

**Tanks and Railway Equipment.**—It was something new for Canadian industry to embark upon so ambitious a program as tank production. Two types were produced, the Valentine and the Ram.

The Valentine is a medium light tank officially rated at 18 tons, driven by a diesel motor. It was designed for easy manoeuvrability to move with attacking infantry where fixed positions had to be assaulted. Nearly 1,400 of these Valentine tanks were shipped to Russia.

The Ram tank was probably the first piece of armament of a specifically United States type to be produced in Canada. It was patterned after the commonly known General Lee which had been developed in 1939 in the United States. After actual combat in Libya, the design was materially modified. The newly designed Ram tank was so highly thought of, after tests in the United States, that it was used as a prototype of the new M-4 tank which was developed some months later by the United States. The Ram is heavily armed, has a maximum speed of 25 miles per hour and weighs approximately 32 tons. By the end of 1943, all orders for tanks were completed and the production facilities were shifted to the production of self-propelled gun mounts which operate on a tank chassis, tank turrets and railway equipment. The former were being produced at the rate of 150 per month and locomotives for overseas shipment at the rate of 24 per month.

In addition to the vehicles mentioned above, several other types of vehicles which required the use of armour plate were produced. These vehicles were built of Canadian-produced armour plate, a commodity practically unknown prior to the War. The program to manufacture armour plate was instituted in Canada in 1940. Production since then has shown a steady rise to over 4,000 tons per month, and the quality is unsurpassed anywhere. Many of the armour-plate hulls for these vehicles are pieced together by automatic welding, a method of production which has been highly developed in Canada. The team work displayed by the manufacturers responsible for armour-plate manufacture, its heat treatment, and subsequent fabrication, exemplifies the resourcefulness of Canadian industry.

**Chemicals and Explosives.**—A vital link in the industrial war effort is the production of chemicals and explosives for Canadian filling plants and for shipment overseas. The range extends from high explosives, rifle and cannon propellents, and TNT, down to intermediary chemicals and raw materials. At its peak, production was at the rate of about 10,000 tons of chemicals and explosives each week, and more than 1,000,000 tons have been made at Canadian plants since the beginning of the War.

Canadian science has contributed notably to the development of chemicals and explosives. Canadian chemists made major contributions to improved methods of manufacturing RDX, the new super-explosive. They have devised and improved important changes in the method of manufacture of TNT and have developed a process for large-scale manufacture of fuse powders.

Hundreds of thousands of signal cartridges, flame floats, flares, smoke generators, sea markers, signal rockets, thunderflashes, lights and igniters are being shipped to the R.C.A.F., the R.C.N., the Canadian Army, and to Britain and the Allied Governments.

**Chemicals Control.**—Early in 1941 it became apparent that shortages of chemicals both for war and civilian purposes made necessary a close regulation of supplies. In July, 1941, a Chemicals Controller was appointed. Since inception, the Control has gradually increased the scope of its operations.