Modern Tactics.

[By Capt. H. R. Gall—From Illustrated Naval and Military Magazine.]

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Chapter II.—Spaces and Time.

Cavalry.

A HORSE measures eight feet from nose to crup, and is allowed a front of one yard. In line the rear rank is a horse's length from the front rank. Cavalry in line occupy as many yards as there are horses in the front rank; therefore, double the yards and you have the number of sabres. In fours, sections, or half sections, the interval between the sections is half a horse's length, or four feet. Cavalry in fours are eight, abreast, four of the front rank and four of the rear rank wheeled up alongside of them. Cavalry in fours (*i.e.* eight abreast) occupy the same space in column as in line. 24 yards of cavalry in line = 24 front rank + 24 rear rank = 48 sabres.

A troop of 48 sabres in fours = 6 sections or rows of 8 horses each = 6 × 8 feet + 5 intervals of half a horse's length, or four feet; 6 × 8 + 5 × 4 = 68 feet. In cavalry 2 feet is alway allowed in front, and two feet behind the column = 4 feet; 68 + 4 = 72 feet or 24 yards. Therefore cavalry in fours occupy the same space as in line, or half a yard per sabre. Cavalry in sections are four abreast, and occupy double the space they do in fours (8 abreast).

A half troop of 24 sabres in sections (four abreast) = 6 sections or rows of 4 horses each = 6 × 8 + 5 × 4 (intervals) = 68 feet + 4 feet allowed for front and rear of column = 72 feet or 24 yards, or one yard per sabre. Therefore 24 sabres in sections (4 abreast) occupy the same space as 48 sabres (8 abreast).

Cavalry in half sections (2 abreast) occupy twice the space they do in sections (4 abreast). Therefore cavalry in half sections occupy two yards per sabre; 400 yards of cavalry in half sections = 200 sabres (2 abreast), in sections = 400 sabres (4 abreast), in fours = 800 sabres (8 abreast).

The normal formation of cavalry on the march is sections (4 abreast). This formation leaves room for passing traffic. In crowded streets or narrow roads half sections (2 abreast). A cavalry regiment consists of 8 troops. A squadron (96 horses) = 2 troops. The tactical unit of cavalry is a squadron. Four squadrons form a regiment.

Cavalry Intervals.—Between squadrons in line or in fours, 12 yards interval is allowed. In sections or half sections there are no intervals between squadrons. The intervals between cavalry regiments and between cavalry and infantry is 24 yards. Intervals are weaknesses, but in line and in close formations, such us cavalry fours, the tendency is to crowd on each other; to avoid this the lesser of two evils is adopted by establishing intervals between units. In the weaker formations, sections and half sections, the tendency is to slag out; therefore no intervals are deemed necessary. This fact is very marked, even with infantry; the moment two deep is formed the men begin to lose their distances. Going into church, men are generally cautioned to close up before they have gone many yards in two deep formation.

Pace.—Cavalry 4 miles an hour at a walk—117 yards per minute; 8½ miles an hour at a trot, or 250 yards per minute.

Infantry.

Each man in front rank occupies 2 feet; in addition for length of front occupied by a battalion in line allow for one officer per company (right guides), two officers and a colour sergeant for colour party, and an officer on left of line. A battalion of 8 companies in line occupies 1 foot per man, or 2 feet for every front-rank man + 24 feet for guides and colour party, and officer on the left of line. Infantry in fours occupy the same space as in line; therefore infantry in line or in column of fours, occupy 1 foot per man + 2 feet per officer or marker. (In fours the markers lead their companies.) All calculations in tactics are made in yards; therefore infantry feet must be brought to yards.

Infantry Intervals.—Between infantry battalions 25 yards (30 paces), between infantry and cavalry 24 yards.

Pace.—Three miles an hour, or 88 yards a minute.

Artillery.

Each gun or waggon with six horses occupies 15 yards. The interval between guns in line is 19 yards. This interval is to admit of the battery being moved off to the right or left in column of sub-divisions and leave 4 yards interval between each subdivision. A battery in column of route (its normal formation when on the march) consists of 6 guns and 6 waggons each, taking up 15 yards, and eleven intervals of 4 yards; hence a battery in column of route occupies 15 × 12 + 4 × 11 = 224 yards. A battery in line occupies 95 yards or 5 intervals of 19 yards between each gun. The interval between half batteries in column of half batteries is 23 yards. This interval admits of the battery being wheeled into line with the proper intervals of 19 yards between the guns: 23 + 15 = 38, which gives the space required for the rear half-battery to wheel into line.

Artillery Interval.—Between batteries 28½ yards (*i. e.* a line interval between guns and a half). Between artillery and other arms (cavalry or infantry) 28½ yards.

Pace.—Same as cavalry, walk four miles an hour, trot 8½.

Points to be remembered:—Cavalry in line = as many yards as sabres in front rank. Cavalry in sections (4 abreast) = a yard per sabre. Fours (8 abreast) reduces the space occupied to ½ a yard per sabre. Half sections (2 abreast) increases the space occupied to 2 yards per sabre. Cavalry intervals 12 yards between squadrons in line or in fours, 24 yards between regiments. Between squadrons in sections or half sections no intervals. Pace 117 yards a minute at a walk; 250 yards a minute at a trot.

