

MILITARY ROADS IN FRANCE.

A very interesting sidelight on the military roads in France and Belgium was given in a letter from Col. Mackendrick, of the Warren Paving Co. of Toronto, to Mr. George Warren, the President of the parent company of Warren Bros., Boston. Col. Mackendrick is Assistant Director of Roads of the Canadian Army, so that his statement has a special interest for Canadian readers. In part it reads as follows:

All the roads in France and Belgium are macadam or macadam with stone setts on sand in the centre of roads except in the towns and villages where the main streets are mostly stone setts or Pavé as they call them here. Nearly all French roads are very light construction, from 4 to 6 inches of gravel or stone, and a few inches of chalk or sand. They do not stand up under the intensive traffic in the army areas of the 3 and 5 ton lorries, guns, etc., and in the spring, fall and winter it is a case of strengthening them with macadam, slag, mine refuse, chalk, old soft bricks from the destroyed villages, or anything that can be had. Bad places wet and swampy we use sleeper roadways, i.e., railway ties on 3 bearers spiked down, or 3in. plank roads or 3 bearer or corduroy roads similarly built.

When building roads in France or Belgium we used to adopt Macadam's methods of standing large stones on end, hand placed and then breaking off the tops and placing macadam on top and rolling, but I found for this climate on wet soil this method was very expensive, as the huge lorries drove the stones down into the mud and it kept on sinking so I adopted the method of laying the large stones, or soling as they call it here, on its flatest side to give good bearing so it would carry the lorries better and then filling macadam on top of this in dry weather, rolling and consolidating as usual and binding with mud off the side of the road in wet weather, first place the soling with more on top, and let the traffic wiggle it into shape. No rollers are used in winter as they block traffic too much and are unnecessary.

The road from Albert to Bapaume was rebuilt and re-coated in this way and we carried all the army on it without a roller on the road until the dry weather of May, when we started to put a regular coating of macadam on it and had 8 rollers working two shifts per day licking it into shape.

Time is the factor in all advance road work such as is only possible in these armies as from the minute an advance is made by the infantry the guns must go up in support and the munitions must go up constantly thereafter, and whatever can be got to make the roads usable is the thing for the army. We carried all the roads in the recent advance for many weeks with repairs made to all shelled sections, which in the worst spots comprised from 80 to 90 per cent of the road near and in villages with the bricks and building chalk from the destroyed buildings in the nearest village. The traffic grounds this material into powder and in wet weather into mud and it had to be renewed every day or two, but with stone costing 30 shillings a ton and at any price not available we had to use what we could get. We have built many miles of railway sleeper roads for temporary use.

Cost never enters into the question here when we are moving whatever we can get that will hold up the guns and traffic is used. Trees are used, old sleepers, rafters and so forth from houses in the demolished villages are laid down to enable the guns and regiments to get along and keep moving and in many cases we could only make roads good enough for the horses to pull in the ambulance carts and limbers could not be taken in over the only available roads until many days or weeks work had been put on them. I have had 10,000 to 12,000 men working for many months and have used up to 2,000 tons of metal a day not counting corduroy sleepers or pit props or brick; when possible we fill all holes with broken bricks and fill 4 to 6 inches macadam on top for a wearing surface and all the while we must keep the traffic moving usually two ways on roads 16 to 78 ft. wide.

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