

KRIEGSSPIEL

1824

VON REISSWITZ

K R I E G S S P I E L

Instructions
for the Representation of
Military Manoeuvres
with the Kriegsspiel Apparatus

by

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1 8 2 4

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FOREWORD.

The idea of representing warfare graphically has been the object of much thought in both ancient and modern times.

Homer's heros played a game with five flat stones to represent the small units used in battles in those days. The more advanced methods of Rome were the origin of the *Lusus Latrunculorum*, in which the phalanx of close ordered troops are advanced against the fortress of the enemy. The war chariots were also represented in Nero's abacus which used amber and other precious stones for the pieces. From the lands of the east the art of war is depicted in the game invented by the Brahmin.

Warfare in the middle-ages was but little guided by art or science, and the man-to-man struggle was reproduced in a lively way in the tournament. There was little enthusiasm for imitating these medieval battles with lifeless figures.

It was not until the use of firearms gave a new direction to war, and science and skill began to win an important influence in battle, that anyone tried in modern times to represent the movements and attacks of a modern army.

Most of the known inventors were concerned mostly with placing the player in a position of supreme control of forces, with complete authority to carry out a campaign from declaration of war, mobilization, marches, supply, battle, replacement of casualties, and peace negotiations - all lay within the scope of the games. One can understand the difficulties faced by these inventors if the scale of statistical information required is considered. Few, and only incomplete terrain maps had been published, and even those, with a few exceptions such as the 1:10,000 maps of Saxony, did not give terrain in a large enough scale to allow smaller units to be properly represented.

Before anyone could hope to succeed a great deal of preparation, including the invention of a terrain on a large enough scale would be necessary.

In these earlier attempts the landscape had been forced into squares and triangles, with rivers, seas, villages, mountains, valleys, etc. pushed out of their natural shapes and into straight lines. In the same way movements of troops, the representation of troop types, the effect of firepower, were also severely modified in such a way that a realistic picture of events failed to be produced.

My father and his friends grasped the idea that the existing equipment had to be abandoned altogether if there was to be the possibility of examining tactics in a realistic way. The scale would have to be enlarged and the terrain would have to be natural. They broke down the events, which had previously been represented in one lump, into individual moments of time which could be studied in detail.

When I undertook the further development of the game the scale was unnecessarily large at 1:2373. The rules for deciding hand-to-hand attacks, and the method for determining terrain advantage had not been fully worked out, and there were still difficulties with deciding effects from gunfire. It took twelve years of trials and re-working for the game to reach its present shape.

The work has been aided by the support graciously given to me by His Royal Majesty Prince Wilhelm, by His Excellency Gen.Lt von Müffling, by many high ranking officers and staff officers, and by the true and faithful support of my friends, of whom I must particularly mention Lt. von Griesham, von Vinke, and Dannhauer.

The war-game can be misused. It shares this misfortune with everything else that we make use of. Art, science, religion, all lose their beneficial influence by misapplication. If, therefore the concern which has been shown here and there should rule out any wrong use of the game, it deserves my fullest thanks. If, on the other hand, it is aimed at suppressing this invention it deserves reproach, for this sort of criticism shows how unfamiliar those critics are with the spirit of our military organization whose teaching and educational institutions expressly state that they are against anything that could be described as a sinister influence.

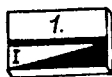
His Majesty, our most gracious king, has ordered that every regiment of the army be furnished with the apparatus. Can anyone suppose that this would be done without the closest examination of the principles involved?

With regard to the style of the introduction and the rules, I feel obliged to say that I have been more at pains to be plainly understood than elegant. I cherish the hope that I may earn the thanks of the subscribers in this respect.

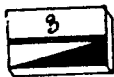
On the application of the rules I will say that anyone who wishes to have a closer understanding will find the principles will be made clear in the introduction.

B.von Reisswitz.

Fig. 1 $\frac{1}{2}$ Battalion



Line inf.



Jager

Fig. 2 Skirmish zug



Fig. 3

Exchange pieces



Fig. 4

Exchange pieces



Fig. 5 Cuirassiers



Fig. 6 Dragoons



Fig. 7 Hussars



Fig. 8 Uhlans



One Horse Artillery
Battery



Fig. 9



munitions wagons

6lb Foot Battery



Fig. 10



munitions wagons

7lb Howitzer Battery

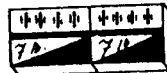


Fig. 11



munitions wagons

One 12lb Battery



Fig. 12



munitions wagons

A Battalion of Pioneers

Fig. 13



Fig. 14. 8 Pontoon wagons



Fig. 15 One officer & 21 riders



Fig. 16 An N.C.O. & 10 riders.



Fig. 17 Individual man or cavalry
double-post.



Fig. 18 One officer & 25 men



Fig. 19 One N.C.O. & 10 men



Infantry single & double-post

Fig. 20



2 guns of a Horse Battery

Fig. 21



Fig. 22 2 6lb cannon



2 7lb Howitzers

Fig. 23



2 12lb cannon

Fig. 24



Fig. 27

A Battalion in line or in open column.



Two Battalions in close zug column on the march.

Fig. 30

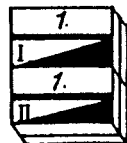
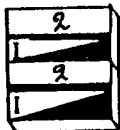


Fig. 28

A Battalion in close column in sections.



Two Battalions in sections

Fig. 31



Fig. 29

Two Battalions in close zug column at the halt.



Fig. 32

6 Battalions in attack column in two lines

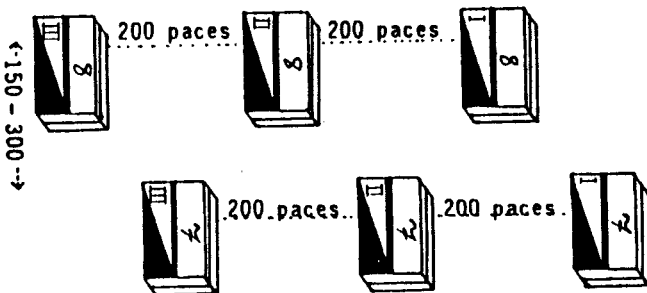


Fig. 33

Brigade-mass of 6 Battalions



Fig. 34 3 Battalions with skirmishers ahead

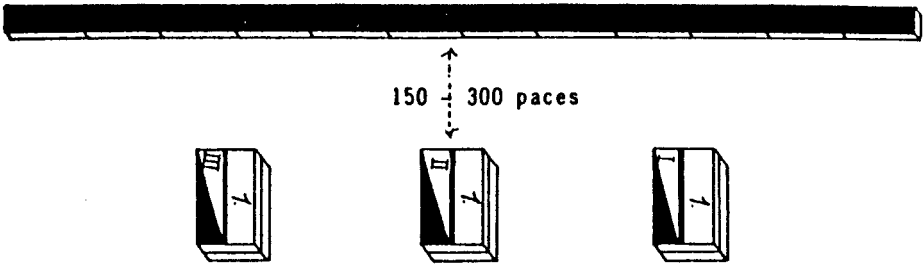


Fig. 35 3 Battalions with skirmishers in the intervals



Fig. 36 8 squadrons in line



Fig. 37 4 squadrons in two's

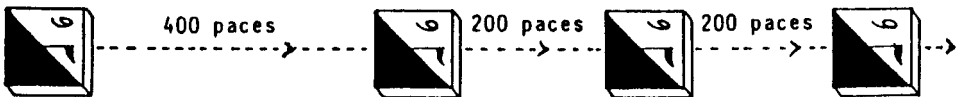


Fig. 38 4 squadrons in threes

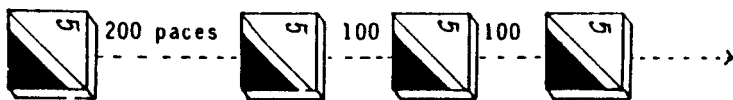


Fig. 39 4 squadrons in open column



Fig. 40 4 squadrons in half-troops



Fig. 41 4 squadrons in troop column without intervals

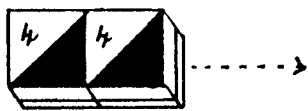


Fig. 42 4 squadrons in divisions

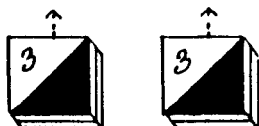


Fig. 43 4 squadrons in regimental column

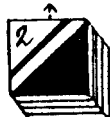


Fig. 44

Fig. 45



Fig. 46

12lb battery in column



Battery in column of 2's



Fig. 47

battery in column of 4's



Fig. 48

Battery in column of 8's

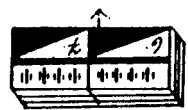


Fig. 49

Die No I

1:1

| | | | | | | | | | | | | | | | | | |
|---------------------|--------------------|--------------------|---------------------|--------------------|--------------------|--------------------|-------------------|-------------------|---------------------|--------------------|--------------------|----------------------|--------------------|---------------------|-------------------|-------------------|------------------|
| 30 20 10 4 | I D 25 10 | 25 15 8 2 | 30 20 10 4 | I T 30 12 | 25 15 8 5 | 15 10 4 2 | I R 15 6 | 10 6 2 1 | 40 25 12 6 | I D 25 10 | 30 17 8 4 | 60 50 25 12 | I T 30 12 | 50 34 16 8 | 10 6 3 3 | I R 15 6 | 7 4 2 2 |
|---------------------|--------------------|--------------------|---------------------|--------------------|--------------------|--------------------|-------------------|-------------------|---------------------|--------------------|--------------------|----------------------|--------------------|---------------------|-------------------|-------------------|------------------|

Die No II

3:2

| | | | | | | | | | | | | | | | | |
|--------------------|---------|-------------------|--------------------|--------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|----------------------|---------------------|----------------------|--------------------|--------------------|-------------------|
| 20 10 5 3 | II O | 25 5 3 1 | 20 10 5 3 | II R 15 8 | 40 25 15 8 | II R 15 8 | 30 20 10 6 | 40 25 15 8 | II D 25 10 | 30 20 10 6 | 60 40 25 12 | II T 30 12 | 50 30 20 10 | 20 10 5 3 | II R 15 8 | 25 5 3 1 |
|--------------------|---------|-------------------|--------------------|--------------------|---------------------|--------------------|---------------------|---------------------|---------------------|---------------------|----------------------|---------------------|----------------------|--------------------|--------------------|-------------------|

Die No III

2:1

| | | | | | | | | | | | | | | | | | |
|---------------------|---------------------|----------------------|---------------------|---------------------|----------------------|--------------------|----------------------|--------------------|--------------------|----------------------|--------------------|--------------------|---------------------|--------------------|----------------------|----------------------|----------------|
| 40 25 10 7 | III R 15 8 | 30 20 12 10 | 40 25 10 7 | III R 15 8 | 30 20 12 10 | 20 10 6 5 | III T 30 12 | 15 12 8 6 | 20 10 8 6 | III D 25 10 | 20 15 9 7 | 20 15 6 3 | III R 15 8 | 15 12 8 6 | 60 40 18 10 | III D 25 10 | 30 16 12 |
|---------------------|---------------------|----------------------|---------------------|---------------------|----------------------|--------------------|----------------------|--------------------|--------------------|----------------------|--------------------|--------------------|---------------------|--------------------|----------------------|----------------------|----------------|

Die No IV

3:1

| | | | | | |
|---------------------|--------------------|---------------------|---------|---------|--------------------|
| IV D 15 10 | IV R 15 8 | IV T 30 12 | IV O | IV O | IV R 15 8 |
|---------------------|--------------------|---------------------|---------|---------|--------------------|





































Die No V

4:1

| | | | | | | | | | | | | | | | | | |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|--------------------|---------------------|--------------------|-------------------|-------------------|-------------------|-------------------|------------------|-------------------|--------|------------------|
| 25 16 6 3 | V D 25 10 | 20 12 8 3 | 25 16 6 3 | V D 25 10 | 20 12 8 4 | 30 20 10 5 | V T 30 12 | 25 15 10 5 | 20 15 5 2 | V R 15 8 | 15 8 7 4 | 12 8 4 1 | V R 15 8 | 8 6 5 2 | 12 8 4 1 | V O | 8 6 5 2 |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|---------------------|--------------------|---------------------|--------------------|-------------------|-------------------|-------------------|-------------------|------------------|-------------------|--------|------------------|

Colour Code Red  Blue 

Von Reisswitz Proportional Dice

| Die |  |  |  |  |  |  | Odds |
|-----|---|---|---|---|---|---|------|
| I |  |  |  |  |  |  | 1:1 |
| II |  |  |  |  |  |  | 3:2 |
| III |  |  |  |  |  |  | 2:1 |
| IV |  |  |  |  |  |  | 3:1 |
| V |  |  |  |  |  |  | 4:1 |



RED



BLUE

POINTS VALUE

| | | |
|---------------------------|------------|------------|
| Infantry in three ranks | 1 point | = 5 men |
| Infantry in two ranks | 3 points | = 10 men |
| Skirmishers | 2 points | = 3 men |
| Cavalry in line or column | 2 points | = 3 riders |
| Artillery | 12½ points | = 1 gun |

The numbers above the circles represent losses per half battalion for the defeated side. The numbers below the circles give losses per squadron for the defeated side.

The tables on this page and the next are taken from Reisswitz' Proportional Dice.

xvi ARTILLERY FIRE EFFECT PER 2 MINUTES

| | DISTANCE | GOOD EFFECT | | | | | | BAD EFFECT | | | | | |
|----------------------------|-------------|-------------|----|-----|------|-------|--------|------------|----|-----|------|-------|--------|
| | PACES | • | •• | ••• | •••• | ••••• | •••••• | • | •• | ••• | •••• | ••••• | •••••• |
| 12LB BATTERY | 1500 - 2000 | 9 | 9 | 6 | 8 | 6 | 12 | 3 | 3 | 5 | 2 | 1 | 1 |
| | 1000 - 1500 | 13 | 13 | 8 | 10 | 8 | 22 | 7 | 7 | 10 | 6 | 5 | 5 |
| | 500 - 1000 | 31 | 31 | 13 | 25 | 19 | 50 | 20 | 20 | 25 | 18 | 10 | 10 |
| | up to 500 | 50 | 50 | 25 | 38 | 25 | 75 | 31 | 31 | 37 | 25 | 15 | 15 |
| 6LB BATTERY | 1200 - 1800 | 7 | 7 | 5 | 6 | 5 | 10 | 3 | 3 | 4 | 2 | 1 | 1 |
| | 800 - 1200 | 10 | 10 | 6 | 8 | 6 | 18 | 6 | 6 | 8 | 5 | 4 | 4 |
| | 400 - 800 | 25 | 25 | 10 | 20 | 15 | 40 | 16 | 16 | 20 | 15 | 8 | 8 |
| | up to 400 | 40 | 40 | 20 | 30 | 20 | 60 | 25 | 25 | 30 | 20 | 12 | 12 |
| 7LB HOWITZER BATTERY | 1200 - 1800 | 10 | 10 | 6 | 7 | 6 | 12 | 3 | 3 | 5 | 4 | 2 | 2 |
| | 800 - 1200 | 12 | 12 | 8 | 9 | 8 | 16 | 8 | 8 | 10 | 7 | 5 | 5 |
| | 400 - 800 | 20 | 20 | 12 | 15 | 12 | 30 | 12 | 12 | 15 | 8 | 6 | 6 |
| | up to 400 | 30 | 30 | 15 | 20 | 15 | 50 | 20 | 20 | 25 | 15 | 8 | 8 |
| TWO 10LB HOWITZERS | 1500 - 2000 | 3 | 3 | 1 | 2 | 1 | 4 | 1 | 1 | 2 | 1 | - | - |
| | 1000 - 1500 | 4 | 5 | 2 | 3 | 2 | 5 | 2 | 3 | 3 | 2 | 1 | 2 |
| | 500 - 1000 | 6 | 7 | 4 | 5 | 4 | 9 | 4 | 5 | 5 | 2 | 2 | 1 |
| | up to 500 | 9 | 10 | 5 | 6 | 5 | 13 | 6 | 6 | 8 | 5 | 2 | 2 |

INFANTRY FIRE EFFECT PER 2 MINUTES

| | DISTANCE | NUMBER OF POINTS | | | | | |
|---|-----------|------------------|----|-----|------|-------|--------|
| | PACES | • | •• | ••• | •••• | ••••• | •••••• |
| HALF BATTALION | 300 - 400 | 4 | 4 | 2 | 6 | 12 | 3 |
| | 200 - 300 | 10 | 10 | 4 | 12 | 25 | 3 |
| | 100 - 200 | 20 | 20 | 10 | 25 | 50 | 6 |
| | up to 100 | 30 | 30 | 15 | 40 | 60 | 10 |
| 2 SKIRMISH ZUGS WITHOUT COVER JAGER OR LINE | 300 - 400 | 2 | 5 | 1 | 4 | 8 | 2 |
| | 200 - 300 | 8 | 8 | 2 | 8 | 16 | 2 |
| | 100 - 200 | 15 | 15 | 6 | 17 | 34 | 4 |
| | up to 100 | 25 | 25 | 10 | 30 | 50 | 7 |
| 2 SKIRMISH ZUGS WITH COVER JAGER | 300 - 400 | 3 | 3 | 8 | 8 | 12 | 3 |
| | 200 - 300 | 5 | 5 | 15 | 15 | 25 | 5 |
| | 100 - 200 | 10 | 10 | 25 | 25 | 40 | 10 |
| | up to 100 | 20 | 20 | 40 | 40 | 60 | 20 |
| 2 SKIRMISH ZUGS WITH COVER LINE INF. | 300 - 400 | 1 | 1 | 6 | 6 | 10 | 1 |
| | 200 - 300 | 3 | 3 | 10 | 10 | 20 | 3 |
| | 100 - 200 | 5 | 5 | 20 | 20 | 30 | 5 |
| | up to 100 | 25 | 25 | 30 | 30 | 50 | 25 |

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INTRODUCTION

It will help towards understanding the individual rules of Kriegsspiel if we begin with a general description of the game. It will also show how the game can become both an interesting and an educational passtime.

