

COMBINED ARMS



**A SOLITAIRE GAME OF WW2
TANK & INFANTRY ASSAULT**

by Phil Sabin

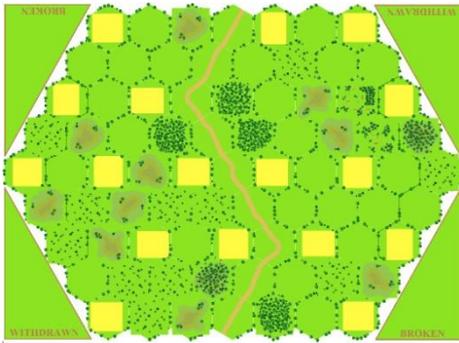


Figure 1: The Playing Board After dicing for terrain, this board looks as shown, with 2 farms, 2 wooded crests, 4 woods, 10 crests and 11 hexes of poor going. (The wheatfields count as normal open farmland.) There are 5 hexes of woods, crests or farms in the bottom 3 rows and only 4 in the top 3 rows, so the defenders will occupy the bottom 6 rows of the board. 14 counters will be placed showing potential enemy positions, 12 of them accompanied by potential ATGs since they have 3 or 4 adjacent open hexes in front or to the side (or behind them if on the side edge). Your platoons enter the top hexrow on any turn.



Figure 2: The Units Fresh units like rifle platoon E2 in the wheatfield have green borders and text, while spent units like armour platoon A1 on the road have buff borders and text. Potential and real enemy platoons use the same colour coding, and their counters also show impacts from your suppressive fire when spent. ATGs have brown borders, since they share the fresh or spent status of their accompanying counter. The counters on the wooded crest remain unrevealed since they have been pinned by your covering fire, but the platoon and ATGs on the nearby crest have been revealed as real and are fresh, so pose a grave danger to both your platoons. Your armour platoon is facing the top right corner of its hex and has a 60 degree forward arc as shown, not covering the wooded crest.

INTRODUCTION

This is a simple solitaire game which simulates a generic WW2 battalion assault in randomly generated rolling farmland. Your infantry are supported by medium machine guns (MMGs), mortars, artillery and a company of tanks or assault guns, while the dug-in defending infantry are accompanied by MMGs and anti-tank guns (ATGs) and have limited mortar support. Their precise positions and strength are concealed until they fire, so you will have to feel your way forward carefully and balance security from ambush against the rapid progress needed to achieve victory should resistance be light. You may play using my Cyberboard game set, or print out and assemble the components on pp.18-22 (you need 2 copies of pp.18-20), or use miniature figures on model terrain as shown in my new YouTube video. The game uses two standard dice. On p.7, I include ideas for co-operative team play and a variant with player controlled defenders, allowing the game to be enjoyed by up to 6 players. Google 'Sabin wargames' for details of my many other designs including those in my 2012 book *Simulating War*.

THE PLAYING BOARD

Combined Arms is played on a hexagon board 9 hexes deep and from 7 to 11 hexes wide, as shown in Figure 1. Each hex represents an area 150 metres across. You must roll 2 dice for each of the 70 hexes not on the central road. The hex contains open farmland on a total score of 7 or less. On 8 it contains poor going, on 9 it contains a crest, on 10 it contains woods, on 11 it contains a wooded crest (with the same effects as both), and on 12 it contains a farm. Show this terrain by placing the appropriate counter in the hex.

THE UNITS

You command 9 rifle platoons in 3 companies (D, E and F), supported by 2 MMG platoons and 3 platoons of armour (tanks or assault guns). Rifle and MMG platoons both count as 'infantry'. Counters show the platoon *fresh* on the front side and *spent* on the reverse. Your platoons become spent when they move, fire or are pinned down by enemy fire, and they regain fresh status automatically during your recovery phase. Each counter occupies a specific hex. Infantry have no facing, but armour must face one of the 6 corners of its hex, with a forward arc as shown in Figure 2. Each side also has a mortar platoon in support, as discussed in the mortar section below.

Counters showing potential enemy positions are placed in each crest, wood, wooded crest or farm hex in the middle 3 hexrows of the board and also on each such hex in the top or bottom 3 hexrows, whichever have more such hexes (decide randomly if there is a tie). The enemy hence always occupy the side of the board with more defensive terrain. The counters are removed when revealed, and some are replaced by counters representing real dug-in infantry platoons with 1 or 2 attached MMGs. Both potential and real enemy counters may flip between fresh and spent status, with fresh counters becoming spent when pinned down and spent counters becoming fresh instead of firing. A potential ATG counter is placed with every potential enemy counter next to at least 3 open, road or poor going hexes. Do not count hexes closer to the enemy rear board edge unless the counter is in a side edge hex. The front of the counter shows the ATGs as only potentially present. When revealed, the counter is removed or flipped to its real side. ATG counters share the fresh or spent status of their accompanying platoon counter, and are removed if it is revealed as unreal.

SEQUENCE OF PLAY

Your infantry losses and infantry ammo fired markers start in box '0' of the circular track on p.22, and your smoke ammo counter starts in box '4'. The turn track records up to 20 turns, each representing 5-10 minutes of battle including frequent lulls punctuated by sporadic bursts of action. Each turn has 4 phases:

Friendly Move Phase: In any order, any or all of your fresh platoons may enter the board or move one hex, becoming spent in the process.

Friendly Fire Phase: You call for mortar fire on a spotted target if you wish, and then any or all of your remaining fresh platoons may fire in any order, becoming spent in the process. You now resolve your mortar fire, and on turn 1, each potential enemy counter with a 1-5 hex line of fire to any of your platoons becomes spent on a die roll of 2 or more due to your preliminary artillery bombardment.

Friendly Recovery Phase: All your spent platoons become fresh.

Enemy Phase: The enemy calls for mortar fire, and then enemy counters are activated in order, with fresh counters firing on your platoons if possible while spent counters become fresh again. Enemy mortar fire is resolved at the end of the phase.

VICTORY

You may end the game after turn 20 or any earlier turn. Reveal any enemy counters still unrevealed, and then score 1 for each real ATG counter still in play, 2 for each enemy platoon still in play or ATG counter broken, and 4 for each enemy platoon broken. Score 2 for each exploiting friendly platoon, but count those which exceed the number of broken enemy platoons only if no real enemy platoons remain in play to threaten resupply down the road. Deduct 2 for each of your platoons broken, and (unless you want an easier game) deduct 1 per turn after turn 18. You win if you score 20 or more.

MOVEMENT

Your fresh platoons may move in any order during the friendly move phase, becoming spent as they do. They move to any adjacent hex not containing an enemy counter, except a side edge hex in the 5 middle hexrows of the board. Your platoons begin off the board, and may move into one of your 7 rear edge hexes during any friendly move phase. They may withdraw by moving back from one of these hexes or exploit by advancing from one of the 3 central hexes on the enemy rear edge, but they may never return. Put exploiting platoons in the enemy withdrawn box. Rifle platoons may not enter a hex containing a rifle platoon from a different company. Armour may stack freely with infantry, but may not enter a hex containing poor going, woods or another armour platoon. Armour may change facing as desired and then move 1 hex into its forward arc. If it does not change facing, it may instead reverse 1 hex in the opposite direction or move 2 hexes forward (including when entering or leaving the board) as long as both hexsides contain a road. MMGs may stack freely with any units, but they may never move once entered except to withdraw. Spent platoons and enemy counters may never move.

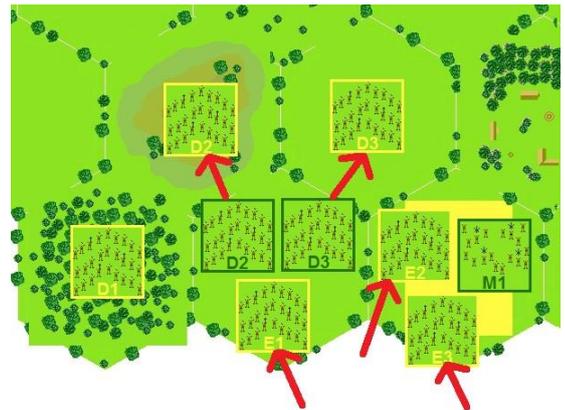


Figure 3: Infantry Movement Rifle platoon D1 in the woods has been pinned by enemy fire, and so cannot move even to withdraw. Platoons D2 and D3 remain fresh and both choose to advance, with D2 moving onto the crest while D3 stays in open ground. MMG platoon M1 in the wheatfield is fresh, but due to the weight of the guns and ammo it cannot move now that it has been deployed except to withdraw. E company cannot deploy into the woods because of the prohibition on stacking with a different rifle company, but the advance of D2 and D3 clears the way for platoon E1 to enter the board in their wake. Platoons E2 and E3 both deploy into the wheatfield to join the MMG platoon, creating a very vulnerable concentrated target should enemy mortars be available this turn. All moving platoons become spent until the recovery phase, so only the MMGs can still fire.



Figure 4: Armour Movement Armour platoon A1 has uncovered an enemy infantry platoon in the adjacent woods, with no ATGs since it has only 2 open hexes not behind (above) it. Platoon A3 pivots 120 degrees left and advances to a safe 2 hex range. Without infantry to protect it and break the enemy, platoon A1 does not want to risk a close range fire duel, and the only safe hex it can reach this turn is now the crest to its rear. It chooses to maintain facing, allowing it to reverse into a hull down position behind the crest. Platoon A2 cannot turn and close in because its path is blocked by the poor going and the now occupied crest hex, so instead it takes advantage of A3 having vacated the road ahead and maintains facing while making a 2 hex road move to continue the advance. With all the armour spent, the enemy platoon will remain fresh this turn, but all the AFVs are now out of range of its anti-tank weaponry.

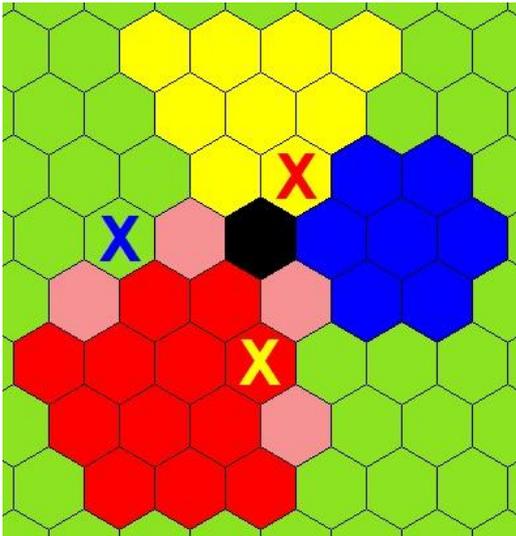


Figure 5: Lines of Fire The intervening hex is shown in black. The 3 possible relative positions of the firer's or target's hex (whichever is closer) are shown by a coloured 'X'. Lines of fire may not be traced to or from the hexes in the matching colour. The 4 light red hexes are only partly blocked, unless another intervening hex also creates a partial block.



Figure 6: Fire Combat You declare that platoons F2 and A2 will fire in support of the advance by F1 and F3 (they may fire overhead because the enemy is on a crest). However, the -2 range penalty is compounded by -1 for the intervening woods and a further -1 for A2 not being part of F company. Hence, rolls of 3 and 5 have no effect except to add 1 to your infantry ammo fired. All your platoons become fresh again, but then the ATGs fire back on A2, and on a roll of 4 (modified to 1) they just miss breaking your tanks as the partly blocked line of fire cuts both ways. Now the enemy infantry engage your whole company in its 3 hex cluster. On a 5 (modified to 3) F2 is pinned despite the woods in front, and your losses rise to 6. You opt to roll next for the exposed F1, and even on a roll of 2 (no net modifier) it is broken as your losses circle round 2 steps to 0. Finally you get lucky when you roll another 2 (modified to 1) for F3, which escapes thanks to being in woods. This gives you 2 chances in 3 of breaking or pinning the enemy next turn while your tanks (which would limit F3's assault if they fire) either risk closing in or seek cover just in case.

FIRE ATTACKS

Your platoons which remain fresh may fire in any order in the friendly fire phase, becoming spent as they do. Fresh armour may change to any facing in your fire phase, but it may only engage targets which end in its forward arc. Each platoon fires on a single hex containing a potential or real enemy counter. If you wish multiple platoons to fire on the same hex, you must commit them all first and then resolve each attack in turn, even if redundant. Rifle platoons from different companies may not engage the same hex. Platoons may not fire on targets 6 or more hexes away, or if their line of fire is blocked by an intervening wood, crest or farm hex. An intervening hex containing a rifle (not armour) platoon also blocks your own (not enemy) fire unless the firer or target is in a crest hex. Figure 5 shows which hexes are fully or partly blocked.

Roll a die for each firing platoon. Add 1 for armour not within 2 hexes of an enemy counter (including an enemy mortar target counter), since hatches may be opened for better situational awareness. Add 1 if the target platoon is unrevealed and none of your platoons are adjacent to it. Deduct 1 if the line of fire is partly blocked. Deduct 1 if a friendly rifle platoon is adjacent to the target, unless the firers are also adjacent or are a rifle platoon of the same company. Deduct 1 for every hex of range (1-5), or for every full 2 hexes of range if firing MMGs. If the modified score is 2 or more, the enemy becomes spent if not already so. If *all* your firing platoons are adjacent to the target hex (allowing them to close in without risking friendly fire from more distant comrades), ATGs are broken and removed if the modified score is 4 or more, as is the enemy platoon itself if the firers are infantry. Each time a rifle (not MMG) platoon fires, advance your infantry ammo fired counter, and if it passes from 7 to 0, the firing platoon withdraws and is removed.

