

Passchendaele

A Miniatures Game of Late-War Western Front Ground Combat in the Great War



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I. Introduction

The very word "Passchendaele" brings to mind images of men dying horribly in the mud, even today, and typifies the horrendous conditions in which many WWI battles were fought. This game explores the grand-tactical equation on the Western Front in the period from 1916-1918, grim as it was. Although sometimes not considered a candidate for this type of wargame, being seen as more of a skirmish period, late-war WWI can still provide us with interesting challenges at the grand-tactical level. *Passchendaele* puts players in the role of higher-level commanders, safe from the mud and blood in their bunkers behind the lines, cigar and snifter in hand, doing their best to manage a chaotic and fundamentally unmanageable type of battle.

The game is designed for use with 15mm/18mm miniatures and smaller, and represents entire operations: primary units of maneuver are divisions. The game is designed to play quickly, and uses an app running on a PC, tablet, or smart-phone in place of charts and extensive rules. All dice are normal 6-sided dice, and all measurements are in inches. It does not require a large table to play: 3 foot square is sufficient, although a much larger table can be used for recreating large battles (anywhere from half a dozen to more than 30 divisions would be committed to a single operation by the Entente late in the war).

Passchendaele is a simple game, reducing the problem of controlling and winning a WWI battle in horrendous conditions to its fundamentals - good planning, intelligent use of artillery, and a generous helping of luck. Tanks and gas feature prominently in the game, as does (of course) artillery, the real killer.

(And, of course, do try not to fall into the mud - lots of chaps have disappeared for good that way...)

II. Game Scales and Equipment

Each turn represents approximately a half hour. One inch represents 300 yards. There is no set man-to-figure ratio, as the game depends on bases, not individual figures - any figures of 15mm/18mm or smaller scale may be used, with as many figures per base as looks good. Sufficient numbers of normal 6-sided dice are required, as are rulers or tape measures in inches. A device (a tablet is ideal, most smart-phones will work, and the app will run on a PC - any Web browser which supports Javascript is all that is needed) is required to run the game app, and more than one may be used simultaneously. There is no need for network connectivity during play.

Markers will be needed to indicate Wavering, Pinned, and Disordered statuses (we use small circular bases with casualty figures on them: one for Wavering, two for Pinned, and three for Disorder). Markers will also be needed for orders (Advance, Retreat, and Countermarch). A single officer figure on a small (half-inch) circular base can be used, positioned to indicate specific orders (to the front of the unit for Advance, to the Rear for Retreat, to the side for Countermarch, and absent for Hold and Fire Barrage). Markers for 1-inch square sheafs in groups of four are needed for field artillery, heavy artillery, and gas (we use cotton wool in orange, yellow, and green colors). A normal sheaf covers 4 square inches, but may be configured in different patterns.

III. Units, Troop Types, and Basing

There is a fairly limited range of troop types used in the game:

Infantry: These are classed as "Veteran," "Line," and "Reservist," representing various grades of infantry as grouped by training, equipment, and experience. Each base represents a brigade or regiment (depending on the army) of 3 to 4 battalions of troops. These are assumed to have the normal allotment of integral trench mortars, MGs, and other support weapons, but attached artillery is a separate unit. Typically, a unit - a division - will have three bases, but late-war Americans will have four. Infantry bases are 2 inches wide and 1 inch deep.

Stosstruppen: These are single-base units which represent the battalion-sized formations of storm troopers and their attached heavy weapons (flamethrowers, artillery, etc.) They were trained in infiltration tactics to a degree which was not seen in the Entente armies, and are only allowed to be fielded by the Central Powers forces. These units were independent of the normal force structure. Their bases are 1 inch square.

Trench Mortars: These represent the heavy trench mortars/minenwerfer assigned to divisions, but operating in a fashion similar to the divisional artillery. Thus, they are played as separate units. They are, however, given quality ratings and treated as infantry for the purposes of command control and close combat. Typically, there will be

one (or none) per infantry division. Note that these bases represent fewer tubes than other artillery bases. Bases are 1 inch square.

Machinegun Battalions: While there were MG companies integral to the infantry formations (represented in this game as part of the infantry and cavalry division) there were also entire independent MG battalions which were allocated as needed by higher command. Often, these would be used to provide indirect fire support for assaults. As such, they are played as independent units. They are, however, given quality ratings and treated as infantry for the purposes of command control and close combat. Bases are 1 inch square.

Cavalry: Cavalry was in many cases just a form of infantry on the Western Front, but - should a break-through occur - they are able to move more rapidly in open country. They are otherwise identical to infantry. Basing and organization as for infantry.