The game requires first of all an ordinary map, of a scale large enough to allow terrain to be shown in detail. It also needs a number of objects which can represent the troops. These have to be able to show what kind of troops they represent, and they have to be capable of being arranged to show the different troop formations which might be needed.

These troop symbols and the map must be to the same scale, and the scale must be large enough for the smallest tactical units to be instantly recognizable. Troops and maps have been prepared to the scale 1:8000 so that 1 Decimal Zoll = 400 paces. *

The time is divided into two minute sections which are known as moves. The rules on marches, battles, etc, are based on these moves, and a player sees the result of two minutes after he has made one move.

He can move as many troops as he wishes in the move, and they can, of course, be moved in any direction. The troops will only be allowed to move as far in one move as they would be able to march in reality in two minutes. So, for instance, infantry will usually march no more than 200 paces in two minutes, and they will only be advanced this distance on the map in one move. If a march of 2000 paces is wanted it will take ten moves or twenty minutes. During this time, of course, the enemy will also be moving his troops, or if he is already in position he may be calling on them to open fire.

The fire results for two minutes must similarly only be such as experience might lead one to suppose could actually be achieved in this time. If an advancing column is to be deployed for an attack each battalion has to be brought up to position, so the head of the column will have to be halted long enough for the tail to arrive. If this takes 2 moves to do

*1:7500 1cm = 100 paces.

then it means that the column took four minutes to deploy.

Dividing time into two minute intervals allows us to make sure that no more and no less will happen in the game than would take place in reality in a given time.

As soon as the player has a clear idea how time and distance scales are co-ordinated the following descriptions will be easily understood.

Let me stress again that the troop symbols and map must be to the same scale, so that troops only occupy the distance on the map that they would occupy in reality, and so that one move only produces the same results for marches, battles, etc., as two minutes of real time would produce.

A move in the game may take more or less than two minutes to make, depending on the number of troops that are to be moved.

A Kriegsspiel exercise needs a minimum of three players, but more can take part, depending on the size of the opposing forces.

One of the players, whom we will call the umpire, begins by putting forward a 'scenario' for the game, which will take place on one of the three battle maps provided with the apparatus. This idea must provide the motivation for a strategic plan whose object can only be reached as the result of an attack.

After the 'General Idea' the umpire gives 'Separate Reports' individually to both sides. The separate report will give each side details of their troop strength, position, objective, the direction of their line of retreat, their relation to other corps or the main body which may not be entering directly in the game, and any information regarding the strength, position, or intentions of the enemy which the umpire thinks is appropriate.

Finally the umpire takes out as many battalions, squadrons, batteries, as will be needed in the game, and forms them into their respective corps on separate boards, in preparation.

When there is more than one player on each side the leader will allocate special duties to the others, such as Advance Guard, Main Body, Reserve, Right or Left Wing, Artillery, Cavalry, General Staff, as he thinks suitable to his plan, or perhaps as the

preference of the player might indicate.

The troop blocks are distributed to the players concerned. When this is done both commanders will give written dispositions to the umpire. These should include a brief but precise note of his intentions, how the subordinate commanders will be employed, and his orders to them. He gives the position where he intends to station his troops, and what security measures and patrols are intended. In cases of larger corps he produces an order of battle. All this is done in the spirit and style in which these orders would normally be made. If any of the subordinates has an independant command he will submit his own orders to troops to the umpire. So that this can be done properly, one side will remove themselves from the map while the other side makes their orders.

If it is part of a plan that bridges are destroyed, defiles barricaded etc., the umpire takes note and makes sure that the other side will be informed of such events as would be observed by patrols.

When these preparations are complete the umpire will put on the map those troops which are in sight of the enemy for both sides, and similarly those patrols and forward posts which are in sight.

Now the game begins, and the umpire notes the time in the first three columns of the losses table - we will suppose 6.30. a.m.

If the troops are so far away from each other that there is likely to be no contact for some time the umpire will take a number of moves together. If in the course of these moves a unit that was unseen becomes visible it will be put on the map and the umpire will inform the player. If it was seen by a patrol the umpire will note how long it would take for a message to reach the commander from the time at which the enemy troops were sighted, and he will make sure that the report is not received until the proper time. When the right moment in the game is reached the commander receives the report and is told of any measures which the local commander has taken. When he receives these messages the commander should tell the umpire what new plans he will make before he comes to the umpire's map. Here one should have a watch handy, so that the time taken to assimilate the information

and reach a decision can be noted. The amount of time taken will be added to the time it takes for the messenger to take new orders to units.

If the commander wants to go to a threatened spot to give orders directly this is allowed. The time it would take him to get there at the gallop will be worked out.

It is a strict rule that players do not talk directly to each other, but communicate orders and messages through the umpire who sees that all such communications get to their destinations at the right time.

When this rule is kept it is possible for genuine surprise to happen in the game, because of the importance of being able to quickly realise the significance of a report, coming promptly to a decision, and being able to frame brief but precise orders.

If the game is conducted without undue haste, in accordance with these rules, the exercise will not fail to be an interesting one.

At first sight it may seem that the umpire's job is a very difficult one, but this is not really so, and the many officers who have taken on the role of umpire have found the rules comfortably workable. Also the umpire's situation is an interesting one in itself because he sees his idea's being interpreted and carried out.

When troops come into conflict the moves have to be taken one at a time. We deal with both sides moves first of all and then find results for firing and lastly for attacks. Finally any adjustments due to troop losses are made.

Exactly how losses are calculated will be described later.

The exercise is taken through, move by move, until one side or the other has reached its objective or the game can be concluded by common agreement.

A retreat is not always the sign of faulty leadership or a lost game because it may be that one side has had to hold their ground against superior numbers for a certain length of time to fulfill their objective.

Anyone who can manoeuvre naturally and calmly, can

quickly appreciate the idea of a plan and follow it through logically, can make the most of good luck and adjust to bad luck, fully deserves approval. The winning or losing, in the sense of a card or board game, does not come into it.

After the above general description it will be useful to take a quick look at the different parts of the Kriegsspiel apparatus.

The troop symbols are made of lead in the shape of small blocks. One side being distinguished from the other by colour. The troop types are distinguished by markings which are the same as those usually found on battle maps.

A battalion is 900 muskets with a frontage of 250 paces including battalion intervals. A squadron of 150 riders has a frontage of 100 paces. A battery of 8 guns has a frontage of 200 paces when the guns are placed 24 paces apart.

The half battalion block represents 2 companies side by side, with three ranks of 150 men. If skirmishers are deployed the smaller plain coloured blocks are put on the map. When the skirmishers are called in again the skirmish blocks are removed from the map.

Light and heavy cavalry are distinguished from each other by markings, and from other troop types by the shape of the block. If cavalry skirmishers are sent out the small cubic blocks can be used.

The artillery consists of 12lb & 6lb Foot, 7lb Howitzer, and 6lb Horse batteries. Each block represents 4 guns, or a half battery. Also there are blocks to represent the artillery wagons - the 12lb battery having two and the other batteries having one each.

The usual tactical formations are the half battalions, squadrons, and batteries, but when smaller units are wanted - for field posts, piquets, patrols, for 25, 15, or 5 men, the smallest blocks, which can be distinguished by their size and markings, can be used.

For convenience of handling the troop blocks are actually larger than the amount of space they would take up on the ground, but they conform to the scale in the most important respects of frontage of units and lengths of march columns.

Details of the troop blocks will be found in the appropriate sections.

There is a ruler giving accurate march distances for each type of unit at the different march rates of walk, trot, and gallop per 2 minutes. If one move is to be made the player opens the dividers the correct distance, places one point at the head of the unit, and puts the other point in the direction of the movement and moves the unit up to it. For a brigade deployed in two lines the infantry march rate would be used.

These march distances naturally only give the basis for movements per 2 minutes, and they should not be exceeded, but a player does not have to move the full distance. Cavalry, for instance, can go 600 paces at the trot in 2 minutes, but if one only wants them to move 400 paces this is allowed - it being assumed that either the troops were halted after 400 paces, or that they took the distance at a restrained trot. The detailed rules on marches will be found in the appropriate section.

Anyone who has observed the effect of fire power at the ranges will know that the results achieved can differ considerably, even when circumstances are the same. The difference in performance is likely to be even more pronounced in battle, when the gunners may be affected by the excitement of the moment, and when errors may be made in estimating the range.

If, therefore, we were to give fixed results for fire effect we would arrive at a very unnatural situation. It would be possible to calculate the results in advance, and an important argument for forming a reserve, for instance, would go by the board. Such unnatural fire results would cause a thousand other mistakes to creep in, and the game would become more like a calculation exercise than a battle study.

Only when the player has the same sort of uncertainty over results as he would have in the field can we be confident that the Kriegsspiel will give a helpful insight into manoeuvring in the field.

The officer in the field can assume that in all probability he will inflict a greater loss on the enemy with a good placing of his guns, that a superiority in firepower will give a favourable result, that the effect against dense masses will be greater than against spread out troops, etc., but to what extent these advantages will tell he can only guess.

So that the player is put in the same position as an officer in the field, in this respect, the results from fire are given in twelve tables. - six for good effect and six for bad effect, with the same number for infantry results. These are stuck on to the sides of dice.

If artillery are well placed against a free standing target the good effect die is used. If the contrary is the case the bad effect die is used.

For skirmishers firing from cover the good effect die is used, but if they are without cover the bad effect die is used.

So we have two dice for artillery effect and two for infantry fire effect, with which we can quickly find a result for two minutes firing.

One might well ask how these results have been arrived at. The author has had opportunity, for some years past, to observe for himself and read reports on trials for almost every type of fire weapon. These personal observations and the data given in Scharnhorst's 'Wirkung des Feurgewehrs' have formed the basis for the figures given.

For canister shot a fire rate of three rounds per minute is assumed. For elevation fire two rounds per minute. For Random shot three rounds per minute.

Since all experience suggests that the result from canister against troops will be much less than that against a lifeless target of, say, 60ft wide, it is assumed that the best result will be only half that which might be arrived at on the ranges or in peacetime practise.

This 'best result' will only be given on one face of the good effect die. The other faces give $\frac{1}{2}$ (2 sides), $\frac{1}{3}$ (1 side), $\frac{2}{3}$ (2 sides), of the best result.

The bad effect results are also fractions of the 'best result' figure, giving $\frac{1}{2}$ (1 side), $\frac{1}{3}$ (1 side), $\frac{5}{12}$ (2 sides), $\frac{1}{5}$ (2 sides).

For closer elevation range the figure for one face is higher than the average of trials, because in certain lucky cases, when the range of a freestanding target has been correctly found and a good effect can be assumed, the circumstance can arise that some shot or grenades can put many men out of action. The rest of the faces, and those for the bad effect die, give the lesser effects.

The results for Random shot have been slightly exaggerated in the good effect column, but reduced in the bad effect column.

In deciding the results for different calibres and types of guns, as well as infantry fire, the following basic ideas have been observed:

1. The 12lb gun has a greater effect and greater range than the 6lb.
2. The howitzer has a smaller canister effect, but the grenade effect is greater than solid shot for the same range.
3. The effect from Jager rifle at close range is not much greater than the usual infantry weapon, but it is significantly more effective at 300 - 400 paces.

To simplify the calculation of losses the results are given in terms of points. For infantry in three ranks 1 point = 5 men, infantry in two ranks 3 points = 10 men. Skirmishers, 2 points = 3 men. For cavalry in ranks 2 points = 3 riders. For artillery $12\frac{1}{2}$ points = 1 gun.

This means that a battalion of 450 men is represented by 90 points when the men are in three ranks. If the die gives 90 points losses against a half battalion then it will be removed from the line.

However, it might not be very realistic to have the result fall on one single battalion, which would thus be reduced by half, and the losses can be spread out. The box contains 'exchange pieces' for infantry, which are of two kinds, both shorter than the usual infantry half battalion block.

If a battalion loses $\frac{1}{6}$ th of its strength, or 30 points, the half battalion blocks will be exchanged for two of the larger exchange pieces and the unit will have a shorter frontage. Using the exchange pieces will allow a loss of 90 points to be spread over three battalions.

A skirmish zug (75 men) will be worth 15 points if the men are in the line, but 60 points when it is in skirmish order.

If the losses table has been arranged according to the bookbinders instructions you will see two divisions headed 'Corps A' and 'Corps B', with vertical columns for the different troop types. Next to each number you see a small circle. At the beginning of the game the pins are all placed in the

first circles. When losses are to be recorded the pins will be moved down the column to the appropriate number. This continues until the last number is reached, and then either a block is removed or an exchange piece is used.

These columns include 'close ordered infantry' and 'skirmishers' in the infantry section. If the pin reaches 15 in the first column the side lose a platoon, and similarly if the pin reaches 60 points in the second column. On the loss of 2 platoons the umpire would use exchange pieces in that part of the line where he judges the effect has been greatest.

Cavalry lose a squadron after 60 points.

Artillery lose 2 guns after 25 points.

The greatest range for artillery is 1800 to 2000 paces. For infantry it is 400 paces. When troops have come close enough for one or other of these weapons to open fire it is dealt with as follows:

The distance is measured by the umpire with the range finding ruler. For artillery he notes whether the range category is for canister, effective elevation shot or Random shot, and decides whether the circumstances give good effect or bad effect, and says,

'A 12lb battery with large canister (low elevation) against infantry with good effect'.

The die for good effect for artillery is used and the figure on the left hand side gives the result, and the losses are noted. The detailed rules are given in the text.

The result of a battle with bayonets or of a cavalry charge depends on the strain on the mental moral and physical strengths of the combatants. How much of this strength is present in one's own troops can be guessed at but not known for certain. How much is present in the troops of the enemy is even less certain. The weight of numbers is the most obvious factor but this only allows us to guess at a probable outcome. It does not allow us to calculate a precise result. The skillful commander will be prepared for a good or a bad outcome.

If we want to create these conditions with the apparatus we must put the player in the same position with regard to probability.