ENEMY FIRE

During the enemy phase, each revealed enemy platoon which remains fresh may fire twice, first against your armour and then against your infantry. A platoon without ATGs may engage only an adjacent armour platoon, adding 1 to its die roll if outside the armour's forward arc and deducting 1 if a rifle platoon is in the target hex. On a modified roll of 5 or more the armour is broken and removed. A platoon with ATGs may engage one armour platoon at up to 5 hexes range as long as it can trace a line of fire. Add 1 to its roll if outside the armour's forward arc. Deduct 1 if the line of fire is partly blocked, and deduct 1 if the armour is in a crest or farm hex (hull down). Deduct 1 for every hex of range. On a modified roll of 2 or more the armour is broken and removed.

Each fresh enemy platoon may also engage up to 3 mutually adjacent hexes containing your infantry, as long as a 1-5 hex line of fire may be traced to each (ignoring your intervening platoons). Roll for each hex, in any desired order. Add 1 if the hex does not contain a wood, crest or farm. Deduct 1 if the line of fire is partly blocked, and deduct 1 for every hex of range. On a modified roll of 2 or more, all your infantry platoons in the hex become spent if not already so, and each suffers 1 loss (or 2 losses if the firers are adjacent). You advance your infantry losses counter, and each time it passes from 7 to 0, one infantry platoon of your choice in the target hex is broken and removed.

MORTARS

Before your platoons fire, your mortars may target any spotted hex which contains a real or potential enemy counter and is not next to one of your platoons. Before enemy counters are activated, enemy mortars may target a spotted hex which contains any of your infantry platoons and is not next to a real or potential enemy counter. Hexes are spotted if within a 1-5 hex line of fire of a *fresh infantry* counter (real or potential) not adjacent to an opposing platoon. Intervening platoons or single partial blocks are no hindrance. Place a target counter until the same time next turn. Enemy mortars may not fire in successive turns, and your mortars may do so only if they target the same or an adjacent hex (which must be spotted and eligible afresh). Resolve other fire normally (including against the target hex), and then dice to select a hex corner as shown on p.22. The mortars land in all 3 hexes sharing that corner. Dice in any desired order for each occupied hex. On 2 or more, all non-armour counters in the hex become spent if not already so, and your own infantry platoons suffer 1 loss each.

On up to 4 turns (recorded using your smoke ammo counter) your mortars may instead lay a smoke screen. The procedure is the same except that you use the smoke side of the target counter, you may target any spotted hex (even if empty) which does not actually contain a friendly platoon, and troops are unaffected. Retargeting delays apply as normal, regardless of the ammo used. Smoke counters are placed in all 3 impact hexes, and last until the end of your next fire phase. Their only effect is that *intervening* smoke hexes block lines of fire as if they were woods.

ENEMY DECISIONS

Enemy mortars which are eligible to engage will fire on a roll of 6 if more friendly than enemy platoons (not ATGs) have been broken, otherwise on 5 or 6. They target the hex with most infantry platoons, and within that the hex with most infantry platoons adjacent (even if unspotted). Potential or real enemy platoons then fire or become fresh, starting with those further from their board edge and moving from the enemy's left to right flank within each hexrow. Each platoon fires on whichever armour platoon it has most chance of breaking, and then on whichever cluster of hexes maximises its likely impact on your infantry. Work this out for each hex by counting each infantry platoon as 1 if spent and 2 if fresh, multiplying the total by the number of chances out of 6 of success, and trebling the result at 1 hex range. Resolve remaining choices for any form of enemy fire by prioritising hexes closer to the enemy board edge, and then by random die roll.

Potential enemies are revealed when activated if adjacent to your platoons, or if fresh potential ATGs have at least 2 chances in 6 of breaking an armour platoon, or if a fresh potential platoon has a total payoff of 6 or more against your infantry. If both need to be revealed, test for the platoon first. To reveal a platoon, roll a die and add 1 if an ATG counter is in the hex, but deduct 1 if ATGs have been removed from the hex. On 5 or more the platoon is real but ATGs remain unrevealed; otherwise both are removed. To reveal ATGs, roll a die and add 2 if the platoon has already been revealed. On 5 or more the ATGs and platoon are both revealed as real; otherwise the ATGs are removed but the platoon remains as is. Deduct 1 from both rolls if at least 2 real ATGs or 3 real platoons have already been revealed, but stop deducting 1 for removed ATGs.

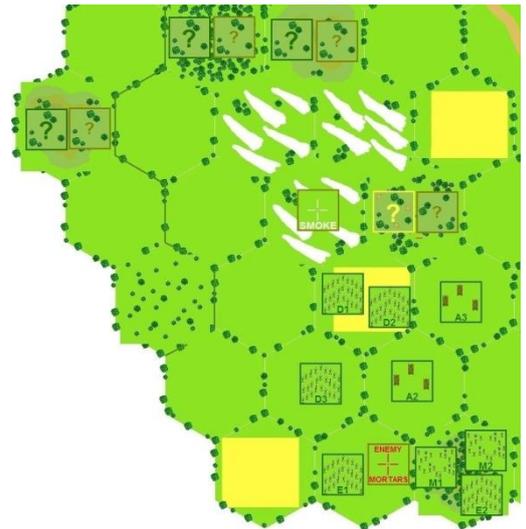


Figure 7: Mortars & Revealing Enemies Your MMGs firing from a wooded crest have kept potential enemies in a nearby farm pinned down while your troops advance (though this turn they hit only on 4, 5 or 6 now your infantry are adjacent). Your mortars have been laying smoke to conceal your troops from other potential enemies, but on a roll of 6, this turn's fall of smoke opens the line of fire for enemies on the side edge. On a roll of 5, an enemy spotter hidden somewhere near the side edge counters calls for mortar fire. The mortars cannot target platoons D1 and D2 in the wheatfield since these are next to an enemy counter, so they target E1 which has just arrived and is next to 1 more infantry platoon than D3, even though most of these platoons are outside the spotter's range.

The spent counters in the farm are activated first and must be revealed since your platoons are now adjacent. Your roll of 3 for the platoon rises to 4 because of the ATG counter, but this still means that both counters are removed and the farm turns out to be ungarrisoned after all. You now see if the counters on the side edge reveal themselves by opening fire. Infantry fire has a payoff of 4 against D3, 4 against D1 and D2 (partly shielded by the smoke), and 2 against E1, so by targeting 2 hexes the threshold of 6 is reached. The roll of 4 rises to 5 due to the ATG counter, so a real platoon counter is placed. Any ATGs in the hex have a side shot on AFV platoon A2, but the extreme range means they would still need a 6, so they remain unrevealed. (In the reverse case, platoons are always real if ATGs are, and so will fire however low the payoff.)

The enemy engage the whole of D company due to the greater total payoff of 8. The wheatfield is missed on a roll of 2, but platoon D3 becomes spent and suffers a loss on a roll of 5, modified down to 2. The mortar bombardment now arrives, and on an unlucky roll of 1 it falls on platoon A2 and on the wooded crest as well as on platoon E1. Your armour is unaffected except that both platoons must remain buttoned up despite the clearing of the farm. E1 escapes on a lucky roll of 1, but on 4 your other platoons become spent and suffer 3 more losses.

DESIGN NOTES

Combined Arms is clearly based on my *Fire and Movement* game, for which I provided extensive design notes on pp.203-8 of my book *Simulating War*. I will focus here just on the many changes I have made.

The biggest change is the move to a dedicated solitaire design. I already produced a simple solitaire add-on for *F&M* itself, but this relied on the player using his or her tactical skill to set up the defence first. *CA* instead uses random and initially unknown defender deployments, as in my unpublished design *Take that Bridge*. Instead of that game's variable time before the bridge is blown, *CA* requires you to break a higher proportion of the defenders the fewer there are, as well as exploiting past them to persuade them to retreat before they are encircled. You can even win if you stop attacking an unexpectedly strong defence before suffering too many losses. Although *CA* does not model defensive counter-manoevres as does *F&M*, it abstractly reflects some defender reactivity by making the initial rolls for defending forces more likely to succeed, whichever part of the front you choose to attack. This not only dampens undue variation in defender force size but it also creates intriguing options for feint attacks to draw defending reserves away from your real thrust.

As its title implies, *CA* moves beyond the purely infantry focus of *F&M* to include armour and ATGs. Despite popular fascination with duels between opposing AFVs, it was ATGs which were the main opponents of tanks and assault guns as they supported infantry attacks. AFVs have interesting strengths and weaknesses compared to infantry, as I have tried to reflect in the game. Their armour gives immunity to the area suppression and concentration penalties faced by infantry, but having to button up to avoid crew casualties from nearby mortar, machine gun or sniper fire reduces their ability to identify targets effectively. They can move swiftly along roads, but cannot move through woods or poor going which might bog them down. AFVs carry plenty of ammo and can provide mobile suppressive fire beyond the range of emplaced MMGs (which I now also exempt from ammo depletion), but they are vulnerable to sudden destruction by AP shells or other anti-tank weapons (including mines), especially if attacked from the side, whereas dug-in infantry break only under close range infantry assault.

The shift to a deeper non-rectangular board makes the side edges look less artificial and gives more scope for the defence in depth which AFVs were key to breaking. The defenders now deploy solely in crests, woods and farms instead of forming a line in alternate hexes as in *F&M*. I assume that your preliminary artillery bombardment, besides covering your initial advance, dislocates the defence and accounts for its relative incoherence.

Your own platoons now fire only on single hexes rather than pairs as in *F&M*. This stops you gaining undue benefit from random defender concentrations, and makes it harder to suppress the many enemy counters until they reveal themselves by firing (though the bonus against unrevealed counters makes it worth trying). The defenders try to strike a balance between not giving away their positions too soon and not remaining hidden while their comrades are defeated in detail. If you send armour forward alone, you will discover any ATGs (often to your cost), but enemy infantry without ATGs will lie doggo until you move adjacent and expose your unaccompanied AFVs to close range attack.

Enemy platoons with their attached MMGs now engage clusters of 3 hexes rather than 2, modelling area fire better and making it even more dangerous than in *F&M* for your infantry to concentrate. I also use these 3 hex clusters as a neat way of randomising mortar impacts, and I include a realistic delay before the shells arrive (especially when switching from another fire mission). You now have smoke rounds to mask enemy positions, though the enemy fire first as the smoke clears. I vary the likelihood of enemy mortar fire as a simple balancing device depending on your fortunes in the game as a whole. I have streamlined the combat system to do without separate assaults and progressive tracking of enemy losses and mortar ammo.

The uniquely British infantry battalion from *F&M* with its 4 rifle companies has been replaced by a more standard formation with 3 rifle companies but more MMGs (typically 12 per battalion), so that you may also model U.S., Soviet, German or other attacks. This boosts suppressive firepower but makes losing the scarce rifle platoons even more damaging. I have increased the endurance of your infantry to stop them wasting away too quickly. To keep things simple, I have not tried to model light armour such as carriers and half tracks, or made any distinction between the many different types of tanks, assault guns and ATGs. The *Combat Mission* PC games offer a much more specific and customisable model of these battles, whereas *CA* is more generic and puts even greater emphasis on suppression and infantry assault rather than long range firepower attrition.

Random generation of terrain and defensive deployments makes every game of *CA* different and challenging, and you never know what you are facing until it is too late. The narrow exploitation gateway, side edge move restriction and armour road bonus help to offset the artificial temptation to hug one side edge as you advance. You may experiment with everything from tentative probes by single platoons to brute force advances by entire company stacks spearheaded by armour. It takes practice to create a balanced and effective mix of fire and manoeuvre while juggling limited time, ammo and intelligence, but combining the distinctive contributions of rifle platoons, MMGs, mortars and AFVs is the secret of success just as in the real battles.

CO-OPERATIVE TEAM PLAY

Just like *F&M*, *CA* may be played co-operatively by a team seeking jointly to guide the attackers to victory. This is especially useful in educational contexts, to give multiple players a feel for the combined arms dynamics of the battles concerned. The ideal team size is 5 players, allowing one to command the 3 armour platoons, one to command each of the 3 rifle companies, and one to command the MMG platoons and the mortars. The player directing the MMGs and mortars is in overall command. Commands may be combined if fewer players are available, or the overall commander may be represented separately to accommodate 6 players.

Teams should discuss possible actions and seek to concert their efforts into a coordinated overall plan, without which their chances of victory diminish greatly. Since the defenders are controlled by AI, there is no need to conceal discussions to stop enemy players overhearing. The overall commander should leave tactical control of platoons to his or her subordinates, to avoid them becoming mere functionaries. If desired, communication between players may be restricted to written messages, perhaps with limits on the number of messages a player may send each turn, to simulate command constraints. However, this should not be taken too far, since turns already include extensive lulls to allow actions to be coordinated across the formation, and winning before the turn limit expires and defending reinforcements arrive is a central element of the game's challenge.

Fresh platoons may be activated in any desired order, but if 2 or more players wish their platoon to move or fire next, the overall commander decides. Any infantry platoon which remains fresh may be used for mortar spotting. When a platoon fires, any other platoons eligible to engage the same hex may declare their attacks, and the attacks are then resolved in the order they were declared (which affects withdrawal due to ammo depletion). The overall commander decides in which order to roll for hexes attacked by the enemy, and which infantry platoon in the hex will be broken if losses circle from 7 to 0.

Players win or lose collectively, since the way platoons are removed due to cumulative losses and ammo expenditure does not allow fair comparative measurement of the performance of different companies. The aim of the multiplayer game is to let the players practise teamwork and to allow a single game organiser to run the game for multiple players without each one needing to master the rules sufficiently to play their own individual game.

