

MUNITIONS AND SUPPLY

Book 16

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# *Actual Production*

*By*

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Minister of Munitions and Supply

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In reporting to Honourable Members on the current position of Canada's munitions programme, my task is much less difficult than in making earlier reports. Then, many of our largest projects were in the construction and tooling up period; now, most of our large projects are in at least partial operation. Then my report, necessarily to some extent, dealt with anticipated production; to-day I can confine my remarks to actual production, and at the same time give to Honourable Members a fairly comprehensive view of our munitions programme.

It is always interesting to see ourselves as others see us. Recently a British management and labour delegation made a tour of the United States and Canada, at the request of the United States Government, to survey the current position of war production. Four of the members were industrial executives and four were representatives of British trade unions. Last week the delegation issued its parting message as an official press release. I quote from this release:



"While on the North American Continent, we have been privileged to inspect over 80 different plants. During our stay in Canada, we have been able to see the production of naval and mercantile ships, aircraft, guns, machine guns, shells, machine tools and other wartime equipment of vital importance, being produced on a scale that not only surprised and heartened us, but which, we believe, will similarly surprise and hearten the people of the Dominion itself."

I was interested in the fact that this delegation believed it to be their duty to tell the people of Canada how well we are getting on. Evidently they had heard disparaging remarks from our own people. I am certain that no one in a position to know the volume of our current munitions exports has any desire to disparage our efforts. In saying this, I wish to say also that our effort is no better today than it was six months or a year ago. The only difference is that we are witnessing a later stage of our production programme. At the next Session of Parliament our output records will enable me to give a still more impressive record of Canadian achievement, but that again will be merely a later stage of the same programme.

At present, practically every plant in Canada capable of war work is engaged in war work, either wholly or in part. To September

30th the estimated dollar value of contracts awarded by the Department of Munitions and Supply amounted to approximately \$2,600,000,000. Of this amount, Canadian orders totalled \$1,506,000,000, which had been filled by Canadian production to the extent of \$1,325,000,000, from the United Kingdom \$40,000,000, from the United States \$140,000,000, and from other countries about \$1,000,000.

Capital assistance to industry for the extension of existing plants and for the construction of new plants, instalment of equipment, etc., aggregated a total of \$550,000,000, partly for Canada, partly for the United Kingdom, and partly for joint account.

## SHIPBUILDING

Our shipbuilding programme has been expanded to a point where total orders for ships now exceed \$500,000,000. To date, Canada has launched 77 corvettes and delivered more than 50 of these for active service; has launched 59 minesweepers, of which about 40 have been completed; and has also delivered 11 patrol boats, 19 motor torpedo and crash boats, and some 700 smaller boats, some with power and some without power.

Our cargo vessel programme is well under way, and two 10,000 ton cargo ships have already been launched and will be delivered this



autumn. Before the end of 1942, we expect to deliver into service about 100 cargo ships, of which 90 will be of 10,000-ton capacity and 10 of 5,000-ton capacity. Some 500 industries located across Canada from coast to coast are engaged in manufacturing components for these cargo vessels.

In addition to our cargo vessel programme, we are laying down keels for larger and faster corvettes and for a large number of corvettes and minesweepers similar to those already built. All our 17 major shipyards are working to capacity, and are being expanded to the fullest possible extent. There are 58 smaller yards working on our small boat programme.

## AIRCRAFT

Our aircraft industry has manufactured in Canada and placed, in service since the outbreak of war, or has assembled in Canada, 3,749 aircraft. In addition, we have received from the United States in the same period 1,268 aircraft. The present average rate of production is approximately 40 per week for all types, and in this regard it should be pointed out that the present production includes a heavier proportion of advanced trainers and service aircraft than in the earlier months of production. Link trainers are also being produced in Canada, with deliveries now well past the 100 mark.

