value is to be ascertained. If this was not the object, my valuation, as above stated would be unnecessary.

With the exception of the land, however, and those lines of the Canadian Northern System which are old lines recently incorporated into the system, in other words for the portions of the lines considered which have been built within recent years, the cost of reproduction and the original cost should nearly coincide. The land values themselves should probably not differ greatly, except in the large cities, where in some cases, land costing little originally has now become very valuable, so that its first cost and its cost of reproduction would be very different. In the case of the older roads recently bought and incorporated in the Canadian Northern System, the cost of these properties to the Canadian Northern Company might differ greatly, both from the original cost of the properties and from their cost of reproduction new at the present time. They may have been bought at very high or at very low prices, as compared either with first cost or cost of reproduction.

These principles were briefly discussed with the Commission before the beginning of the work. The problem, therefore, to be performed by the force under my direction, was to ascertain the cost of reproduction new of the properties in question at the present time. By the phrase "at the present time" is not to be understood the present moment, in view of the inflated prices for materials and labor which have come about as a result of the war; but rather, the fair cost of reproduction new, assuming that the properties were to be reproduced at fair average prices prevailing during a brief period of years just before the war.

LAKE OF THE WOODS REPORT.

The members of the International Joint Commission, when at Detroit recently, signed the report on the Lake of the Woods levels, and it is expected that this report will be delivered to the Canadian and United States governments this week. The two officers of the commission are now engaged in getting into shape some material supplementary to the report. It is probable that the report will be made public at an early date by the two governments. It is understood that accompanying it will be nine volumes, three of which are the consulting engineers' reports and maps and the remainder consisting of testimony and arguments.

That the United States Steel Corporation has appropriated up to date about $9,000,000 for building the company's Canadian plant at Ojibway, Ontario, is a statement made by Judge E. H. Gary, chairman of the company, to *The Canadian Engineer*. The construction on foundations, docks, etc., has been commenced.

The Manitoba government has established a purchasing department. Everything required by any of the departments will be requisitioned and put through the purchasing department. The head of the new department is Mr. E. A. Gilroy, former auditor of purchases, and he will be known as the government's purchasing agent. Mr. H. Hurd will be the assistant purchasing agent.

The British government is taking more ships from the Pacific routes and the Empress vessels of the Canadian Pacific Railway may be diverted. The ships being taken off the Pacific are being used for the greater part on the North Atlantic to carry foodstuffs and munitions to Britain, France and Italy. Some may be used during the open shipping season at Archangel, Northern Russia.

TAKING TRAINS TO THE TRENCHES.

DOUGLAS S. ROBERTSON, special correspondent at the front for the Toronto "Evening Telegram," has written an interesting account for that paper of the construction and operation of narrow-gauge railroads behind the fighting lines in France. He says that where the guns are roaring Canadian railway building is proceeding with all the push and go it ever exhibited on the western prairie. But the engineers and contractors have stars on their sleeves, and the men are all in khaki.

Canadian railway battalions are now handling the greater part of the railway construction behind the British front. Of the five assistant directors of light railways, no less than three are Canadians. Shells are delivered by rail right to the guns; rifle ammunition is hauled within a stone's throw of the firing-line; food and materials of all kinds are readily despatched to wherever needed; wounded are carried quickly to the base; and troops are shifted to and fro. Motor transport behind the lines has cost some fifty cents per ton per mile, says Mr. Robertson, whereas by railway the cost is about one cent, and, although the motor transport serves its useful purpose, the railway is more reliable.

Twisting and twining in sinuous curves, the light railways reach out to all parts of the battlefield. Every spur is constructed with double loops, so that should shell fire or other mishap destroy one loop, the alternative loop may be used. So numerous are these light lines, and so well planned, that traffic can never be altogether held up under any conceivable circumstance of mishap. They fairly gridiron the country back of the lines.

Stopping at a safe distance in the rear, the standard gauge lines unload their tonnage at the various ammunition dumps, whence it is moved to the trenches and the guns as required. The locomotives are largely steam-driven 17-ton Baldwins. The cars for the most part are like small editions of the Gondola coal cars. They measure 17½ ft. long by 5 ft. wide and are equipped with hand-brakes. These cars have a capacity of 2½ tons. By virtue of collapsible sides they can be transformed into flat cars. The railways are largely operated by despatchers, who use the telephone system.

Grades are fairly easy on these light roads. There is no rise greater than 1½ per cent., and no sharper curve than 20 per cent. There are some large cuts and fills. Broken stone and brick are used extensively for ballast, as a firm roadbed is necessary when moving heavy loads of shells. Many of the ties are cut in the woods of France by Canadian forestry battalions.

Although the light lines are built and maintained by Canadians, they are largely operated by British, Australian and New Zealand troops, enlisted specially for such work. Each repair train carries an electric generator, driven by a gasoline engine. These repair trains consist of a considerable assortment of machines, such as shapers, lathes, metal saws, drills, grinders, etc., all electrically driven.

"Tamping ties and driving spikes," says Mr. Robertson, "running transits and taking levels, the laboring and the professional sides of railroading, may be prosaic enough occupations at home, but here they are not only useful in the highest degree, but also they are fraught with no small portion of the soldier's risk. Every bullet has its billet and every shell its destiny. And not a few Canadians made the great sacrifice when helping to win the war with railroads."