Tanks: This category of tanks includes most WWI varieties, including British Mk I, IV, and V, A7Vs, St. Chamond and Schneider medium tanks, and smaller tanks (Whippets and FT-17s). Each tank base represents approximately 50 vehicles, assumed to be a mix of male, female, and supply tanks, which may operate independently or in units of two to four bases. The smaller tanks ("light tanks" in game terms) with a higher power-to-weight ratio are faster than their larger cousins. Tanks are notionally represented on a 2-inch square base, but this may need to be slightly enlarged to accommodate 15mm models.

Field Artillery: These represent the British 13- and 18-pounders, French 75mm, and German 77mm field guns, and other weapons in that class (including the field howitzers often combined with them at the divisional level). Each base represents a pair of artillery brigades/regiments/groupes, or approximately 40-80 guns. This was the normal allotment of such weapons at the divisional level, and typically an infantry division will be supported by a field artillery base. Late in WWI, double allotments (or more) of such guns were often made at the divisional level. Units will consist of one or two bases, and operate independently (even though assigned to a particular division). Field Artillery bases are 2 inches square.

Heavy Artillery: Heavy artillery represents guns of 100mm to 200mm. These were typically assigned at the corps and army level, and used as needed. They are like Field Artillery in all ways except for the effect of their larger-caliber shells. Bases are 2 inches square.

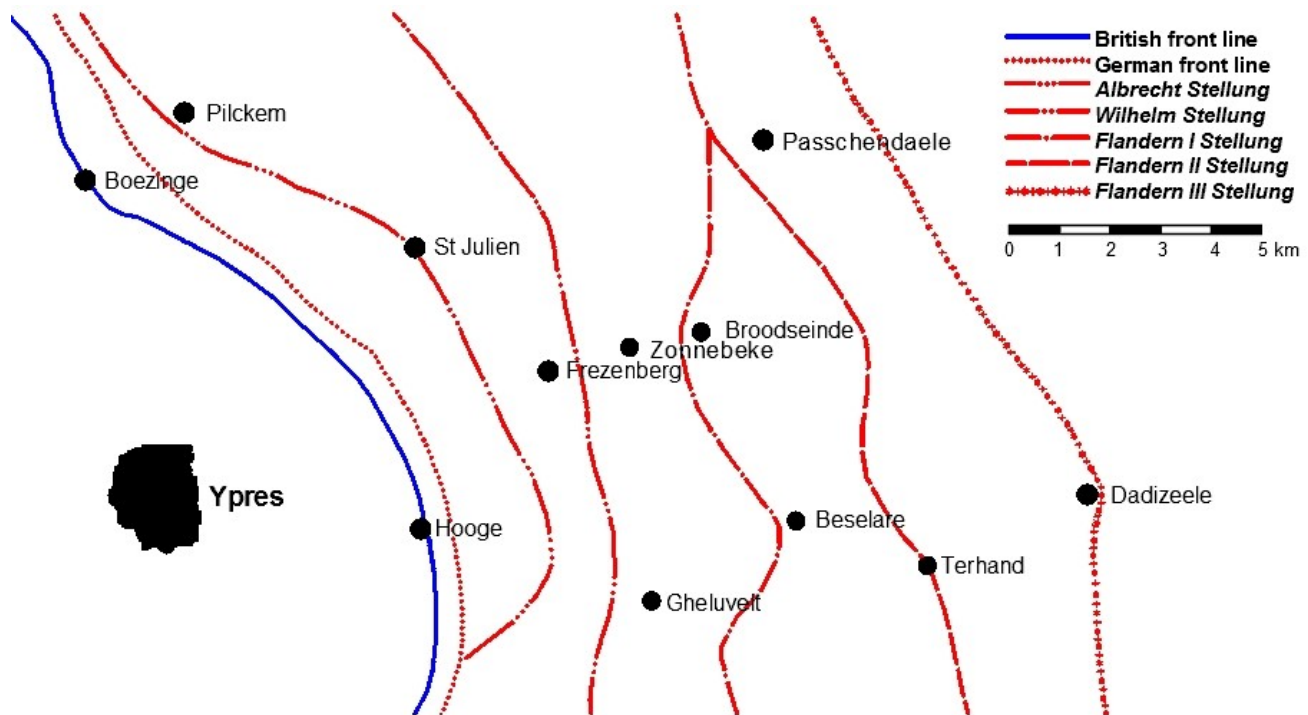
Extra- and Super-Heavy Artillery: Although not normally seen, some scenarios may involve heavy fortifications which will also then involve the guns designed to reduce them. Extra-Heavy artillery represents guns in the 240mm-plus range. Super-Heavy Artillery represents guns in the 400mm-plus range (ie, Gamma Mortars, massive French rail guns, etc.). These are immobile, and represent single batteries. Bases are notionally 2 inches square, but may need to be adjusted to fit these oversized models.

