

OR Driven Wargame

[DN it needs a decent title]

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Introduction

Design Objectives

The objective is to design a set of wargame rules using findings from various Operational Research (OR) papers and books that is actually playable. The belief is that incorporating the OR findings will make for a more realistic game. Using this along with the lessons of CLWG should also make something that you can play an engagement through to a conclusion in a couple of hours.

OR Sources

[cite properly]

Murray, L, 2013 *Brains & Bullets: Psychological...*

Rowlands, D. *Stress of Battle*

Scale etc

Ground Scale

This needs to fit the normal playing surface size and also the usual engagement areas for the types of battles being fought. For a relatively modern infantry heavy battle this might encompass an area 3-400m from the objective. On a 5x3 table this could translate to a ground scale of 1cm = 20m.

The game is intended to be played where each side has at least one map of the play area as well as a shared view of a master map/table with the forces deployed on it when they are visible.

Unit Resolution

Given the psychological aspects at an individual level it probably needs elements to be small groups of soldiers (4-6) with some small unit leaders shown individually (section/squad commanders, platoon sergeant, platoon commanders and higher).

Time Slice

When working things out the non-Combat phase uses five minutes as the time slice, although it is mostly event driven. Combat phases have a notional ten minute time slice but this would just be to link events into a campaign narrative if required. It is assumed that combat phases have large amounts of people keeping their heads down punctuated by brief moments of frantic activity.

Key Concepts

Primary Arc

All elements in the game, and all defensive positions, have a primary arc. This is the direction that they are actively expecting the enemy to come from. Even with all round defence most elements will have a primary facing where the majority of their weapons can engage the enemy. These need to be specified in orders for both defending and attacking units.

Defensive positions may also have a secondary arc, which is a direction that an individual element could fully engage the enemy from.

These arcs (primary and/or secondary) should be marked with an arrow denoting centre of arc on the play area map. Alternatively they can be expressed as a clock face, a small element can watch one either side (i.e. centre of arc is two o'clock, so anything between one o'clock and three o'clock inclusive can be engaged).

Changing Arc

Once shot at from that arc an infantry unit can change its facing to meet the enemy. However if in a defensive position it can only claim cover for the two nominated arcs.

An element can only ever have one active arc.

Anything not on the primary or secondary arc counts as flanking.

Cohesion

“Cohesion is like a volume button for the magnetic attraction of all the four Fs. It is the single biggest magnet when men can see their mates. It makes men move into and out of fights as groups rather than as individuals.”
Leo Murray, Brains & Bullets.

The game impact is that everyone in a small area is deemed to have the same result, which means that you can scale up to team sized bases rather than trying to track each individual in the unit.

Minimum Safe Distance

The morale studies suggest that the advances tend to stop at the minimum safe distance for the weapons being used. Soldiers don't close to hand to hand combat readily. Many engagements spend a long time at 25-50m with a trade of fire and then one side's morale breaks and they retire.

This concept is a key feature of the game model. Units cannot close with the enemy unless they have a positive morale result (showing as either 'Close' on the chart or a result that pushes them up onto the 'Danger Close' line of the morale chart).

Game Phases

1. Orders

Both sides need to provide brief written orders for their forces. These can be as simple as some lines on a map of the game area showing attacking routes and objectives. Once both sides have completed their orders the phase ends.

Have a plan. Best if not complex and needs to assign tasks to all of the elements deployed. Good orders will fit into the larger plan and contain the following:

- objectives (mandatory for each element)
- routes (mandatory for any element you want to move)
- limits of exploitation
- Rules of Engagement
- actions on

Changing Orders

This is very difficult to achieve successfully in the middle of a battle.

For units placed in reserve (or in support of another unit) then new orders can be given at any point in the battle. However these must be limited to directing a reserve/support unit to engage a specific objective, with a route for it to follow.

Once a unit has been given a specific objective then it can only be given new orders when either it has achieved that objective, or when it has demonstrably failed to do so.

