

Arsenal of Industry

Major-General G. B. Howard

THE experience gained in two major wars, has taught us that the military strength of a nation or group of nations can no longer be measured solely by the will to resist, and the courage of the citizens, as well as in some measure the size of the mobilization stocks of weapons on hand.

Stocks of armament rapidly grow obsolete, and consequently something less than worthless. Courage and individual bravery are ineffectual against superior armament and equipment, if numbers be equal.

In consequence of these basic truisms, the nations of the western democracies are giving as much attention to the industrial potential for the manufacture and supply of armaments and equipments, as they are to formation of the navies, armies and airforces which will, if necessary, use them. We know that those nations who may, at a moment of their own choosing, attack us or any of our allies, can undoubtedly provide themselves with a preponderance of manpower in the field. Their radically different views on freedom, as well as their ruthless disregard for human life and liberty, makes such a situation almost a certainty. Since the innate fanaticism of their peoples counterbalances in large degree any advantage we may feel is ours due to the superior physique, education and enlightenment of our citizen soldiers, we must not neglect the one link in our defence chain in which we do claim with some justification a real superiority.

I refer, of course, to our scientific design and productive potential.

We expect Canada's Defence Department to have ready, for instant use, plans for the mobilization of our armed services. We expect the Defence Research Board, in co-operation with our National Research Council, to have plans ready to mobilize our scientific resources to solve the problems within their field which will arise in wartime, as well as to provide us with the basic data from which new weapons or defence measures may be designed and developed. We are not, then, out of order if we expect the recently announced Department of Defence Production to produce some sort of plan for the mobilization of our industrial resources and potential in the event of war.

The preparation of such a plan in any nation is not a simple matter. For one thing, it can never be complete: some factor of safety must be employed to permit meeting additional and unforeseen requirements, both for military purposes and essential civilian needs. Then too, the planning is so complex—involving as it does problems of manpower, finance, raw materials of domestic as well as foreign origin, the determination of what is essential and what is not essential to our civilian population, and other equally obvious matters—that no hard and fast blueprint or chart can be provided. All must be on a tentative basis and flexibility is a necessity.

AN industrial mobilization scheme would, in its ideal form, provide each manufacturer with some indication of what

he would be called upon to do in the event of an emergency. He would know to some degree of approximation how much of his capacity would be required for military production of a rather definite type, and what proportion if any could be devoted to his normal civilian output, and, of course, the limitations of the variations and specifications for his line of civilian goods.

As has been noted, the ideal will not be attained, but a closer approach could be made to it if a timed schedule of military production, with complete manufacturing data, including drawings and specifications, could be provided.

In Canada, at this time, no complete list of military requirements is available, due to our peculiar position in the Western world.

Canada has a total productive capacity far beyond her own military needs. During the last war, less than 30 per cent of our total war production was needed to fill Canadian orders; the remainder went to our Allies by direct purchase or in consequence of our mutual aid program. Our productive capacity is not, however, self sufficient or balanced. There are a large number of components and materials which we now import because the quantities we require are not sufficiently large to justify setting up production lines in Canada. We can obtain what we require cheaper from our neighbors and from abroad.

A similar situation will exist in war time. There are any number of items of Naval, Military or Air force equipment which our Armed Services require in numbers too small to be produced economically in Canada. On the other hand, there are within our capabilities many other items which we can manufacture economically in this country and for which our capacity will exceed our requirements, if it does not now.

Thus it is that Canada, in planning the mobilization of her industry, must take into account what will be required of her by her North Atlantic Treaty Allies, as well as her own military needs. It is for this reason too, that too much emphasis cannot be placed on the absolute necessity for integrating our industrial planning for

defence with the work being carried on by the United States along similar lines. It should be obvious that a co-ordinated North American plan of action in the industrial field, as in the operational field, is of prime importance.

In regard to the equipment needs of the N.A.T.O., some information has been received. More may be forthcoming when the newly created Defence Production Board really begins to function. What data is, or will be, available in the immediate future refers to what may be termed current requirements rather than long-range needs for the distant future. Our Government will, no doubt, examine the lists supplied it with a view to determining what it is economically feasible to supply in order to meet these demands.