IV. Sequence of Play

The game has two distinct phases: Set-Up and Play. Because the planning of attacks was such a major factor in determining their success or failure, and because reconnaissance in the static trench warfare being depicted was so ubiquitous, the Set-Up for this game is perhaps more elaborate than for other tabletop miniatures games. It forms a distinct part of the game, and may also contribute significantly to a player's winning or losing.

A. Set-Up Phase

The Set-Up phase involves first having the tabletop terrain laid out, which will potentially involve a lot of mud, a lot of trenches, and not a whole lot else. The following diagram is helpful in understanding the type and scale of battlefield being fought over, as it is very unlike those of other common wargaming periods.



The German defenses around Ypres, mid-1917. Top-to-bottom it would fit on an 8-foot tabletop in game scale.

Important to note is that the front-line trenches are not often much more than a kilometer apart - only 3 to 6 inches in game terms. Also important are the multiple lines of German works: the front line might be taken, but a real breakthrough would need to go through all of them. (Note that this example is more fearsome than trench systems in many other sectors.) This was the German "defense in depth" - a series of trench-lines, with front-line divisions supported by others waiting to counter-attack. A front-line division (*Stellungsdivision*) was often a lower-quality one which was expected to be beaten by a determined assault; the *Eingreifdivision* was one intended for an immediate counter-attack, to deny the attackers any permanent gains and to strike before they could regroup. There were typically almost as many of the counter-attack divisions as front-line ones in any sector.

When laying out the tabletop, as a rule of thumb there would be a German division for every 12-18 inches (2 to 3 miles) of front, with the Eingreif divisions stationed well back. To put this in perspective, an attacking division's front would typically be at most a mile or so (6 inches in our game or less). The depth behind the attacker's front line will not be the focus of the battle, so this can use only a foot or two of table depth. The rest should be devoted to at least two or three German defensive lines. Unlike wargames where maneuver is more important, the depth of the table may need to be greater than its width.

Note that the villages, while important as map references, were physically almost non-existent at this point. The ruins of villages were often fortified, and they attracted a lot of artillery fire as map references (as did the woods in the area) but they did little in terms of blocking line-of-sight or affecting movement. The image of the village of Gheluvelt from the time gives a good sense of this:



The village of Gheluvelt during the Battle Of Passchendaele.

The lay-out of the tabletop is known to both players. Each side would attempt to conceal their intentions and strength from the other side, although this was always a chancy proposition with the spying, aerial reconnaissance, balloon spotting, and patrolling going on. To reflect this, we use an abstracted but simple mechanism for setting up troops:

1. The German player identifies their front-line divisions, and deploys these on the tabletop within friendly trenches/territory, along with any supporting units which will be within 12 inches of the front line divisions.
2. The Entente player sets out all of their units in friendly trenches/territory.
3. The German player then deploys any Eingreif divisions, plus their supporting units, which must be at least 12 inches behind their front line units.
4. The Entente player may now roll to relocate his divisions on the tabletop, so long as they are not deployed along the front lines facing the enemy. This will be permitted on a roll of 5 or 6 on one die - roll for each division chosen. All rolls may be made for candidate units before any are relocated.

Bases within a multi-base unit must be contiguous, but may be separated - beyond 2 inches, however, they will no longer be able to support each other in close assaults.

Different deployment mechanisms may of course be used by players to depict historical scenarios, etc.

B. Play Phase

Once the table is set up and forces deployed, play begins. Initial orders are given to each unit, including placing sheafs for any Field Artillery or Heavy Artillery units which choose to fire. After this, the game is conducted in a series of turns, repeated until one side or the other concedes defeat, or all players agree that it is a grim and hopeless affair and that an immediate Armistice should be declared and the July 1914 status quo reverted to (not!).