For any unit given new orders in a turn a higher commander needs to spend the turn giving the orders. Neither commander may do anything else that turn and both need to have either 'fuss' or 'fight' as their morale state. If this is the case in the following turn roll 2d6, if the resulting score is less than or equal to the current morale state number of the unit then the orders have been

successfully received. If not the unit must continue with its original orders.

2. Advance to contact

The second phase of the game (once orders have been given)

Defender indicates where their fire zones are, attacker moves troops to that point as per orders.

Defender checks their morale state. If any element has 'fight' then start the combat phase.

If a defender element has flee or fight then the attacker checks morale state too. A fight result indicates an engagement.

If neither side has fight then move the attackers forward along their axis of advance at the full distance for one tactical bound. Repeat the defence morale state.

Continue until either the attacker achieves their objective or the defender starts a battle.

3. Combat

This phase starts when at least one element of either side has a *Fight* for it's morale state. It ends when neither side has any element with *Fight* as their morale state.

All movement in this phase (except fleeing) follows the plan. Distance each turn is determined by the morale die roll.

At the *minimum safe distance* all movement stops and can only continue closer to the enemy when either the firefight has been won or there is a flanking move.

4. Reorganisation

At the end of the combat phase both sides may give new orders should the battle not have been decisive. However there will be a pause at this point.

Attack Successful

If the attack has succeeded all attacking units may move to their specified objectives. Casualties are collected as directed by orders and ammo is redistributed evenly for both sides. The defenders may issue orders for a counter attack to start from this point.

Attack Failed

If the attack has failed then the attackers must withdraw to cover from the defenders. Again a pause to collect casualties and redistribute ammo for both sides ensues. New attack orders may then be issued. Equally a defender with reinforcements available may wish to order a clearance patrol to counter attack.

Game Mechanics

Morale state

There are four possible morale states. These are all drawn from Murray, 2013.

Fight

Active engagement with the enemy. All units with this state will fire on the enemy if not moving closer (unless the pre game orders specifically give an ROE that precludes shooting, or if they have run out of ammunition).

Fuss

Not shooting or moving closer to the enemy but will attend to casualties, bring up more ammo, brew up, and generally do something vaguely useful not involving attacking the enemy. Can still dig in and/or improve defences. May move to reinforce another sector under attack.

Freeze

Will stay in current location and keep head down. Always counts as in cover regardless of terrain. Not watching the enemy.

Flee

Retiring from the battle at fastest reasonable speed. Preferably through the rear arc where they would expect resupply from. Moves from cover to cover but will break if none in maximum non-tactical move distance.

Checking Morale

When checking morale what the majority of units in the same location are doing has an effect on the others. Roll 2d6 once for all elements in close proximity (i.e. both within line of sight and 100m of each other). Although a morale group all share the same die roll they may have different outcomes if they have different modifiers.

Morale Modifiers

Apply the following modifiers to the dice roll to get a final morale result.

| Situation | Mod | Situation | Mod |
|--|------------|--|------------|
| Each friendly base firing | +1 | Enemy has status weapon (e.g. .50, flames, fast air) | -1 |
| Leader moving forward (in line of sight) | +1 | Enemy air overhead | -1 |
| Senior leader present (Major, Capt, CSM etc) | +1 | Each friendly base retiring | -1 |
| Moving quickly (i.e. rapidly advancing in successive phases) | +1 | Poor visibility | -1 |
| Not directly under fire | +1 | Enemy fire is effective (suppressed or casualties) | -1 |
| Fired at from two or more directions | -1 | Enemy advancing on your flank | -2 |

2D Morale Chart

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|-------------------|----------------------|-----------------------|----------------------|----------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------|
| Danger close | surrender | surrender | Surrender / run away | Surrender / run away | freeze | fuss | fight | fight | fight | fight | fight | fight | No Prisoners | No Prisoners |
| Min safe distance | surrender | flee | Give Ground | Give Ground | freeze | freeze | fuss | fuss | fight | fight | Close | Close | Close | Close |
| Under 100m | surrender | flee | Give Ground | Give Ground | Give Ground | freeze | freeze | fuss | fuss | fight | Close | Close | Close | Close |
| 100m - 200m | Surrender / Run away | Give Ground | Give Ground | freeze | freeze | freeze | fuss | fight | fight | fight | Close | Close | Close | Close |
| 200m - 400m | return to base | freeze | freeze | fuss | fuss | fuss | fuss | fight | Close | Close | Close | Close | Close | Close |
| unaware of enemy | return to base | Pause to check orders | fuss | fuss | Follow Orders | Follow Orders | Follow Orders | Follow Orders | Follow Orders | Follow Orders | Follow Orders | Follow Orders | Follow Orders | Find Enemy |