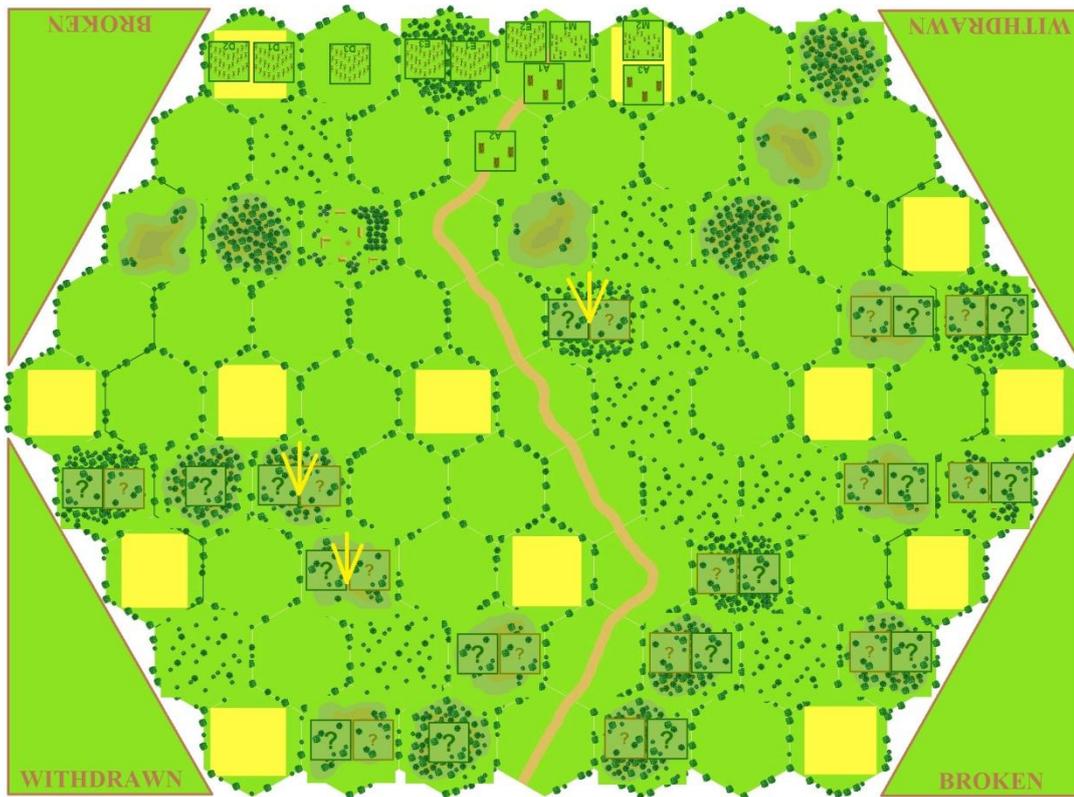
ENEMY PLAYER VARIANT

Instead of having the defenders managed by the AI system, you may allow a player to command them as in *F&M*. If playing *CA* as a competitive two player game, you may balance the contest by letting the players bid for command of the defenders. Command goes to the player willing to grant the attackers the greatest handicap bonus to add to their victory score (dice if bids are equal).

The defending player secretly rolls 2 dice, re-rolling both until one scores 4-6 and the other 1-3. The higher roll gives the number of real defending platoons, and the lower roll gives the number of real ATGs. Potential defending counters are set out just as for the solitaire game, and the defending player secretly notes the hexrows and lateral positions of his or her real counters within this standard array of potential counters. Real ATGs must be with real platoons, and there are some additional restrictions to stop the player gaining an artificial advantage from his or her freedom of deployment. Only 2 or none of the real platoons may be adjacent to another real platoon, at least 2 real platoons must be on each side of the road, and each hexrow with at least 2 potential platoons or 3 potential ATGs should have at least 1 real counter of that type. If this is impossible because not enough real counters are available, prioritise hexrows with most potential counters of that type.

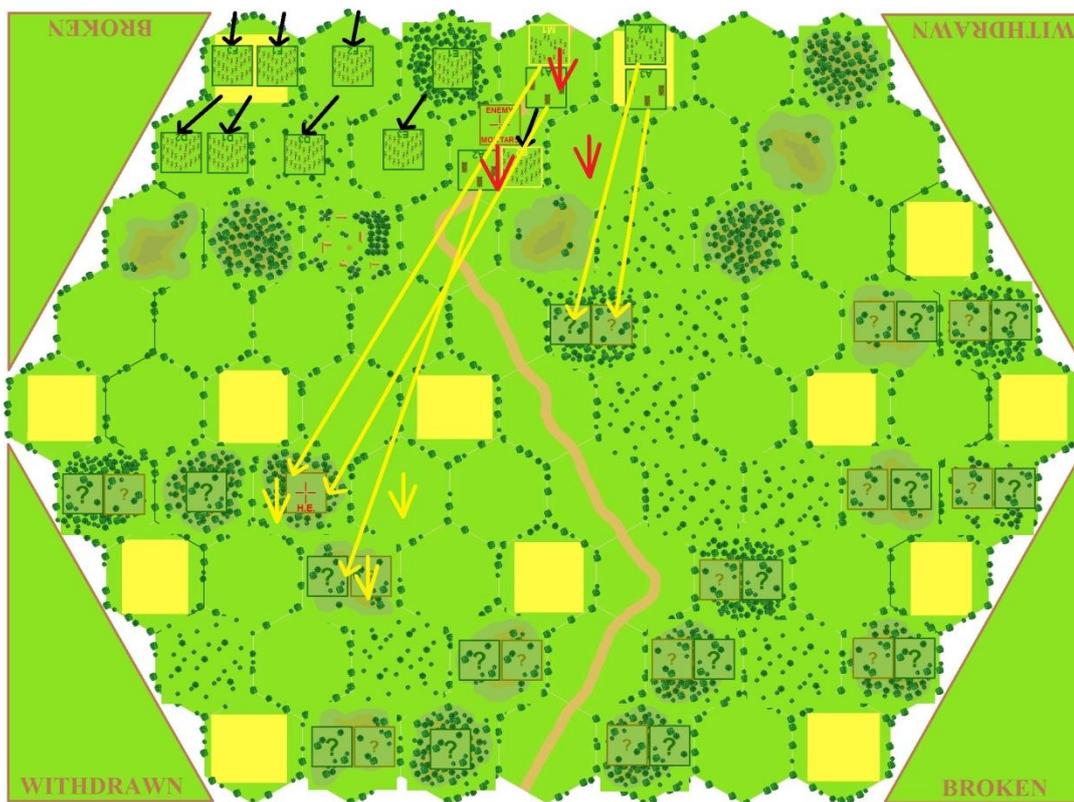
Defending counters are activated in the usual order, but are revealed only if adjacent to an attacking platoon or if the player decides to reveal a real counter. To balance the longer persistence of phantom counters, the +1 fire bonus against unrevealed platoons now applies even if an attacking platoon is adjacent. The defender may opt to reveal a counter on activation even if it is spent, to escape this fire bonus in future. The defending player chooses which targets his or her revealed platoons, ATGs and mortars will engage. Mortars are available only on the usual die rolls, but the player may forego fire if desired so that it remains possible next turn. The defenders win if the attackers do not achieve a standard victory despite their handicap bonus.

This two player variant has strengths and weaknesses compared to the standard solitaire game. The game becomes more of a battle of wits than an exercise in risks and probabilities, and the attackers can no longer calculate when unrevealed defenders will open fire. On the other hand, the defender's scope for decisions is no greater than in *F&M* since moving defending units is no longer an option, while the balancing constraints on a live player make defensive deployments more artificially calculable than in the solitaire system. Hence, both game versions are equally worthwhile, and neither is necessarily superior.



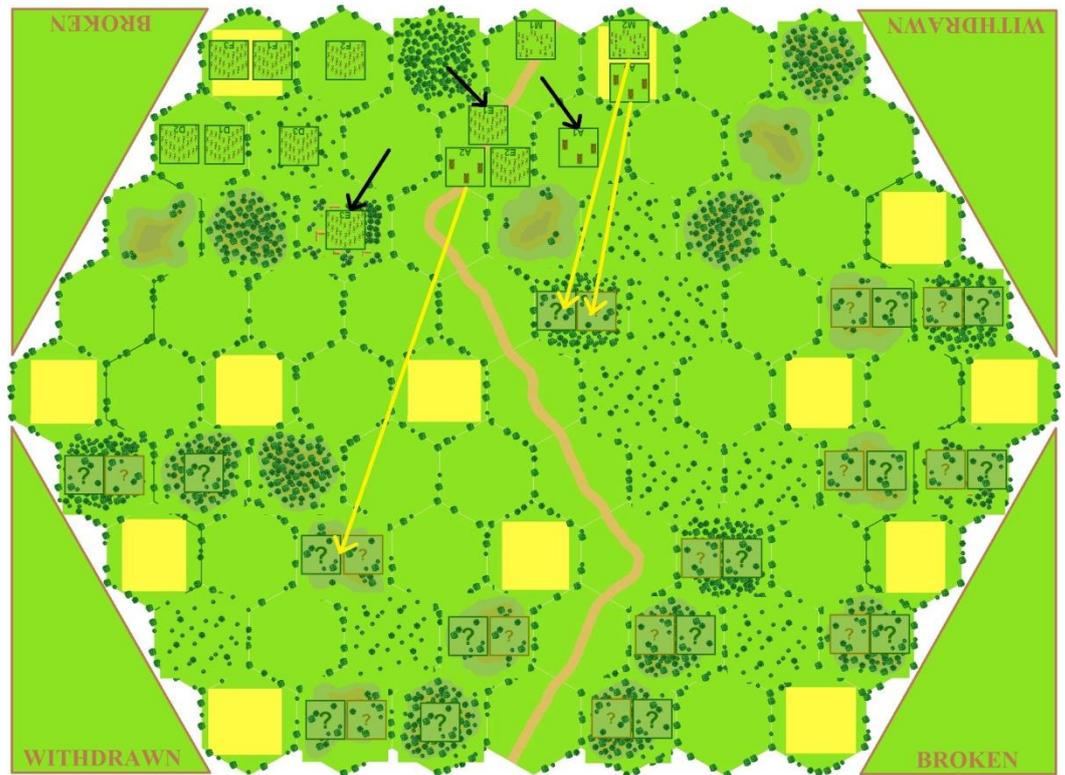
SAMPLE GAME

Turn 1 This board has unusually dense terrain, with 8 defensive hexes in each of the top, middle and bottom groups of hexrows. The defenders randomly choose the lower part of the board, so I must attack from the top. The poor going on my left flank makes it unsuitable for armour, so I plan to send my tanks down the road and my infantry down my right flank. Distance and obstructions mean my centrally placed MMGs will be little help after the initial phase. My plan is to clear the central wood and then shift my forces right to drive for the enemy board edge before curling back to roll up remaining strongpoints as required. My leading tanks use the road bonus and I keep F company in reserve for now. The only 3 enemy positions able to see my initial advance are pinned by my artillery as shown.