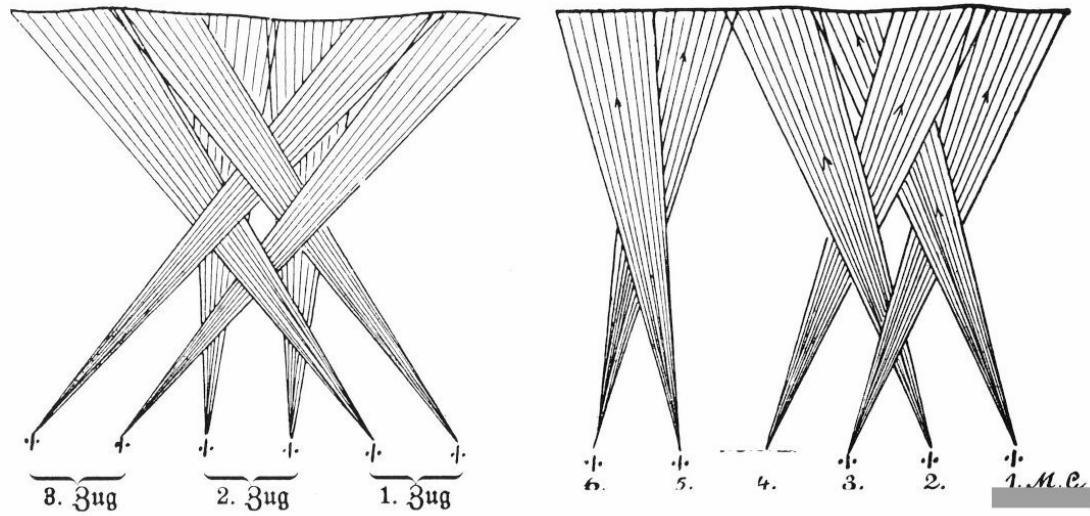
The turn sequence is as follows:

1. Players dice for initiative, with ties being re-rolled. The winner chooses first or second move for the turn.
2. The moving player will select each unit in any order desired, and check its status using the game app, making any required rolls to determine results. This will involve choosing whether that unit will continue following existing orders and targeting, or whether a change in order/targeting is wanted. If the former, all fields in the app are filled out as appropriate for the unit, and the Carry On button is clicked. For a change in orders or targeting, the fields are filled out with the desired change in orders indicated (or change in sheaf positions, for artillery) and the Change Orders/Target button is clicked. Instructions should then be followed, and all results indicated on the tabletop. If the unit has moved into close combat - base-to-base contact with an enemy unit - the Close Combat button is then used, and the close combat resolved. This process should be repeated until every unit on the moving side has been checked.
3. The same process is now repeated for all of their units by the player(s) with second move. After this, a new turn begins.

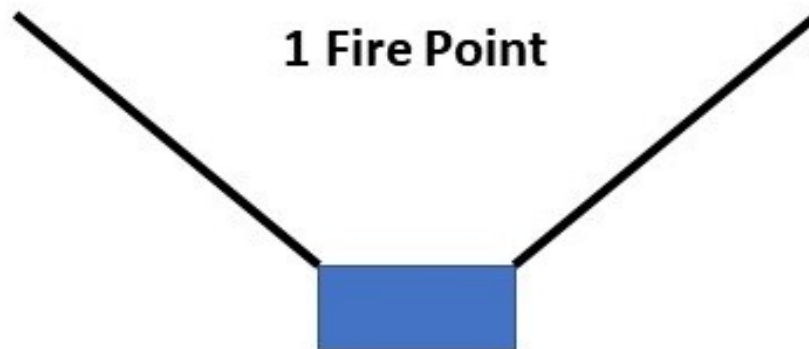
It should be noted that orders fail to get through as often as not, and that the initiative sequence means that one player may move twice in a row. This can be chaotic, but is intentional - the communications on the battlefield were such that having a timely understanding of what was occurring was a fantasy. This process helps to recreate this experience of chaos and loss of command control on the part of the higher-ups.

V. Fire

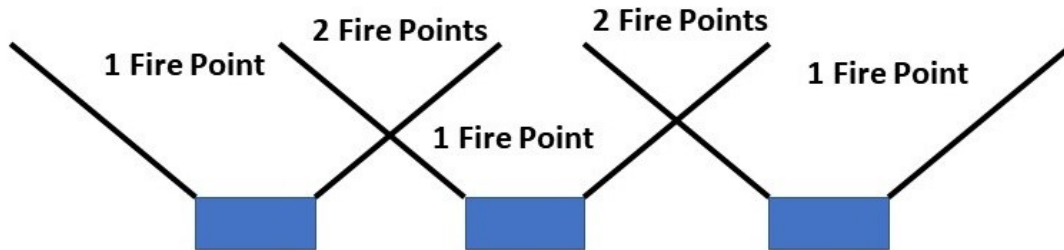
The nature of warfare in WWI on the Western Front was somewhat different than in many other periods. Fire - and machineguns were the primary killers when artillery is left aside - was not so much a matter of aiming your weapon at an enemy and pulling the trigger as it was sweeping the landscape where you knew your enemy to be with fire, in order to create a "beaten zone" through which the enemy could not pass. And while the British are famous for their "two-inch tap," the Germans - with an MG that was less easy to traverse - achieved a similar effect with their deployments, as can be seen in the period diagram below:



To reflect this, units using small arms in *Passchendaele* do not proactively select a target unit and fire on it, but rather, each potential target counts up how much fire it is taking (how badly it would be affected by the beaten zones it is within) and the result calculated from there. Each base will generate a beaten zone out to its 6-inch range within an arc that extends 45 degrees to either side of the bases' front. Any enemy unit that is even partly within this arc will take 1 point of fire.