Infantry occupy 1 foot per man in line, or in fours; in addition 2 feet each must be allowed for guides and front rank of colour party. Interval 25 yards between battalions. Pace 88 yards a minute.

Battery of artillery in column of route = 224 yards; in line = 95 yards. Intervals between guns in line 19 yards; between guns or waggons in column of route 4 yards; between half batteries in column of half batteries 23 yards. Between batteries, and between batteries and other arms 28½ yards. Pace same as cavalry.

Rules for calculating space occupied by the different arms:—

I. Draw out the force.

II. Put in the space occupied by infantry in feet above, and by the other arms in yards below.

III. Bring the infantry feet to yards before proceeding with calculation.

IV. Remember though infantry occupy feet, all calculations of time and space are in yards.

Example.—Calculate the space occupied in line, by the following troops:

1 regiment of cavalry 400 sabres.

4 regiments of infantry (three 800 strong in 8 companies, and one 600 strong in 6 companies.)

2 batteries of artillery.

Calculate the space occupied by the same force in column:

The cavalry in sections.
The infantry in fours.
The artillery in column of route.

Time Calculations.—To calculate the number of troops on the march all that is necessary is to note what formation they are in, and time the different arms passing a tree or turn on the road.

Artillery always march in column of route, *i.e.* 224 yards for a battery.

Infantry in fours, *i.e.* a foot per man.

Cavalry in half sections = 2 yards per sabre (2 abreast); in sections = 1 yard per sabre (4 abreast); in fours = ½ yard per sabre (8 abreast).

Let us suppose that a body of infantry marching in fours is observed to take ten minutes to pass a tree. Required their strength. Infantry march three miles an hour *i.e.* 88 yards a minute; 88 × 10 = 880 yards of infantry in fours; 880 × 3 = 2,640 feet or men.

This roughly would be about 3 battalions; there would therefore be two intervals of 25 yards each to deduct between the battalions, which would leave 2,490 feet or men; or three battalions, each 830 strong.

The rate of marching of mixed troops, *i.e.* cavalry and infantry, or all three arms, is regulated by the infantry, the slowest arm, and is, therefore, 88 yards a minute.

A body of cavalry in half sections winding through a mountain district take 25 minutes to turn a corner in the road at a trot. Required the number of sabres.

Cavalry at a trot = 8½ miles an hour = 250 yards per minute.

250 × 25 = 6,250 yards of cavalry in half sections.

Cavalry in half sections occupy 2 yards per sabre, giving 3,125 sabres roughly, or about 8 regiments of 400 each; therefore, there would be 7 intervals of 24 yards each to deduct, leaving 6,082 yards of actual men in half sections, or 3,041 sabres = 8 regiments of 380 sabres each.

A force as under leaves a barrack square in the following order: 2 battalions leading in fours (6 companies each 120 strong); 1 battery of artillery in column of route; 1 regiment of cavalry 450 strong in sections. How long will it be before the last trooper moves off the ground? Infantry marching 3 miles an hour.

Here all that is required is to draw out the force in the order in which it is given, calculate the number of yards it occupies, and divide the result by 88, or the number of yards infantry marching at 3 miles an hour cover per minute.

A division consisting of 7 battalions of infantry (each 1,000 strong in 8 companies); 1 regiment of cavalry, 3 batteries of artillery, 1 company of engineers (200 strong) is in retreat; the rear-guard composed of 2 battalions of infantry, 1 squadron of cavalry, 1 battery of artillery, half company of engineers, occupies a position to hold the enemy in check, while the main body crosses a river 2 miles in rear by a bridge 300 feet long, and part of the roadway on the bridge is taken up by a line of ammunition waggons. How long must the rear-guard hold its ground to enable the remainder of the division to take up a position on some high ground 1,000 yards from the further bank of the river, deploying half to the right and half to the left of the road leading across the bridge?

The cavalry of the main body is moving independently to watch a ford about a mile above the bridge. The infantry is marching in quarter column, the artillery in column of route, and there is no advanced guard; the head of the retreating column is within a mile of the bridge when the attack on the rear-guard position commences.

Here we find, after deducting the rear-guard and the cavalry, that the retreating column consists of: 5 battalions of infantry (1,000 strong each), 2 batteries of artillery, half company of engineers (100 men). A delay at the bridge will be caused while the infantry get from quarter column into fours; and the force can deploy on its new ground half to right and half to left, therefore the time occupied in deploying will equal half the length of the line.

Draw out a simple sketch, and put in the distances, remembering that the delay at the bridge getting 5,000 infantry from quarter column in fours will be 5,000 feet or 1,666 yards, length of infantry in fours. We find the distance 5,583 yards; and the time at 3 miles an hour, or 88 yards a minute, 63 minutes. The answer, therefore is "about an hour."

(To be Continued.)