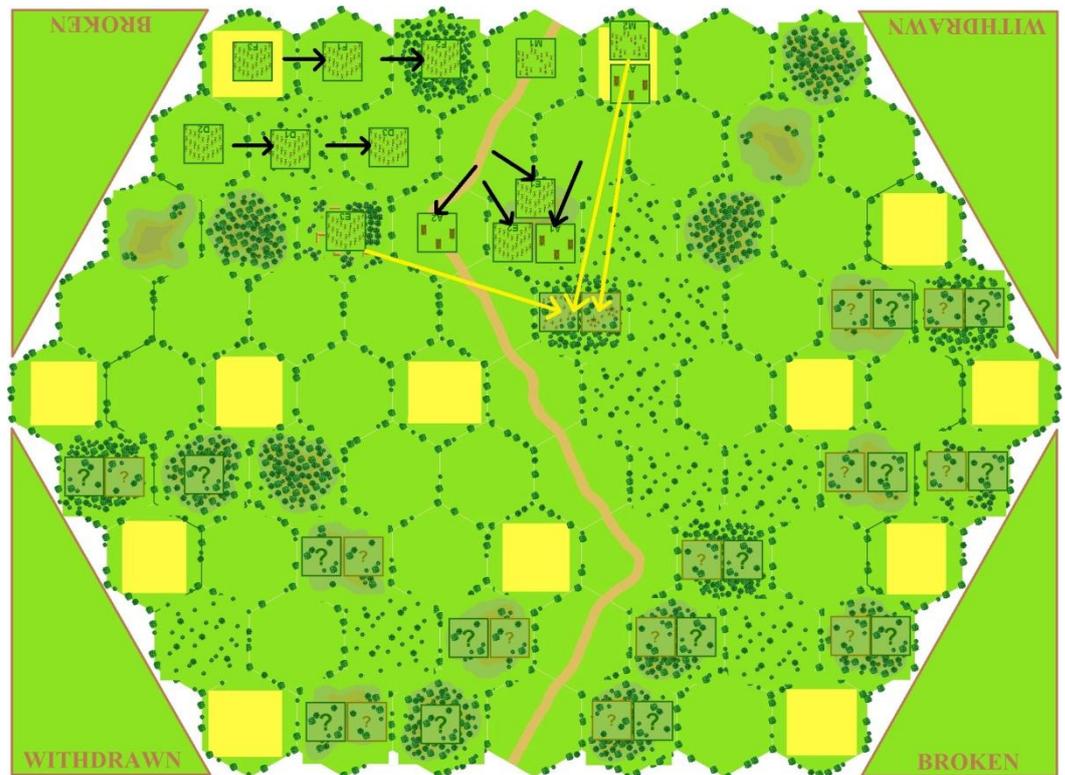


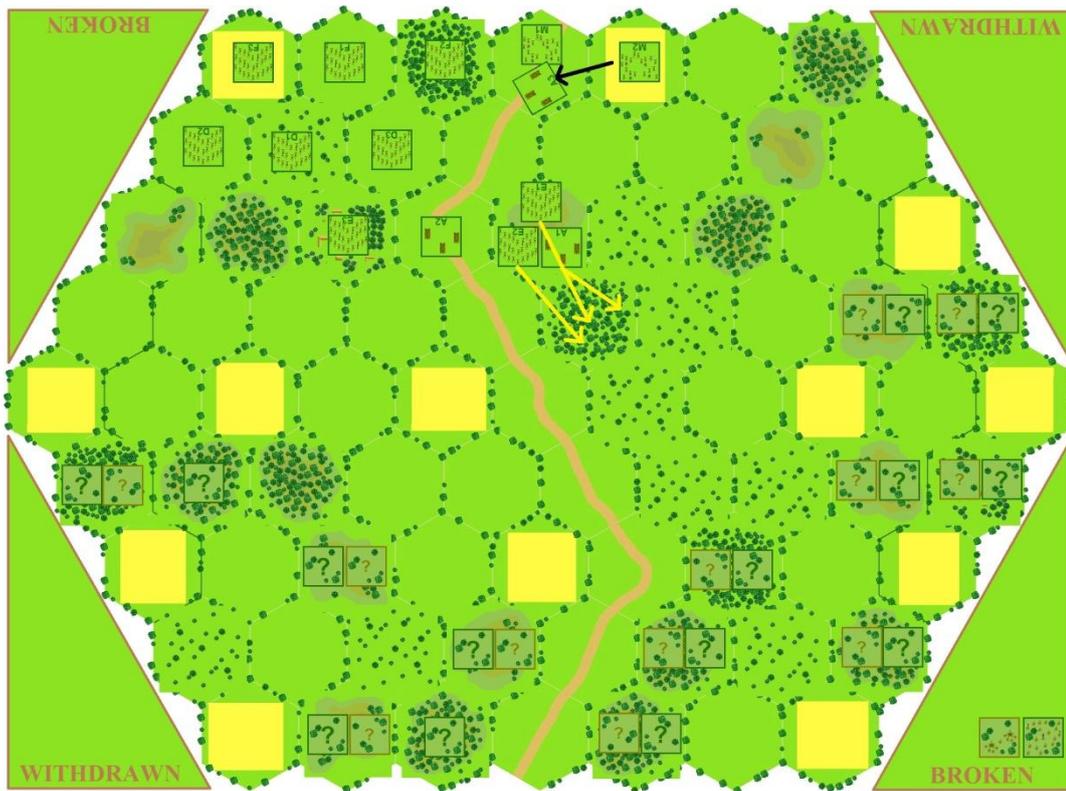
Turn 2 I show my moves in black, my fire in yellow, and enemy fire in red. My infantry take advantage of the dead ground to advance in cover, with F company deploying behind D company. My tanks and MMGs meanwhile try to suppress the 3 enemy positions within line of sight, but despite being bombed by my mortars into the bargain, the wooded crest remains unpinned, and a spotter there calls in mortars on my own troops. There turn out to be no enemy troops on the wooded crest, but the enemy mortars pin platoons E2 and M1 and I suffer my first 2 losses of the game. I had planned to send platoons A2 and E2 over the crest next turn in a classic combined tank and infantry assault on the wood, but the attack will now have to be delayed since it is too risky for the tanks to close in without infantry protection.

Turn 3 I make the best of the delay by advancing platoons A1 and E3 on the flanks of the assault force to increase my options next turn. I also take the risk of stacking platoons E1 with E2 now that the mortar threat is temporarily in abeyance. D and F companies wait frustratingly in place, since I do not want yet to provoke enemy fire by putting more troops in the farm or wooded crest. Although this would clarify enemy strength, I may be able to draw defenders away by probing elsewhere before revealing my real thrust. My mortars cannot continue firing this turn since I have no fresh spotters to walk them further along the enemy ridge, but even my concentration of E1 and E2 is too distant to tempt any enemy there to give themselves away yet by firing. Platoons M2 and A3 keep the nearby wood pinned down despite my tanks being buttoned up due to the enemy mortar fire. Platoon A1 does not block my fire as a rifle platoon would.

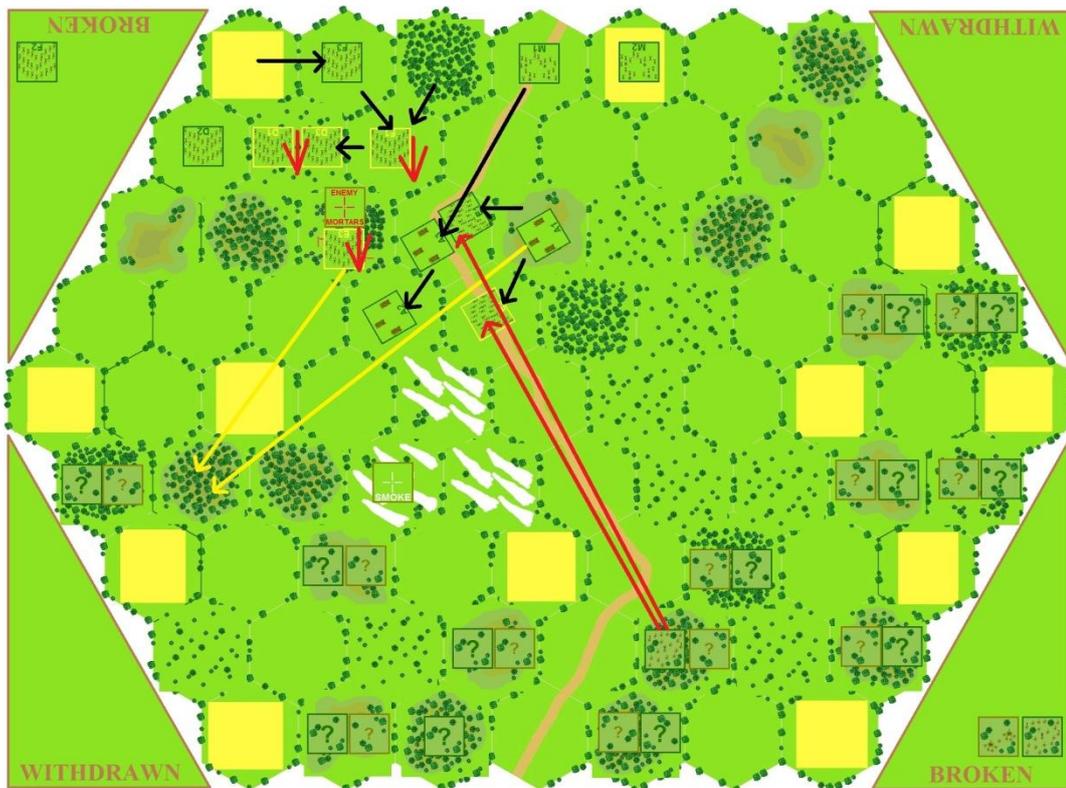


Turn 4 D and F companies take the chance to extend left to increase their dispersion, while A2's tanks advance one hex along the road, still carefully staying just beyond the range which might trigger an ATG ambush. Their place in the assault on the wood is taken by platoon A1, with both E1 and E2 platoons now following the tanks in a concentrated high stakes push across the crest. With the odds of platoons M2 and A3 keeping any defenders pinned falling from 94% to 67% now my infantry are adjacent, platoon E3 in the farm across the road expends some of its precious ammo to add to the covering fire and boost the odds of suppression back up to a healthier 78%. It is lucky that the covering fire succeeds, since the wood turns out to hold a full enemy platoon complete with ATGs, which at such close quarters could have caused carnage among the assaulting tanks and infantry. No more distant defenders open up in support, thanks to the cover provided by the crest.



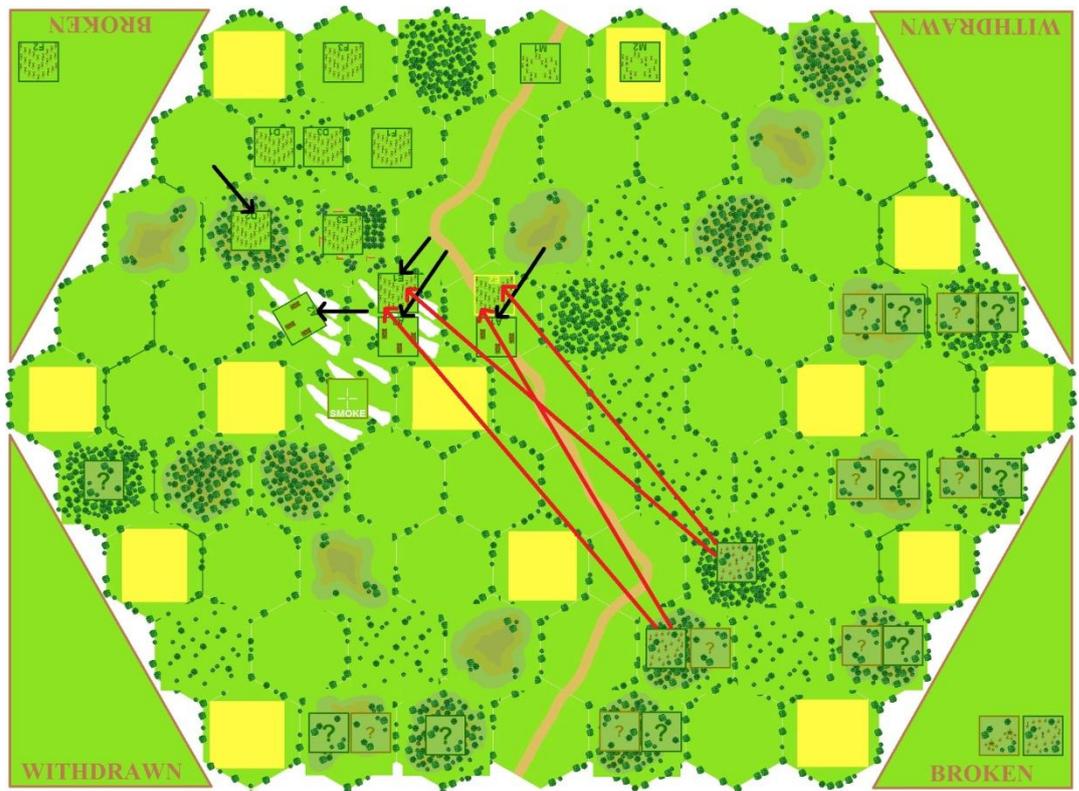


Turn 5 Having covered the assault on the wood, platoon A3 moves right and prepares to use the road bonus in future turns. My other platoons await the outcome of the assault, refraining from further support fire since it would prevent the adjacent units closing decisively with the enemy. My doubling of the infantry assault force increases the chance of breaking the enemy platoon from 33% to 56%, and this proves key when the enemy are indeed overcome in textbook style. Luckily the enemy mortars are unavailable to take revenge on my victorious troops now they are no longer shielded by having enemies adjacent. This is an excellent start to the battle, but as I feared, my static MMG platoons have now become almost redundant even for mortar spotting, so my tanks will become even more important from now on.