A unit of more than 1 base (or bases from multiple units) may produce overlapping arcs, which will combine their fire:



Additional fire points may be accumulated also from the fire of Trench Mortars, Field Artillery, Heavy Artillery, gas, and indirect fire from MG Battalions. The total fire being taken by all bases in a unit is reported using the app when its status is being checked. Fire coming from infantry (including Stosstruppen), MG battalions, cavalry, and tanks is done using the fire arcs shown above. In all such cases, fire does not go through friendly units or blocking terrain. It *does* go through enemy units, as troops would not be dense enough to stop the effects of this kind of area fire.

Additionally, because MG battalions often fire indirectly during this period, they may fire through (over, really) intervening troops.

Artillery fire is of three types: Trench Mortars, Field Artillery, and Heavy Artillery. Trench mortars worked in close collaboration with the units to which they were attached, and did not have long-ranged capabilities. Because of this, it is assumed that they will fire on all available targets within 6 inches. (Typically, this will be supporting fire for a nearby infantry unit). Each TM base produces a single fire point on each target within arc and range.

Field and Heavy Artillery work differently. They are capable of firing either high explosive shells (HE, which for our purposes would include shrapnel, although it was going out of use at this point in the war) or gas. When fire commences (that is, when the order to fire a barrage is received), a 4 square-inch sheaf is placed where the shells are landing. It must be specified whether the fire is gas or HE, and is entirely one or the other. It is permissible with HE to "stack" square inches of fire - that is, to concentrate fire into a single 1-inch square sheaf which counts for quadruple the normal points, cover two square inches at double points, etc. Sheafs from different units may be similarly stacked.

For gas, the sheaf is placed and will remain on the table in that position for the remainder of the game (common late-war gasses such as mustard gas and phosgene would sink into shell holes and even the ground, filling them with lethal vapours for hours or days, regardless of the action of the wind). Any unit with a base under any portion of a gas sheaf will check the appropriate box on the game app when checking status. For HE, any unit with a base underneath this sheaf will count a fire point for each square inch (or fraction of greater than half a square inch) of that sheaf that is landing on them, as Heavy Artillery or Field Artillery as appropriate. When the fire is directed at a different target (or fire ceases due to a change in orders or status) then the sheaf is lifted (it may be placed somewhere else in the case of a change of target).

Artillery fire of all types is assumed to be indirect - it may pass through (that is, over) friendly units. Friendly units inadvertently caught under the sheafs of HE and gas will still be affected by it, however.

Each type of fire has a different field on the game app: for gas, it is a check box. For infantry, cavalry, stossgruppen, MG fire, and tanks all fire produced is considered to be Small Arms (even though this includes such things as integral MGs, bombs, integral light trench mortars, and direct-fire artillery of small calibers). For Trench Mortar bases, this is reported as Trench Mortar fire. Field Artillery and Heavy Artillery (including Extra-Heavy and Super-Heavy Artillery) is reported as Heavy Artillery (the bigger guns just produce more points per square inch). Fire ranges and capabilities are described in the table below.

Type	Range	Arc of Fire/Notes
Infantry, Cavalry	6 inches	45 degrees off of front facing to either side
Tanks	6 inches	45 degrees off of front facing to either side
MG Battalions	6 inches	45 degrees off of front facing to either side - indirect fire allowed
Trench Mortars (TMs)	6 inches	Any direction - indirect fire allowed
Field Artillery	18 inches	Any direction - indirect fire allowed; 4 square-inch sheaf; may fire gas or HE
Heavy Artillery	24 inches	Any direction - indirect fire allowed; 4 square-inch sheaf; may fire gas or HE
Extra-/Super-Heavy Artillery	48 inches	Any direction - indirect fire allowed; 4 square-inch sheaf; double/quadruple fire points

Note that all units other than Field Artillery and Heavy Artillery are assumed to fire at any available targets, unless their status drops to Disordered. If their status is Disordered, they no longer produce effective fire. Field and Heavy Artillery units will only fire when they have Fire Barrage orders.

