STONK

Brigade-Level Operations NW Europe 1944-45

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INTRODUCTION

This is a set of wargame rules intended to simulate actions between about one brigade equivalent a side, supported by divisional or even corps troops where they would have been available.

This therefore represents a departure from the normal pattern of wargame rules for models, for this period, which have hitherto tended to be set at company level, and are entirely unsuitable to simulate larger actions. In STONK the details of tank versus tank actions (which feature so importantly in other sets) have been greatly simplified. This is for two reasons; first to shift the emphasis onto other types of combat at this level, and secondly because pure tank versus tank battles are very unrepresentative of the type of action most often fought at this level of operations in this theatre of warfare.

To this end, the smallest separately represented unit is the platoon or troop. This is shown on the table top by a cardboard base of the appropriate size, on which a suitable number of 1/300 scale models are mounted - the exact number per base can be varied to meet your own taste and financial resources.

The area of the base represents the normal area the unit would occupy when deployed for combat. Whilst this might impart a degree of inflexibility to the smaller units, the system of using these bases is regarded as a necessity to create a higher speed of play, and the 'feel' of thinking and planning at brigade level. It is important that players think of these bases as indivisible, and concentrate on the actions of companies and battalions as a whole. This change in scale of operations does require some special effort to get used to.

There are inevitably a number of tables in the rules, and to get used to the application and interpretation of each one takes a little effort. Despite this, it is worth it, and the tables are designed to try and make play as rapid and interesting as possible.

It is probably best to start small with these rules (as indeed it is with any new rules), and try out actions involving just one battalion. It is important to continually bear in mind the ground scale used with these rules. 1 inch to 100 metres is the recommended scale, and this is very small. If the models used were to this scale, then a tank would have to be about 0.75mm long, so the size of the models has very little relevance to the action. Players should be careful not to be misled by this.

On the subject of scale; in 1944, a British armoured division could, and often would, attack on a frontage of one mile or less. This would be represented by a frontage of some 16 inches on the table top.

Of course, this would only constitute the leading brigade battlegroup, but within the terms of our rules, this means the whole wargame could be fought out over a frontage of less than two feet! This gives you some idea of the possible concentration of effort that could be expected, and to warn you against the old wargaming trap of spreading your models to fill the table space available. This will produce ridiculous and ahistorical results.

A great deal of emphasis is placed upon the umpire in these rules, and he should have a good knowledge of the period first, and the rules second. The rules can be used without an umpire, but most of the refinements, and a lot of the 'feel' will be lost.

Contrary to popular practice, there is no points system, since the forces used must be historical, and placed within a realistic military context from the period. The best criterion for choosing your forces is whether they actually fought in the NW Europe Campaign and a short search through one of the many excellent books on the period will settle the question. In any event, the forces are usually determined by the scenario played.

These rules are not to be treated as Holy Writ; they were not written with that intention, but simply as a set of guidelines for keen WWII wargamers to fight brigade battles of the type typical in NW Europe. The interpretation of the rules is therefore not fixed, but dependant upon the tactical situation you are attempting to simulate. Players and umpires should continually measure the results of their games with their own knowledge of the period, of what the units were actually capable, based on the history of the campaigns. I would therefore suggest that, in preference to deep and detailed study of the rules, a study of a few of the better books on WWII tactics and operations, will tell you far more about what is, or is not, possible.

To help readers who are relatively new to the period, I have included a short bibliography at the end of the rules.

You will note that the rules are in two parts: Part I is the bare bones with little or no explanation; Part II is the fuller explanation of the rules given in part I, with notes and examples, to try and put the rules in their proper perspective

INTRODUCTION TO VERSION 2

Many readers of these rules will already have some idea of the philosophy behind them. In summary it is:

    a. That units at platoon level are treated as such, and not as a collection of individual and separate elements.

    b. That command, control, logistics and organisation are vital ingredients in the battle, and that these elements can and should be realistically and sensibly be reflected in a playable wargame.

    c. That morale continues to have a dominant influence on the outcome of battles, notwithstanding the superficial effects of technology.

The main changes readers will notice in the new version are where I have attempted to clarify, simplify and streamline the rules. In particular, the basic rules section has been reorganised so that the rules occur in the same order as the sequence of action. The playsheet has been similarly re-designed.

The period is not a simple one, and you may feel that I have gone too far in my attempts to simplify it. A set of rules is, in my experience, more easily expanded than simplified, and I am confident that you, the reader, are well qualified to modify and add to the rules to suit your personal taste.

As ever, all communications about these rules are gratefully received, and any comments welcome.

Jim Wallman 1986
Streatham

PART I: THE BASIC RULES

1. SEQUENCE OF ACTION   (See para 15).

		(Para reference)
1.	Check orders & communications status	2
2.	Target location	3
3.	Direct fire calculations	5
4.	Area fire calculations	6
5.	Movement	9
6.	Close assaults	11
7.	Check for demoralisation and rallying	12 & 13
8.	Update logistics status	

2. ORDERS AND COMMUNICATIONS   (See para 19.)

ARTILLERY: To bring effective fire on an opportunity target:10 minutes
per additional battery after first: 5 minutes

To bring effective fire on registered target: 5 minutes
per additional regiment (or part):   5 minutes

Fireplanning : To prepare and communicate a fireplan takes 5 minutes per target, plus 5 minutes per battery. During planning, guns should not be used on other tasks.

EXAMPLE: Fireplan of 7 targets with 3 batteries, and in the middle of planning one battery has to engage a target for 10 minutes; the calculations are:

7 Targets	=	35 minutes
3 batteries	=	15 minutes
Delays	=	10 minutes
Total planning time	=	60 minutes

If targets are neither adjusted or predicted (ie. 'speculative') then these times may be halved.

