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LMG fire against groups of attackers at short range.

Abstract.

A preliminary investigation has been made concerning the best method of engaging groups of attackers at short range with LMG. It appears that normal service bursts are always the worst method, and that the machine-gunner should use either single shots or traversing fire.

1. When an LMG is in defence a particular kind of target may arise when the enemy makes his final assault up to close quarters. The Bren gunner may then be confronted with a group of men advancing towards him from a distance of, say, 200 yards. The characteristics of such a target will be that

(i) each man will be fairly well exposed.

(ii) the whole target will only be in view for a short time.

2. It has been questioned whether the standard method of fire (bursts of 4 or 5 shots) is the best to adopt against such a target. The alternatives are to fire single shots or to go to the other extreme and fire as many rounds as possible in the time, traversing the gun so as to spray the bullets along the line of attackers.

3. The obvious objection to the last method that it would lead to very heavy ammunition expenditure cannot be sustained on investigation. Only two more magazines would be fired in 30 seconds, and such a method of fire would have to be confined rigidly to proper occasions, when the short time of exposure makes the ammunition expenditure of secondary importance.

4. An attempt has been made to estimate the number of casualties from the 3 methods of firing. In the case of traversing fire a small number of experiments were carried out which agreed well with theory. With bursts and single shots about 50 experimental shoots were carried out. Targets were used which were equivalent to a row of 24 men at 100 or 200 yards spaced either 4 or 8 ft. apart. A summary of the results is given as Table 1.

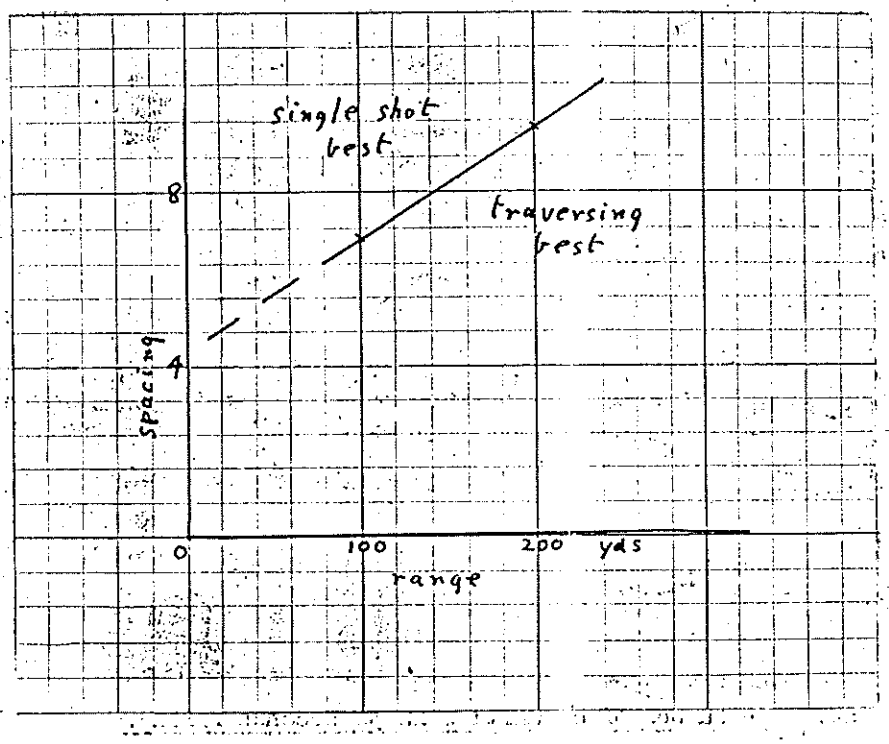
Table 1 - number of casualties in 30 seconds firing.

	Bursts.	Single shot.	Traversing.
Range 100 yds, spacing 4 ft.	9	12	16
Range 100 yds, spacing 8 ft.	8	12	8
Range 200 yds, spacing 4 ft.	8	6	12
Range 200 yds, spacing 8 ft.	5	6	7

5. It will be noticed that 'bursts' is never the best method. In some conditions traversing fire will be best; in some, single shot. This is shown graphically in Diagram 2.

See Page 2 for Diagram 2.

Diagram 2:
Conditions when traversing fire or single shot will be best.



6. It is rather surprising that bursts give worse results than single shots in three cases out of four. Two reasons suggest themselves:-

(i) More single shots than bursts can be fired in 30 seconds.

(ii) In a shoot against time the standard of burst firing goes down owing to the continuous 'shake' of the gun.

7. Further details of calculations and trials are given in the Appendix.

8. Conclusion. In the circumstances envisaged (a group who are only likely to be exposed for a short time), troops should be instructed to use traversing fire. When, however, the enemy come to within 100 yards range and are at least 6 ft. apart, recourse should be had to single shots.

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APPENDIX.

1. The average number of shots fired in 30 seconds was tested for a selection of firers. In each case time occupied by stoppages was not counted. The results are given in Table 3.

Table 3 - shots in 30 seconds.

Traversing	(4 firers)	119 shots
Bursts	(28 firers)	52 shots
Single shots	(22 firers)	18 shots

2. The average number of casualties to be expected with traversing fire can be obtained by calculation. The only further factor that must be obtained experimentally is the number of shots wasted by being too high or too low. The average of 4 firers gave the following results.

Table 4 - shots wasted in traversing.

Range.	% wasted.	Net shots in 30 secs.
100 yards.	10	105
200 yards.	45	66

3. The final calculations for traversing give the figures quoted in Table 1. Allowance has, of course, been made for overhitting, and the figures given represent the number of different men hit, some of them more than once.

4. The method of traversing deserves attention. A few actual trials were made traversing from the bipod, which is not very easy to do. Even so, the results were very near the theoretical values.

5. The figures for bursts and single shots were obtained by experimental shoots at miniature targets at 25 yards by men from the Guards demonstration platoon and the Dorset regiment. It is thought that these targets were considerably easier than actual men would have been, and that the results are, therefore, weighted <u>against</u> traversing fire (which has even so given such good results).

28 shoots were made with bursts and 22 with single shots. No shoots were made with range 100 yds and spacing 8 ft; the corresponding figures are inserted as a guess, but cannot be very far out.

6. The horizontal distribution of every shot was plotted, and the resulting histograms verified that the gun used was accurately zeroed.