VI. Movement

There are several different types of movement, depending on orders or the outcomes of status checks: Advance, Retreat, Countermarch, and Fall Back. Each of these is discussed in turn below. It should be noted that, as for other periods, open terrain is terrain which is not interrupted by woods, buildings, or other obstacles. Unlike most other periods, however, many of the WWI battlefields which had been the scene of fighting were massively cratered. On most battlefields - and those around Ypres surely qualify - the terrain is so heavily cratered that woods and villages have basically ceased to exist, and the "open" terrain (for game purposes) is both muddy and cratered. While this does provide a slight amount of cover to advancing troops, it also slows them down. On some other battlefields (Cambrai

being an excellent example) there had been little or no fighting, and the attacking British even used special artillery shells fused so as to not crater the ground over which tanks would need to pass.

Some types of troops - and for our purposes this would be cavalry - are much less able to handle the broken "open" ground found on many battlefields, but could move rapidly across normal open countryside. To reflect this, any ground which is open countryside - not yet cratered by fighting - should be specified (often this will be beyond the trench lines), as opposed to normal open ground (in game terms) which is assumed to be cratered, and across which cavalry is unable to move rapidly.

A. Advance Movement

Advance movement is performed by units which have successfully received Advance orders, and it is always made in the direction of the enemy (understood as moving through enemy lines and into enemy-held territory beyond). While directional changes of up to 45 degrees of either side of a straight, forward direction are permitted, sideways movement and retrograde movement are not permitted, except to skirt around minor obstacles (crossing an impassable canal, for example, would not be permitted unless there was a bridge within 6 inches of the Advancing unit).

Advancing units will move as rapidly as possible, even if this means entering areas being shelled or which contain gas. The rate of advance will depend on the results of the status check for the unit. When Advance orders are given, an objective may be specified for where the unit is to stop advancing. On reaching this objective, the unit's orders will automatically switch to Hold. Otherwise, an advancing unit will not stop until it reaches either Berlin or Paris, depending, unless other orders are received.

Other than impassable terrain, and the rules concerning open countryside given above, basically all terrain is rough, so no alteration to movement rates need be applied. The factors determining the speed of an advance are not primarily those of terrain on a cratered Western Front battlefield.

Artillery and Trench Mortars are never allowed to advance into base-to-base contact with the enemy, but will stop short of contact by a small interval (1/4 inch). Other units will stop their advance movement when they come into contact with the enemy, triggering a close combat (see below). Trench Mortars - if attached to an infantry or cavalry unit - may be part of a unit which is in base-to-base contact with the enemy, and thus involved in close combat, but may not be the part of such a unit which initiates the combat through contact.

Unit facing may be adjusted as desired in any movement by the unit (or with any other orders). The bases of a multi-base unit must be contiguous, but do not need to be touching. Note, however, that a separation of more than 2 inches begins to reduce the bases' ability to support one another.

B. Retreat Movement

Retreat movement represents the orderly withdrawal of a unit falling back to a second trench line, or pulling out of no man's land and back to friendly trenches or other, safer ground than

its current position. Units are generally more willing to retreat than to advance. It is in all ways similar to Advance movement except that it requires a Retreat order, and must be made directly away from the enemy (with the same variation of 45 degrees to either side). Retreat movement may not result in contact with the enemy such that close combat results - units will stop 1/4 inch short of making contact.

C. Countermarch Movement

Countermarching is sideways movement along a trench line or other position, and must be directly left or right, with no more than a 45-degree deviation toward the front or rear of the unit. Units are happier when countermarching than when advancing, but not so happy as when retreating(!). Countermarching requires a Countermarch order, and may - like Advancing and Retreating - benefit from having an objective stated when the order is given. Like retreating, it will not bring units into combat contact with the enemy (a move which is by definition towards the enemy) - units will stop short at a distance of 1/4 inch.

D. Falling Back

Unlike other types of movement, Falling Back is not done according to an order, but is caused only as a result of the status check of a unit. It requires a 1-inch movement away from the enemy (as for a retreat), which may be extended up to 2 inches if this will remove the unit from an area which is being shelled or affected by gas (from any type of artillery, including Trench Mortars). Falling Back may not bring a unit into contact with an enemy unit. If at least an inch of movement is not possible due to impassable terrain or the presence of the enemy, the unit Falling Back will surrender and be removed from play.