Concerning integrated planning with the United States, the Joint Industrial Mobilization Planning Committee formulated a governing policy which was approved by both Governments in October last in what is referred to as the "Washington Declaration." The direct result of that policy has been the joint application of a uniform system of Defence Order priorities for materials required to meet defence production contracts. Another result is the loosening of restrictions by the U. S. in regard to purchases in Canada for the U. S. Armed Services.

A ceiling of one hundred million dollars for this purpose was recently mentioned in Parliament.

The value of stated policies is, however, limited by the extent to which they are applied in detail at working levels. Consequently, much remains to be done to make integrated planning an effective actuality. The recently announced adoption by the Canadian Services of U. S. types of equipment wherever and whenever feasible should make somewhat easier the task of our planners in Washington and Ottawa.

ALTHOUGH we are not able to formulate an all-embracing overall plan for industrial mobilization in Canada at this time, many recent announcements indicate that at least a partial plan will gradually develop.

Among these is the formation of a Department of Defence Production under a Minister of the Crown. This Department should be able to undertake the task of planning much more effectively than the various Agencies which were previously interested in the work and whose efforts, at times, have appeared to be unco-ordinated. A focal point will be "in being" and both industry and Government should benefit.

Another indication of the shape of things to come is the announcement of the size of Canada's defence program for the next three years. While the consequent enlarged scale of purchasing of what can be considered short range requirements may not be termed planning for industrial mobilization, nevertheless the production of new types of equipment from Canadian industry cannot be other than helpful in the acquisition of experience and "know how," both of which will be invaluable in the future.

In the fulfilling of these "pilot orders" difficulties and bottlenecks will be encountered. The immediate solution of these must furnish a pattern for the future, if large scale production should become a necessity. What could be called "parent" facilities will be established, and a good basis for expansion will be provided. So far, these current orders are mainly for aircraft, naval ships and their anti-aircraft guns and equipment, radar and radio equipment of complicated and expensive types, as well as cloth, clothing and general stores. Pre-production orders for automotive equipment of U. S. types are forecast as well as orders for guns and ammunition for the Army.

In consequence of the defence production programmes here and in the U.S., which are concurrent with expanding consumer markets, shortages of materials and skilled manpower are developing to an extent which some consider alarming. As a result of these shortages, many manufacturing facilities can operate at partial capacity only. As the manufacture of defence equipment is enlarged, these shortages must become increasingly apparent and a shift of labour from those factories unable to obtain material to

those employed on defence production must ensue, unless new capacity now projected can be brought into being at about the time the impact of defence needs is felt with any degree of severity. Otherwise considerable dislocation will occur.

II

SINCE it would appear that Canadian plans for industrial preparedness for defence must be a gradual bit-by-bit development, it is appropriate to ask what steps can be taken now, in anticipation of the eventual creation of a comprehensive and effective plan which could be put into effect at the outset of an emergency.

In the same way that the defence of his homeland is the prime concern of every citizen, so it is a matter of vital interest to every segment of our national organization.

Thus it is that in the matter under discussion Canadian industry must assume its full share of responsibility. Everything cannot be left to a Government, which, according to our accepted principle, must be guided by the expressed opinion of those best qualified to speak. On industrial matters, the opinions of the executives of our industries must be given due weight. Therefore, it is the duty of industry to make known its views of the effectiveness of methods employed in the past, and to suggest the means by which any shortcomings of those methods may be avoided in the future.

The subjects on which the opinions of industry would be of value are legion. To mention but a few of the more obvious it is suggested that consideration be given to the training of skilled and professional personnel, the allocation of labour, contractual and costing procedure, financial provisions, capital assistance, and strategic dispersal of new facilities.

The means to present these views either in groups or individually exist in the numerous trade associations, the Boards of Trade and Commerce, the Canadian

Manufacturers Association, the Canadian Industrial Preparedness Association and others. If industry does not give positive expression of its thoughts, it can have little if any complaint to offer if what is done or omitted is not to its liking. This may be the place to note that industry as represented by the various committees of the Canadian Industrial Preparedness Association has already done much along these lines, and many recommendations of value have been made. More could be accomplished.

ASIDE from making known its opinions to responsible agencies of Government, industry can take other definite steps to make itself ready for the tasks which may be ahead of it. Some of these will be indicated briefly.