The same dice that are used for fire effect can also be used to give decisions on hand-to-hand conflicts, and are arranged to give a suitable degree of probability.

On the six sides of each die there is a black or white circle. The first die which is used when both sides have equal chances has three black and three white. Before the die is thrown the umpire decides which side wins if the black circle comes up.

When the chances are not equal one of the other dice are used according to the odds.

| | |
|---------|-----|
| Die I | 1:1 |
| Die II | 3:2 |
| Die III | 2:1 |
| Die IV | 3:1 |
| Die V | 4:1 |

For the odds 3:2, 3:1, 4:1, some sides have to remain blank. If a blank side falls the die is simply thrown again.

In general, favourable odds will be gained by one side having greater forces, by preparation of an attack with artillery or infantry fire, by good use of terrain - in defence, for instance, by the use of steep slopes, villages, ditches, woods etc., by successfully carried out surprise attack.

Hand-to-hand attacks by cavalry and infantry, in fact, do not take place all that often, since not all such attacks actually reach a *mêlée*. As a rule, one or other of the sides will retreat before they come into conflict, and the losses result from fire during the approach or retreat.

The situation of the beaten side is likely to be the more serious according to how hard fought the battle has been - how lively the attack, how vigorous the defence - with losses in proportion.

For this reason the game gives three different circumstances for the beaten side, and the initials 'R', 'G', 'T', are found in the centre of the circles.

| | |
|---|--------------------------------|
| R | - repulsed /Ruckzuge |
| G | - defeated /Geschlagen |
| T | - totally defeated/ Total Ges. |

If R falls it means that the beaten side is only repulsed. i.e. they fall back in good order suffering

only slight losses. For G they are defeated, suffering more losses and not wholly in good order. They also need more time before they can renew the offensive. The third category T means that the troops are completely in flight. Losses are still greater, and it takes some time before they can rally for any kind of defence, and longer before they can assume the offensive.

The losses are given in points on the dice. The first number gives points per beaten half battalion, the second number gives losses in points per beaten cavalry squadron. The attacking side will suffer any losses from enemy fire. The victorious side must expect to suffer losses as well, and for cavalry the victors suffer half the losses of the defeated side.

The rules on destroying, rebuilding, and building of bridges, barricading of defiles, bursting of dams, strengthening of villages for defence etc., are self explanatory.

If this introduction has managed to give a general picture of the game, with enough detail to show the basic idea and spirit of the game, it will have served its purpose. Those who already know the game will not need it, but it is meant for those who are not very familiar with it, or have never seen it in action.

On the question of how the game is actually conducted I will only say this: If the apparatus is to be used to give a clear and true picture of a manoeuvre it should be used as follows: Some officers will need to make a thorough examination of the rules and become so conversant with the use of the equipment that they can take on the role of umpire. They should practise first with a few troops - marches, deployments, attacks, defences, on the maps against a known enemy. When this has been done a few times they should try a brigade manoeuvre in open terrain against a set position and with two other players. Finally they should try small manoeuvres against an enemy of unknown strength in more difficult terrain. This time only known enemy positions and marches will be shown, and written dispositions will be required before the game. When this has been done 3 or 4 times they can increase the size of the forces and try

more difficult objectives. If one were to begin with the more complicated games the result would only be confusing.

It will soon become clear that dispositions of forces need to be clearly stated, and written orders and messages need to be brief but precise.

Apart from that one needs a certain facility in reading the terrain and in using the different troop types to gain an objective, and then the game will produce many occasions for interesting discussions.

PART I

THE KRIEGSSPIEL APPARATUS

1. MAPS AND SCALE.

The maps supplied show terrain in the same way as those issued by the Prussian General Staff which have been so well received. They only differ from the 'Lehmann' maps in that the smaller details of hills and valleys are easier to read. A simple ruler for measuring distances and a scale for determining the slope of ground will be found in the lower compartment of the box.

All conventional signs are consistent with those generally in use and need no explanation. The scale used is 1:8000 or 1 Decimal zoll = 400 paces.

The individual sections of the maps need to be well designed and mounted by a skillful bookbinder so that each terrain is made up of four to six sections. The towns, villages, roads and other features should be coloured with water colours.

2. DESCRIPTION OF TROOP SYMBOLS.

The two opposing armies are distinguished by colour - one side being red and the other blue. The close-ordered half battalions of infantry, pioneers, and Jagers are longer than the blocks for cavalry sqns., munitions columns and pontoon trains. The skirmish troops are represented by small oblong blocks, while mounted skirmishers and individual troops are represented by small cubes, both types being shown in plain colours.

A close ordered infantry block (Fig. 1.) is 75 paces deep and 125 paces long. It represents two companies side by side making up 450 men in three ranks, or a half battalion. Two such blocks together make up a battalion of 900 men in three ranks.

The thin blocks (Fig. 2.) represent skirmishers. Each battalion uses its third rank for skirmishing, and each block represents the third rank of one company. (See Appendix V).

The skirmish blocks are only put on the map when skirmishers are called out. When they are called in again they are removed from the map.

A battalion can use four skirmish blocks without affecting its frontage. If a player wants to use more men in the skirmish line - for the defence of a village or woods etc. - the frontage will be affected and the exchange pieces should be used. Two kinds of exchange pieces will be found in the box.

The larger pieces (Fig.3.) can show that a half battalion has lost $1/6$ th of its strength. The smaller block can show that a half battalion has lost $2/6$ ths of its strength. If a half battalion loses half its strength it is removed from the map.

If the player wishes to use more than four skirmish groups, therefore, for a battalion, one or other of the exchange pieces will be used to show that the frontage has been affected. If one extra group has been used one of the larger exchange pieces is used. If two extra groups are called out one of the smaller exchange pieces is used. If half the battalion are to be used as skirmishers one of the half-battalion blocks will be removed completely and the one left will represent the centre or battalion reserve.

The third rank is represented by 4 blocks. Half a battalion is represented by 6, a full battalion by 12. With the use of the larger exchange piece one appears to have a few skirmishers too many, and with the smaller piece one seems to have too few, but the situation is righted again with the use of a complete half battalion in the skirmish line.

(See the appendix for a more detailed view of how the skirmishers are actually formed into groups, and how they operate as skirmish line, supports, and reserve. If the use of extra skirmishers seems to be rather confusing one should remember that in normal circumstances the battalion will only use the third rank and therefore no change to the front will be necessary.)

The umpire has charge of the exchange pieces and gives them out as necessary.

The arabic numerals on the infantry blocks give the regiment and roman numerals denote the battalion. Jager blocks only show battalion numbers. One should be careful not to let the the half battalion blocks to get mixed up but keep them together according to their battalion numbers by regiments.

Four different types of cavalry are represented:

| | |
|-------------|-----------|
| Cuirassiers | (Fig. 5.) |
| Hussars | (Fig. 6.) |
| Dragoons | (Fig. 7.) |
| Uhlans | (Fig. 8.) |

The number gives the regiment to which the squadrons belong.

Small cannon symbols denote the battery blocks, with small wagon symbols showing the artillery wagon trains.

A horse battery (Fig. 9.) has two gunblocks and one wagons block.

A 6lb battery (Fig. 10.) the same.

A 7lb howitzer battery (Fig. 11.) the same.

A 12lb battery has two gun blocks and two wagon blocks (Fig. 12.)

The lighter batteries have arabic numerals and the heavier battery has roman numerals.

In the box, under the heading, 'posts, mounted skirmishers and patrols', one finds:

| | |
|----------|---|
| Fig. 15. | Cavalry units of 21 riders and 1 officer. |
| Fig. 16. | 10 riders and an N.C.O. |
| Fig. 17. | Single riders and two-man posts. |
| Fig. 18. | Infantry units of 25 men and 1 officer. |
| Fig. 19. | 10 men and an N.C.O. |
| Fig. 20. | Single-man and two-man posts. |
| Fig. 21 | 2 guns from a horse battery. |
| Fig. 22. | 2 guns from a 6lb foot battery. |
| Fig. 23. | 2 guns from a 7lb howitzer battery. |
| Fig. 24. | 2 guns from a 12lb battery. |

3. DESCRIPTION OF MARCH RATES.

Fig. 25. shows a ruler divided into 100 paces. It shows five sub-divisions distinguishable by colour.

| | |
|-----------|--|
| 200 paces | March rate for infantry. March rate for columns of mixed arms. |
| 250 paces | Infantry and foot artillery in action. |
| 600 paces | Trot for cavalry and horse artillery. Foot artillery in exceptional cases. |
| 800 paces | Gallop for cavalry and horse artillery. Charge for heavy cavalry. Adjutants and orderlies with orders and messages. |
| 900 paces | Charge for light cavalry from trot and gallop. |
| 400 paces | Apart from the above one should note this distance for: Trot & Walk for cavalry. Skirmishers deploying or infantry units running to occupy a position. 6lb and 7lb batteries when pulled by ropes forwards or backwards. 12lb batteries advancing to fire. |

How often troops can use the faster rates will be found under 'Rules for Movement'. To avoid disputes over whether troops have moved the correct distance a pair of dividers is used. One point is put at the head of the unit and the other is set in the direction of the movement, and the unit is moved up to it.

If a whole line is to be advanced one measures the distance for the wings and moves the rest up in alignment. For columns the distance for the leading unit only is measured. With a little practice it becomes easy to make quick and accurate moves and the game does not get slowed down.

4. ARTILLERY RANGES

Fig. 26. shows the artillery range ruler. It is divided into 100 paces sections and is marked up to 2000 paces (approx 1 mile). It is also divided longitudinally into two parts.

The left hand side, in black and white, is for the 12lb battery with 2 10lb howitzers.

The right hand side gives, in red and white, the distances for the 6lb and 7lb batteries.

SMALL CANISTER. The first division is 400 paces for the 6lb batteries and 500 paces for the 12lb battery. It gives the effective distance for small canister (point blank range)

LARGE CANISTER. The second division - 400 - 800 paces for the 6lb batteries, 500 - 1000 paces for the 12lb battery, gives the effective range for large canister (low elevation, or line of metal firing)

ELEVATION. The third division gives the effective range for elevation shot. 800 - 1200 paces for the 6lb batteries, 1000 - 1500 paces for the 12lb battery.

RANDOM SHOT. The fourth division gives the effective range random or ricochet shot. 1200 - 1800 paces for 6lb batteries and 1500 - 2000 paces for a 12lb battery.

For the 10lb howitzers (left) and the 7lb howitzers (right) the first category is the most effective and the second category is the furthest range for canister. The third category gives the range for use with smaller charge. The fourth category gives the range for heavier charge for ricochet and elevation for howitzers. This is 1200 - 1800 for 7lb howitzers and 1400 - 2000 for 10lb howitzers.

When an unlimbered battery is ordered to fire the range is found with the artillery range ruler, and the player says, 'I open fire on this or that cavalry or infantry unit with small canister etc,' and the umpire chooses which die will give the result.

The infantry fire distances can also be found with this ruler, the distance being rounded up to the nearest 100 paces, and the umpire says, for instance, 'Four skirmish platoons with cover against close ordered infantry at 300 paces', and the appropriate die is used for the result.

5. THE USE OF THE DICE

The way in which the dice give different odds has already been described in the introduction. It only remains to say that the roman numerals I-IV refer to the particular die to be used.

For infantry fire with musket and jager rifle, die I and die II are used.

For artillery fire die III and die IV.

On the first two dice one can see two vertical rows of figures on each face. The number at the top gives the effect for up to 100 paces, the second number up to 200, the third up to 300, and the fourth up to 400 paces.

DIE I - CLOSE ORDERED INFANTRY & SKIRMISHERS (JAGER OR TIRAILLEUR) WITHOUT COVER.

The left hand side of each face gives the results for a half battalion close ordered infantry. If only one half battalion were firing the umpire would throw die I and find the result in the left hand column. If the distance came to 100 paces he would look at the second number (100 - 200 paces) and this will give the points lost.

If more half battalions are firing then the figure is multiplied by the number of half battalions.

If the skirmishers of a half battalion (normal deployment being two platoons) are firing from a free-standing position without cover, then the right hand side of die I is used. If more skirmishers are firing the points are scored per 2 platoons firing.

DIE II - SKIRMISHERS WITH COVER.

Die II is used for Jager or Tirailleur skirmishers if they are firing from cover and therefore able to take more careful aim to greater effect.

The left hand column gives the results for Jager, the right hand column for Tirailleurs, with the same distances as in die I.

DIE III ARTILLERY WITH GOOD EFFECT

The left hand side gives the numbers for a 6lb battery of six guns with 2 7lb howitzers

The right hand side is for a battery of 8 howitzers.

THE LEFT HAND NUMBERS

The top number is for small canister. (point blank)
the second is for large canister. (low elevation or
line of metal firing)

The third is for elevation shot.

The fourth is for random shot.

THE RIGHT HAND NUMBERS

The top number is for small canister from a battery
of 8 howitzers at up to 400 paces.

The second is for up to 800 paces.

The third is for grenades with smaller charge.

The fourth is for the furthest howitzer range with
heavier charge.

DIE V ARTILLERY WITH BAD EFFECT

The fifth die is used when conditions for artillery
are less than ideal. The figures on the left and
right have otherwise the same significance as in
Die III.

12lb BATTERY

For a 12lb battery the effect from canister shot will
be $\frac{1}{4}$ more than that given on the dice. (i.e. $\frac{1}{4}$
more for the first two range categories)

HAND TO HAND ATTACKS

In using the dice for deciding the outcome of hand-
to-hand attacks the numbers on the left and right of
the dice are ignored and only the black and white
circles and the figures below them are consulted.

DIE I is used when the chances for both sides are
equal, and one finds that it has 3 white and 3 black
circles. The umpire decides which side will win if
black falls before he throws.

DIE II is used when the odds are 3:2, and one finds
3 black, 2 white, and 1 blank. If the blank circle
falls the die is simply thrown again.

In this and the following dice the black circle falls for the side with the greatest chances, and if the white circle falls then the side with less chance have won.

DIE III is used when the odds are 2:1, and we find 4 black and 2 white circles.

DIE IV is used when the odds are 3:1, and there are 3 black, 1 white, and 2 blank.

DIE V is used when the odds are 4:1, and there are 4 black and 1 white.

How the odds are decided is explained in chapter 4.

The initials R.G.T. (R.D.T. in English), which will be seen in the circles, give the condition of the beaten side.

REPULSED. If the initial R is shown on the circle it means that the beaten side is only repulsed. (Ruckzuge) It loses for each half battalion which it has used in the fight or for each 2 platoons in the case of a skirmish fight, the number of points given by the first number under the circle. In a cavalry attack it loses the number of points given by the second number for each squadron it had in the fight. For a whole battalion, therefore, one would double the score. For a whole cavalry regiment the score would be multiplied by four.

DEFEATED. The letter G (Geschlagen) means that the beaten side has been defeated, with more severe loss. Also it will take them longer before they are once again able to assume the offensive without penalty.

TOTALLY DEFEATED. T (Total Geschlagen) means that they have been totally defeated and the troops are in full flight.

All troops who have been defeated by infantry and artillery suffer losses according to the dice and the circumstances governing the effectiveness of the fire. (i.e. troops may suffer loss from fire as well as losses from hand-to-hand fighting)

In cavalry fights the victors will suffer half the loss inflicted on the losers.

More details for repulsed, defeated and totally defeated troops will be found in chapter 4.

THE FLAME SYMBOLS

Small flame symbols will be found on some of the dice. The choice of die to decide whether a village is set on fire or not from howitzer fire is given in chapter 4. If a side with a flame symbol falls a fire has started.

PART II

USING THE APPARATUS

CHAPTER ONE

PREPARATION & METHOD.

6. THE FUNCTION OF THE UMPIRE

The role of the umpire has been given in general in the introduction, but the following paragraphs should make his part clearer.

The umpire has the task of providing a natural and interesting scenario which will allow for either side to gain its objective.

In the course of the game he has to see that both sides conduct their operation through orders, and according to the rules. He has to see that losses are properly taken into account, and that both sides only receive information on enemy troops at the proper time. He also has to see that concealed marches are made exactly according to the dispositions, with no more and no less troops arriving at their concealed destination.

