# Editorial

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#### A NEW PHASE OF WAR ENGINEERING.

The part played by engineering in the present European conflict is something for the details of which we may be obliged to wait a considerable length of time. The continual shifting of positions by the contending armies, however, impress us as sufficient to require a most remarkable manipulation of guns and supplies over rough country whose transportation routes have already been blocked and destroyed. This work falls naturally to the military engineers.

An outstanding feature of the methods of transportation and communication is the extensive use of the motor truck. It has brought about a revolution in transportation methods and has made possible the manoeuvring of millions of men and the required equipment of various classes of guns, ammunition, provisions, etc. These trucks are, for the most part, of ordinary type. This we know from the knowledge that Germany, France and England have systematically subsidized motor trucks during recent years on condition that they be available for governmental use in case of need. In Germany the subsidy amounted to \$2,000, one-half of which was applied to the purchase price, and \$250 of which was applied on upkeep yearly for four years. These trucks were to have a capacity of  $6\frac{1}{2}$  tons, to run 10 miles an hour with full load, to climb a 10% grade, and to haul one, or, if necessary, two trailers. At the beginning of 1912 over 800 trucks had been subsidized and the number has very greatly increased since that time, the government having power to requisition every motor vehicle in the German Empire.

In France a subsidy of \$600 toward purchase, and \$200 a year for three years toward upkeep, could be obtained from the government by owners of trucks of capacity of over three tons.

Great Britain allows a subsidy varying from \$40 to \$60 per vehicle and \$75 a year for upkeep. Austria also subsidizes motor trucks and has a right to take possession in times of need.

The result is that motor trucks are brought into commission in almost every conceivable way for the rapid transportation of men and supplies. Artillery is, to a considerable extent, hauled by motors. This applies particularly to big motors such as constitute the heavy siege artillery. Many of these guns are known to weigh from 8 to 8 to 20 tons, while it is stated that there are larger pieces weighing 40 tons each, and at least as much more for the gun carriage. The projectile which such a gun uses weighs approximately a ton. It is evident that the trans-Portation of these pieces of artillery, together with their ammunition supply, over stretches of country where there are are no railroad facilities and whose bridges, etc., have been previously destroyed, is an engineering task that requires utmost skill, as the manipulation has to be prompt prompt and absolutely reliable, since there may be de-pend: pending upon the service armies of hundreds of thousands of men.

It is interesting to note that the Canadian expeditionary force at present on its way to Great Britain possesses an extensive motor equipment, including motors for mechanical transport, armoured cars with machine guns, motor-drawn trucks, motor ambulances, touring cars for the officers and an armoured motor machine shop. This shop is very complete in itself with a full equipment of tools and lathes.

The problem of transportation is sufficiently gigantic of itself to evidence the dependence of military manoeuvres upon the engineering corps. There are other problems, such as those of entrenchments and fortifications, of water purification and sanitation—problems that are of an impromptu nature requiring immediate solution, thereby differing from the engineering that has already made itself evident in the design and construction of artillery pieces, ammunition, etc., while the world was yet at peace.

#### OPPORTUNITY FOR CANADIAN ELECTRICAL MANUFACTURERS.

Canadian exports of electrical apparatus amounted last year to \$215,546. Imports, on the other hand, amounted to \$9,098,736. At the present time there is a scarcity in England of electrical apparatus. It is only a few days ago that a newly established foreign trade commission in Pittsburgh, Pa., had a communication from a large engineering equipment house in London, England, stating that owing to the war its orders could not be filled and asking to be put in touch with Pittsburgh firms supplying all kinds of electrical equipment and machinery.

In view of the above figures of Canadian foreign trade in electrical apparatus, it is somewhat improbable for Canada to hope to export largely to Great Britain unless her productive capacity is materially increased. That Britain, whose supplies from Germany in this line amounted last year to £721,078 will have to look elsewhere should be an inducement of no small magnitude to Canadian manufacturers of electrical machinery and apparatus. The portion of the demand that might be supplied in this country is small, perhaps, in proportion to that which the United States is prepared to look after. Last year Great Britain's imports of these supplies from the United States attained a value of £437,906. Canadian manufacturers, however, should give the problem their very careful consideration at the present time. There is undoubtedly a market and that market is a country with which we are more closely associated than any other.

### TRANSFER OF LOCOMOTIVE CONTRACTS.

Owing to' the European war and the immediate cessation of trade relations with Germany the supply of railway locomotives and rolling stock, for which Germany has long been a keen contender, is rapidly undergoing a change in its source of manufacture. Before war broke out the leading German companies had in hand some enormous orders from British and overseas railways. One of the most important contracts comprises a large number of passenger carriages for the new electrified services around Buenos Ayres of the Central Argentine Railway Company. This contract was originally placed with a Hanover firm, but has now been awarded to the