We are now in position to manufacture aircraft to meet all the requirements of the Air Training Plan, as well as the aircraft requirements of the British training schools that have been located in Canada. We are in very substantial production of Hurricane fighters and Bolingbroke bombers for operational work, we are well advanced toward production of the Consolidated P.B.Y. boat, and we have recently undertaken production of the newest type of British 4-engine bomber, as well as a new type of British fighter plane.

The repair and overhaul of aircraft and engines, which is a rapidly growing responsibility as the number of planes in Canada increases, is being carried out by the Department in 29 plants strategically located across Canada. It is estimated that the number of aircraft requiring overhaul at the present time is 5,000 per year, and that a year from now the number of overhauls will reach 10,000 per year. This overhaul work represents a very substantial aircraft industry in itself.

## AUTOMOTIVES

The Canadian automobile industry has played a tremendous part in equipping the forces of the Empire. Already over 150,000 vehicles of all types, army trucks, personnel carriers, etc., have been delivered, and deliveries are continuing at the rate of thousands each



month. In addition, bicycles, motor cycles, buses, tires, spare parts, etc., have been delivered in large quantities.

In the field of armoured fighting vehicles, we are now delivering infantry tanks, cruiser tanks, universal carriers and armoured scout and reconnaissance cars at a rapidly expanding rate of production. Production of tanks began in June, and the rate of production has increased steadily since that date. Early in 1942 we are scheduled to achieve a production rate of 200 medium tanks each month.

Universal carriers came into production in the middle of the year, and already over 1,500 have been delivered. These very useful vehicles are now being produced at a rate of over 400 each month, and this rate will be substantially increased early in 1942.

Armoured scout and reconnaissance cars of Canadian design will be produced in quantity before the end of the year, and the production rate of hundreds per month will be reached early in 1942.

## GUNS

Guns and equipments, after long months of planning, building and tooling, are now in very substantial production. This is a wholly new Canadian industry, and has required heavy capital expenditure for plant and for training

of skilled personnel. The early period of low production is now moving into the crescendo of mass production. We have already delivered thousands of gun barrels of the anti-aircraft types, and are now delivering complete gun mechanisms. We have delivered tank guns and field guns, and the first of our naval guns will be ready this month. Altogether we are producing more than ten types of complete heavy guns, including anti-aircraft, field, tank and anti-tank and naval type guns, together with all mountings and parts to make the complete fighting units. The 1942 rates of production will be:

Anti-aircraft	— over	400 per month.
Field	— over	500 per month.
Naval	— over	150 per month.
Extra barrels	— over	1,000 per month.

The production of these intricate mechanisms is high testimony to the skill and determination of Canadian industry.

In the field of machine guns and small arms, Canada is making a worth-while contribution to the equipment of Empire forces with rapid fire infantry weapons. We have created rifle and machine gun plants that compare in size with any similar units in the world. We have already produced over 12,000 Bren guns and over 14,000 additional extra barrels. Honourable Members will note that, whereas the first Bren gun contract called for this number of



guns to be produced over a period of 2½ years, all deliveries called for under that contract have now been made. Production of this gun now runs at the rate of more than two thousand per month, and is still increasing.

In addition to the Bren gun, we are now producing Browning aircraft machine guns, with a production rate rising to thousands per month early in 1942. In addition, we are bringing into production the Vickers machine gun and Boys anti-tank rifle and Sten sub machine gun. Early in 1942 we will be producing naval machine guns and mountings in hundreds, and anti-tank rifles and sub machine guns at rates of thousands per month. We have already delivered substantial quantities of Lee Enfield .303 rifles, and production rates, now in thousands per month, will increase to over 200,000 per year.

Trench mortar deliveries, already in hundreds, will increase to a rate of over 400 per month. In addition to trench mortars, we plan 1942 production of bomb throwers and smoke projectors.