E. Stosstruppen

Stosstruppen are the battalion-sized storm trooper units deployed by the Germans at the end of the war. While other nations fighting on the Western Front advocated infiltration tactics, it was only the Germans who equipped and trained units of this size to operate according to this type of doctrine, and effectively deployed them in the field. Stosstruppen function like other units, except that they may - if making an Advance move into contact - pass through the enemy unit. This requires that they have sufficient movement given them by the status check to move their base front beyond the unit in question. If they choose to do so, no combat will result, as the Stosstruppen unit will not be judged to be in contact with the enemy. Otherwise, no pass-through will occur and a normal close combat will take place. In practical terms, this means that an Advancing Stosstruppen unit will need to be given a move of 2 or 3 inches, and to be within an inch of the enemy unit at its starting point. If the enemy unit is not deployed such that the resulting move would place the Stosstruppen unit in contact (in a formation 2 or more bases deep), such a move is allowed, and the infiltrating Stosstruppen are placed 1/4 inch beyond their foe.

VII. Close Combat

When a unit has moved into base-to-base contact with an enemy unit with one or more bases, the contacting bases and any friendly bases in the same units are declared to be in close combat. Any other friendly bases, not part of the unit, but still within 2 inches of any

involved base are "supporting bases", and may be declared as involved in the combat if their player wants them to be. This determination is made before any dice are rolled to determine the results of the close combat.

For each involved base, a single die is rolled, and modifiers applied to that die. The total for each side is then determined, and the winner (the higher total) may select any single involved enemy base for removal from play. If the score are equal, each player selects one of their own bases for removal. This is termed a "round" of close combat. Additional rounds of close combat are immediately performed until only one side has any bases left.

After the combat is resolved, for each round of close combat performed, the surviving bases will drop one level of status, but may never go below Disordered.

VIII. Unit Status

All units begin the game with a status of Solid. As they have their status checked, this may change. There are four status levels, listed from highest to lowest:

1. **Solid:** The unit is in good order and responds to commands by its officers. Units may never rise above this status.
2. **Wavering:** The unit is still responsive to orders and functional, but is beginning to feel the effects of combat.
3. **Pinned:** The unit is beginning to break down as a result of casualties and other combat effects, and many soldiers will be focused on taking cover rather than engaging in combat. The unit is minimally functional.
4. **Disordered:** Order has broken down within the unit, and soldiers will no longer man their weapons or fight reliably. Effective fire is no longer performed.

If a unit goes below Disordered status, it ceases to operate as a combat unit and is removed from play. A Disordered unit will not - unlike units with other statuses - be able to perform fire. It will still be able to engage in close combat.

IX. Orders

At the beginning of play, every unit must be given an order. All bases in the unit will receive the same order. If the unit is Field Artillery or Heavy Artillery, and it has Fire Barrage orders, a sheaf is placed on the table within its firing range. The set of possible orders is small:

1. **Hold:** The unit remains in place. Any units other than Field Artillery and Heavy artillery will fire at any enemy units which come into arc and range unless Disordered or fire is blocked.
2. **Fire Barrage:** This order may only be given to Field Artillery and Heavy Artillery units. It allows the unit to place a sheaf on the table (either gas or HE), or, in the case of a target change, to move the sheaf being fired onto a new target location (gas/HE also be switched at any time).
3. **Advance:** Unit will advance toward the enemy. An objective may be stated.
4. **Retreat:** Unit will retreat in good order away from the enemy. An objective may be provided.

5. **Countermarch:** Unit will move laterally, typically within existing trenches, to take up a new position. An objective (the new position) may be provided.

Units will have an order at all times, and must perform according to it regardless of whether the player wishes it to do so. This is important in representing the inability of higher-level commanders to control the battles of the Western Front. Once a unit has been sent "over the top" it will carry on regardless, until receiving other orders. Communications are so poor that new orders, even if sent, are likely to never reach their objective.

When a unit is executing its existing orders - those from the preceding turn - it uses the Carry On button to check status. When a different set of orders is given, or the target for Field or Heavy Artillery fire changes, then the ChangeOrders/Target button is used instead, with the new orders (if any) set on the app.

