in turning out a gun (with the exception of the barrel) at their Petone Workshops, but for various reasons Cabinet decided in February last not to proceed with the manufacture of these guns.

The above remarks relative to the manufacture of machine guns applied generally to the making of rifles, since, in order to manufacture rifles, hundreds of special machines were required.

The committee further considered that, if the material which was at that time in the Dominion was found on test to be suitable, the making of bayonets and scabbards could be proceeded with.

18-pr. High-explosive Shells.

Immediately on receipt of this report I instituted inquiries in Australia as to the possibility of securing steel made in accordance with Imperial specifications and suitable for the manufacture of 18-pr. high-explosive shells, as it was understood that this was the class of shell most required by the Home Government. An offer was received from the Broken Hill Proprietary Company (Limited), Melbourne, to supply suitable steel, and in order that an experiment might first be made as to the capabilities of the machinery available in the Dominion I placed an order for 5 tons of this material, sufficient for 250 shells. This duly came to hand in the shape of $3\frac{1}{2}$ in. bars, which had been passed by the Commonwealth Government Inspector. It was similar steel to that with which the Australian workshops engaged in like manufacture have been supplied.

It might be as well to mention that the results of tests carried out by Professor Scott on this steel were not satisfactory, and these are confirmed by latest reports from Australia, which indicate that the steel showed defects which, although slight in themselves, disqualified the material for use for 18-pr. high-explosive shells.

For the purpose of carrying out the experiment the Railway Department kindly made available its Addington Workshops and the engineering staff employed therein, and both the General Manager, Mr. E. H. Hiley, and the Chief Mechanical Engineer, Mr. H. H. Jackson, rendered valuable assistance. Professor Scott, Chairman of the Munitions Committee, generously and patriotically offered his services in conducting and superintending generally the manufacture of the experimental batch of shell-bodies.

The preparatory work was at once entered upon. This involved the making of some seventy gauges and various jigs, the construction of a hydraulic banding-press, and the adaptation of several machines to the special character of the operations required. The manufacture of the gauges was a work of some magnitude, no master gauges being available. These had to be made at Addington from drawings supplied by the Federal Munitions Committee, Melbourne, the gauges being daily verified at the School of Engineering, Canterbury College, where the final adjustments were made, the limits of variation permitted being within one ten-thousandth part of an inch (0·0001). The construction of the master and working gauges and the preparatory work generally was practically completed at the time the 5 tons of steel arrived at the workshops in the early part of January last.

Besides the $3\frac{1}{2}$ in. steel, base-plate steel was also required, and this it was possible to obtain in bars of $2\frac{1}{2}$ in. by $\frac{3}{4}$ in. from the same source as the $3\frac{1}{2}$ in. round bar steel, 5 cwt. being necessary for the manufacture of the experimental batch of shells.

The obtaining of a supply of copper tubing suitable for driving-bands presented some difficulty at first, as no copper tubing of suitable size was to be obtained in the Dominion. A sufficient number of bands, however, was eventually procured from the Victorian State Munitions Committee, which had imported a quantity supplied to War Office specifications by the Broughton Copper Company, and was distributing them at landed cost to shell-contractors. It might be here mentioned that experiments had been carried out in the School of Engineering by Professor Scott, which finally resulted in an excellent quality of copper ring being produced by electro-deposition.

By the end of January a few 18-pr.-shell bodies had been completed, whilst others were in various stages of manufacture, and the Chairman of the Munitions Committee was in a position to submit a report on the practicability of proceeding in a more vigorous manner with the manufacture of this class of shell in New Zealand.

Cabinet's Decision.

This report was placed before Cabinet for the purpose of enabling it to come to a decision on the question of the advisability of carrying on the manufacture of munitions in New Zealand. After full and careful consideration, Government decided to take no further action regarding shell-manufacture in the meanwhile, as they were of the opinion that under the circumstances New Zealand could be of greater service by directing all her energies towards the carrying-on of those important industries, such as freezing-works, dairying, &c., which are so essential for the maintenance of food-supplies to the troops, and to the carrying-on of which our Dominion is so well adapted. Besides, the output of shells, &c., from this Dominion would be infinitesimal as compared with the enormous quantities required, and would necessarily involve the setting-aside by the Railway Department of a large proportion of its important work of making carriages and locomotives, and maintaining the present rolling-stock; while if the work were undertaken by outside firms the assembling of their plant in central localities would have the effect of interfering to a large extent with the making of freezing-works machinery and dairying machinery which are so necessary for the proper carrying-on of the industries concerned.

Close Touch kept with the Commonwealth Authorities.

Right from the time of my assuming office I was in constant and close communication with the Commonwealth authorities and the various State Munitions Committees on the steps which