## HEAVY AMMUNITION

In heavy ammunition, we are producing 20 sizes of shell, and have already delivered over 9,000,000 units. Our capacity is in excess of 1,200,000 shells per month. We are producing

10 sizes of cartridge cases, and have already delivered over 10,000,000 cases. Our capacity is about 2,000,000 cases per month. We have produced in excess of 7,000,000 fuses of all types, and have capacity for over 1,000,000 per month. We have produced in excess of 8,000,000 primers, with a continuing capacity of 1,300,000 per month. We have produced many millions of gages, tubes and miscellaneous shell parts, as required for complete ammunition, and have a capacity of about 1,000,000 per month. All these empty components, together with other minor component parts, are required for the complete rounds of filled ammunition. Their production is co-ordinated with the capacity and requirements of our filling plants, with some surplus shipped empty as required abroad.

Vast new plants have been created and personnel trained for the exact operations of filling ammunition with high explosive and propellant charges. We are now shipping filled complete rounds, and production of these will expand rapidly as our filling plants swing into full production. Capacities for 1942 production are presently arranged as follows:

Complete rounds	— over 1,000,000 per month.
Cartridges	— over 700,000 per month.
Projectiles	— over 700,000 per month.

In addition to complete rounds, cartridges and projectiles, we have provided capacity for filling bombs, depth charges, mines and fuses.



## SMALL ARMS AMMUNITION

In the field of small arms ammunition, Canada holds an enviable position in the matter of quality and quantity of production. We have already delivered hundreds of millions of rounds of small arms ammunition of various types. Our capacities include ball, tracer, incendiary and armour piercing types of .303, .30/06, .22 long and .38. New capacity is being created for the production of .50, .55, .45, 9 MM and 20 MM. Current capacities are about 50,000,000 rounds per month, and will be trebled in 1942.

Our bomb programme includes types from 500 lbs. down to practice bombs. Deliveries have already been made in excess of 500,000 units. Mortar bombs, grenades and anti-tank mines are in production, with monthly capacity in the tens of thousands.

Our chemicals and explosives programme is a major part of our munitions production. Explosives are produced for our own filling plants and for shipment overseas. The range of production extends from high explosives, rifle and cannon propellents, and TNT, down through the intermediary chemicals and raw materials. The standard of our product enjoys a very high rating, and we have already delivered over 150,000,000 pounds of finished products. Capacity in 1942 will reach 70,000,000

lbs. per month of chemicals and explosives, with complementary production of subsidiary materials.

In the field of pyrotechnics, we are producing signal cartridges, flame floats, flares, smoke generators, sea markers, signal rockets, lights, igniters, etc., by the tens of thousands each month. Already hundreds of thousands of these special stores have been delivered to our forces and allied governments.

## INSTRUMENTS

Production of instruments includes technical apparatus and gear, ranging from fire control gear, range finders, telescopes, etc., through to clinometers, gauges, etc. We are already in production on many of these precision instruments, and production is scheduled to match ordnance requirements from now on. Thousands of gauges and standard instrument types have already been delivered.

## PROVISIONS FOR THE ARMED FORCES

Our General Purchasing department has procured the vast quantities of personal equipment and barrack stores required for our services, including thousands of tons of food, fresh and canned. Clothing, boots and shoes, caps, mitts, gloves, greatcoats, etc., have been turned out at the rate of many thousands per



month. Other stores procured include furniture, office equipment, electrical supplies, fuels and paints, lubricants, medical supplies, tools and hardware.

The Construction Branch of the Department of Munitions and Supply has awarded construction contracts aggregating 1,558 in number for a total of \$146,000,000. These include work for the Army, Navy and Air Force and the Air Training Plan, as well as harbour works, and extensions or additions to aircraft manufacturing plants. This does not include civilian housing, which is handled by Wartime Housing Limited.