X. Units and Army Organizations

A. Units

Units may be single bases or may be composed of multiple bases. These rules reflect the basic levels of organization to which higher-level commanders might issue orders: divisions of infantry or cavalry, specialized battalions such as Stosstruppen or MG Battalions, brigades/regiments/groupes of field and heavy artillery and trench mortars, and battalions (sometimes brigades) of tanks. Infantry and cavalry divisions have a core of three bases (except for Americans, who have four) bases, although cavalry formations were sometimes smaller with only two bases. Each base represents three battalions (or, for cavalry, regiments) - a brigade in British nomenclature, and a regiment in German or US service. Each artillery base represents about 30 - 50 guns, or a pair of brigades, the typical tactical distribution of field or heavy artillery. The terms vary - artillery was grouped (depending on nation and availability) into 3 or four batteries, each of 4 to 6 guns, in a unit termed a brigade by the British, a regiment by the Germans, and a groupe by the French. Each infantry or cavalry division was given the support of at least one (and usually two or more) of these formations, but since they did not advance with the other troops, and often provided fire support for neighboring formations, they are played separately here. In game terms, the most important thing is to judge the number of guns, with each base representing approximately 40 tubes.#

Tanks were deployed only by the French, British, and Americans in any significant numbers (the Germans attempted to do the same but lacked the numbers, even with captured vehicles - fielding more than a single tank base for the Germans in this game is a departure into "what-if" territory). Each tank base represents a battalion of about 50 vehicles or a little less. These were sometimes grouped together, or sometimes not - this is left up to players to determine.

Stosstruppen were the specialist storm-trooper units in the German army. While other nations adopted infiltration tactics to some degree, only the Germans did so in a way to be significant on the battlefield, notably during the 1918 Spring Offensive (*Kaiserschlacht*). Stosstruppen battalions were used on an as-needed basis by higher command, and will always function as single-base units, partly as a result of their nature, infiltration being performed by small self-directed groups of soldiers.

Trench mortars in this game represent not the lighter trench mortars which were an integrated part of the infantry divisions, but the separate heavy trench mortar formations which were used on an as-needed basis by the forces on all sides. These can be attached to an infantry or cavalry division if desired, making them an integral part of that unit, and subject to its orders, or they may be played as separate single-base units.

Machinegun Battalions are a similar type of unit - while there were many integral machinegun companies within the infantry and cavalry divisions, there were also dedicated MG battalions used on an as-needed basis by higher command, which is what these represent in this game. As for trench mortars, these may be attached to the infantry or cavalry divisions if desired, as additional bases within the unit, or they may function as independent single-base units.

Note that the attachment of trench mortars and MG battalions should be made prior to the start of play - once the action starts, the disposition of these bases would not be changeable.

B. Army Organizations

Changes in the organization of forces varied throughout the Great War, and often were seen being implemented only gradually - some divisions involved in an operation might be organized according to a new TOE, while others would still be on the preceding one. The organizations here are just a starting point to provide players with some typical forces for pick-up play. When depicting an historical action, the organization of forces for that operation should be used - these are easy to find from various places on the Web and elsewhere, even Wikipedia having many of these.

German: A German division will consist of three infantry bases, supported by one or more (usually two) field artillery bases. Trench mortar and MG battalion bases - one of each - might or might not be present. Stosstruppen bases would be present in exceptional circumstances. The German army tended to organize itself into Groups, which were basically corps-sized formations of from 3 to 6 divisions. Heavy artillery would be held at this level - a Group would typically have 3 to 5 heavy artillery bases (one for every two or three field artillery bases is a good rule of thumb), but could have many more. Half (or more) of the divisions in a group would be *Stellungsdivisionen* - front-line divisions - and the others *Eingreifdivisionen* - counter-attack divisions. Of these divisions, a third or a half would typically be reserve divisions. Those divisions freed up from the Eastern front would be counted as Veterans, otherwise the non-reservist divisions are line infantry.

British: British divisions were made up of three (sometimes 4) bases, each representing a brigade of three or four battalions. Typically, each would have a single MG Battalion and two Field Artillery bases. Corps were made up of 2 to 4 divisions, and would include 2 to 4 Heavy Artillery bases (although these could be more in number depending on the operation in question). Heavy trench mortars were assigned to divisions in different ways at different points in the war: a given division will have a trench mortar base in 1917n0 but will not have one by 1918.

French: French divisions will have three bases. They did not deploy MGs in independent battalions, but heavy trench mortars were fairly common - a division may or may not have a base. Field artillery will have two bases per division, and may have up to four. At the corps and army level the heavy artillery support was emphasized: it is not unreasonable to have as

many (or only a few less) heavy artillery bases as field artillery bases, and in major offensives extra-heavy and super-heavy artillery will be seen (a base per division or less).

American: The American divisions were huge, and organized somewhat differently than their European counterparts. An infantry division will have four bases, accompanied by two field artillery bases. In addition, there will be an MG battalions and a trench mortar base. Due to inexperience, units may be rated as reservists, but their very inexperience could also be seen as providing a (naively) high level of morale. I leave this up to players to decide. Artillery was typically French, as were tanks (FT-17s).