Each manufacturer should make known the facilities which he has to offer, together with information on his normal products, the sources of his materials, the numbers and class of his employees and other pertinent data. An industrial survey, somewhat limited in extent, is being carried out by the Canadian Industrial Preparedness Association, and the information so obtained is circulated to Canadian Arsenals Limited, the three Armed Services, the Department of Labour and the Canadian Commercial Corporation. This last named organization has set up a central indexing division, where the data furnished is classified and catalogued. This classification and data should serve a useful purpose, for although records are available regarding the prime contracts for war material placed during World War II, little information is available on a variety of sub-contract work and, of course, changes in plants have been made which have lessened the value of last war records.

Another matter in which all industries should be very interested is that of plant security. It is well known that we may expect more subversive activity and sabotage in the unhappy event of another war than we did during the last conflict, and that this time the danger lies more from within a plant than from without.

As management is in the most favour-

able position to spot key danger points in its factory, it is logical to place the onus in that quarter. It can have, for the asking, any advice or assistance from the police authorities, and it can and should take now, any steps considered necessary to ensure the minimum interruption of production due to sabotage. In any effort in this direction the assistance of loyal and trusted employees would be of the greatest help.

An analysis of the types of labour employed is another step which may well be taken at this stage in preparation for any emergency. How many men of military age and fitness are employed? Are they likely to enlist voluntarily even if not called up under any compulsory service scheme which may be in force in the event of war? How many key or skilled personnel could be released for service with the Armed Forces or to other essential wartime occupations? Could female labour be employed to any extent, and if so in what capacities? What alterations to employee amenities would be necessary if female labour was introduced in the plant? The answers to these questions and others equally obvious should furnish a basis for action should the time come when decisions must be made, and made without hesitation.

Many manufacturers, have, since the last war, embarked on the production of new lines, using new processes, and new materials. It may well be that information on these is not available outside their particular field. It is also possible that some of these could have a defence application. The Armed Services and other Governmental agencies should be kept fully informed of development work completed or in process.

In regard to the supply of materials, a number of industrial groups have conducted surveys of basic materials they are likely to require in their normal course of business for the next year or so. The results of these industry-wide surveys are invaluable to both industrial and government planners in establishing quotas where shortages make such action necessary. Lacking information of this sort, any action based on out-of-date or

incomplete statistics is likely to cause considerable difficulty, since once action is taken amendment or alteration is sometimes a formidable task; this is especially true when other governments are involved.

In all aspects of industrial preparedness for defence, it is important that the best possible liaison be maintained with the technical branches of the Armed Services. Officers of the Services are not normally afforded many opportunities for personal contacts with industry, and consequently are often not well informed as to what can or cannot be done by manufacturers in Canada. On the other hand, many industrial executives would be better able to understand service requirements if they took the time to learn something about the reasons for specifications and peculiar provisions therein which may to them seem unnecessary. The interchange of ideas and the promotion of mutual understandings must be helpful to both sides. It was sadly lacking in the early days of the last war.

III

MENTION has been made of the Canadian Industrial Preparedness Association, a name which may not be familiar to many readers. That association is an organization of some 330 Canadian companies whose prime objective is the furtherance of industrial preparedness for defence in any way of which it is capable. It is non-political in character, and is wholly supported financially and otherwise by industry itself; thus it is independent of

Government. Its facilities are available to all who may have need of them, including the Armed Services, the Department of Trade and Commerce and other departments, as well as industry itself. The Association has formed industrial committees in a large number of fields and these groups are available for consultation and advice on any problem within their sphere of activity. Many of them have made comprehensive studies of problems arising in their own industry, and on matters referred to them by the Government. On such questions sound recommendations have been provided. The directorate and guiding body of the Association is formed from many of the most prominent executives in the Country, who give their time freely to assist in the defence of the country. The idea behind the formation of the Association originated in the minds of a group of industrialists, officers and officials who had experience with the confusion and uncertainty which existed in the early years of the last war and who were, as a consequence, fully aware of the need for forward planning for defence production, and were determined to keep that need before the people and the Government. It is a tribute to the public spirit of Canadian industry that the growth of the organization has been steady since it was started in late 1947, and it is a tribute to the Government which has seen fit to make the maximum possible use of the machinery which industry has provided. It is hoped that the Industry-Defence team will play the game together in a way which will bring a victory without a war—or, if that proves impossible, will win any conflict which we cannot avoid.

Lawful Ambitions

I think that all ambitions are lawful except those that climb upward on the miseries and credulities of mankind.

JOSEPH CONRAD