The Air Services Branch of the Department of Transport, which now operates under the direction of the Minister of Munitions and Supply had, up to the end of September, completed 108 new airports for the use of the Royal Canadian Air Force and Air Training Plan, and had 31 additional airports under development. Included in the above are 18 airports now occupied by the Royal Air Force in connection with its training project in Canada. As at 31st August, 1941, the sum of \$64,000,000 had been allocated for airport construction, exclusive of buildings. In addition, the cost of airport hangars, workshops, barracks and associated works and buildings for the Department of National Defence for Air has involved an expenditure of \$117,000,000. Over 100 airports

have been equipped for night flying; and power, telephone and lighting facilities have been installed by the Air Services Branch at a cost of \$5,200,000. Operational airports are now under way in Newfoundland and Labrador, between Edmonton and the Alaskan boundary, and along the Northern coast of British Columbia, in areas far from human habitation, involving unusual engineering problems. In my opinion, this work of airport construction calls for all credit to Canada's construction industry and to the staff of the Air Services Branch of the Department of Transport, who have planned and supervised the work.

## GOVERNMENT-OWNED COMPANIES

Honourable Members may be interested in a brief mention of the work of the wholly government-owned companies operating under the direction of the Department of Munitions and Supply.

**Allied War Supplies Corporation** administers the chemical, explosives, and ammunition filling programme, including 23 separate projects. Construction work is now largely completed. Twenty projects are in production, and the balance will be in operation before the end of this year. Approximately 15,000 employees are engaged in operations, and it is estimated that twice that number will be required as the plants are brought into full production. One new



chemical plant has recently been authorized for the manufacture of aniline, and additions have been authorized for four chemical and explosives plants. Capital commitments now total about \$112,000,000.

**Citadel Merchandising Company Limited** supervises the purchase and distribution of machine tools. During the quarter ended September 30th last, this company purchased machinery and machine tools to the value of \$23,400,000. Since it commenced operation, this company has purchased and distributed machine tools to a total value of about \$60,000,000.

**Fairmount Company Limited** is responsible for maintaining in Canada adequate supplies of rubber. This company is the sole buyer of rubber for Canada, and its product is sold to war and domestic industries as required. In addition, the company buys and distributes hides for our leather industry.

**Melbourne Merchandising Limited** was established in September, 1940, to purchase in bulk the wool required for military contracts, and also to act as handling agents for the British Wool Control. This company is charged with the responsibility for having adequate supplies of wool available for war industrial requirements.

**National Railways Munitions Limited** was incorporated to produce munitions at various

shops and car plants of Canadian National Railways. The company is engaged in the production of naval guns and gun carriages, and will shortly be in production.

**The Plateau Company Limited** was formed to purchase, store, and distribute to war industries adequate supplies of silk, required for parachutes and other war purposes. Since the issuance of an Order-in-Council on August 9th, 1941, "freezing" all silk in Canada, Plateau Company has been taking delivery of all "frozen" silk for government account.

**Research Enterprises Limited** was organized in August, 1940, to provide facilities for manufacturing war material of a secret nature developed by the National Research Council; and for the production of optical glass, fire control instruments, both optical and electrical, and devices of a secret nature required by the Army, Navy and Air Force. This operation has developed in a most spectacular way, and has been found to meet a major war requirement. The main plant has been in operation for some months and now employs more than 1,500 men and women. The first optical glass produced in Canada was made by Research Enterprises in June. The company now has orders totalling over \$55,000,000 for optical equipment, instruments and secret radio devices.



**Small Arms Limited.** This company was formed in August, 1940, to build and operate a plant at Long Branch, Ontario, for the production of Lee Enfield rifles, bayonets and scabbards. The present programme provides for six times the capacity of the original plant. The company has recently undertaken the production of Sten machine carbines. About 1,250 men and women are now employed at the plant. A substantial quantity of rifles has already been delivered, and the output is increasing rapidly each week.

**Wartime Housing Limited.** This company was incorporated in February, 1941, to provide housing accommodation for munitions workers in communities where serious congestion has developed on account of war projects. The present programme embraces the construction of 4,427 cottages, 35 staff houses, 4 commissaries, and 2 special buildings, in 27 cities and towns across Canada. The expenditure for the entire programme now under way or projected is estimated at \$15,750,000. The programme is constantly being expanded to meet urgent requirements for housing for munitions workers.

