

ineffective if it was executed by all firing with the same sight, and therefore, recommends the simultaneous employment of two, or even three, different sights when ever it is deemed necessary to fire at an object whose distance is not known with certainty.

"Rules for firing—Depend upon two different principles, according as the firing is at a defined object or at an extended one. In the first case, the aim of all should be concentrated on the centre of the object aimed at; in the second, as it is sufficient to strike it anywhere, the apparent bottom should be fired at, the chances of hitting being thus increased.

The practical instruction of recruits and old soldiers proceeds on these principles, substantially in the following manner: The firing exercises are divided into three categories—1st, 'Target Practices'; 2nd, 'Battle Practices'; 3rd, 'Instructional firing.' The total number of rounds employed varies from year to year, but is generally about 120, in 1872, 170 were fired. The targets may be thus briefly described: They are all made of either paper, or canvas with paper pasted on it, stretched on wooden frames.

"TARGETS.—No 1 target is 5ft. 10in. high, 4ft. wide, and has a black vertical band 4½ in. wide running down its centre; it is generally used for the practices at which a rest is employed.

No. 2 target is of the same height and width as No. 1, but the vertical band is only 2in. wide. The whole target is divided into three bands, each 16in. wide, and representing a man's breadth; the outer ones are painted blue and the central one white. Around the centre are traced twelve circles, forming twelve rings, each 2in. broad, and numbered from the exterior to the interior 1in. to 12in.; thus representing the value of each shot striking in them. Rings 10 and 11 form a black circle 4in. thick, enclosing a white centre; these together form the bull's eye. This target is chiefly used by the men in the second and third classes.

No. 3 target is 5ft. 10in. high and 16in. wide, and has a Prussian Infantry soldier painted on it. This target is varied in the following manner: No. 3 A, 'Head target,' is the upper quarter of No. 3; No. 3 B, 'Chest target,' is the third of No. 3; No. 3 C, 'Bust target,' is the half of No. 3; No. 3 D, 'Knee target,' is 2ft. of No. 3 raised 3ft. 10in. above the ground. This target is employed especially by the men in the first class, and also in the 'battle practices' and 'inspection firing,' in these two latter cases, the white remaining round the edges of the figure is removed.

No. 4 target, called the 'column target,' is 5ft. 10in. high, 8ft. wide, white, and has a vertical black band 6in. wide down its centre; it is used for individual firing from 350 to 600 metres. For the practices beyond 600 metres several targets are placed in columns, one behind the other; their height is 5ft. 10in.; their width and their number depend on the distance and the nature of the practice. Besides the above, these targets are sometimes placed in the same alignment, but then greater or lesser intervals are always left between them."

All men in their first year of service fire in the third class; those who fulfil the necessary conditions fire in the second class in their second year; and those who succeed in passing out of the second class fire in the first class in their third year of service. Each class, however, must succeed in fulfilling the conditions attached to the "preparatory practice" before entering the "principal practice." The conditions are as follows:

*Third Class.*—"Preparatory," 5 practices, the first four standing, with a rest, the last offhand. Each practice has five shots. The first and second are at No. 1 target, the rest at No. 2. In each practice there must be five hits, 2 of which must be in the "band." Distance, 100 yards. "Principal," 10 practices, from 150 to 500 yards, retreating from target by 50 yards at a time, and practised alternately standing with rest, lying down with rest, and standing, kneeling and laying down without rest. The targets are Nos. 2 and 3, and the number of hits necessary 5 or 4, with 30 points on the ring target. At 500 yards there are no conditions.

*Second Class.*—There are 4 preparatory and 9 principal practices, from 100 to 600 yards. As in the third class the conditions are strict up to 350 yards, but at 600 there are none. The targets are 1, 2, 3 and 4.

*First Class.*—4 preparatory, 9 principal practices, conditions still closer up to 350 yards, none at 400 and 600.