Updating Morale State

Use the morale result to update the morale state of the unit on the morale chart

The blue bordered box (with 6,7,8 written in it) represents the starting morale state for the unit.

| | | | |
|---|-----|-------|------|
| | | 11 | 12 |
| 3 | 4,5 | 6,7,8 | 9,10 |
| | 2 | | |

If the morale score is 6,7 or 8 then it would stay there. Otherwise it will move relative to the morale score to the appropriate box on the chart. So a unit scoring 11 or more will advance on the enemy. A unit scoring 2 or less will give ground.

Base Morale

Base morale determines where a unit starts on the morale table before it has had contact with the enemy. At the start of the game place a marker for each player on the appropriate square on the 'not aware of enemy' line of the morale chart.

Base morale depends on training and experience. This is modified by the level of medical and logistical support and their expectations of the mission ahead of them. The higher the base morale number the better a unit's morale state. The morale number can never be less than 4 or more than 12 at the start of a scenario.

Cross reference the training and experience in the table below to get the basic morale number that the factors are applied to.

| Training level | Novice | Experienced | Seasoned | Veteran |
|----------------|--------|-------------|----------|---------|
| Civilian | 5 | 4 | - | - |
| Volunteers | 7 | 6 | 6 | 7 |
| Part-time | 8 | 6 | 6 | 7 |
| Regular | 9 | 6 | 7 | 7 |
| Special Forces | 9 | 7 | 8 | 8 |

Novices are those that lack combat experience. It takes three months in a war zone (with at least

two battles) to be treated as Experienced. Seasoned troops are those with at least five battles behind them, or on their second tour. Veterans have at least ten battles or two years of warfare behind them.

Factors Affecting Base Morale

Things that make a unit feel they are less likely to become a casualty make morale go up, as does evidence that they will be speedily evacuated and well treated if they do get hit. Units with strong esprit de corps also get a bonus to morale. The reverse situations also make for poorer morale.

| Situation | Mod | Situation | Mod |
|----------------------|-----|--------------------------|-----|
| In body armour | +1 | No medical support | -1 |
| In Tanks/APCs | +2 | Poor officers | -1 |
| Excellent medical sp | +1 | Enemy air superiority | -1 |
| Excellent officers | +1 | Enemy treats PW well | -1 |
| Elite unit | +1 | Poorly equipped | -1 |
| Religious fanatics | +2 | Casualty averse doctrine | -1 |

i.e. Taliban volunteer base 7 +2 fanaticism -1 med sp -1 poorly equip -1 en air sup. = 6

Paras 2nd tour base 7 +1 body armour +1 elite +1 med sp -1 cas averse = 9

Normal inf base 7 +1 body armour +1 med sp -1 cas averse = 8

Firing

All units in a fight morale state will fire whether or not it can be effective. Each dice rolled uses up one ammo counter.

Combat firing is generally ineffective. Casualties may occur on a 1 or 2 on a die roll. Suppression effects on six or less.

The type of die rolled depends on the sort of unit firing. Generally a d10 for most units but ranging from d8 to d20.

Suppression has an effect on the morale state of a unit but doesn't cause any casualties. Roll again on the casualty chart using a d10 where there is a effective fire.

Casualties

Each casualty represents a dead or wounded soldier. Depending on doctrine this may cause elements to stop fighting to deal with them regardless of the morale effects.

An element with a morale state of Fuss will always attempt to recover casualties and administer first aid if required. Each element can move one casualty using normal combat phase movement. Once in cover first aid may be administered. This requires a task roll (d10) greater than or equal to the severity of the wound to stabilise the casualty.