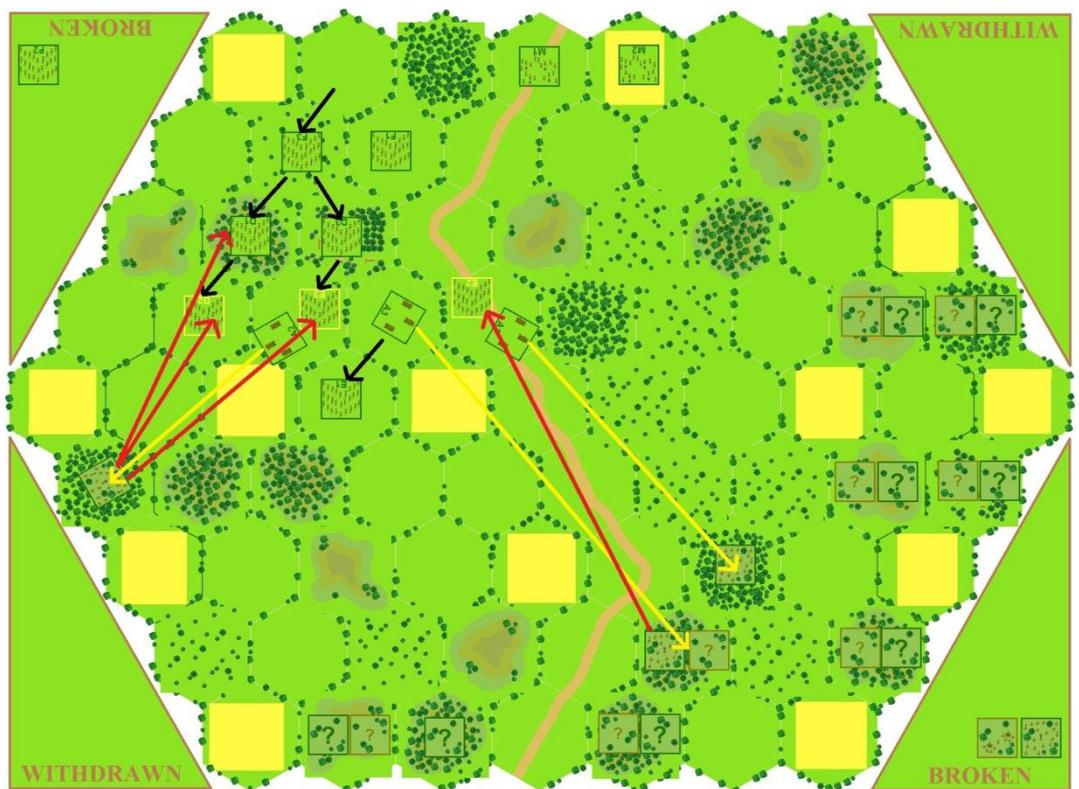


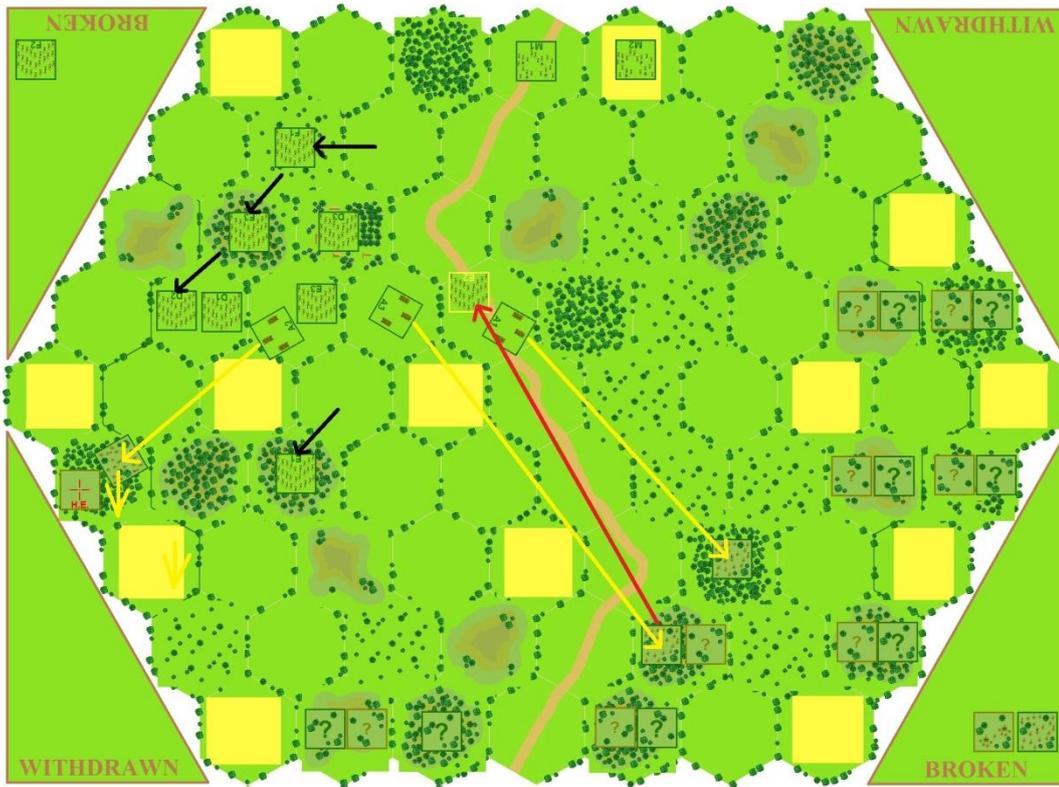
Turn 6 After waiting so long, my forces get back in motion with a vengeance. D company contracts again to let F company move up alongside ready to advance as fast as possible. My tanks and erstwhile infantry assault force move quickly right while platoon E3 calls down a mortar smoke screen to shield their exposed flank. Platoons E3 and A1 try unsuccessfully to suppress the next possible enemy position along the wooded crest. It proves to be a phantom like its neighbour, but a more distant enemy platoon fires its machine guns straight along the road as my infantry cross, pinning platoon E2 with 1 loss. Much worse, the enemy mortars target the farm and by unhappy chance fall squarely on platoons D and F which I had impatiently concentrated in the dead ground behind. No fewer than 5 of my platoons are pinned and suffer losses, with F2 breaking altogether. It is a sobering setback after my success in taking the wood.

Turn 7 Despite half my mobile platoons being pinned, I keep all but 1 of the rest moving to react to the new situation, while relying for cover solely on the smoke screen which I must walk back 1 hex. Platoon D2 at last advances into the wooded crest, while E1 pushes on past the deadly road. Tank platoon A2 continues right, but my other 2 tank platoons turn back down the road to face the new threat. With the smoke screen blowing uselessly back across my own forces, several unpinned enemy positions test to see if they open fire. There turn out to be no troops in either central crest and no ATGs in either flanking wood to threaten my tanks, but a second enemy platoon does open up alongside the first on my beleaguered E company. Platoon E1 escapes again, but E2 on the road is firmly pinned down and suffers 2 further losses.

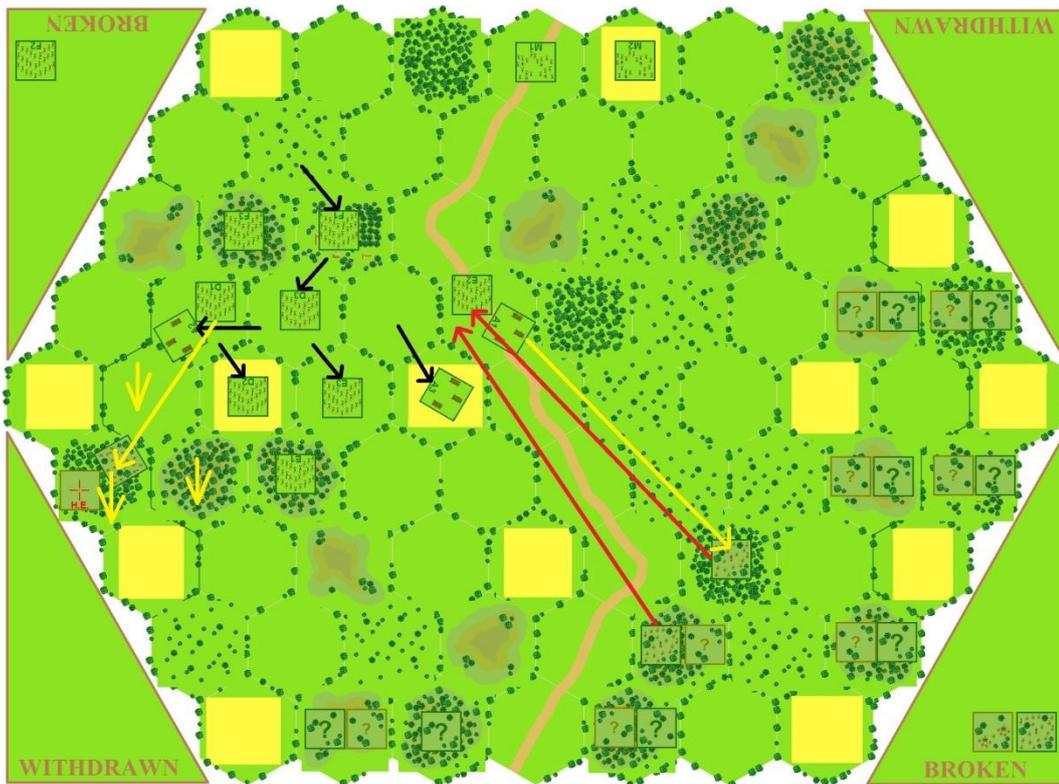


Turn 8 With no enemy troops having appeared on my own side of the road, and with the chances of this even lower now that 3 enemy platoons have already been revealed, it looks like enemy resistance here is lighter than expected and I need to speed up if I am to attack the other flank in time. I hence risk pushing 3 infantry platoons across the open ground to expose what I fully expect to be yet another phantom enemy in the side edge wood. Platoon A2 fails to pin the counter, and on a roll of 6 it turns out to be a real enemy platoon after all. It unleashes withering fire on my exposed troops, pinning 2 platoons and inflicting 2 more losses. My other 2 tank platoons meanwhile pivot left and try to suppress the other 2 revealed enemy platoons, but one remains unpinned and keeps platoon E2 in place with yet another loss. My mortars cease fire so as to retarget and help me to escape the worrying stream of infantry losses which I am suffering.



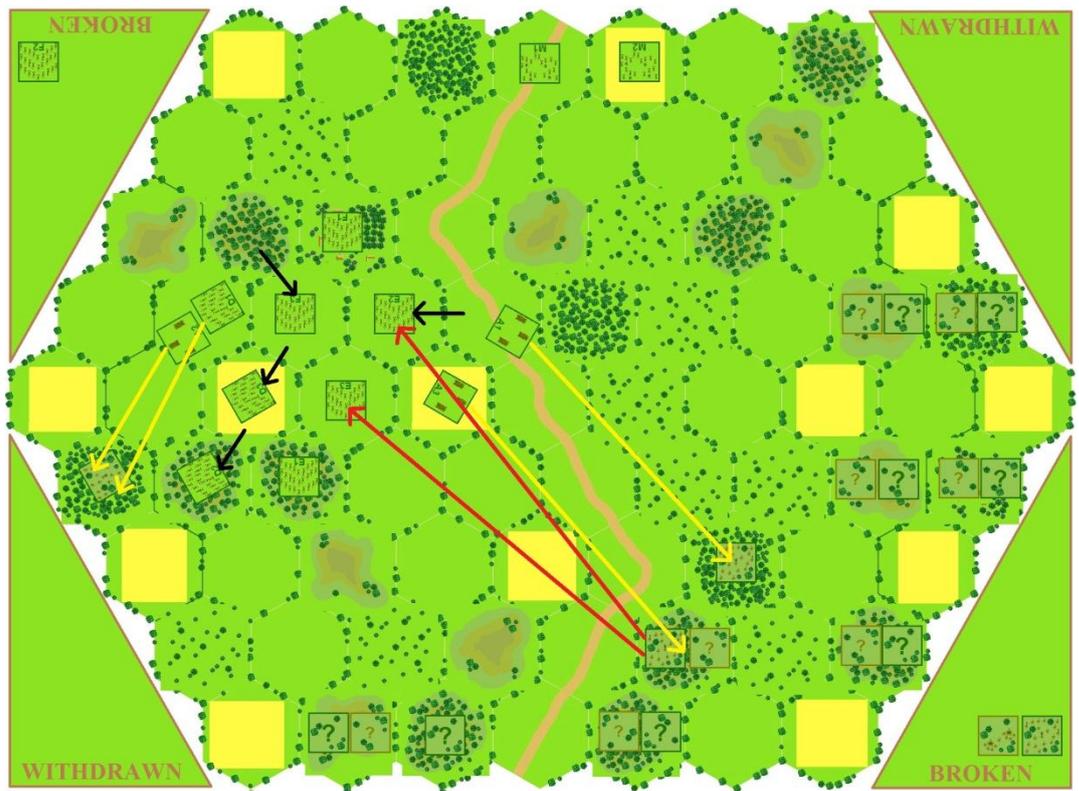


Turn 9 Platoon E1 at last reaches the safety of the wooded crest which was the first potential enemy position to be revealed. Platoon D2 takes the risk of joining D1 in the open ground, while F company moves up behind and platoon D3 in the farm calls down mortar fire on the side edge wood, finally inflicting the suppression which A2's tanks have previously sought in vain. Meanwhile, in what is becoming a depressingly familiar pattern, 1 of the 2 infantry platoons on the far side of the road again escapes being pinned by my other tanks and keeps platoon E2 pinned down with yet another loss. I now keenly feel the absence of my outranged MMGs (despite their real world importance in guarding my rear against enemy counterattack), since my mortars can only target one position at a time and must cease fire when I move to assault the side edge wood.

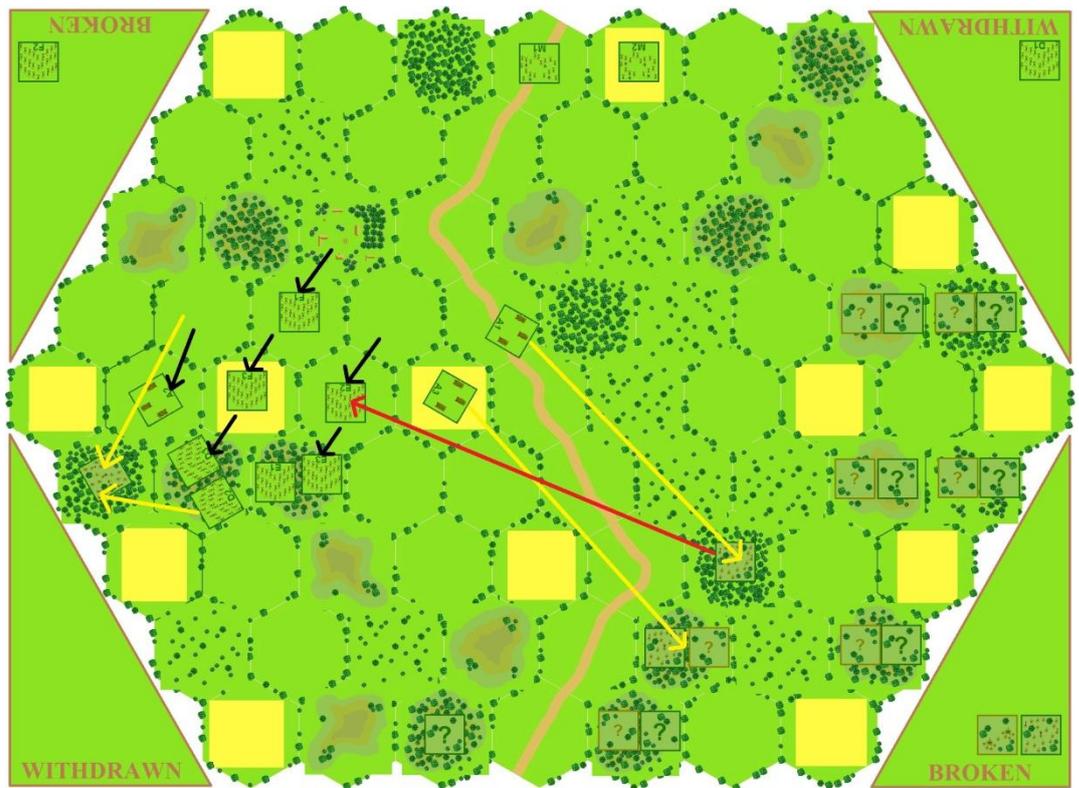


Turn 10 It takes a lot of thought to plan an assault on the wood which overcomes the twin constraints of inter-company coordination and obstructed lines of fire to this non-elevated hex, but I finally implement a series of moves which bring D company and the tanks of platoon A2 to the fore while the mortars and platoon D1 keep the enemy pinned down. My plan is to prepare the assault over 2 turns as units gradually move adjacent, even though this will delay even further my advance to the enemy board edge and the tackling of the other flank. On this other flank, I advance platoon A3 to bring it closer to its targets, but even though this leaves both enemy platoons unpinned this turn, they fail at long last to keep platoon E2 pinned down in its bloody ordeal. As the game reaches its half way point, it shows how difficult it can be to avoid losing momentum and getting bogged down by unexpected and costly distractions.