He has to make sure - and among intelligent officers, for whom the game is designed, it will only be necessary to remind them - that players on the same side who are represented on the map as being in different places, may not speak to each other except by the exchange of orders and messages through the umpire, and he will make sure that any time taken to deliver such messages will be accounted for.

The game has to be kept going at a good pace, and he will, therefore, whenever possible take more than

one move at a time, and will usually only take one move at a time when fiercely contested fights are taking place.

The 'General Idea' has to provide the motive for the manoeuvre without giving the players any more information than is necessary concerning the objective for their operations.

Apart from the general idea, which both sides receive together, both sides get a separate report detailing:

1. The strength of their own forces,
 battalions,
 squadrons
 batteries including calibre.
 jager companies
 pioneer companies
 bridging equipment and pontoon trains.
2. An outline of any orders for the corps as well as their objective. This can be in the form of operational orders or messages.
3. Such information on the enemy's position and movements as the umpire thinks it appropriate for them to have. The information should make clear:
 - (a) Whether the information has come from patrol reports,
 - (b) Whether it has come from more or less reliable spy sources,
 - (c) Whether it has come from inhabitants, travellers, and those who are little practised in making reports especially as far as estimating strengths of forces is concerned.

The umpire can give all this information before the game, or he can introduce some of it during the course of the game, though in the latter case he plans what information is to be introduced during the game when he designs the general idea.

The designing of a good general idea can give as much pleasure as taking part in a game, and the umpire will have earned the friendly thanks he will receive at the end if he has succeeded in conducting an interesting and lively game.

7. THE NUMBER OF PLAYERS

If the operation involves 6 battalions, 8 squadrons and a battery, one player for either side is enough. For larger forces one needs more players, and for 24 battalions one would need at least three. Of these three one will be chosen to have overall command and the others will be allotted suitable subordinate roles.

For even larger forces the number of players will need to be even more. However, it should be noted that the largest number of players for each side should be four, and that two umpires will be needed. One of the umpires would be occupied with movements and positions of troops and the other would make note of losses. The subordinate commanders would assume the responsibilities of staff officers, artillery officers etc.

Games involving larger numbers of players can only work when everyone is fully acquainted with the details of the game and the equipment and have some experience of how it works.

8. THE RELATION BETWEEN PLAYER AND UMPIRE.

The umpire is the final authority during the game. His decisions are final, and any discussion of them must wait till the end of the game if players and the umpire are not in agreement.

We must note here that when a group of officers have decided to enter into an exercise designed by one of their own members they must be able to trust his impartiality and knowledge of the rules, must be willing to comply with whatever directions he finds necessary to give, and that what might otherwise become a painfully embarrassing business will be made easy with willing and friendly co-operation.

However, even among educated people who have willingly entered into a serious exercise, it must not be assumed that the position of the umpire will never be misunderstood by one side or the other, and so, without going into great details it is enough to say that anyone who takes part in the game must observe the following rules:

1. The decision of the umpire is final.
2. The players must not communicate with each other except through the umpire if they are more than 1000 paces from each other on the map.
3. The first and all subsequent orders for troops, both on the map and concealed, must be made through the umpire.

At the end of the game either side may give a critique, but during the game itself any such discussion is forbidden. If an experienced officer is present it will add to the interest and usefulness of the exercise if he evaluates the course of the game and the general idea.

CHAPTER TWO

USING THE TROOP BLOCKS

A. INFANTRY

(Some of the paragraphs in this chapter may require further explanation. I have kept the notes as closely as I can to how Reisswitz left them, but the reader may also find the notes in the appendix helpful.)

9. INFANTRY IN THREE RANKS.

A battalion in line is shown by two half-battalion blocks side by side, as in Fig. 27. The intervals between half-battalions will come to 25 paces at most.

10. BATTALION IN OPEN COLUMN.

An open column moving to the left or right will have the same length as the frontage of the battalion, and will also be represented as in Fig. 27.

11. ZUG & SECTION COLUMNS WITH INTERVALS.

These will also have the same length as the battalion frontage because of the intervals. Fig. 27. (See also appendix)

12. BATTALION IN CLOSED UP SECTIONS.

If the battalion wants to pass through a narrow defile as quickly as possible it will close up the sections to shorten its length. Such a battalion would be shown as in Fig. 28. (emphasising the shorter column but greatly exaggerating its width)

It must be remembered that if the column is to close up in this way it must be halted for long enough, or the head must slow down for long enough, for the tail of the column to catch up.

13. BATTALION IN CLOSE ZUG COLUMN.

A battalion in close zug column will have a depth of approximately 34 - 37 paces. Two such battalions would have a depth of 60 - 75 paces. They would be represented as in Fig. 29 (A zug is half a company, see appendix)

However we must remember that the ranks and zugs will tend to spread out on a march, and also that some room has to be allowed for staff officers, adjutants, musicians, and also intervals between battalions, so that in fact one battalion on the march is likely to have a depth of 75 paces.

As the width of a half battalion block represents 75 paces, and the length 125 paces, we can show a close zug column in two ways:

1. When the troops are closed up and taking up the least possible column space two battalions can be shown as in Fig. 29.
2. After the column has been on the march the two battalions would be shown as in Fig. 30 as they will take up more column space.

14. TWO BATTALIONS IN COLUMN OF SECTIONS.

Each battalion is shown by two half battalions on top of each other, with the shorter side leading. Fig. 31. (Since a section is 4 - 6 files a battalion column in sections will only be about half as long as the battalion frontage, but then again it will tend to spread out on a march to something like the battalion frontage of 250 paces)

15. BATTALION ATTACK COLUMNS.

A battalion in attack column has the frontage of a company (75 paces) and a depth of 17 paces (12 ranks).

We cannot represent 17 paces with the troop blocks, and the best we can do is to put one block on top of the other as in Fig. 32. This at least gives the correct frontage, with the shorter side towards the enemy.

The distance between battalion columns in line will be about 200 paces (see Fig. 32). The battalions of the second line have been placed at about 150 paces from the first, but when we take into account that the first line troops do not actually take up all the area occupied by the troop blocks the distance between the lines is more like 200 paces. Fig. 32 shows six battalions in close company columns.

If the six battalions were drawn together to make a battalion mass they would be represented as Fig. 33.

16. SKIRMISHERS.

As long as the third rank are not deployed as skirmishers their special blocks will not be put out on the map. When the skirmishers are ordered out the blocks will be placed 100, 200, or 300 paces ahead of the line

If the whole of the third rank is used as skirmish troops there will be four skirmish blocks for each battalion. If one wanted to use more than the third rank as skirmishers the umpire would exchange the half battalion blocks for one or other of the exchange blocks to show that there has been a reduction in frontage of the troops still in close order.

When the skirmishers are called back in the special blocks are again removed from the map, and any battalion which has used the exchange blocks (see para. 2) will also revert back to its normal size.

Fig. 34 shows three battalions with skirmishers advancing ahead of the columns.

Fig. 35 shows three battalions with skirmishers advancing in the intervals between columns.

(Throughout these notes on infantry formations Reisswitz tends to try to show the depth rather than the frontage when columns are concerned. At a quick glance, for instance, at Figs. 28, 29, 30, one might assume that troops were advancing on a half battalion front, whereas they are close columns on a half company front.)

B. THE CAVALRY

17. CAVALRY IN LINE - THREE RANKS.

Fig. 36 shows eight squadrons in line. There would be a 25 paces gap between the two regiments. (The third rank here would only be a supernumerary rank)

18. COLUMN OF ROUTE IN TWO'S.

Four squadrons in two's will have a length of 1200 paces. Two hundred paces left between the first, second, and third, and four hundred paces between the third and fourth. (600 riders in pairs means 300 files, which allows four paces per file.) See Fig. 37.

19. COLUMN OF ROUTE IN THREE'S.

See Fig. 38. The column length this time is 800 paces, so 100, 100, and 200 are the intervals left between the squadron blocks.

20. & 21. CAVALRY IN OPEN COLUMN.

The four cavalry blocks one behind the other, giving a column of 400 paces. See Fig 39. (Reisswitz says, 'March column "mit rechts oder links um", or in sixes' and then again, 'With whole or half troops but with distances'. The point being that whether they are in sixes, half troops, whole troops or squadrons, they have intervals between them which allow them to wheel into line to left or right. This means that there column length must be much the same as the frontage of the line they might have to form.)

22. CLOSE COLUMN OF HALF TROOPS.

See Fig. 40. One of the blocks has been placed on top of the other three.

23. CLOSE COLUMN OF WHOLE TROOPS.

See Fig. 41. Two blocks placed on top of two.

24. A REGIMENT IN TWO DIVISIONS.

See Fig. 42. Each of the divisions is shown with one block placed on top of another. There is an interval of 100 paces between the divisions. Front facing the enemy.

25. A REGIMENT IN SQUADRONS COLUMN.

See Fig. 43. This shows the four squadrons in line, one behind the other.

26. MOUNTED SKIRMISHERS.

If one wants to represent the sending out of mounted skirmishers the small blocks shown in Fig. 17 can be used. 5 or 6 of them could be placed in front of the cavalry line.

C. THE ARTILLERY

27. A BATTERY WITH INTERVALS OF 24 PACES.

Fig. 44 shows a battery, unlimbered, with guns pointing forward. The space between guns is 18 - 24 paces. (The frontage is 200 paces)

28. A BATTERY WITH SMALLER INTERVALS.

Fig. 45. In this case the interval between guns is 7 - 10 paces and the frontage of the battery is 100 paces. One half battery has been placed on top of the other.

29. A BATTERY IN OPEN COLUMN.

Fig. 46 shows a 12lb battery, with two wagons blocks, in open column. The diagram says the guns are in single file; the text says that they can be single file or in twos or fours, but with sufficient space between to allow the guns to be wheeled into line.

30. A CLOSE COLUMN - GUNS IN PAIRS.

Fig 47 shows a column of 150 paces with one block placed on top of another.

31. A CLOSE COLUMN - GUNS IN FOURS

Fig. 48 shows two blocks placed on two others, which gives a column of 75 paces.

32. TWO BATTERIES IN A CLOSE COLUMN OF EIGHTS.

Fig. 49 shows two batteries. They are moving forwards as whole batteries in line.

33. THE POSITIONING OF THE WAGONS.

At the start of the battle the munitions wagons would be behind the first two lines of cavalry or infantry, some 1000 to 1500 paces from their own battery. In the course of the action they would take up the most advantageous position - according to terrain.

CHAPTER THREE

THE MOVEMENT OF TROOPS

34. MARCH RATES UNDER DIFFERENT CIRCUMSTANCES.

The table shown on page 33 opposite gives various march rates per two minutes according to circumstances and enlarging on the basic march rates given in paragraph 3.

NOTES ON REISSWITZ' TABLE.

1. The figures under 'Marches' for cavalry are for trot and walk. Note the differentiation between light and heavy cavalry.
2. In 'Troops in action' attacks by cavalry in ranks are considered impracticable on slopes of more than 10° .
3. Exceptional circumstances for artillery will mostly be getting into action or out again at top speed, but even so these exceptions should not exceed 1 move in 3.
4. skirmishers would normally be expected to take up position or get back into line at top speed, but, again, not more often than 1 move in 3.
5. Where no figure is given it may mean that no progress is considered possible, or it may mean that no progress at that gait or in regular ranks is possible.

35. GENERAL NOTES ON MARCHES.

When troops are set in motion they may be making an open or concealed march. If it is open the troop blocks will be set out on the map. If it is a concealed march they can be set out on a small board in the correct order of march as they would be if they were on the map.

If orders are given for a column to close up or adopt a formation which will give a shorter column depth, only the tail of the column will move the full amount. The head will either halt or only move a small distance until the tail has caught up.

| MAXIMUM DISTANCES IN ONE MOVE. | EVEN GROUND & SLOPES LESS THAN 5°. | SWAMPY GROUND | WOODS | | RISING GROUND | | | | | FARMYARDS, FENCED GARDEN AREAS ETC. | |
|--|---------------------------------------|---------------|-------------|-------------|---------------|----------|----------|------------|----------|--|---|
| | | | LIGHT WOODS | THICK WOODS | WITHOUT ROADS | | | WITH ROADS | | | |
| | | | | | 5°- 10° | 10°- 15° | 15°- 35° | 15°- 25° | 25°- 35° | | |
| MARCHES | | | | | | | | | | | |
| Infantry, Foot Artillery & Mixed Columns | 200 | - | 200 | - | 150 | 100 | - | 100 | 50 | - | - |
| Heavy Cav. & Horse Art. | 300 | - | 250 | - | 150 | 100 | - | 100 | 50 | - | - |
| Light Cavalry | 400 | - | 250 | - | 150 | 100 | - | 100 | 50 | - | - |
| TROOPS IN ACTION | | | | | | | | | | | |
| Infantry in ranks in attack or retreat | 250 | - | 250 | - | 150 | 100 | - | 150 | 100 | - | - |
| Infantry breaking ranks (2 moves in 5) | 400 | - | 400 | - | 300 | 200 | - | 300 | 200 | 200 | - |
| Skirmishers out or in or avoiding cav. attack. (1 move in 3) | 400 | - | 400 | - | 300 | 200 | - | 300 | 200 | 300 | - |
| Heavy Cavalry deploying | 600 | - | 600 | - | 400 | 300 | - | 300 | - | - | - |
| " in attack | 800 | - | - | - | 600 | - | - | - | - | - | - |
| " in pursuit | 800 | - | 600 | - | 600 | 400 | 25 | 400 | 50 | - | - |
| " in retreat | 800 | - | 600 | - | 600 | 400 | 25 | 400 | 50 | - | - |
| Light Cavalry deploying | 900 | - | 700 | - | 700 | 500 | - | 500 | - | - | - |
| " in attack | 900 | - | - | - | 700 | - | - | - | - | - | - |
| " pursuit or retreat | 900 | - | 700 | - | 700 | 500 | 25 | 500 | 50 | - | - |
| 12lb Bty - usual rate | 250 | - | 200 | - | 150 | 100 | 25 | 150 | 50 | - | - |
| " exceptional(1 in 3) | 400 | - | 250 | - | 200 | 150 | 50 | 150 | 50 | - | - |
| 6lb & 7lb Art. - usual | 250 | - | 200 | - | 150 | 100 | 50 | 150 | 100 | - | - |
| " exceptional(2 in 6) | 400 | - | 300 | - | 250 | 200 | 50 | 150 | 100 | - | - |
| Guns hauled by ropes, forward or back | 300 | - | - | - | 200 | 150* | - | - | - | - | - |
| Horse Art as cavalry " exceptional (2 in 6) | 900 | - | 600 | - | 600 | 400 | 50 | 150 | 100 | - | - |
| MESSENGERS ETC. | | | | | | | | | | | |
| Cavalry patrols | 600 | - | 600 | - | 500 | 400 | 200 | 550 | 250 | 100 | - |
| Infantry patrols | 250 | 100 | 250 | - | 200 | 150 | 100 | 250 | 200 | 200 | - |
| Officers & Messengers for first 2000 paces | 900 | - | 800 | 200 | 800 | 600 | 400 | 700 | 150 | 400 | - |
| after 2000 paces | 700 | - | 700 | 100 | 600 | 300 | 200 | 500 | 100 | 200 | - |
| All Wagons & Trains | 200 | - | 150 | - | 100 | 50 | - | 100 | 50 | - | - |

*uphill but not down!

If weather, road conditions, or hardness and softness of ground are going to have an influence on troop movements and marches the umpire should give an indication of conditions in his presentation. This is especially important for artillery.

36. WIDTH OF ROADS, BRIDGES ETC.

When widths of roads are not given on the map the umpire must decide for himself, and advise the players accordingly.

1. Large main highways. Maximum troop formations:

infantry in $\frac{1}{2}$ Zug (18 man width)
cavalry in sixes.
artillery guns in pairs.

