

out engineer services during peace and war. These officers' station duties continue in war, and every officer ordered overseas must be replaced by another officer.

The R.C.E. officers are appointed from graduates of the Royal Military College, who, when appointed, get two years' instruction on all technical subjects at the School of Military Engineering, Chatham, England.

A special instructional Cadre, R.C.E., is appointed for instruction in all branches of military engineering, telegraphy and engineer services.

The Canadian Engineers comprise:—

(a) Four field troops—Hamilton, Winnipeg, Regina and Calgary.

(b) Eight field companies—Woodstock, N.B., Toronto, Ottawa, Montreal, Kingston, North Vancouver, London, Toronto.

(c) Eight telegraph detachments, with same headquarters as field companies.

(d) One wireless detachment—Hamilton.

(e) One fortress company—Halifax.

A field troop is a mounted unit to accompany a cavalry brigade. A field company accompanies an infantry brigade—three per division. A telegraph detachment forms a portion of a signal company. One signal company is allotted to a division, and contains three cable detachments as well as brigade signallers. A wireless detachment forms part of a signal troop to accompany a cavalry brigade. A fortress company is detailed to a fortress for defence lights and fortification works. All the above-mentioned non-permanent troops and those now preparing for war are trained by the R.C.E.

An engineer training depot has been established in England, and also one in Canada, for training the engineers with the Canadian Expeditionary Force. The officers and men of the C.E.F. engineer units are selected from the various R.C.E. and C.E. units as required and sent to the Canadian Engineer Training Depot for their first training prior to their going to the Training Depot in England.

The establishment and proportion of engineer units have been increased in this war.

The chief duty of Canadian Engineers is the co-operation with the other armies in the construction of field defences. The infantry supply the working parties, the engineers the supervision and technical labor. The proportion of engineers is in the neighborhood of 50 sappers to 1,000 infantrymen. The engineers also carry out the technical portion of communication in the field—telegraphs, telephones and wireless, which are of such importance. All engineers are fighting troops, and carry their rifles with them at all times.

While engineers have always been engaged on important duties in connection with war from the early times to the present, it is only comparatively recently that they became a recognized profession. Their efforts were sporadic, and the value of their work depended upon the cleverness of the individual more than upon the advanced state of the science of engineering. Royal Engineers were previously known as sappers and miners, which names still survive, but bear a somewhat different meaning. It was at the long siege of Gibraltar that the first formal organization of engineers took place, and since then they have constituted a most important and integral part of every campaign. As one writer stated, they "are not unprogressive as anthropoids, little raised above them in intellectual developments, living and

laboring only to supply their immediate material wants and dying only to be forgotten," but they occupy a prominent place in history by virtue of the fact that forces of nature are subjected to human skill, mechanical power is substituted for animal force, labor of the mind has become more active and more productive as the pressure of daily toil is lightened by the dynamic application of heat.

Engineers are successful as commanders, for General Eliot held Gibraltar against the combined forces of France and Spain. Lord Napier was in command of the Abyssinian expedition; General Gordon in China and Egypt; General Lee, of the United States Confederate Army. Vauban, Marshal Niel, Vaillant, Caraignoc, Graham, Warren, Prendergast, Joffre and Kitchener are a few typical examples of engineers who have won immortal fame. The motto of the Royal Engineers is "Ubique" (ubiquitous), and on their banner is inscribed, "*Quo fas et gloria ducunt*" (Whither duty and glory lead).

## TELEPHONE EXTENSIONS IN SASKATCHEWAN.

In the annual report for the year ended April 30, 1915, of the Saskatchewan Department of Telephones, the completed construction work for the year is stated to be: New toll offices, 16; new exchanges, 3; pole miles (long distance), 234.6; wire miles (long distance), 550.

The most important section added to the system was that from Gull Lake westward to the boundary to join up with the Alberta system. This connection permits of communication between points from Regina west as far as Calgary and with all other points south of the main line of the Canadian Pacific Railway. The field was further widened by arrangement for connection with systems across the international boundary so that now points as far as Chicago may be reached.

Exchange construction for the year included only that of plants in three small towns and the installation of a new automatic system in Prince Albert which latter work necessitated a great deal of outside reconstruction. The year's work was made up largely of the rearrangement of equipment which had grown through successive yearly additions into a system comprised of some 15,000 wire miles of long distance and of exchange plant to serve some twenty odd thousand subscribers.

Somewhere between four and five thousand miles of rural systems were constructed during the year, making altogether over 12,500 pole miles of system owned and operated by nearly 500 farmer companies and serving some 13,000 farmer subscribers.

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## COBALT ORE SHIPMENTS.

The following are the shipments of ore, in pounds, from Cobalt Station for the week ended October 15th, 1915:—

Buffalo Mines, 62,410; Penn Canadian Mines, 63,662; McKinley-Darragh Savage Mines, 81,066; Dominion Reduction Company, 88,000; La Rose Mines, 87,127; Mining Corporation of Canada (Cobalt Lake Mine), 86,115; Nipissing Mining Company, 77,387; Right-of-Way Mines, 77,831; Peterson Lake Silver Mine, 65,958. Total 689,556 pounds, or 344.7 tons.

The total shipments since January 1st, 1915, are now 24,803,343 pounds, or 12,401.6 tons.