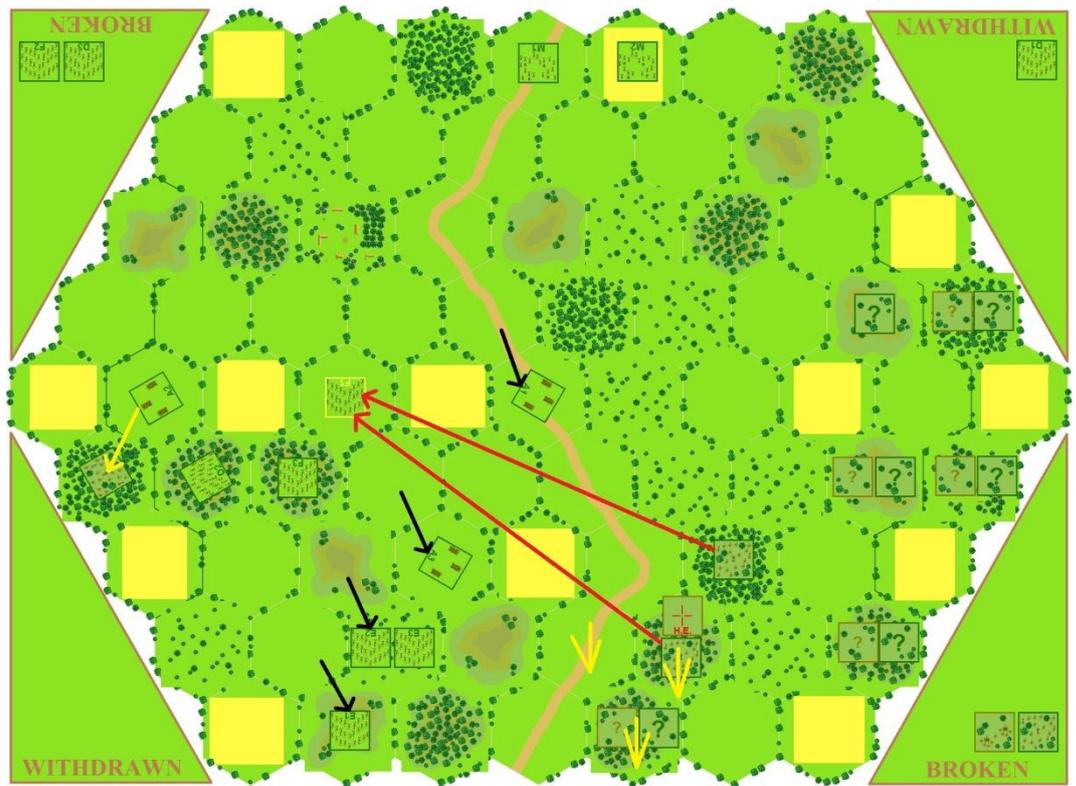
Turn 11 As the mortar barrage lifts, platoon D2 enters the wooded crest next to the target wood, with platoon D3 moving up in its wake and the survivors of F company following behind. Platoon D1 and the tanks of platoon A2 meanwhile provide covering fire along a fire lane especially left clear to one side. This is the most dangerous moment of the attack, since the 2 covering units between them have only a 67% chance of keeping the enemy pinned down, as against 83% for the mortars alone hitherto. However, fortune smiles on me and the enemy platoon remains suppressed. In the centre, platoon E2 finally crawls away from the deadly road while my tank platoons resume firing to cover its retreat, now with a 33% chance each of success. One enemy platoon is pinned, and the other fails in its attacks on platoons E2 and E3 due to the extreme range.



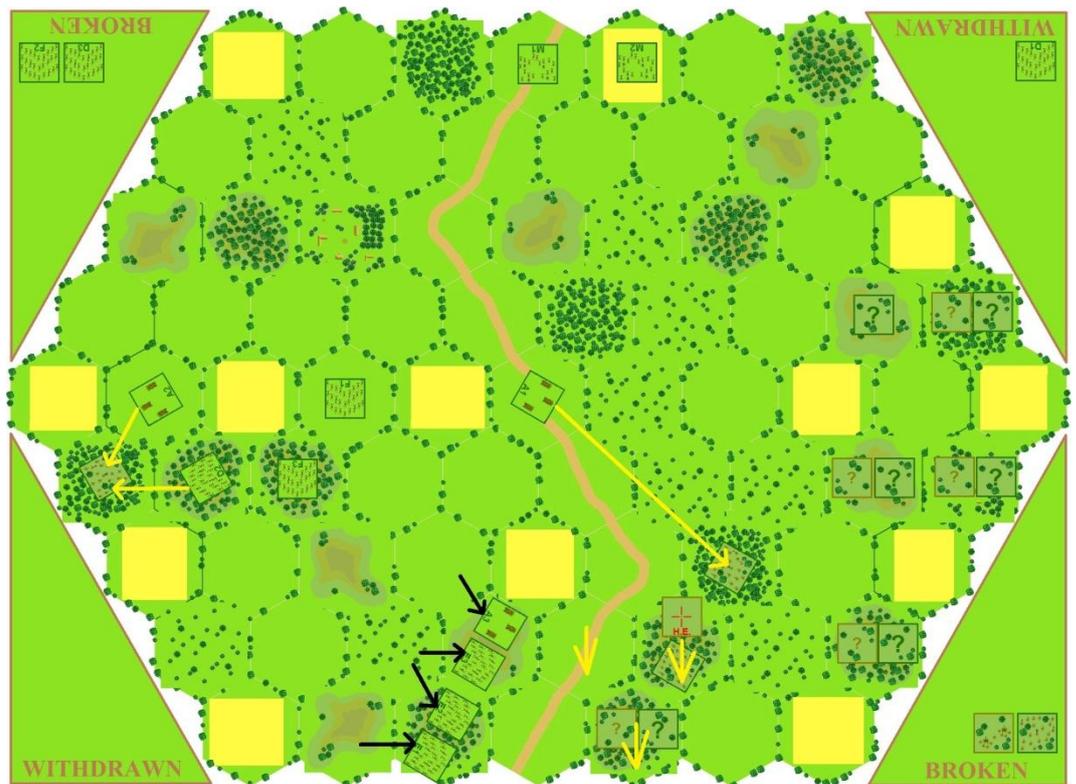
Turn 12 My plan unfolds with the tanks of platoon A2 closing in on the wood while platoon D3 joins D2 in the adjacent wooded crest. E and F companies meanwhile advance behind them, with E3 joining E1 in the safety of the other wooded crest hex. Platoon D2 engages the adjacent enemy, but I forfeit the chance of closing with and breaking the enemy platoon by having D1 provide support fire past the advancing tanks of platoon A2. This allows D1 to be the platoon withdrawn due to my cumulative expenditure of infantry ammo, and only thanks to D1's fire do I succeed in pinning the enemy and avoiding crippling counterfire. D company is too tied up with the adjacent enemy to call in precautionary mortar fire on the rear board edge crest, but luckily the counter there proves to be another phantom. On the other flank, my tanks again pin one of the enemy platoons, and the other platoon fails to roll the 6 now needed to hit platoon E2 as it escapes.

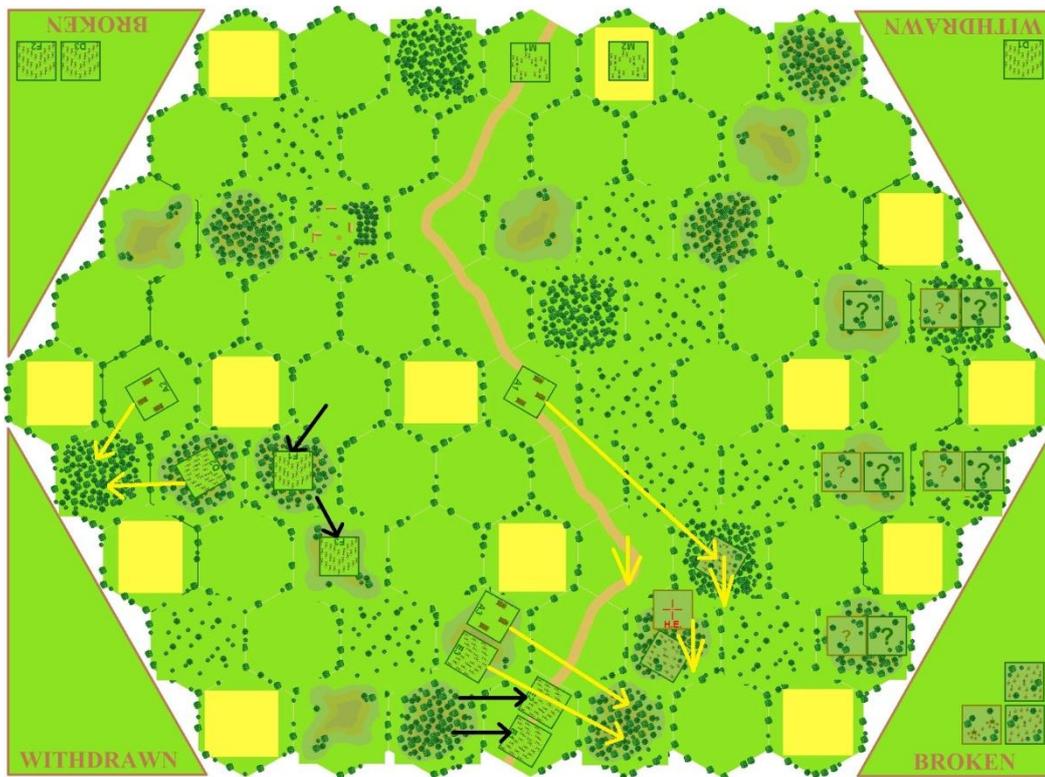


Turn 15 I actually consider reversing platoon A2 out of harm's way to avoid the 1 in 9 chance that its unaccompanied tanks will be overwhelmed by close range attack, but this would leave platoon D2 completely in the lurch, so instead my tanks remain engaged and manage to suppress the enemy while my infantry recover. Meanwhile E company moves fully into the shelter of the roadside ridge while my other tanks risk advancing to within optimum 3 hex range of the other enemy platoons. F1 platoon continues to direct the mortars onto the enemy, but this turn they suppress only the unrevealed board edge position, allowing the enemy platoons to pin and inflict a loss on F1 itself. Any ATGs on the wooded crest would have a 1 in 3 chance of breaking one of my tank platoons, but luckily they prove to be phantoms after all, as do those on the far crest with a side shot on platoon A1.

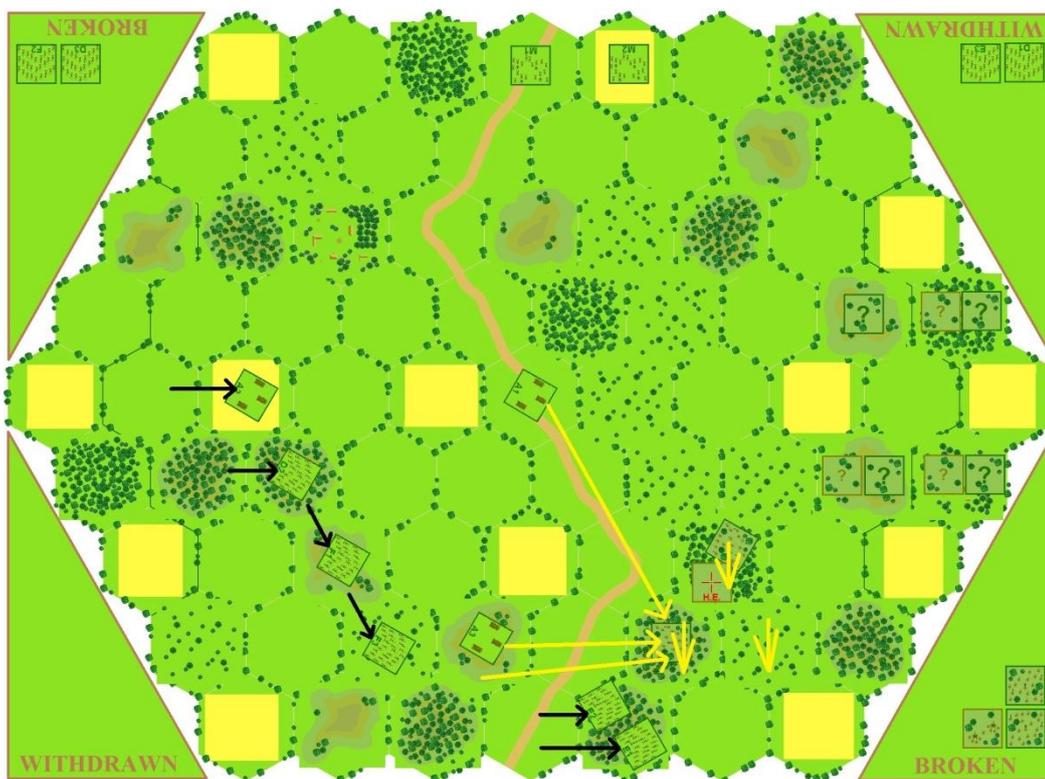


Turn 16 With time growing short, E company advances onto the low ridge without further ado, and is joined by the tanks of platoon A3. Platoon A1 meanwhile pins down the enemy platoon in the woods, while platoon F3 takes over mortar spotting from the recovering F1, with the bombardment suppressing both wooded crest hexes. Platoons A2 and D2 resume their combined assault on the side edge wood, but my infantry losses mean that yet again they can manage only to keep the stubborn defenders pinned down. I roll 5 for the enemy mortars, but now that I have had more platoons broken than the enemy, they fire only on a 6. Even if I manage to break the side edge platoon at last, and send 2 of my own platoons exploiting off the board, this will not be enough to win unless the unrevealed enemies are far stronger than the odds suggest. I must try also to break at least one of the other enemy platoons if I am to have any real chance of victory.