**Wartime Merchant Shipping Limited.** This company was incorporated in April, 1941, to administer the programme of cargo ship cons-

truction in Canada. This programme calls for 143 vessels of 9,300 tons and 10 vessels of 4,700 tons. Two of the larger type ships have already been launched, and a third will be sent down the ways on November 6th. Keels have been laid for 20 more of the larger class ships. Twelve shipyards are engaged in carrying out this merchant ship programme.

**War Supplies Limited.** This company was formed in April, 1941, as a means of implementing the Declaration of Hyde Park. Its function is to negotiate and receive orders from Departments of United States Government for war supplies to be manufactured in Canada. I should perhaps mention that the Declaration of Hyde Park has worked out as was contemplated, with the result that Canada's problem of dollar exchange is in process of being solved.

**Federal Aircraft Limited.** This company was established in June, 1940, to administer a large programme for the production of Anson aircraft required for the Air Training Plan. Ansons have now been built and flown at all five of the company's assembly plants, and a considerable number have now been test-flown and delivered to the Royal Canadian Air Force. The aircraft being produced by this company is a material improvement on the British type Anson, and production is stepping up rapidly.



## "BITS AND PIECES"

An interesting development of our munitions programme, brought into being to mobilize the last ounce of Canada's war productive capacity, is known as our "bits and pieces" programme. Munitions contracts call for a tremendous volume of production, and it was inevitable that the large contracts were placed in large factories. It is now our purpose to have the large plants break down their large contracts into small contracts and to sub-contract these as widely as possible, in order that Canada's peace-time machine tool capacity may be fully utilized for war work.

There are many advantages in expanding our production by a "bits and pieces" programme, rather than by building more large plants. I may mention a few:

**First.** — There is a limit to the amount of work that can be handled by our larger manufacturing organizations, as they represent only a portion of the country's productive capacity which, from a mechanical standpoint, can be adapted for war use.

**Second.** — The machine tool market has now reached a point where it is difficult, and in some cases impossible, to secure machine tools as rapidly as required.

**Thirdly.** — By taking work to the men rather than the men to the work, we can avoid disruption of community life in some areas and congestion in others, save in housing costs and community facilities, and obtain a more suitable type of labour. Readjustment problems will be lighter after the end of hostilities, and the load on the taxpayer less.

**Fourthly.** — By spreading the work to hundreds of small shops, use can be made of thousands of skilled workmen, who, through their age, position, or other reasons, do not desire to change their homes and source of livelihood.

To facilitate carrying out this programme of sub-contracting, a new branch has been formed known as the Industry and Sub-Contract Co-ordination Branch, with headquarters at Ottawa and regional offices across the country. The Branch and District Offices are designed to help small manufacturers, and those threatened with curtailment of peace-time operations, to obtain contracts or sub-contracts of a type they are equipped to handle. The purpose is also to encourage sub-contracting and to assist the prime contractors in setting up and operating efficient sub-contracting departments.

A great deal has already been accomplished in the field of sub-contracting. Millions of dollars of "bits and pieces" are already in



process of being manufactured. Several large industries such as the pulp and paper, oil, utility, and mining have set up organizations to co-ordinate the use of the available hours of their maintenance shops. A great many of our so-called luxury manufacturers are changing over to the production of war materials.

As an outstanding example of what has already been accomplished in this direction, I may mention the 25-pounder gun programme being carried out by Sorel Industries. This plant was built to manufacture 25-pounder equipments at the rate of 8 per month. It is now building about 40 complete equipments per month, and by the end of the year will be building 50 complete equipments per month. The increase in production has been brought about partly by an extensive system of sub-contracting.