2. Smaller roads. Maximum troop formations:

infantry in sections
cavalry in threes
artillery gun by gun.

3. Large undamaged bridges - as for main highways.

4. Smaller and temporary bridges - as for small roads.

5. Gateways - as for small roads.

6. Town roads and villages - according to the map.

7. Defiles and sunken roads - according to the map.

8. Fords - the umpire must decide.

NOTE. For troops forced to change from one formation to another because of gateways etc. some adjustments will be necessary. When the column gets wider the head must wait for the tail. When the column narrows the tail must wait while the troops ahead sort themselves out.

37. PONTOONS & REPAIRED BRIDGES.

Crossing pontoon bridges or any bridges which may have been hastily built or repaired in the course of the battle are treated as small roads for width, and can only be crossed at the walk.

38. ALTERING FORMATION.

When close ordered troops are re-forming or re-grouping by wheeling, marching, etc. the march rate will be:

| | |
|-----------------|------------------|
| Infantry | - 250 paces |
| Foot Artillery | - 300 paces |
| Horse Artillery | - trot or gallop |
| Cavalry | - trot or gallop |

If the terrain is difficult the movements must be altered as in paragraph 34.

39. SKIRMISHERS & OUTRIDERS DEPLOYING.

Skirmishers at the run, mounted skirmishers at the gallop for moving out, or coming back into line. See paragraphs 16, and 26, for use of troop blocks.

40. RECONNAISSANCE PATROLS.

Although small units can move faster than larger formations the necessary reconnoitring will take up so much time that one can only allow that unless the terrain is completely open the march rate will be:

| | |
|------------------|--------------|
| Infantry patrols | - 200 paces. |
| Cavalry patrols | - 400 paces |

If the terrain is completely open the usual march rates can apply, also if the patrols are falling back before an advancing enemy.

41. MESSENGERS.

When the distance to be travelled by the messenger is not more than 2000 paces (roughly 1 mile) it will be covered at the gallop. Beyond this distance the rate will drop to 700 paces.

CHAPTER FOUR

RULES FOR ATTACKS

42. GENERAL NOTES ON ATTACKS.

The battle plan will decide such things as where and when the troops will attack and how the different service arms will operate. It will give the expected order of events for the coming battle. However, all these plans will have to be modified to a greater or lesser extent according to the movements and endeavours of the enemy which cannot be known in any detail in advance. This means that the commander has to leave each unit to carry out his orders within the spirit of the plan but also according to the prevailing circumstances of the moment.

The commander, therefore, cannot be allowed, in the course of the game, to issue orders directly to units unless he has previously arranged to be directly in control of them - in fact even then he will only be allowed to issue direct verbal orders to them if he is on the same spot, and failing that he will have to issue his orders through the umpire as usual.

A condition for the natural and realistic unfolding of events with the apparatus is a good knowledge of the duties of the different service arms and how they can work together towards a common end. Such a knowledge results in calm and resolute decisions.

Every player should try to have a clear idea of how and why he will use his troops, and he should consider whether the intended manoeuvre could be expected to take place in reality.

Pretty well all officers, young and old, who have tried the game are agreed on the importance of questioning themselves as to whether an intended plan could actually take place through the use of normal commands, signals, etc., and have shunned any misuse

of this principle, which would otherwise need a vast increase in the rules, causing the essential points to become lost in the detail.

43. INFANTRY FIRE.

In most cases the terrain has almost no influence on infantry fire. Here we give an advantage to marksmen in the skirmish line who are under cover, and who are consequently able to take aim with more care and less agitation.

The effect for Jager or Tirailleur skirmishers under cover is decided by Die II.

For skirmishers in the open Die I. (See para 5.)

44. ARTILLERY FIRE - GOOD & BAD EFFECT.

BEST EFFECT - DIE III

CANISTER SHOT - POINT BLANK & LOW ELEVATION.

When the ground between the battery and the target is even, with no slope up or down of more than 10°

HIGH ELEVATION RANGE.

When the battery has a clear view for 200 paces before or behind the target.

RANDOM OR RICOCHET SHOT.

As for canister shot.

BAD EFFECT - DIE V

CANISTER SHOT - POINT BLANK & LOW ELEVATION.

When the ground between the battery and the target is swampy, marshy, full of hedges; broken or undulating ground, or has a slope up or down of more than 10° .

HIGH ELEVATION RANGE.

When the ground close to the target is swampy or marshy, when the terrain between the battery and the target rises or falls more than 20° , and when there is not a clear view of the target.

RANDOM OR RICOCHET SHOT.

As for canister shot.

45. ARTILLERY FIRE AGAINST COLUMNS & 2ND LINES.

- a) Cannon fire against columns of two battalions or more, squadrons or batteries + $\frac{1}{4}$ more.
- b) Grenade fire + $\frac{1}{3}$ more.
- c) Two or more lines in the same range category + $\frac{1}{4}$ more.
- d) Skirmishers, when they are not more than 100 paces from their line + $\frac{1}{4}$ more than the table gives.

46. ARTILLERY FIRE AGAINST FLANKS.

Artillery fire - both cannon ball and grenade - will count as $\frac{1}{4}$ more effective against flanks of troops.

47. TROOPS UNDER COVER.

The effect of all fire-arms will be less against troops under cover. Infantry occupying the outskirts of woods, villages, townwalls, embankments and ditches to defend them suffer half the losses from infantry fire and canister. Suffer $\frac{1}{3}$ the loss from cannon ball and grenade.

When troops are taking cover but not defending behind woods 200 paces wide, villages, towns, high embankments, there are no losses from infantry fire, cannon ball or canister. They will suffer $\frac{1}{3}$ the loss from grenade fire as long as the battery knows the position of the troops.

48. HOWITZER BOMBARDMENT OF BUILDINGS.

The distance between the battery of 8 howitzers and the village should not be more than 2000 paces.

MOSTLY WOODEN HOUSES.

1. Die I is used on each move (1 in 6 chance - see flame symbol). If the flame symbol falls it means that a building has been set alight.
2. Five moves after a building has been set alight Die III (even chances for flame symbol) will decide whether the fire is spreading.
3. If the fire is spreading the streets in the burning area must be evacuated in 10 moves.

MOSTLY BRICK OR STONE.

1. If the map indicates larger buildings Die I will only be used on every third move to see whether a building has been set alight.
2. If a fire has started Die II will be used after 10 moves to see whether the fire is spreading.
3. If the fire is spreading the area within a 500 paces radius must be evacuated within 10 moves.

If the die has decided that the fire is not spreading the battery will continue until another building has been set alight and the dice will again decide whether the fire spreads.

If only 4 howitzers are in use the die will be used every second move in the first case and every sixth move in the second case.

Each howitzer battery, if it has its usual supply of ammunition can only fire for 50 moves.

If troops occupy the area being bombarded by the howitzers the umpire must allow $\frac{1}{3}$ of the score given in the table for losses.

49. ARTILLERY MAKING A BREACH.

A whole battery of 6 cannon and 2 howitzers.

12lb battery at 600 paces.

6lb battery at 400 paces.

AGAINST STRONG WALLS.

1 BATTERY

| | |
|--------|-----------|
| Move 1 | no effect |
| Move 2 | no effect |
| Move 3 | Die I |
| Move 4 | Die I |
| Etc. | Die I |

2 OR MORE BATTERIES

| | |
|--------|-----------|
| Move 1 | no effect |
| Move 2 | no effect |
| Move 3 | Die I |
| Move 4 | Die II |
| Etc. | Die II |

If the flame symbol falls it means that each battery has made a breach wide enough for a half Zug (18 men) to pass through. If two batteries are used Die II is used from move 4 (see above).

If batteries are further away (800 - 900 paces), the first six moves have no effect and after that the die numbers are as for 400 and 600 paces.

AGAINST LESS STRONG WALLS

Use Die II after the first 2 moves of nil effect.

50. ARTILLERY FIRE AGAINST BRIDGES.

For the destruction of bridges by artillery fire we can use the same method described in paragraph 49, if the bridge is constructed of wood.

Stone bridges will not be rendered completely uncrossable for at least 30 moves of fire.

51. RECKONING & DISTRIBUTION OF LOSSES.

The introduction and paragraph 5 describe how the numbers of losses are arrived at. It is only necessary here to remark that it is important to see that when losses occur they are noted against the units which are chiefly concerned in the action in the first line, and are not spread over the units of the second line or reserve unless they have actually come under fire. There can be no modification of this rule without the approval of the umpire.

52. HAND-TO-HAND ATTACKS.

When one or other side intends to make a bayonet attack or a cavalry charge, he pushes the troop blocks concerned - providing circumstances allow - close up to the enemy units to be attacked in whatever troop formation he thinks appropriate. The different troop formations have been dealt with in Chapter Two.

As he moves his troops he says to the enemy, 'I attack this or that unit or position etc.'

His opponent then declares whether he will retire, counter attack, or stay to receive the attack. From this point both sides control their own units.

If the attack is accepted the appropriate die is chosen, as will be explained in later paragraphs, and this will decide which side is beaten and to what extent it has been beaten.

REPULSED, DEFEATED, & TOTALLY DEFEATED TROOPS.

Following the hand-to-hand attack the beaten side falls into one of three categories.

REPULSED TROOPS.

When the circle on the die gives the initial 'R' the beaten troops are 'Repulsed'. They have turned back, but they remain in good order as they retire, without significant losses. They need 2 moves before they can defend themselves, and 3 before they can assume the offensive. One of the troop blocks is turned over.

DEFEATED TROOPS.

When the circle on the die gives 'D' the beaten troops turn back. Only some of them retain their order and the rest begin to scatter. Losses are significant. These 'Defeated' troops need 3 moves before they can defend and 6 moves before they can resume the attack. Two troop blocks will be turned over.

TOTALLY DEFEATED TROOPS.

When the circle on the die gives 'T' it means they are 'Totally Defeated'. They go back in disorder in full flight. They need 5 moves before they can rally for defence, and 10 before they can assume the offensive. As soon as they are able to defend themselves (widerstandsfahig) one troop block is turned face up, and when they are able to assume the offensive (angriffsfahig) all the troop blocks are turned face upwards again.

Finally each player must give careful thought to what he hopes to achieve by an attack, and to the most purposeful way of leading it.

NOTE ON PARAGRAPH 52.

The notes here could mean that repulsed troops take 3 moves to become angriffsfahig, or that they take 5 moves - 2 in which they cannot defend, or at any rate are at a disadvantage, and then 3 in which they are now widerstandsfahig but not yet ready to make an attack. Tschischwitz, who kept his rules very close to Reisswitz gives the latter idea.

53. TROOPS ADVANCING UNDER ARTILLERY FIRE.

An attack which has been prepared with canister shot to 'Good Effect', without the battery itself coming under similar fire promises certain advantages.

1) It cannot be assumed that troops will remain still for long under effective canister fire (this includes low elevation range, which is described as 'large canister shot') without either going forwards or back. There can be very few exceptions to this.

If, therefore, a half battery is firing against 1 battalion or 2 squadrons in canister range, under conditions which will give good effect, and without itself coming under canister fire from an enemy battery, Die II after each move to the advantage of the battery to decide whether the troops can remain in position or retire.

If the die decides against them the troops must retire without any other penalty apart from losses from artillery fire.

If the die falls in their favour they can stay where they are or equally advance, whereupon the decision with Die II will be made again next move.

We would, therefore, avoid any unintentional advances or halts under enemy canister fire. If an attack is to be seriously undertaken against an enemy line which has been strengthened by artillery we would combine the attack with our own artillery fire, so that part of the artillery would occupy the enemy guns while the other part would, for at least one or two moves before the attack, direct canister fire at the enemy line.

This does not rule out the possibility that in certain pressing circumstances one may have to give an attack under unfavourable conditions.

2) Those battalions or squadrons which receive canister fire from artillery in the course of their advance will be at a disadvantage in the ensuing attack in that they will use a die to their disadvantage - Die II instead of I, III instead of II, etc. (i.e. they lose an index point)

54. ODDS FOR COMBAT BETWEEN UNEQUAL FORCES.

If the forces engaged in hand-to-hand conflict are of unequal strength the odds - other things being equal - will be decided according to the difference in strength between the two sides.

| | | |
|--|---------|-------|
| equal forces to 1/6th difference | Die I | (1:1) |
| between 1/6th and 1/4 difference | Die II | (3:2) |
| between 1/4 and 1/2 difference | Die III | (2:1) |
| between 1/2 and 1 difference | Die IV | (3:1) |
| between 1 and 1 $\frac{2}{3}$ difference | Die V | (4:1) |

If the difference in strength is greater than this the victory for the greater side - other things being equal - is considered a foregone conclusion and the weaker side loses.

EXAMPLE.

One battalion in open ground, without cover, with a half battery in support, is attacked by two battalions without artillery. The numerical proportion would give Die IV with advantage to the two battalions, but the presence of artillery adds a point to the one battalion, so Die III will be used instead, although it can be assumed that the two battalions would not be making for the battery but would be sending their main strength against the enemy battalion while skirmishers were sent forward to keep the battery occupied. If the half battery were with the two battalions then they would gain a point and the odds would be Die V (4:1).

55. DEPLOYMENTS WITHIN ENEMY STRIKE DISTANCE.

Lateral movements of cavalry within striking distance of enemy units will cause the loss of a point if they come under attack while carrying out the movement. Troop concentration or deployment will also come under this category, even if the frontage of the deploying troops is equal to the distance from the enemy, or is even longer.

If cavalry have come as close as 400 paces to enemy infantry when they are forced to move the cavalry will gain a point in an attack.

If infantry are 200 paces from enemy infantry who are changing to an attack formation from a column

with a narrower front, the first mentioned infantry will gain the advantage of a point in an ensuing attack.

56. ATTACKS ON FLANK AND REAR.

A. CAVALRY

Cavalry can be attacked in flank and rear if they remain standing or if in retreat they cannot get away from a *mêlée*.

A flank and rear attack presumes a surprise or an envelopment, as otherwise the attacked side would have already taken up another position or withdrawn.

If an envelopment is being attempted the troops should be so manoeuvred that they can cut through the line of communication before the enemy can reach it.

Each battalion or squadron which is attacking in flank and rear counts as double as far as determining the odds is concerned. (See paragraph 54)

B. INFANTRY

The infantry are only involved in these considerations if there is a flank attack against a deployed line or a column of route, and if the attacking cavalry are not more than 600 paces away when they are making for the flank (attacking infantry not more than 300 paces away when making a flank attack).

C. ARTILLERY.

Foot batteries attacked in flank and rear by a half battalion or a half squadron are lost.

Horse artillery batteries attacked in flank and rear by at least a half battalion or a squadron are lost.

57. ATTACKS ON LINE OR COLUMN.

A. CAVALRY AGAINST A BATTALION IN ATTACK COLUMN.

| | | |
|--------------------------------------|--------|---------------|
| 3 or 4 squadrons without preparation | Die II | (3:2) |
| 2 squadrons | " " | Die III (2:1) |
| 1 squadron | " " | Die V (4:1) |

The above odds being to the advantage of the infantry. A larger number of squadrons only means the attack can be renewed more often.

B. CAVALRY AGAINST 2 BATTALIONS OR MORE.

For six battalions attacked by 12 squadrons, as for one battalion attacked by 2 squadrons the Die III is used - against the cavalry. Note that if the cavalry do not succeed against infantry they are not to be counted as totally defeated even if the die gives 'T' in the circle, but only 'repulsed'. Close ordered cavalry must have at least half their strength to hand, so they need 2 moves to pursue.

It is not necessary to push all 12 squadrons at the same time on to the brigademass. They can be used in waves to attack one after the other, indeed such a position will need many attack waves before the fight is over. Each wave uses the same Die III.

If instead of 12 there are 8 - Die IV

If only 4 Die V.

C. INFANTRY LINE WITH SECURE FLANKS.

3 or 4 squadrons against 1 battalion Die III

2 squadrons Die IV

1 squadron Die V.

If the infantry are beaten by cavalry they are always to be counted as totally defeated. Defeated cavalry will be according to the dice.

