

the left of the mark, and a too long fire to the right of it, even if its direction is good. This fact must be carefully remembered.

With regard to estimating the ranges, the German practice of "range finding squads" is worthy of imitation.

(7). The question of the kind of fire to be used is of very great importance, for it is greatly affected by considerations of human nature and of the means of handling troops under fire. There are two kinds of controlled fire:

1. Individual fire.
2. Collective fire. $\left\{ \begin{array}{l} a. \text{ Volley firing.} \\ b. \text{ Mass firing.} \end{array} \right.$

Uncontrolled fire will come of its own accord when the moral and mental strain of battle becomes too great for control. Hence it need never be ordered. Every effort, indeed, should be made to avoid such firing. We have only to deal with controlled firing, and we can control collective firing either by employing volleys, or by employing mass firing (which is really only a more perfectly controlled individual firing than the individual firing we have already considered) of a limited number of rounds (4 at the most), when the fire must cease until ordered to be renewed after a slight pause.

In individual firing the trigger is pressed directly the alignment is obtained; in volley firing the alignment, when obtained, has to be maintained until the order to fire is given. As this is not easy to do, and as some men are, more or less, disturbed by hearing the sudden command to fire, the result is that in peace experiments deliberate individual firing has always given better results than volley firing. The advocates of volley firing say, that though this is the case on the practice range, yet the reverse will be the case on the battle field, for the men will be kept in hand better when volleys are fired. Here is a delicate question of human nature. My own impression is that it requires highly disciplined troops to use volleys under an effective fire, for during the frequent pauses they will hear the enemy's bullets and the sound of his fire, whereas individual firing, by making a continuous noise, prevents this. Further, volley firing at even medium range requires more control than can be expected from any but highly trained troops.

Volleys should only be fired by companies in close order, or half companies in rank entire, or sections in open order. Other units are too large for the purpose.

Other advantages are claimed for volleys, such as economy of ammunition, facility for changing objectives and elevations, especially when the target is charging cavalry, etc. But these advantages can be equally claimed for mass firing conducted on the lines to be presently indicated.

Now volley firing, however good in theory, requires for its execution the maintenance of the organic units. Hence volleys are only practicable so long as these units are maintained intact, which will only occur when close order formations are used (as in savage warfare), or so long as the enemy's fire has not necessitated heavy reinforcing. But when the organic units have been broken up by losses or have been mixed up by an advance under fire or