The 25-pounder gun is made up of approximately 1,286 parts, and of these 529 parts, or about 41 per cent, are being sub-contracted. These parts are divided among 63 small plants in the Provinces of Quebec and Ontario. The parts that are being made at Sorel are some of the most difficult, and also those requiring special single purpose machines. The parts that have been sub-contracted are being handled by shops, the smallest of which is a two-car garage behind a house, operated by the owner and two helpers, and having about \$4,000 worth of machinery; and the largest a modern shop

having \$300,000 worth of machinery and 600 employees. The small garage is providing two precision parts — a pin and a bracket. The large shop is manufacturing a highly complicated dial sight having 122 precision parts, many of which have to be made with the same accuracy as required in an expensive watch.

In the last two months over 82,000 finished parts have been supplied by these 63 sub-contractors to the main factory at Sorel. Production of these parts does not come about by merely handing blueprints to manufacturers and asking them to supply the parts. It has been found that in a great many cases, manufacturers, in their desire to assist in the war effort, and because of over-optimism, have accepted work from prime contractors and failed to produce.

The excellent work that is being done in sub-contracting by the Sorel plant is due to the use of engineers on loan from the Chrysler Corporation, who have put into effect methods arrived at by years of experience in sub-contracting in the automotive industry. Under the direction of these men, remarkable results have been obtained in cutting down man hours and costs of production.

What Sorel Industries have done, other manufacturers can do. My remarks on this subject have been extensive, for the reason that



I am asking the co-operation of all manufacturers in the further development of sub-contracting and co-operation in our "bits and pieces" programme. The Department is ready and willing to assist in every way, but the manufacturers, both large and small, must do their part. The small shops and displaced industries must be prepared to help themselves if the Department is to be placed in a position to help them.

To assist in furthering this "bits and pieces" programme, I have issued instructions that before additional capital assistance will be approved, a full investigation must be made of the possibility of sub-contracting. Those responsible for purchasing have been asked to break down orders to a size that can be handled by as many small manufacturers and displaced industries as possible.

### SUPPLY

I think that Honourable Members will agree that the production programme as it is today is tremendous in scope. It will readily be appreciated that a programme of this magnitude makes tremendous demands on our sources of raw materials. To supply our war industries it has been necessary to rigidly control distribution of war materials and to assure a priority of use to war industry, as against peacetime industry.

The control over essential war materials has been obtained by the appointment of twelve Controllers of materials and services. These twelve Controllers are members of the Wartime Industries Control Board, under the Chairmanship of the Director General of the Priorities Branch. The purpose of the Controllers is principally to insure adequate supplies to war industries, but the work of the Board is closely associated with that of the Wartime Prices and Trade Board, the latter Board having complete control of prices. Each Controller administers the policy of the Wartime Prices and Trade Board as applied to the industry over which he exercises control. The following is a brief outline of action taken by the Controllers to date:

### MACHINE TOOLS

Machine tools are basic in war production, and every effort is being made to increase their supply and to restrict their non-essential use. In 1940, designs were frozen on a broad list of consumers' durable goods, including automobiles, in which a change of model would otherwise require new tooling. Every effort has been made to distribute machine tools to war industries in need of such equipment. No exports of machine tools may be made without license. A Government-owned company, "Citadel Merchandising Company Limited", assists in the financing of the greatly extended production and purchase of machine tools.



## METALS

The Metals Controller has supervision over the supply, distribution and use of all non-ferrous metals, minerals, and alloys. Substantial restrictions have been imposed on the civilian use of essential metals. In the case of copper, lead and zinc all tonnage in excess of that required for the Canadian war programme and for greatly restricted domestic requirements is sold under contract to the United Kingdom. The production of metals in Canada has been greatly extended, and this country, which produces the principal base metals such as aluminum, nickel, copper, lead and zinc far in excess of domestic requirements, is supplying these metals in very large quantities to Great Britain and/or the U. S. A. In addition, progress has been made in developing sources of strategic metals which were not produced in Canada in any quantity before the war. Mercury has been in production for over a year, and tungsten, antimony and manganese are being developed.