If the infantry could be attacked in flank they would be dealt with as in para. 56.

D. INFANTRY IN LINE ATTACKED BY BATTALION COLUMN.

For equal strength Die I.

For unequal strength see paragraph 54.

E. INFANTRY LINE VERSUS INFANTRY LINE.

For equal strength Die I. For unequal see para. 54.

F. INFANTRY IN LINE AGAINST COLUMN.

For equal strength Die I. In all three cases, if the line is beaten it will be defeated even if the die gives 'repulsed'.

G. INFANTRY IN LINE ATTACKED BY 2 OR MORE BATTALION MASS COLUMNS.

Equal strength die II to the battalion-mass. If the attack does not succeed the column is defeated even if the die gives 'R', and totally defeated if the die gives 'D' or 'T', and totally defeated in any case if they are pursued by cavalry in their retreat.

58. INFLUENCES OF A SECOND LINE.

A. INFLUENCE ON CAVALRY.

The suitable distance for the second line is between 400 - 800 paces behind the first.

Cavalry units conforming to these distances forming two lines gain the following advantages:

- 1) The first line cannot be attacked in flank and rear, so the advantages noted in paragraph 56 are not given to the enemy - on the contrary, they only count those squadrons which reach the front in the attack. If the enemy line extends far enough to a flank attack on the second line this modification will not count.
- 2) If the first, and after that the second line is beaten they will both only be counted as 'R' even if the dice give 'D' or 'T'.
Not until the first line is beaten for a second time will they be treated strictly according to the losses and category as given on the dice.
- 3) If the first line, which has a reserve line, has beaten an enemy line which does not have a reserve line within the qualifying distances, and the second line can take up the pursuit on the next move the result will be decided by Die III to the advantage of the reserve line. If the enemy is beaten again, and if they can be followed on the next move, they will be totally defeated or completely destroyed. If the enemy succeeds under these unfavourable conditions they must stay one move to rally before making any further moves.
- 4) If cavalry in two lines are attacked by cavalry of superior strength but in only one line, then only the troops which will actually meet will be counted

- 5) If the first of two cavalry lines is attacked by cavalry in one line which has roughly the same number of squadrons as the cavalry in two lines, the cavalry in two lines can count half the number of squadrons in the second line when assessing numerical strength.
- 6) If the second line is too close then not only will these advantages not be counted, but if the first line is beaten it will take the second line with it in flight.
- 7) If the second line is too far back it will have no influence at all and the first line will be treated as not having a second line.

B. INFLUENCE OF A SECOND LINE ON INFANTRY.

- 1) For infantry the second line should be 150 - 400 paces from the first.
- 2) If there is a second line within the above noted distance it gains the following advantage: An attack against an enemy in one line only will gain 2 points, or Die III instead of Die I etc.
- 3) If, in spite of this advantage, the side formed in two lines is beaten, the first line will only be repulsed whatever the die gives.

If, both for cavalry or infantry, the two lines deployed as prescribed above the decision is made as follows: If the first line is defeated it will only be counted as 'repulsed'. If the second line is beaten on a renewed attack it will be treated, as far as losses and time are concerned, according to the die. For a third attack on a beaten line para. 61 should be consulted. (This is not quite the same as given in note 2 'Influence on cavalry'. W.L.)

If one side deploys more than two lines there is no other advantage apart from the possibility of making renewed attacks.

A more or less equal strength is assumed in these notes. If numerical strength is not equal, or if there is an artillery presence etc., then odds are modified accordingly by the umpire.

59. RETREATS & PURSUITS.

Cavalry which have made a successful attack must wait one move before pursuit, and then follow at half speed.

LIGHT CAVALRY

| | |
|----------|-----------|
| 1st move | wait |
| 2nd move | 500 paces |
| 3rd move | 900 paces |
| 4th move | 900 paces |
| 5th move | 600 paces |
| etc. | 600 paces |

HEAVY CAVALRY

| | |
|----------|-----------|
| 1st move | wait |
| 2nd move | 400 paces |
| 3rd move | 800 paces |
| 4th move | 800 paces |
| 5th move | 600 paces |
| etc. | 600 paces |

If the line which conducted the attack had flank columns which were not in the fight, these can be used in the first move at 800 paces.

RETREATING CAVALRY

The retreat of the beaten cavalry will take place at the gallop for the first two moves, and after that at the trot. If faster movement is necessary the troops will become downgraded - repulsed troops becoming defeated etc.

VICTORIOUS INFANTRY

Infantry successful in an attack must halt for one move before following, if the enemy are to suffer the full loss. If they follow without a halt of one move only half of them will go.

RETREATING INFANTRY

The retreat of beaten infantry takes place at 250 paces per move. They can go faster at 500 paces, but become downgraded in the process - repulsed troops becoming defeated etc.

If during the retreat they come under canister fire to 'good effect', or if they are caught by the enemy cavalry before they can reach their reserve line, they are also downgraded.

Skirmishers which are beaten can go for two moves at 400 paces without penalty or downgrading.

60. LINE OF RETREAT.

The line of retreat for the beaten side is not restricted in any way except by the consideration that a diagonal line of retreat will keep them in the close vicinity of the enemy for longer, and will consequently leave them longer exposed to the threat of a renewed attack.

61. BEATEN TROOPS MOVING THROUGH RESERVE LINES.

If totally defeated troops retire through their own reserve line, and this in turn is attacked within the next two moves, the reserve line will lose a point in the attack.

If the attack on the reserve takes place on the third move after the totally defeated troops have moved through it the rule will not apply.

62. RENEWED ATTACKS ON BEATEN TROOPS.

The umpire should note the regimental or battalion number of totally defeated troops, since if they are attacked again (before they become angriffsfahig) they will be at a disadvantage.

63. CAPTURED TROOPS.

If defeated troops come up against insurmountable terrain obstacles in their retreat:

Artillery in all cases are lost.

Cavalry and infantry are only destroyed or captured if the enemy remains uncontested amongst them for three moves. For only one move $\frac{1}{3}$ are lost. For two moves $\frac{2}{3}$ are lost.

On the other side only 1/10th of any loss from infantry fire will be counted (if the beaten troops are resisting)

64. BEATEN TROOPS FINDING COVER.

For repulsed or defeated troops who within two moves following an attack can find refuge behind some terrain obstacle there may be a halt to a pursuit.

INFANTRY SHELTER

For infantry a suitable refuge point might be thicket or coppice, woods, village, trench, small stream which must be waded, hilltops which have been occupied by artillery.

CAVALRY SHELTER.

For the cavalry small ditches and streams, coppice or thicket which is occupied by skirmishers, hilltops occupied by artillery.

If the fleeing troops manage to reach such a refuge the attack must be renewed, but it will take place with one point more advantage than the previous attack unless circumstances have changed through reinforcements etc.

65. ATTACKS ON BATTERIES.

The storming and capture of a battery is possible. We must examine the circumstances of the battery.

A. AN ISOLATED BATTERY DEFENDED FROM FRONT ONLY.

The battery is isolated, without support, is unable to withdraw, and is limited in its defence to firing forwards only.

- 1) If the terrain allows the spreading out of a whole battalion or two squadrons, in skirmish or mounted skirmish order, which can attack from front and flank, the battery is lost.
- 2) If only a half battalion or one squadron are to hand - Die III against the artillery.
- 3) If less than a half battalion or one squadron are to hand - Die II against the artillery.
- 4) If the terrain is limited and does not allow for the spreading out of the troops to the flanks there must be at least a half battalion or one squadron for each half battery.

As soon as they come within small canister shot range (point blank) Die II is used, against the attackers. If the white circle falls the battery will be taken, if not the troops must withdraw.*

* See also note 53 on advances under artillery fire.

B. AN ISOLATED BATTERY WHICH CAN DEFEND ITS FLANK.

The battery can defend its flank with artillery fire.

- 1) If the terrain allows the spreading out of one battalion or two squadrons in skirmish order - Die I decides whether the battery will be taken.
- 2) If the terrain is limited Die III to artillery.

C. A BATTERY WITH SUPPORT.

The battery is covered by troops who have been given the responsibility of defending it.

- 1) In this case the supports must be beaten at the same time, or before-hand if the battery is to be taken. In addition there will have to be a sufficient number of skirmishers to hand to keep the battery occupied during the battle with the supports.

Before any attack on a battery the opponent must be asked whether the guns will stay or whether they will withdraw.

If a battery has been in the possession of the enemy for four moves it will remain out of action for the rest of the game. If it is reclaimed before the four moves are up it is only out of action for 30 moves, or one hour.

Losses from artillery fire in these actions will be found from the dice.

66. ATTACK AND DEFENCE OF STRONGHOLDS.

Outskirts of woods and villages, town walls and church walls, are adequately defended if there is a battalion available for every 400 - 600 paces. Naturally only part of the battalion will be in open order, the rest will be in close order forming the centre (soutien).

Defiles can be defended with advantage if there are enough close ordered troops available to fill up the whole width, plus a sufficient number of skirmishers to take up position to prevent the enemy getting too close.

Field works can be defended with advantage by one battalion of 800 - 900 men for every 300 - 400 paces.

Larger numbers of troops present would only mean that the defenders were in a better position to counter renewed attacks by the enemy.

TROOPS NEEDED IN AN ATTACK.

Outskirts of woods, villages - 1 battalion per 400 paces.
 etc.
 Defiles - at least as many as are defending.
 Field works - 1 battalion per 200 paces.

If larger numbers of troops are available they will be held back for fresh attempts. An attack will gain an advantage if it can be followed up quickly by a renewed attack with fresh troops.

| ATTACKS & RENEWED ATTACKS | MOVES | LIGHT DEFENCES | | STRONG DEFENCES | | FORTIFIED POSITIONS | |
|---------------------------------|-------|------------------------------------|-------------------------------|------------------------------------|-------------------------------|------------------------------------|-------------------------------|
| | | POSITION HAS BEEN HELD FOR 2 MOVES | POSITION ONLY HELD FOR 1 MOVE | POSITION HAS BEEN HELD FOR 2 MOVES | POSITION ONLY HELD FOR 1 MOVE | POSITION HAS BEEN HELD FOR 2 MOVES | POSITION ONLY HELD FOR 1 MOVE |
| WITH FRESH TROOPS | 1 | II | I | III | II | V | II |
| | 2 | I | I | II | I | III | II |
| | 3 | II* | II* | I | II* | I | I |
| | 4 | III* | III* | II* | III* | II* | II* |
| | 5 | IV* | IV* | III* | IV* | III* | III* |
| WITH TIRED TROOPS | 1 | II | I | III | II | V | II |
| | 2 | II | II | III | II | V | III |
| | 3 | III | III | IV | III | V | IV |

*to the advantage of attackers.

It is assumed here that both attackers and defenders have sufficient troops for the circumstances. To what extent the odds for attackers or defenders will be altered if they do not have the basic minimum is dealt with at the end of this section.

LIGHT DEFENCES

Outskirts of woods,
Hedges,
Villages with light fencing,
Roads and highways with ditches at the sides,
Positions surmounting an incline of 15°-25°,
Bridges over small streams and ditches,
Fords and sunken roads whose crossing is covered by troops.

STRONG DEFENCES

Villages with solid defences difficult to break down,
Town walls which have not been specially built for defence,
Dikes,
Field works hastily built in 1 - 1½ days,
Wet ditches and streams difficult to wade,
Hights with a 20°-25° incline,
Entrances to woods, villages, open towns, sunken roads, which cannot be avoided and so can count as defiles if they are barricaded,
Bridges over rivers 50 paces or more wide.

FORTIFICATIONS

Towns with specially strengthened outskirts,
Town walls etc. specially built for defence,
Fully constructed field works,
Inclines of 25° or more,
Entrances to towns etc. which have gateways or which have been specially barricaded.

NOTES TO THE TABLE.

Decide on the strength of the defences, then decide whether the defenders have only just occupied the position, or whether they have been in position for at least 2 moves. Lastly decide whether the attacking troops are fresh or not.

Close ordered troops defending a defile will be only 'repulsed' if beaten, but those occupying field works or lines will be treated as per the dice.

Attacking infantry will be treated as per the dice when their attack fails if they do not have a second line.

Between each attack there must be at least a one move pause for the circumstances to allow an advantage.

If attacking infantry pursue the beaten side on foot the latter will suffer half the losses (half the losses they suffered in the original attack will be suffered during the moves of pursuit).

All further battles inside the town, village, woods, etc. will be fought out according to para. 54. Equal strength = equal chances etc.

INSUFFICIENT TROOPS.

If the defenders are not as strong numerically as is recommended the attackers will gain a point if the defenders are $\frac{1}{3}$ below strength - assuming the attack is up to strength.

If both sides are weaker then the umpire will decide according to numerical proportion.

If the attackers are not up to strength they will lose 1 point for every quarter below strength.

DISMOUNTED CAVALRY

If dismounted Dragoons or mounted Jagers are used in attack or defence four squadrons will equal a half battalion.

ARTILLERY SUPPORT FOR ATTACK.

If the defenders have been two moves under canister fire the attack will gain a point.

LOSSES.

Losses for attackers are given by the right hand side of Die II in the 2nd position per 2 skirmish blocks. (Losses inflicted by defenders)

Losses for the defenders are 15 points per block for an unsuccessful attack and 18 points per block for an attack which succeeds.

67. SURPRISE ATTACKS.

An attack will count as a surprise when:

- 1) The attacker can reach the enemy from their cover in one move.
- 2) In open ground when one side finds that they have been attacked by at least twice as many enemy.
- 3) The surprised troops are not in battle order, but open in marching column.

How the troops will react to the surprise will be decided by Die I (equal chances).

A BLACK CIRCLE.

If the black circle falls the surprised troops must fall back on their reserves, and will not assemble again until they have reached the safety of the said reserves.

If they do not have reserves they must simply fall back the way they came in disarray.

If they are attacked again within the next three moves each attacking unit will count as double and the appropriate die will be chosen. If the decision goes to the attackers the surprised troops must retreat and they must remain for at least five moves without being further attacked before they can be allowed to regroup again. If the surprised troops have been lucky they can stay and form themselves.

B. WHITE CIRCLE.

If the white circle falls the surprised troops can form themselves straight away and either make a counter attack or await the attack where they are.

ARTILLERY PRESENCE.

If the ambushing troops have artillery with them the die used to see whether the troops are surprised or not will be Die II (3:2) to the favour of the attack.

(Some of the notes in this paragraph are a little ambiguous, but the main idea is clear enough - if the surprised troops manage to overcome their surprise they are all right, if not, they are in a bad way.)

68. RECORDING LOSSES.

The losses for those troop blocks which have been engaged in the fighting is given on the dice under the black and white circles. The first number is for infantry - per troop block (half battalion) when the infantry are in ranks, and per two skirmish blocks when they are in skirmish order. The second number is for cavalry per squadron.

Attackers will suffer losses from infantry fire if they are successful, as given by the dice.

Successful defenders who have beaten off an attack suffer 10 points for each half battalion block and 5 points for each skirmish block.

When the rules lay down that troops will only be considered as repulsed even if the die gives 'totally defeated' the losses suffered will be in the same proportion.

If the victorious infantry do not remain for one move to regroup, but follow up the enemy on foot, they will only cause half the losses in the pursuit.

The lost troop blocks must be taken from the troops which have been in the fighting.

69. PRISONERS.

The capture of a corps might result if:

1) COMPLETELY SURROUNDED.

If they are closely confined by a corps of overwhelming strength, and there is no help to be expected quickly from outside. If the enveloping troops are three times as strong as the confined group the capture may take place immediately after Die III decides whether they can continue to defend themselves or not. (2:1 against)

If a black circle falls they begin to be captured at once. If not they form masses which according to their strength and other factors already given must be attacked or go over to the attack themselves. If the surrounding troops do not win conflict continues.

It is assumed that the troops in question are already in fully fighting order.

A corps which is forced back after hand-to-hand

fighting will definitely be taken prisoner if they are attacked in their rear by another formation.