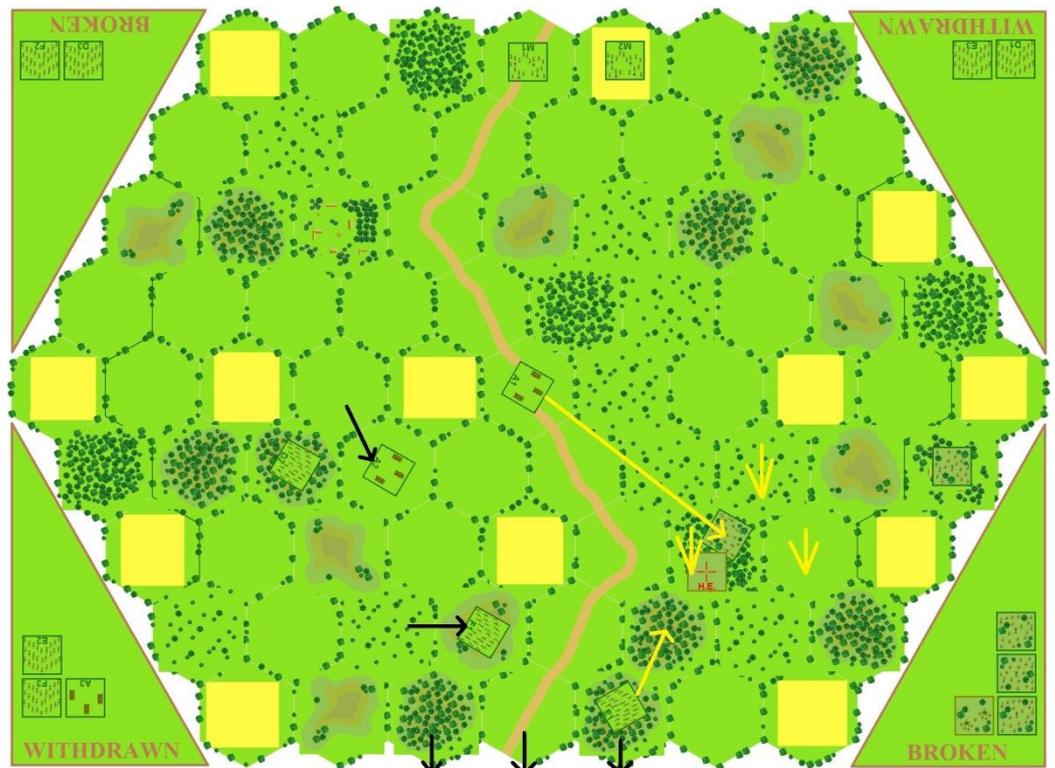
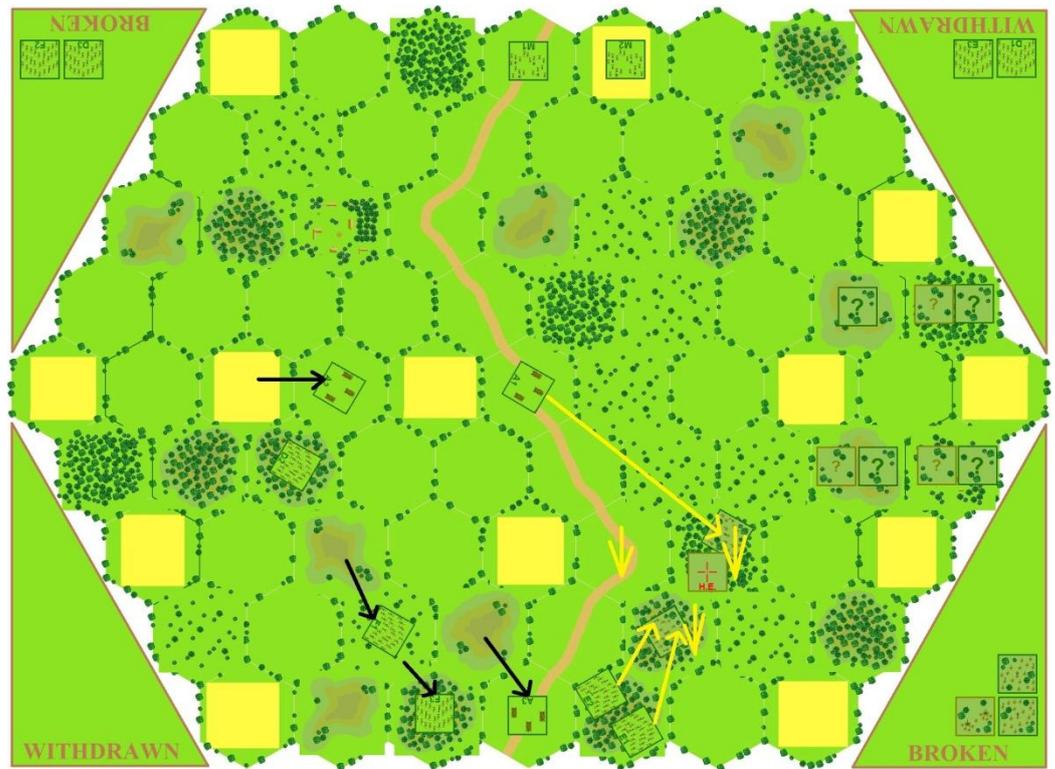
Turn 17 There is no time for subtlety, so I send platoons E1 and E2 dashing down across the road, while E3 and the tanks of A3 provide overhead covering fire against the unknown defenders of the opposite wooded crest. F company hurries forward as E3 takes over the mortar spotting role. D company's single effective platoon at last rolls the 5 needed to break the defenders on the side edge, 9 turns after their initial ambush. The mortars and the tanks of A1 keep the 2 other known enemy platoons pinned down, but the board edge wooded crest escapes suppression. On another roll of 5, the enemy mortars are available now that the total of broken platoons is equal again, but thankfully any spotters next to E1 and E2 are too busy escaping, and no other fresh enemy counters have my infantry in sight. A hitherto hidden enemy platoon would cause carnage among my dreadfully exposed troops, but luckily the counter proves to be yet another phantom.

