he wishes to enlist in the armed force of his choice rather than be drafted into the army. A man with aircraft experience naturally favours the air force. This problem demands immediate and serious consideration.

Shipbuilding Production

The Sub-committee has heard the evidence of departmental officials and has visited many of the shipbuilding yards engaged in the construction of naval as well as cargo ships but has not completed its enquiry into this subject and consequently makes no general report at this time with respect to it.

RECOMMENDATIONS

As a result of its investigations to date the Sub-committee makes the following recommendations:—

(1) That the policy of placing fire insurance on material to be used for the manufacture of aircraft and also on the finished aircraft down to date of actual acceptance by the Department of National Defence for Air should be discontinued and all existing contracts amended accordingly to provide that this risk should be carried by the Department of Munitions and Supply and further that the amount of fire insurance carried by privately owned companies on their own property and chargeable by the companies as a cost item with respect to aircraft built under the aforementioned contracts should be restricted to an

amount not to exceed actual cost less depreciation which has been written off the company books and further that in negotiating for a fixed price contract allowance for fire insurance should be restricted in like manner. This recommendation is equally applicable to shipbuilding. It is not the intention of this recommendation to prevent manufacturers from carrying use and occupancy insurance with respect to its plant and equipment.

(2) While considerable progress has been made in the elimination of royalty payments with respect to the production of aircraft the Sub-committee recommends that with the exception of reasonable cash payments to original inventors resident in Canada and in allied countries all licence, royalty and patent payments with respect to the manufacture of war materials, equipment and planes should be discontinued and that the necessary negotiations should be carried on with the governments of our allies to secure this result.

(3) That as soon as company financial statements are available for the year 1942 a special study should be made of profits, accelerated depreciation and corporate taxation. The question of excess profits and accelerated depreciation has caused the Sub-committee considerable concern. Very substantial profits are being earned in some instances far in excess of normal profits and while the Excess Profits Tax Act should result in no one being allowed to retain any excess profits which have been earned yet in many instances we found, as a result of rulings which have been given, companies will at the conclusion of the war own valuable physical assets which have been entirely paid for out of money which would otherwise have been payable as excess profits. Steps should be taken now to prevent sale of physical assets and company reorganization during the postwar period to escape taxation or to provide for the sterilization of physical assets whose cost has been completely written off through permitting very drastic depreciation write-offs as are now in effect with respect to plant and equipment of wartime industry. The Sub-committee found that in regard to industries engaged in war production rulings have been given in most instances permitting plant and machine costs to be written off in three years.

(4) That steps should be taken to put into effect a plan whereby novel engineering practices and production knowledge achieved by each of the different aircraft and shipbuilding firms may be made available to all plants in Canada and in allied countries on a reciprocal basis. The Sub-committee finds that all of the different firms are seeking to step up production and to reduce costs and that these efforts are highly beneficial to Canada's war effort. The different individual firms have improvements in different individual operations which if shared with all other firms would be highly beneficial to our entire production.

(5) As to aircraft production there is a constantly recurring bottleneck in regard to materials, machines, instruments and tools and there is a constant and serious slowing up in production by ever recurring improvements in designs. Large United States manufacturers have found that better results are obtained by declining to permit changes in designs, to be incorporated into their production lines until sufficient time has elapsed to permit this to be done in the regular course of their production. It should be noted that U.S. do not interrupt their production lines in making alterations in designs. They complete their aircraft as originally designed and then have the alterations made in an adjoining plant operated for that express purpose. We also heard many complaints of delays in the furnishing of engineering with respect to changes in designs. The shortages and the delays above noted result not only in a slowing up of production but also serious labour loss. These delays not only break down labour morale but seriously increase cost.

This reference applies to the shipbuilding industry as well, though delays in that industry through changes in designs and delay in the supply of engineering have not been so prevalent.

(6) That periodic checks should be made of the factory personnel of all plants to make available to plants requiring them any specialists who are no longer required in the plant where they are presently located. This recommendation is made because of the fact that some plants have, on account of changing war conditions, been awarded contracts for the manufacture of many different types of planes and as a result have built up skilled personnel to meet these extraordinary demands and in some instances this emergency has passed. That greater encouragement should be given to induce female workers to take factory employment in war industry and that adequate steps should be taken to solve the present problem of "absenteeism" which the special Sub-committee finds to be especially prevalent in the factories where good wages are being paid. As the skilled labour shortage becomes increasingly acute the Sub-committee believes that the more scientific allocation of labour to essential industries becomes necessary.

(7) That steps should be taken to bring up the work of the Accounting Branch, Department of Munitions and Supply, to the point where it can be kept current at all times. The Accounting Branch is doing a splendid job but is behind with its work. The results to be accomplished by this work are twofold:—

1. to assist departmental officials in negotiating purchase contracts at the correct price;
2. to detect anything in the nature of excessive cost or wrongful payment.

In its investigations the Sub-committee found in one instance that an aircraft producing firm agreed to pay a salesman for release of an existing sales contract an amount equal to 50 per cent of its firm capital and which agreement the Sub-committee believes to be an improvident agreement and should not have been entered into had the facts been brought to the attention of the department promptly.

(8) That active steps should be taken now to plan for postwar salvage of physical assets owned by the Department of Munitions and Supply. Hundreds of millions of dollars of public money have been spent on buildings, plant and equipment for war production, some of which has been expended on private property and under which the department is under agreement to remove within a very short period of time after the cessation of hostilities. This whole problem demands special study.

All of which is respectfully submitted.

ALPHONSE FOURNIER,
Chairman.

27th January, 1943.

The Special Committee on War Expenditures begs leave to present the following as a

TWELFTH REPORT

A copy of the printed proceedings and evidence taken by your Committee is tabled herewith.

All of which is respectfully submitted.

ALPHONSE FOURNIER,
Chairman.