The envelopement of a corps is achieved when all routes of retreat within a distance of 800 paces have been cut off, as well as, in a narrower sense, when the surrounding troops are immediately in touch with each other.

The enveloping corps must be at least three times as strong before the matter can be settled by Die III alone. For less than three times the strength resistance can be taken for granted.

2) CAUGHT IN A DEFILE.

When a corps is marching through a defile, a very restricted valley, a thick woods, or over a bridge or dam, is attacked from in front or behind the capture will result even if the attackers are only as strong as the enemy.

The transporting of a captured corps will need to be accomplished by troops at least 1/10th as strong. If the prisoner column meets up with the enemy the prisoners may be set free again.

70. ATTACKS BY NIGHT.

The umpire has first of all to decide what the visibility will be. Only troops within the range of visibility of each other will be shown on the map. Up till then the hidden marches and positions will be controlled as usual.

Losses in the course of attacks are significantly less than by day. The effect from infantry weapons will be found in Die I and divided by two. In open ground the artillery range will be 600 paces and the effect will be given by Die V. If guns have been so placed beforehand to cover the length of a defile the usual effect will be allowed.

CHAPTER FIVE

BRIDGES AND FORDS

71. PONTOON BRIDGES.

If by agreement with the umpire one side or the other has the necessary bridge building equipment, bridges can be set up at those places where the banks are suitable.

Including unloading of pontoons it takes 10 moves for every 50 feet of bridge.

If it is being built under cannon fire (ball) it will take 12 moves. Construction has to come to a stop under canister fire.

If the pontoons are already in the water it will take 8 moves per 50 ft. If they are already in the water and ready for bolting together 6 moves can be allowed.*

To dismantle and load up the pontoons needs 10 moves for each 10 pieces.

If the pontoons are carried away by the water the umpire will decide how far they can be brought back in each move after deciding the strength of the current and winds.

*This note on bolting pontoons together is a guess. Reisswitz says, 'Sind sie im Wasser und schon zu Maschienen gebildet'- 6 moves needed.

72. FLOATING BRIDGE.

A floating bridge built in the immediate vicinity of a town or village will take 15 moves for every 25 paces if it is only to be used by infantry.

It will take 30 moves per 25 paces if it is to be used by cavalry or artillery.

It cannot be constructed under cannister fire.

If the river is more than 50 paces wide the time taken can be doubled the above rate, or trebled even if the current is rapid, or the material has to be brought from any distance.

73. TRESTLE BRIDGES.

There are times when it is impossible to use the pontoons for bridging. When, for instance, the banks and the river bed offer so little depth that the pontoons would be pressed into the ground, or as is found in a great number of mountain rivers, the water flows over a hard stony surface which is covered with small rocks and therefore lacks a good anchorage. In these circumstances one uses the so-called 'trestles', a certain number of which are included in any well equipped pontoon train.

If a trestle bridge is to be built, and the necessary equipment is to hand on the site the time taken will be as for a pontoon bridge.

If a completely equipped pontoon train is not on hand, but one has at least a half company of pioneers at the site with wooden houses in the vicinity, one must allow $1\frac{1}{2}$ hours for the assembling of materials before the actual bridge building can begin. The building of the bridge itself will be the same as for pontoon bridges

In less fortunate cases, where neither pioneers nor wooden houses are near by, and one only has ordinary carpenters to help, the umpire should allow at least three hours for the assembling of the materials.

74. DESTRUCTION OF BRIDGES.

To destroy a bridge by explosion, burning, or the destruction of the support piles, needs a complete preparation. If this is to be done, therefore, the umpire needs to know exactly when the preparation is to begin.

For the explosion of a bridge one can reckon on an hour for preparation. If the bridge is to be crossed in view of the enemy and then the enemy's crossing be prevented, so that the exact moment of the explosion can be planned needs at least three hours preparation.

For burning a wooden bridge, including support piles, will take an hour to prepare. Three hours if the moment of setting light is to be timed.

If the enemy reaches a burning bridge within five moves after it has been set alight, and has the intention of putting the fire out, it is assumed that the plankway and the hand rails of the bridge will be destroyed but not the support piles.

To destroy a wooden bridge by tearing up the plankway, if no special preparation has been undertaken, takes at least ten moves to make the bridge impassable. If the whole bridging is to be torn up and transferred to one bank or the other one must allow for at least two hours. Indeed, if the bridge is over 100 paces three times as long, and for over 400 paces four times.

For destruction by gunfire see paragraph 50.

75. REPAIRING BRIDGES.

When only one support pile of a stone bridge has been destroyed, or only the plankway of a wooden bridge has been removed, repairs can bring the bridge into use again as follows:

1. Stone bridges - if bridging equipment is to hand or wooden buildings are close by - 10 moves.
2. Wooden bridges - under similar circumstances as above - 10 moves for every 25 paces.

If bridges are razed to the ground one can only build a pontoon, floating, or trestle bridge to the right or left of the original (see 71,72,73). To build the destroyed bridge up from nothing would take a number of days.

76. SUPPLEMENTARY OBSTACLES.

By using harrows, overturned wagons etc. mixed up with boulders, by raising the height of one bank by piling up earth and stones, one can make the way even more impassable. One can allow two hours for this. The clearing of a way through the rubbish will take half as long as it took to put it there.

CHAPTER SIX

77. BOATS & FERRIES.

The embarking and disembarking of troops takes place by rows.

FERRIES AND LARGE BOATS.

These will hold 100 infantry - a whole battalion will require nine.

25 cavalry - 1/6th of a squadron.

1 gun - 1/8th of a battery without munitions wagons.

PONTOONS AND SMALL BOATS.

At the most they hold 25 infantry.

DOUBLE PONTOONS.

Two pontoons lashed together and laid over with planks will carry 50 infantry, 10 cavalry, or 1 light gun without limber or horses. The latter will need to be held with great care.

CURRENTS AND TIDES.

A boat will travel 250 paces in a move with the tide downstream, 100 paces with the tide upstream, and 150 paces with a cross current.

The umpire can dispense with these calculations all together if he wishes.

78. SWIMMING.

If it becomes necessary in the course of a game for individual cavalymen or infantrymen to swim over rivers or streams the necessary preparation for the carrying across of ammunition and weapons will take 5 moves. For the swimming - 1 move for every 50 paces, and one move for forming up and handing out of weapons.

APPENDIX

I. A PRUSSIAN ARMY CORPS - 1815.

Carl von Decker, a contemporary of Reisswitz, wrote 'Die Taktik der drei Waffen', published in 1833. He describes the make-up of a Prussian Army Corps as it typically was in 1815, adding that the system had proved its worth then and was likely to be the basis of army organization in the next war.

AN ARMY CORPS IS MADE UP OF:

- 4 Infantry Divisions,
- 1 Cavalry Division,
- 1 Artillery Brigade,
- 2 Pioneer Companies.

AN INFANTRY DIVISION IS MADE UP OF:

- 9 to 10 Infantry Battalions,
- 1 Cavalry Regiment of 4 Squadrons,
- 1 Light Foot Battery,
- 1 Supply Column,
- 1 Field Hospital Unit,
- (approximately 10,000 men)

A CAVALRY DIVISION (RESERVE CAVALRY):

- 6 to 8 Cavalry Regiments of 4 Squadrons,
- (sometimes divided into two brigades)
- 1 to 2 Horse Artillery Batteries,
- 1 Supply Column.

AN ARTILLERY BRIGADE (RESERVE ARTILLERY):

- 3 12lb Batteries,
- 1 6lb Foot Battery,
- 1 to 2 Horse Artillery Batteries,
- 1 Howitzer Battery,
- 6 Artillery Park Columns,
- 1 Technical Column,
- 1 Craft Column,
- 1 Pontoon Train.

II A REGIMENT.

'The infantry, with the exception of Jagers and Schutzen, is normally divided into regiments. Each regiment is made up of 3 battalions, two being heavy and one light infantry.'

Carl von Decker.

III THE BATTALION.

Decker says that the best size for a battalion is somewhere between 800 and 1000 men. The frontage is 250 paces. Reisswitz' battalion has 900 men in three ranks.

COMPANIES.

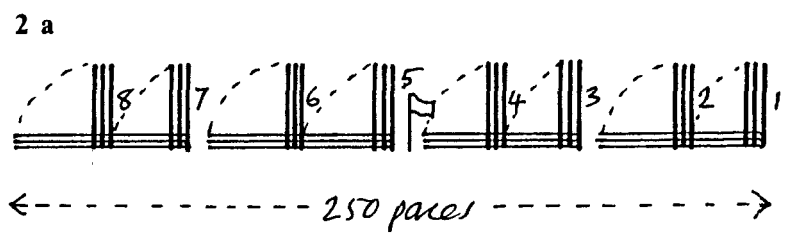
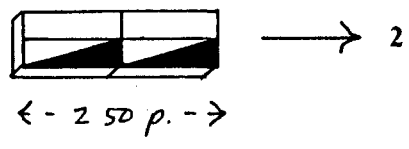
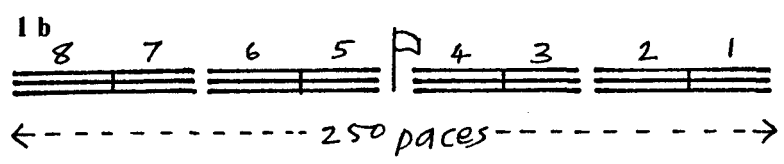
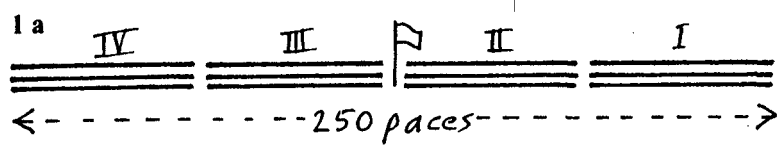
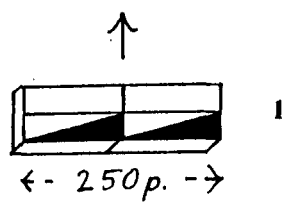
The battalion is divided into four companies. They are numbered I to IV from the right (Fig 1a). They stand side by side in three ranks.

ZUGS.

Each company is divided into two zugs. They are numbered 1 to 8 from the right (Fig. 1b). Most of the column manoeuvres are based on zug movements. (It will be simpler in the end to talk of a zug, rather than try and translate it into something which it is not, though I have anglicized the plural into zugs)

SECTIONS.

The zugs are divided, when necessary, into sections. The 1812 regulations say that a section should be of 4 - 6 files and preferably 6, so that a zug of 16 files would be divided into three sections - one of 6 files and two of 5. Reisswitz' zugs would have 37 or 38 files, so it would probably be divided into half-zugs of three sections each.



IV COLUMNS.

OPEN COLUMNS.

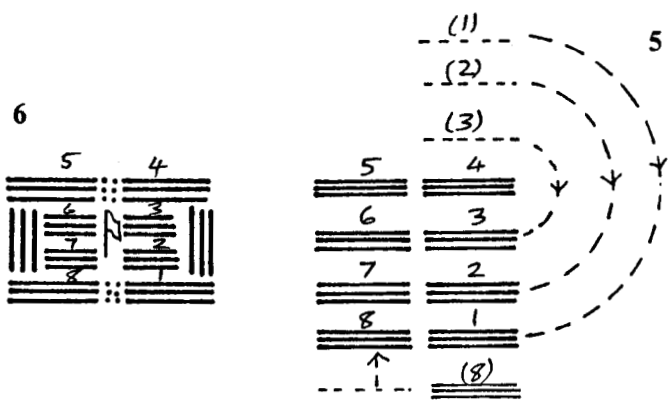
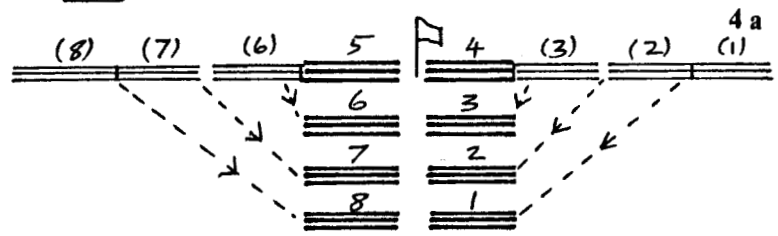
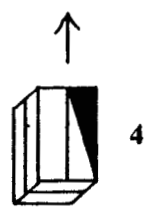
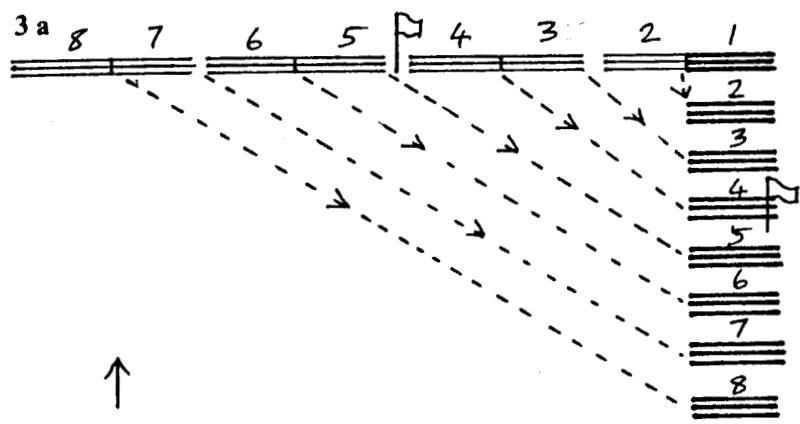
In an open column the line has broken up into units of companies, zugs, or sections, which have all wheeled to the right or left to make a column. As long as the units maintain the correct intervals between them the column can be wheeled back into line very quickly, but of course it is not too easy to keep these correct intervals for any length of time or on uneven ground without a great deal of practice. All open columns will have roughly the same length as the frontage of the line they were made up from. (Fig. 2a)

CLOSE COLUMNS.

If the units of the open column close up on each other the column will be 'close'. The close column can also be formed from line by having all the zugs, for instance, march into place behind one zug which stands firm. The most usual case is for zug 1 or zug 8 to stand firm. The rest always keep in their right order. When zug 1 is at the head the column is said to be 'rechts abmarschiert', when zug 8 is leading it is 'links abmarschiert' - the same applies to open columns. The zug column can be formed on any zug - if it is a centre zug some will march into place in front of it and some behind it to preserve the order - or it can be formed by zugs marching in front of the standing zug. The 1812 regulations, however, make it clear that forming up behind zug 1 or zug 8 is to be the normal procedure. Zug columns are the ones most likely to be used for manoeuvres leading up to a battle position. (Fig. 3a)

ATTACK COLUMN.

The attack column is always formed on the centre two zugs. It is called 'Colonne Nach der Mitte'. It is the width of a company. It is always formed on zugs 4 and 5 in the centre.



The attack column can also be formed from a close zug column. (Fig. 5) In the example the zug column is 'rechts abmarschiert' with zug 1 leading. On the order to form attack column zug 4 stands firm while zugs 5,6,7,8 march to their left until they are clear of zug 4, then they march forward until zug 5 is level with zug 4. Meanwhile zugs 3,2,1 march round to the rear of zug 4 into their proper places. They will, if it is necessary, counter march so that the front rank is facing the front.

THE SQUARE.

The Prussian square is virtually a closed up attack column, with the three outer files on the left and right facing outwards and gaps filled up by NCO's and officers. (Fig. 6)

COLUMN OF ROUTE.

For marching on roads or across country in column of route the battalion line will be broken up into sections (6 files) which will wheel to the right or the left to make the column. As they will be six abreast the column will be about half the length of the battalion frontage when they set off - with gaps between zugs, and column space taken up by officers, musicians etc., but as the column continues they are bound to become increasingly spread out.

NARROWING THE FRONT.

If the terrain is difficult and the column has to narrow its front it will do so by reducing its front by half - i.e. from company column to zug column, from zug column to half zug - until it is narrow enough. A little time should be allowed for the battalion to narrow its front and for widening out again when the obstacle is passed.

GENERAL NOTE.

Column in sections for route marches.