## MOTOR VEHICLES

The Motor Vehicle Controller has substantially reduced the number of passenger cars which may be manufactured in Canada in order that materials and labour may be directed to the manufacture of war vehicles. For 1942 the rate of production of passenger cars has been established at 44% of 1940 production, which

is the equivalent of 50% of 1941 production. Steps have been taken to spread this reduced output evenly through the year, to avoid unnecessary peaks and valleys in labour and material requirements.

## OIL

A number of Orders have been issued by the Controller to restrict civilian use of gasoline. These include reduction of deliveries to service stations to 80% of estimated normal requirements, and prohibition of the erection of new service stations, gasoline pumps, storage tanks and oil-burning equipment. Sale of gasoline and oil to motorists on Sundays and at night (7:00 p.m. to 7:00 a.m.) on week days has been prohibited. Grades of gasoline for public use are limited to two, and credit cards may no longer be used by Canadians. Voluntary co-operation in saving gasoline has been requested, and a list of pointers on how to save gasoline and oil has been placed before the public.

## STEEL

Various measures have been taken to conserve iron and steel, and a system of indexing of consumers' requirements is now in operation to ensure that the needs of essential undertakings are met. Measures have been taken to stabilize steel prices, and structural steel shapes have been standardized and reduced in number



from 267 to 70. All orders for pig iron must be forwarded to the Steel Controller for approval on a preference basis. By the first quarter of 1942, Canada's annual steel productive capacity will be more than double what it was in 1939. This greatly increased capacity, plus greatly augmented imports from the U. S. A., is insufficient to meet war orders and domestic requirements, which accounts for the rigid control outlined.

Apart from the action of the Steel Controller, the civilian use of steel is limited by the operations of the Controller of Construction, the Machine Tools Controller and by the Controller of Supplies.

### **TIMBER**

The entire Canadian industry has been organized so that centralized buying for Government projects is effected as economically as possible. In May, 1941, domestic prices for timber, lumber and millwork were fixed at the April 1st, 1941, level, and price-fixing has since been extended to other lines. The Controller also has entire power to direct the sale, storage and movement of timber stock should this power need to be exercised. Substantial progress has been made in arranging for the more efficient use and substitution of timber in order to release steel for war requirements and to make more high grade timber available for export.

### **CHEMICALS**

Through voluntary arrangements, a number of measures have been taken to ensure an adequate supply of chemicals for various essential purposes. Formal orders have been issued limiting the use of chlorine as a bleaching agent in paper making, and prohibiting the use of glycerine as anti-freeze, and restricting the civilian use of refined glycerine to 70% of 1940 levels.

### **TRANSIT**

This Controller is responsible for reorganizing transit systems in order to ensure adequate transport facilities to deal with traffic congestion in key war production areas. Organizational work in connection with staggering of working hours to relieve congestion in certain areas is now under way, and introduction of specific measures on a test basis is expected in the near future.

### **CONSTRUCTION**

With certain exceptions, including government buildings, churches, and single, duplex and triplex dwelling houses, construction of new buildings costing more than \$10,000, installation of equipment costing more than \$5,000, and making repairs in excess of \$2,500 are all subject to license of the Construction Controller. These



powers are being exercised to the end that construction projects shall be limited as far as possible to those of an essential nature.

### SHIP REPAIRS

It is the duty of this Controller to see that the most efficient use is made of Canadian ship repair facilities. These facilities are being stepped up to a maximum to provide quick repairs for both naval and cargo vessels.

### SUPPLIES

To date the following commodities have been brought under the jurisdiction of the Controller of Supplies: Silk, rubber, cork, transparent film, refrigerators, washing machines, stoves, radios and vacuum cleaners.

(a) **Silk** — Early in August, 1941, all raw silk owned by Canadian companies or on order by Canadian Companies was taken over by Plateau Company Limited (Government-owned) and will be used exclusively for war purposes. Consequently supplies of substitutes for companies previously using silk for certain purposes have of necessity been arranged.