Last come the result of the system as embodied in the "battle" and "instructional" practices, as follows:

"Battle Practices.—The object of these practices is to apply the knowledge gained in the 'target practices.' They take place as much as possible on undulating ground affording cover. They are never executed at the ranges unless there is no means of doing otherwise, and then the appearance of the range is changed by some rapid works, such as ditches, parapets, abattis, etc. The firing ought to be at unknown distances. The men belonging to all three classes take part in these practices; those of the third class fire at least twenty rounds, and those of the other two classes at least twenty five. The rounds are expended in the following manner: 1st. Five rounds in volley-firing by sections, in close order with bayonets fixed at No. 4 target, or one larger still. 2nd. The remaining rounds are individual firing against No. 3, 3 'A,' 3 'B,' 3 'C,' and 3 'D' targets. The second series is, as a rule, fired man by man; the distance and the dimensions of the target are regulated for each man according to his individual skill.

Instructional practices.—These are only executed by men in the first class in the presence of those of the two other classes, who take part as spectators. Each man fires ten rounds lying down, or kneeling at distances between 800 and 1,600 metres. These practices are intended to show the efficacy of the firearm up to the longest ranges.

"Inspection Firing.—It will be seen from what has gone before that no one can pass into a higher class until he has satisfied all the conditions in the lower one; and that the 'Battle practices' are executed at different distances according to the individual skill of each man; hence it follows that there is no means of comparison between companies, battalions, or regiments. To supply this deficiency an examination in firing takes place every year before the commencement of the Autumn Manœuvres, under the supervision of the colonel of the regiment. The programme is drawn up by the War Minister, and is identical for every regiment. Officers mark in the butts, and the register is filled in on the ground; and a duplicate, signed and certified to by the colonel, is forwarded to the Emperor. If necessary, any special circumstance which might influence the firing is inserted on the register.

"Dress.—The 'Preparatory practices' are fired by men in forage caps without their knapsacks, and with only one ammunition pouch on. In the 'principal practices,'

'battle practices,' and the 'inspection firing' the men have their helmets and knapsacks on, the latter either full, or containing a weight equal to its contents on service; they also carry two ammunition pouches, a cooking pot, and the great coat *en bandero*. In the instructional firing the dress is optional."

The United States Army and Navy Journal gives us the following very interesting article on "Military Telegraphy"—and as the officers of the U. S. Army obtained great experience in its use during the late internecine contest, the subject has peculiar value for the military student.

Where troops are widely separated, and it is contemplated that they should act in concert in times of emergencies, it is highly necessary that sure and rapid communication should be secured, and what, for this purpose, could be better than the modern telegraph, which to our improved warfare is now, as well as the railroad, absolutely necessary, and has frequently conduced to the most decided successes? Gen Sherman remarks on this subject, that "for the transmission of orders in an army covering a large space of ground, the magnetic telegraph is far the best, though habitually the paper and pencil, with good mounted orderlies, answer every purpose; but the value of the magnetic telegraph in war cannot be exaggerated, as was illustrated by the perfect concert of action between the armies of Virginia and Georgia during 1864. Hardly a day intervened when General Grant did not know the exact state of facts with me, more than fifteen hundred miles away as the wires ran. So, on the field, a thin insulated wire may be run on improvised stakes, or from tree to tree, for six or more miles in a couple of hours. I have seen operators so skilled, that by cutting the wire, they would receive a message with their tongues from a distant station. As a matter of course, the ordinary commercial wires along the railways form the usual telegraph lines for an army, and these are easily repaired and extended as the army advances; but each army and wing should have a small party of skilled men to put up the field wire, and take it down when done. This is far better than the signal flags and torches. Our commercial telegraph lines will always supply for war enough skillful operators."

It was during the war of the Rebellion that the telegraph played a most conspicuous part. Within a space of three years the Army laid upwards of 5,000 miles of wire on land and 100 miles of cable in the sea. This war showed how useful the military telegraph might be made to carry out daring projects to effect surprises, reconnoissances, requisitions, etc. The troops of partisans that were constantly operating upon the flanks of the armies, were always accompanied by an experienced telegraphic operator, and important intelligence was thus frequently received by the leader of the band.

Even when telegraphy was in its infancy it accomplished wonders. Napoleon owed his astonishing success at Ratisbon, in 1809, to the fact of his having established a telegraphic communication between the headquarters of the army and France. He was still at Paris when the Austrian army crossed the Inn at Brunnau, with the intention of invading Bavaria and breaking through his line of cantonnements. Informed, in twenty-four hours, of what was passing at a distance of seven hundred miles, he threw