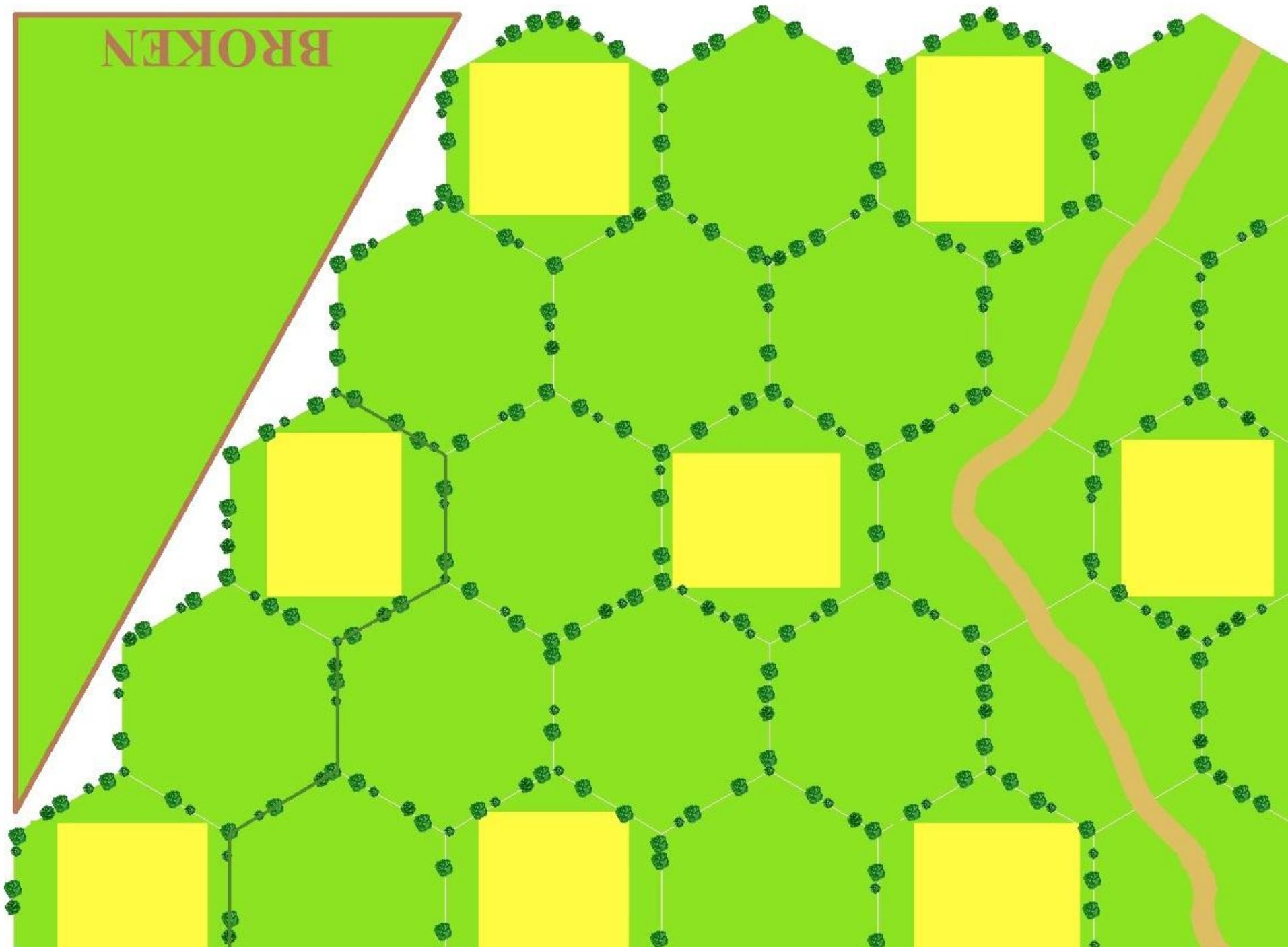


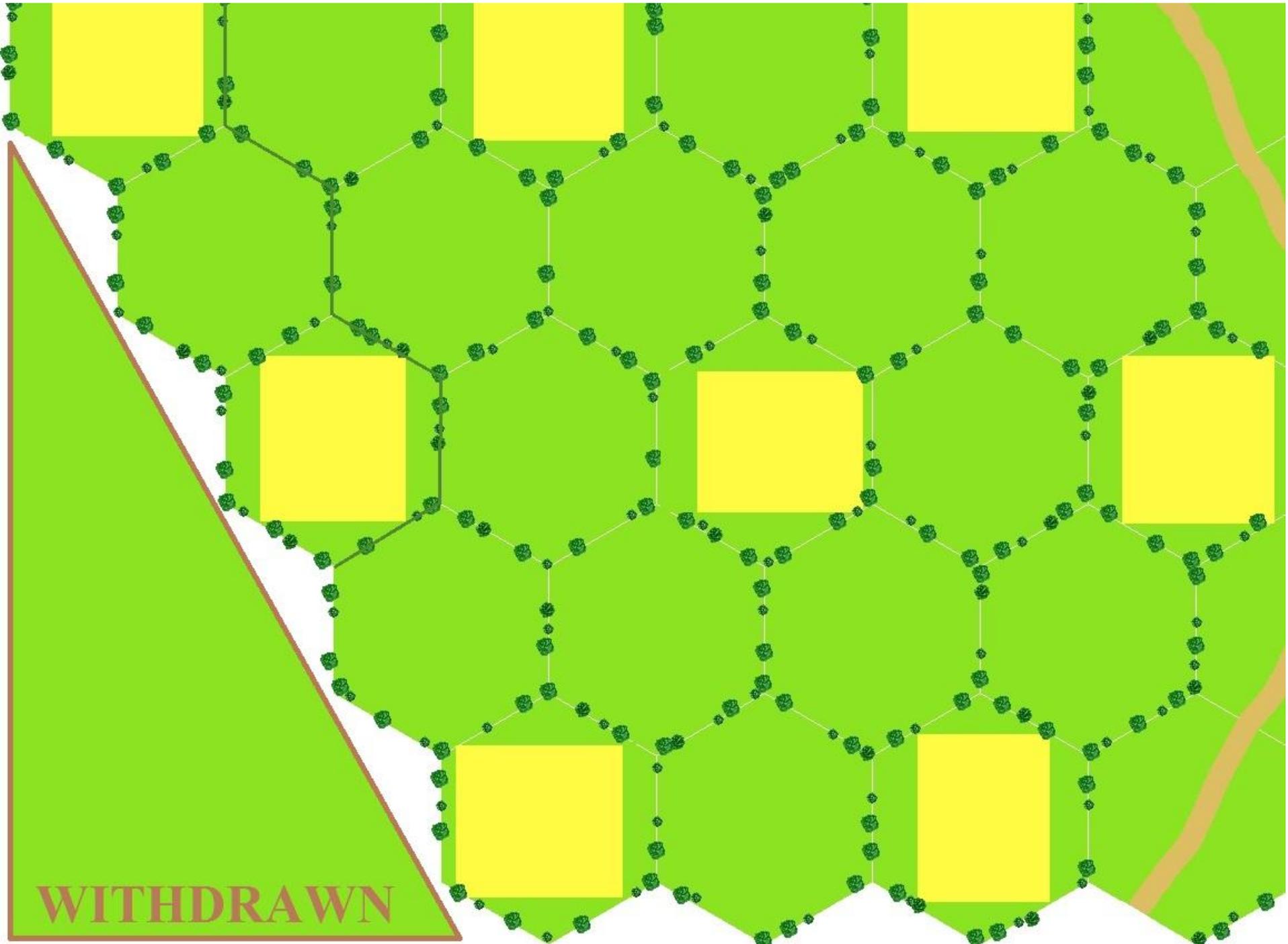
Turn 18 With great relief, platoons E1 and E2 enter the unoccupied wooded crest and turn left towards the known enemies. Platoon E3 walks the mortars towards the woods to avoid risking friendly fire, and together with the tanks of A1 and A3 it rains covering fire on the wooded crest, becoming the second of my platoons withdrawn to reflect growing ammo shortages. The 2 enemy platoons are firmly pinned, especially when the mortars scatter back onto the wooded crest (the same phenomenon which exposed D company to enemy mortars during its assault). My other platoons hurry forward, but only F3 will be in time to exploit. The enemy mortars are available again, but still have no spotted target since E1 and E2 are too close to bombard. The wooded crest on the side edge proves yet again to be unoccupied. Although each turn from now on will cost me a point, I stand to gain more by playing on.

Turn 19 Platoons F3 and A3 enter board edge hexes, ready to exploit off on the final turn. Platoons F1 and A2 advance, for lack of any more useful contribution to the endgame. Platoon D2 halts on the wooded crest so that it can take over mortar spotting now that E3 has withdrawn. The tanks of A1 keep the enemy platoon in the wood suppressed, while E1 and E2 launch their climactic assault on the other enemy platoon along the wooded crest, with a 56% chance of breaking it. Sadly, they manage only to pin it this turn, a result which is reinforced when the mortar fire on the woods again scatters back onto the wooded crest. No enemy activity occurs except recovery from suppression.

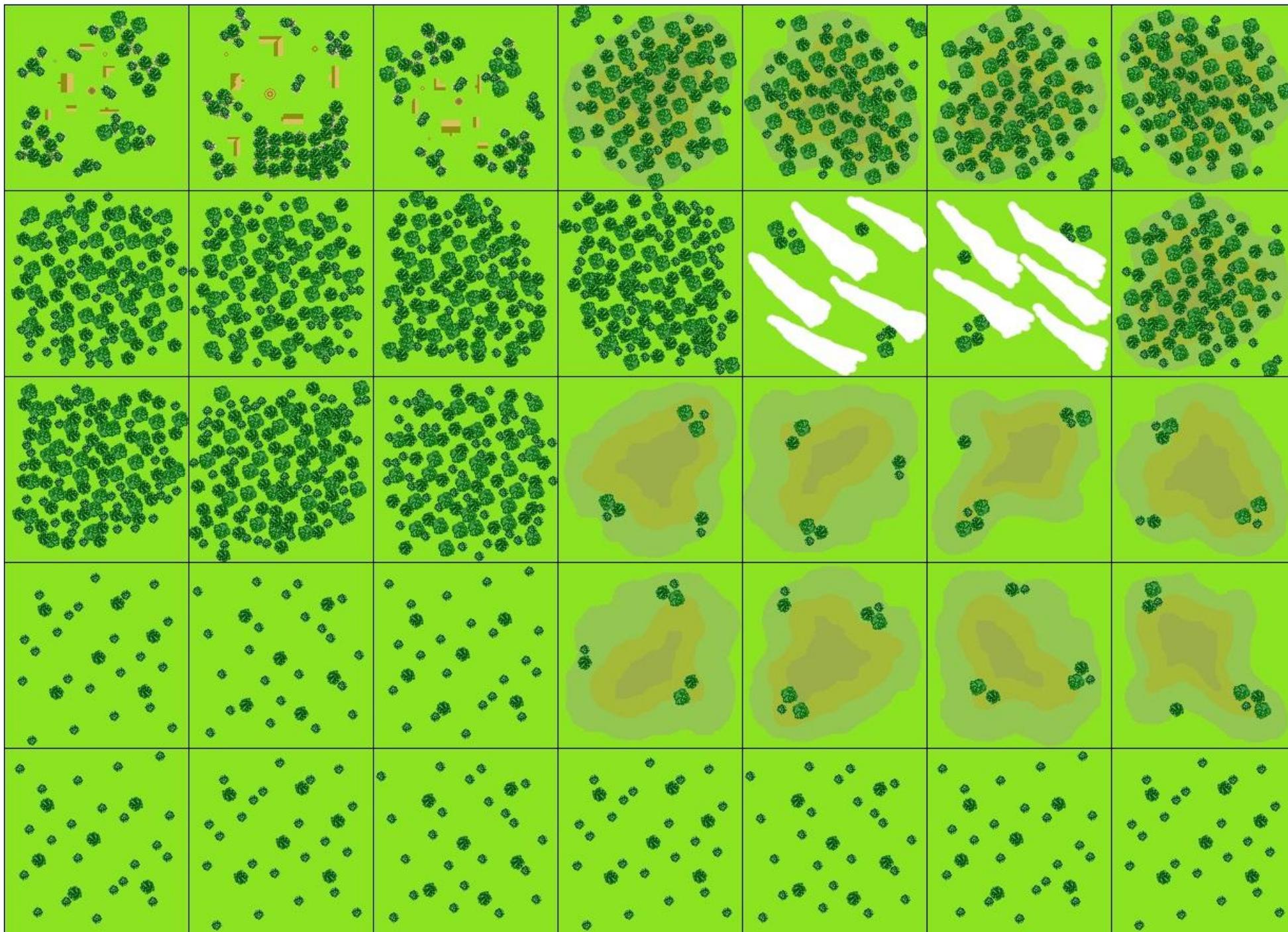
Turn 20 As platoons F3 and A3 exploit off the board, I decide to make a high stakes gamble. If my assault succeeds at the last minute, I can benefit from another exploiting unit, but only E1 or E2 are in a position to leave. Instead of using them both for a final assault, I decide to exploit off with E2 and hope that E1 alone rolls the 5 or 6 needed for success. The gamble pays off as I roll a 6 and break the enemy platoon. My mortars and the tanks of A1 keep the other platoon pinned down, and although the enemy mortars are available yet again, they still have no spotted infantry target. Everything now depends on the final revelation of the remaining enemy counters. Unfortunately, this reveals only one more enemy platoon, without ATGs. My final score is hence 4 for the 2 enemy platoons left on the map, plus 14 for the 4 broken enemy counters, plus 6 for my 3 exploiting units, minus 4 for my own 2 broken platoons. In an easier game this would give me the 20 needed to win, but in the standard game the -2 for the 2 final turns leaves me just short with 18. Had I known of the paucity of enemy ATGs, I could have been bolder with my tanks, but I know how quickly they can break when ambushed. This real playtest game shows well the many intriguing dilemmas which CA creates.







WITHDRAWN



D1	D2	D3	E1	E2	E3	M1
F1	F2	F3	A1	A2	A3	M2
?	?	?	?	?	?	?
?	?	?	?	?	?	?
?	?	?	?	?	?	?
?	?	?	?	?	?	?
?	?	?	?	?	?	?
?	?	?	?	?	?	?
?	?	?	?	?	?	?
?	H.E.	ENEMY MORTARS	SMOKE AMMO	INFANTRY LOSSES	INFANTRY AMMO FIRED	GAME TURN

M1	E3	E2	E1	D3	D2	D1
M2	A3	A2	A1	F3	F2	F1
?	?	?	?	?	?	?
?	?	?	?	?	?	?
?	?	?	?	?	?	?
?	?	?	?	?	?	?
?	?	?	?	?	?	?
?	?	?	?	?	?	?
?	?	?	?	?	?	?
?	?	?	?	?	?	?
GAME TURN	INFANTRY AMMO FIRED	INFANTRY LOSSES	SMOKE AMMO	ENEMY MORTARS	SMOKE	?

COMBINED ARMS

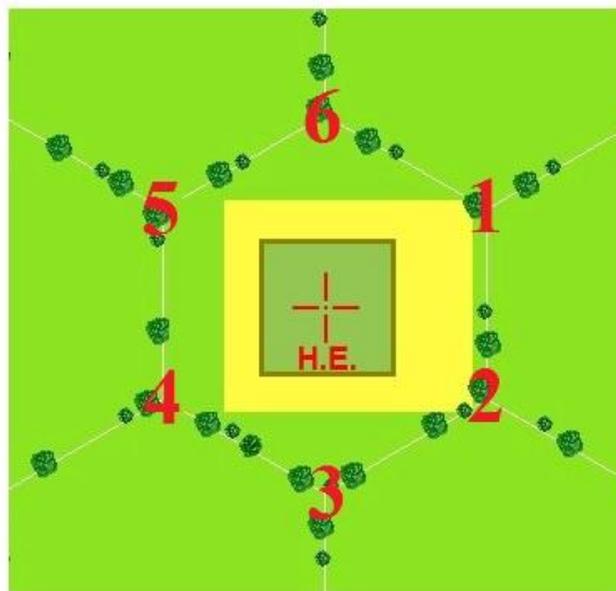
by Phil Sabin

FRIENDLY MOVE PHASE

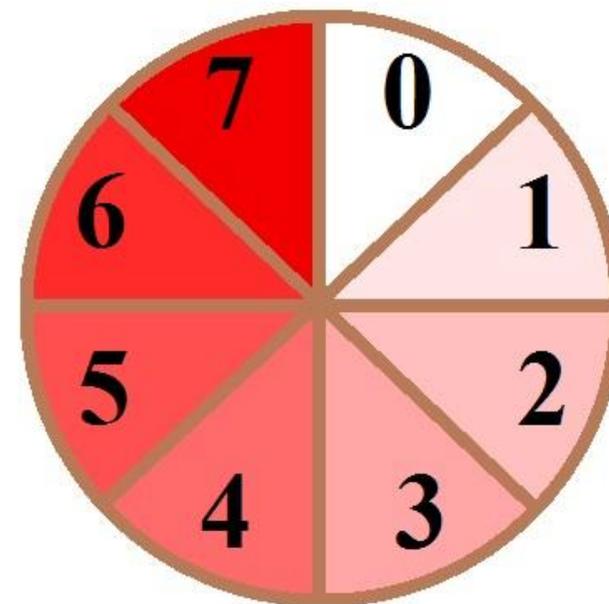
FRIENDLY FIRE PHASE

FRIENDLY RECOVERY PHASE

ENEMY PHASE



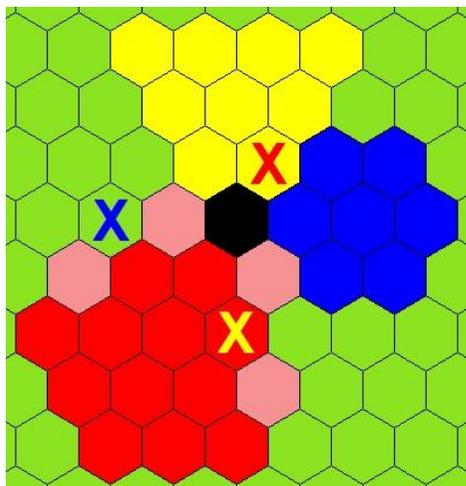
MORTAR SCATTER



LOSS & AMMO TRACK

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
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GAME TURN



Die Roll Modifiers for Friendly Fire	Die Roll Modifiers for Enemy Fire
+1 for armour not within 2 hexes of an enemy counter	+1 against infantry not in woods, crest or farm
+1 if target platoon unrevealed and no friends adjacent	+1 against armour from outside its forward arc
-1 for every hex of range (or every 2 hexes for MMGs)	-1 for every hex of range (1 hex max vs armour if no ATGs)
-1 if the line of fire is partly blocked	-1 if the line of fire is partly blocked
-1 at 2 or more hexes range if a rifle platoon not of the firer's company is adjacent to the target	-1 for ATGs against armour in a crest or farm
	-2 without ATGs against armour unaccompanied by infantry
	-3 without ATGs against armour accompanied by infantry
<ul style="list-style-type: none"> On a modified 2 or more, the target becomes spent 	<ul style="list-style-type: none"> On a modified 2 or more, armour is broken
<ul style="list-style-type: none"> On a modified 4 or more, if all firers are adjacent, ATGs are broken, as is the enemy platoon if the firers are infantry 	<ul style="list-style-type: none"> On a modified 2 or more, infantry become spent and take 1 loss each (or 2 losses each if adjacent)