(b) **Rubber** — Arrangements are under way for the acquisition of additional supplies of crude rubber to be held as a reserve by the Government Company, Fairmont Company Limited, which now handles all purchases of

crude rubber for both war and domestic requirements. Consumption of rubber for civilian purposes is being curtailed on a sliding scale and by February 1942 will be down to 70% of the 1940 monthly average civilian consumption.

(c) **Cork** — While no formal orders have as yet been issued, commercial cork, including cork wood in a natural or semi-processed state, is now under the jurisdiction of the Controller of Supplies.

(d) **Transparent Film** — The use of transparent films of the "Cellophane" variety has been substantially curtailed, and with certain specific exceptions is limited to use as cellulose adhesive tape and for packaging food, candy, drugs and tobaccos when not in tin or glass containers.

(e) **Consumers' Durable Goods** — i.e., refrigerators, washing machines, stoves, radios, vacuum cleaners. Production of all these articles for civilian use has now been curtailed. The general principle underlying the curtailment measures is that monthly production for the time being is to be reduced to 75% of 1940 monthly average output. Committees of representatives of the industries concerned are being formed to assist in the efficient and equitable application of this principle.



## POWER

In order to ensure adequate supplies of power for war industries, the Power Controller has instituted Daylight Saving applicable throughout the year in the Provinces of Ontario and Quebec in the case of those communities which observed Daylight Saving in the summer of 1940. Use of electric power for steam purposes has been banned and coal boiler installations made, making such power available for war industry. Certain non-war industries have been forced to reduce consumption of power during peak hours. In central areas all power systems have been interconnected, so as to permit excess power in one area of the country to be used in other areas as required. Many improvements in plants have been arranged on the order of the Controller to ensure maximum production of power from all capacity.

## PRODUCTIVE CAPACITY

I have endeavoured to give Honourable Members the highlights of Canada's munitions programme without undue detail, but, even so, it has been a long story. I feel that the men and women of Canada are beginning to understand the all-out nature of our productive effort. Looking back over the past two years, I do not see how our full production could have been developed any more rapidly than it is being developed. I have been supported by the

unfailing devotion to duty of a very able staff drawn from Canadian industry, and I have also had the fullest co-operation from Canadian manufacturers and from Canadian workmen. Canada's position in war production will stand comparison with that of any country in the world, and recent comparisons that have been made by competent observers are highly complimentary to this country. Our war industries are soundly established, and our present production is all that, and in many cases more than, we had anticipated. It has been our purpose to call on Canadian industry and Canadian manpower for the maximum that the most optimistic estimates of capacity would permit. While we believe that we are reaching the end of possible productive capacity, we are still taking on new projects to the extent that further possible productive capacity can be discovered. If in the past, other countries have looked upon Canada as a source of raw materials rather than of finished products, the future will find us a country equipped to turn our own raw materials into finished products within our own borders.

It has been our purpose in planning our war industries to maintain a balance between available supplies of raw material and our planned war production. We have counted on curtailment of domestic production of a non-essential character and this is now being brought about through our Controllers. I wish



to assure Honourable Members that the only purpose of curtailing domestic articles is to free necessary raw materials for our munitions programme and to provide needed manpower for that programme. We will continue to make available for domestic use everything not absolutely required by the war programme, and we will not call upon our people for sacrifices that are not entirely necessary to bring about the success of our war effort.

Such measures of restriction as have already been applied have, in general, obtained the full co-operation of our citizens. I ask all Honourable Members to co-operate with our Controllers in explaining to our citizens the need for restriction and in asking for co-operation.

There is no reason to believe that this war will end in the near future. Our industrial effort must be sustained over a long period. We have planned with this in view. Munitions from Canada are now reaching every theatre of war in quantities that are impressive to those receiving them. We have established a reputation of quality and prompt delivery. There is an enthusiasm behind our production that is accomplishing results greater in many cases than we had hoped for. I am confident that, in the months to come, Canada will make history as an industrial nation engaged in an all out effort in war production.



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