Zug column (open or close) for manoeuvring in the field.

Double zug column for attack.

V SKIRMISHERS - THE THIRD RANK.

From 1809 the third rank had a special role as skirmishers in the Prussian Army. Reisswitz represents these troops with long thin blocks some 300 paces ahead of the line. (Fig. 7). This is fair enough, but it is helpful to know what is actually going on here.

FORMING UP.

On the order for the third rank to form skirmish zugs the men from zugs 1,3,6,8 march six paces to the rear while the men from zugs 2,4,5,7 file off to left or right to join them (to the right of the standard they go behind, to the left of the standard they go in front so that the men from zug 1 will stand in front of those from zug 2 etc.) They have now formed four skirmish zugs, each one two men deep. These are numbered I to IV from the right according to their company. (Fig. 7a)

The next step is for the zugs I and IV to take another six paces to the rear while zugs II and III file into their places. (Fig. 7b) From here zugs II and III will go forward in front of the line and zugs I and IV will remain behind the line.

SKIRMISH POSITIONS.

When they are about 100 paces in front of the battalion half or more of the forward zugs (II & III) will stay in close order on the wings as 'supports' while the rest will go about 150 paces further ahead to form the skirmish line. These will work in pairs and will spread out the width of the battalion line.

The men left behind the line are the 'reserves'. Carl von Decker says that there should be about 5 to 10 paces between each pair in the skirmish line. If they come under enemy cavalry attack they are meant to fall back on the supports and form rallying squares as best they can.

If more men are needed in the skirmish line, or if casualties need to be replaced, men go forward from the supports, and these in turn are replaced from the reserve.

NOTES FROM DECKER.

1. It is quite against usage to use all the tirailleurs at once in the skirmish line, and only for particular tactical objectives, such as occupying woods, would one use the whole or nearly all in open order.
2. The great usefulness of the skirmish line makes for its frequent usage but also, unfortunately, it may make for many losses. In the 1813 - 1815 war we had hardly a Tirailleur officer who did not receive a 'blessing' at some time.
3. It is a rule that one should not try to reach an objective with skirmishers other than by firepower, and steady, well aimed, close range fire at that. All ineffective fire should be avoided as well as any kind of fighting which upsets their calm firing. (i.e. fights between skirmishers will almost certainly be fire fights. W.L.)

SKIRMISHERS WITH COLUMNS.

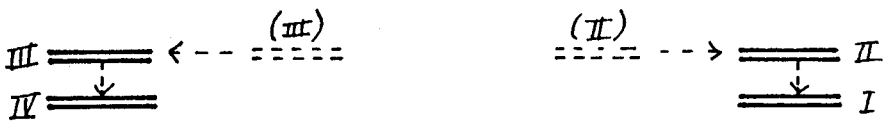
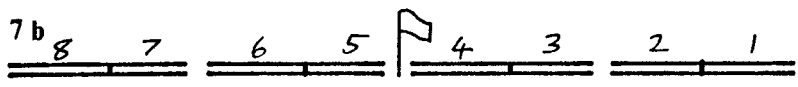
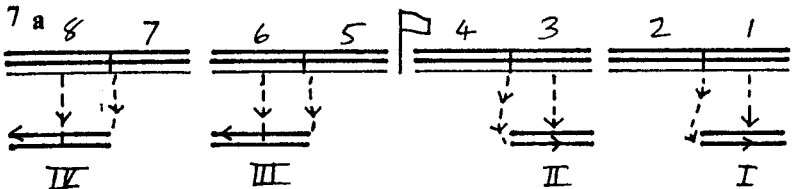
Reisswitz shows skirmishers being used with advancing columns, both in advance and in the intervals between columns of attack.

FORMING THE SKIRMISH ZUGS.

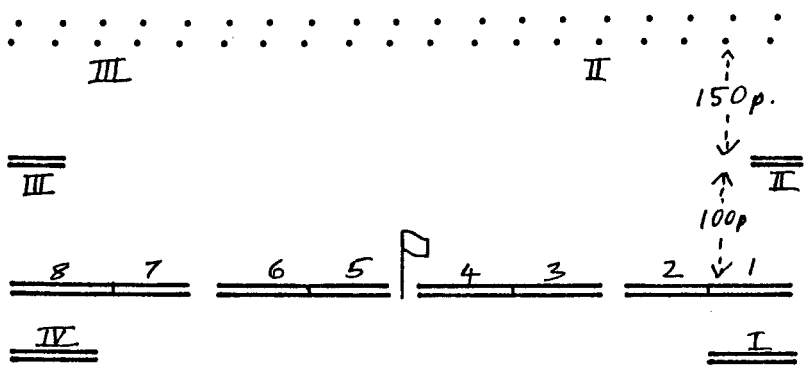
Fig. 8a shows the four skirmish zugs forming up on either side of the column. You will notice that on the right hand side the men from zugs 1 and 3 have to make an extra movement to be properly in front of the men from zugs 2 and 4.



7



7 c



SKIRMISHERS AHEAD OF THE COLUMN.

Fig. 8b shows the skirmishers forming the three groups. Zugs I and IV are behind the column as reserves, and zugs II and III have gone forward to form the skirmish line and support groups.

SKIRMISHERS IN THE INTERVALS.

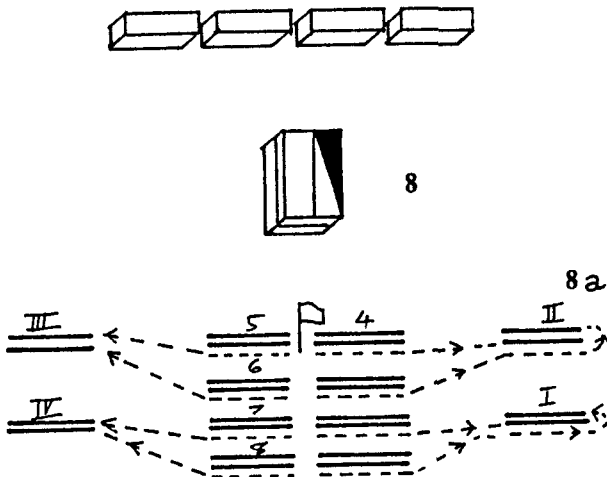
When the skirmishers are to be used in the intervals the whole of zugs II and III spread out and zugs I and IV are again behind the column as reserves.

NOTE.

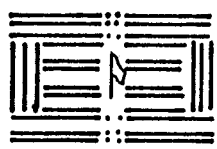
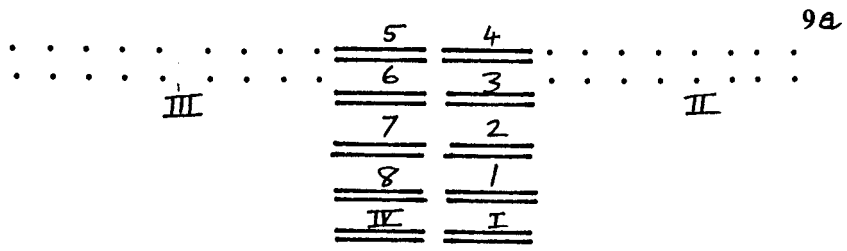
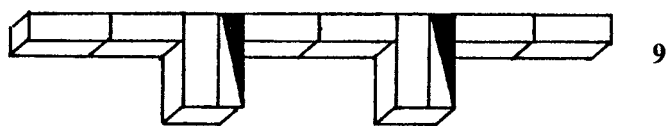
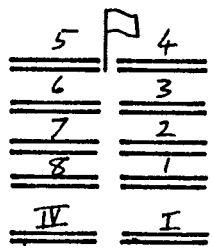
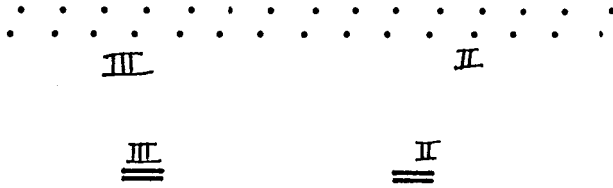
The use of skirmishers in the intervals is described by Decker as a new tactic, the idea being that they will support the column attack with firepower. Decker adds that the method is not approved of everywhere, and that if it is used the skirmishers should not be called out until quite close to the enemy, since we cannot expect skirmishers to shoot calmly and be advancing with the column at the same time.

COLUMN WITH SKIRMISHERS IN SQUARE.

This square is very similar to Fig. 6, except that the zugs are only two men deep. There are the same number of ranks, but the skirmish zugs I, II, III, IV, are at the rear of the column.



8 b



10

VI ARTILLERY.

POINT BLANK RANGE.

Reisswitz calls this 'small canister shot' range. The centre of the bore of the gun is horizontal and all the gunners have to do is point the gun at the enemy, load and fire. The shot begins to spread out as soon as it leaves the cannon's mouth at 25 ft per 100 paces (Scharnhorst, Die Wirkung des Feuergewehrs) so that after 400 paces it has spread 100 ft. Of course it spreads in all directions, so much of it hits the ground well before it reaches the target. If the ground is level or gently sloping some of it will ricochet up again, and some of it will hit the target on the rebound. This is why level ground is considered to give best results for this range, and why steep slopes or shooting across valleys, or broken ground will not give best results.

LOW ELEVATION RANGE.

Reisswitz calls this 'large canister' range. Since the cannon is thicker at the breach than at the muzzle the gun will be slightly elevated if the top of the cannon is horizontal. This slight elevation allows the gunners to extend the canister shot range, though of course the increased distance means that the spread will be greater and more shot will go over the target or hit the ground too far in front of it. The conditions for best effect will be the same as for point blank range.

ELEVATION SHOT.

To extend the range even further the cannon has to be elevated higher, and cannon ball is used instead of canister. Since the ball has to travel up in the air for a good part of its flight bringing it onto its target is more difficult. The distance of the target has to be judged and the gun elevated the correct amount. Even when this is done there are many small variations in shot and gunpowder which make for different effect even from the same gun. To find out whether he has the range right or not it is

necessary for the artillery officer to observe very carefully where a number of shots fall, and to average out the effect. To do this properly he really need to be able to see the fall of shots in front and behind the target. If he can see that roughly the same number are falling behind as are falling short he knows that he must be about right. If he can only see the shots which fall short it is more difficult for him to judge. This is why a view in front as well as behind the target is considered important for best results.

RANDOM SHOT.

Artillerists discovered that under certain conditions they could extend the range still further by using low elevation combined with heavier charge. On flat ground they found that the ball could be made to skip over the ground in the way that you can skip a stone over the waves. Of course it was even more hit or miss than high elevation shots, and could only work at all if the ground was level or had a gentle slope.

AMMUNITION.

The author of 'Dienst der Artillery', 1827 (anon) gives interesting details of ammunition.

- Each 6 lb Foot gun - in the limber:
 - 56 rounds shot, 14 rounds canister.
- Each 6lb Horse gun - in the limber:
 - 48 rounds shot, 12 rounds canister.
- Each 6lb battery has two wagons, each holding:
 - 152 rounds shot, 40 rounds canister.
- Each 12lb Foot gun - in the limber:
 - 12 rounds shot, 8 rounds canister.
- Each 12lb gun has its own wagon:
 - 80 rounds shot, 20 rounds canister
- Each 7lb howitzer - in the limber:
 - 15 rounds shell, 5 rounds canister.
- Each 7lb howitzer has its own wagon:
 - 66 shell, 15 canister, 1 carcass, 2 flares
- Each 10lb howitzer - in the limber:
 - 4 rounds shell, 4 rounds canister.
- Each 10lb howitzer has two wagons, each holds:
 - 44 shell, 9 canister, 1 carcass, 2 flares.

KRIEGSSPIEL MAPS

These maps are fully contoured and come in separate A3 sheets which can be mounted on card and covered with film so that notes on times of arrival etc. can be made on them and cleaned up afterwards. They also include smaller index maps which can be copied and issued to players who can mark them up and add information about the enemy as it becomes available. They are produced in black and white.

MECKEL'S KRIEGSSPIEL MAP.

This was produced by Meckel in 1875 for the war game. It is invented terrain and covers 24 A3 sheets, plus index map. Price £12.50

KONIGGRATZ.

This has been redrawn from Lt Khein's map of 1866. It is a fully contoured map of the Koniggratz battle area, and was a much used map by Prussian wargamers. Because it comes in 40 A3 sheets it provides many opportunities for different Kriegsspiel games. Includes index map. Price £20.00

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Facsimile edition of the translation of 1872 for the British Army by Capt. E. Baring. Tschischwitz' book was very much in the Reisswitz tradition, but of course, it is particularly relevant for games set in the 1860's and 70's. Baring adds useful notes on lengths of columns and British Army Corps.
48pp + tables £5.50

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THE REISSWITZ STORY.
A translation of articles from the Militar Wochenblatt which give historical details of the events surrounding the invention of the game by Reisswitz and his father, and how it came to be adopted by the Prussian Army. 23pp £2.50

HISTORIC NAVAL DOCUMENTS

1. SAILING & FIGHTING INSTRUCTIONS FOR HIS MAJESTY'S FLEET. 1775.

This is a facsimile copy of the 1775 instructions, but in fact they go back almost unaltered to 1703 when they were first issued by Sir George Rooke. Since the system required that a specific flag flown from a specific part of the ship gave a specific signal the book gives a complete view of all signals which could be made by an admiral to his fleet under sail. 44pp A5 size.

ISBN 0 9508950 7 5

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2. SIGNALS AND INSTRUCTIONS IN ADDITION TO THE GENERAL SAILING & FIGHTING INSTRUCTIONS. 1779.

This is a facsimile copy of extra signals given in 1779. In the years between 1703 and 1779 individual admirals sometimes made a few extra unofficial signals for use with their own fleet. These were usually written in by hand on the fly leaf of the signal book. Vernon, Hawke, Hood, and Boscawen were among those who are known to have made some extra signals, and some of them can be found in this book. 40pp A5 size.

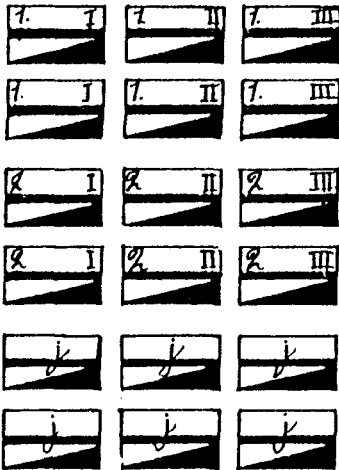
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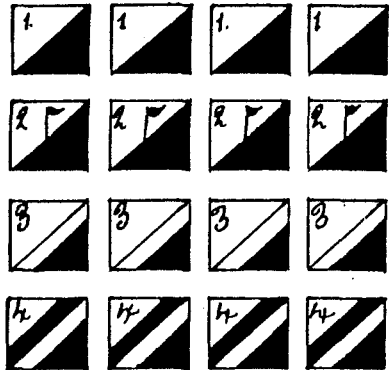
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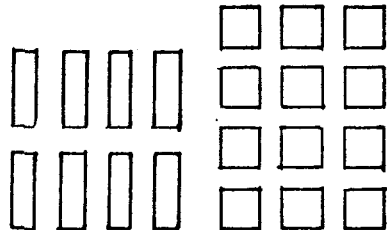
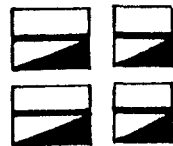
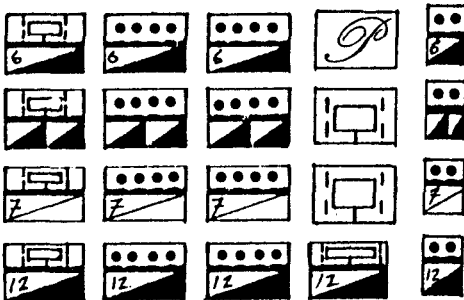
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Metal troop blocks (unpainted) to the Kriegsspiel scale (1:7500). This is roughly 8 inches to a mile. Cleanly painted up these blocks provide an attractive accessory to the game. Each set gives a brigade strength force for one side.

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