

over rough ground or by heavy reinforcing, then volleys cease to be practicable for ordinary troops and become very difficult to execute with highly trained troops.

Consequently volley firing should be confined to the longer ranges before the organic units are mixed or broken up. Indeed they are essential at such ranges to enable the effect of the fire to be properly watched and the elevations corrected if necessary. But after a while when volleys are no longer possible, mass firing must be resorted to. Many German writers will not even rely on the men stopping the firing of their own accord after 3 or 4 rounds, but rely on the use of a shrill whistle for this purpose, an instrument which every officer and N. C. O. should carry, and on the sound of which every man should be trained to cease firing. This I would advocate for the Canadian Militia.

Now to secure the greatest efficacy of fire one very important detail must never be forgotten. To avoid a multiplicity of estimates of the same range and to avoid adjacent sections firing with very different elevations, which has often happened, *the firing line of each battalion must be under a distinct commander (one of the field officers of the battalion) and distinct pauses must be made now and then in the firing along a wide front, that of a battalion at least.* This pause can be easily obtained by training, by the use of the whistle, and by the exertions of all the officers and N. C. Os. in the firing line. During these pauses the smoke will be allowed to clear away, objectives can be chosen and named and apportioned to different portions of the firing line, the ranges decided on by the range-finding squads, and any necessary alterations made in the elevations used, or the fire stopped for good, or the men made to advance. These distinct pauses on a wide front are required even in volley firing, and too much stress cannot be laid on them, for without them it is impossible to maintain a proper control over the fire to usefully direct it. In this way alone can an united action between all the parts of the firing line be ensured, and only in this way also can we employ company and even half battalion volleys, even when the smaller units are mixed up, for the purpose of "picking up the range,"\* or for steadying the men if they are getting excited. The greatest stress must be laid on having a distinct officer commanding the firing line, and on these regular distinct pauses in the fire over a wide front during any kind of firing, if a control over the fire is to be maintained.

Thus, as a rule, volley firing is better adapted to the defence than to the attack and to long range firing, while mass firing is best suited to the medium and short ranges when so much reinforcing has taken place that the units have got mixed up. This mass firing seems to be in complete accordance with the requirements of battle in those periods when organic units have ceased to exist as such and when reinforcements are being boldly pushed into the firing lines to drive it forward. By making use of it the men will fire more naturally and more effectively and will be less affected by the

\* Volleys are required for picking up the range by watching the strike of the bullets. Volleys should also be used against a retreating enemy after his position has been carried.