Set up battery position	40 minutes for artillery
	20 minutes for heavy mortars
	10 minutes for mortars
Change fireplan	1 hour

INFANTRY AND TANKS:

Issue Combat orders: 10 minutes per platoon ordered, per main objective (say, approximately 1« - 2 hours for a battalion objective.

Issue orders for movement only (ie. a non-combat move): 40 minutes per battalion

MEANS OF COMMUNICATION:

Roll 1d10 - score as follows for communications to work:

Radio	- Company net 7+ (US radios 5+)
	- Battalion net 2+ (US radios 1+)
Messenger on Foot	6+
Messenger in vehicle	1+

Telephone always works, but wires may be cut by shell fire. Score 8+ to cut under field artillery, 9+ under mortars, or 6+ under medium artillery or air attack.

Signals platoons can repair open cable at 20 metres per minute.

3. TARGET LOCATION

Roll 1d10 per company-sized unit (or equivalent) observing (0=0).

Target:	IN OPEN		IN COVER		DUG IN	
Qty of VEHICLES	**Not firing**	**Firing**	**Not firing**	**Firing**	**Not firing**	**Firing**
1	4	2	6	4	7	6
2-6	3	2	5	3	6	5
7-12	2	1	4	2	5	4
13-18	1	0	3	1	4	3
19+	0	-1	2	0	3	2
GUNS DEPLOYED						
1	5	3	6	4	7	6
2-6	4	2	5	3	6	5
7-12	3	1	4	2	5	4
13+	2	0	3	1	4	3
INF PLATOONS						
1	6	4	8	6	10	9
2-4	5	3	7	5	9	8
5-8	4	2	6	4	8	7
9+	3	1	5	3	7	6

Additions to the die roll:

OBSERVER IS: TARGET IS:

Moving	-2	Moving	+2
Infantry pinned	-1	Non-tactical	+2
Less than 3 elements strong	-1	Firing second time from same position	+2
Infantry suppressed	-4	Under smoke	-6
Armour pinned	-2	Green troops	+1
Armour suppressed	-4	Veteran troops	-1
Veteran troops	+1	Under 200 metres	+2
Green troops	-1	Over 1000 metres	-1
		Over 2000 metres	-3

Maximum visibility will be defined by the umpire, but is normally from 2000-5000 metres. In bocage country the maximum visibility is around 100-400 metres.

4. EFFECTS OF FIRE   (see paras 20, 21, and 24-26)

P = PINNED : Infantry - only Veteran units may move, and then only at 50 metres per move. All other   units cannot move. Armour - only veteran units may continue to advance, at a maximum of 200 metres per move, all others must halt their advance.

S = SUPPRESSED: No troops may fire. Infantry may not move at all. Armoured units must withdraw until rallied, or reaching own gun line.

5. THE ARMOUR BATTLE TABLE   (see para 24)

Used for direct firing on vehicles. Roll 1d10 (0=0)

WEAPON RANGE BANDS						
	Light Inf AT	-	-	-	0"	1"
	Infantry AT	-	0"	-	1"	-
	Heavy Inf AT	0"	1"	-	-	-
	Medium AT Gun	4"	8"	10"	24"	-
	Heavy AT Gun	6"	12"	20"	30"	-
	Light AT Gun	1"	3"	7"	10"	20"
	Tank Gun	3"	6"	12"	20"	-
	Heavy Tank Gun	5"	11"	16"	25"	-

INDIRECT FIRE WEAPONS			AIR STRIKE	MEDIUM ARTY	FIELD ARTY	MORTAR

	↓Target Situation ↓				**RESULTS**				
	Stationary in Open	Moving in Open	In Cover	Hull Down					
Die Score			-1	1 or 2	**P**				
	-1	-1 or 0	0 to 3	3 to 6	**P**	**P**			
	0	1	4	7	**1P**	**P**	**P**		
	1 or 2	2 or 3	5 or 6	8 or 9	**1P**	**1P**	**P**		
	3	4	7	10 +	**2P**	**1P**	**P**	**P**	
	4	5	8		**2S**	**2P**	**1P**	**P**	
	5	6	9		**2S**	**2S**	**1P**	**P**	**P**
	6 or 7	7 or 8	10+		**3S**	**2S**	**1P**	**P**	**P**
	8+	9+			**3S**	**2S**	**1S**	**1P**	**P**

Additions to die roll:

Firer Pinned	-1	Target Light armour	+1
Disappearing target	-2	Firer moving	-3
Target heavy armour	-1	Target TIGER TANK	-2
Target soft	+4		

6. INFANTRY AND ARTILLERY EFFECTS TABLES   (see para 26)

Roll 1d10 (0=0).
DDI = Deeply dug in.   DI = Dug in.   IC = In cover/APC
SIO = Stationary in open.   MIO = Moving in open.

FIRER WITH INFANTRY TYPE WEAPONS:

Range Band	Up to 4" and Mortars					Die score	Up to 8"				
Die score	DDI	DI	IC	SIO	MIO	Die score	DDI	DI	IC	SIO	MIO
0	-	-	-	-	-	0	-	-	-	-	-
1	-	-	-	-	P	1	-	-	-	-	P
2	-	-	-	P	P	2	-	-	-	P	P
3	-	-	P	P	1P	3	-	-	P	P	P
4	-	P	P	P	1S	4	-	-	P	P	P
5	P	P	P	1P	1S	5	-	P	P	P	1S
6	P	P	P	1S	1S	6	-	P	P	P	1S
7	P	P	S	1S	2S	7	-	P	P	S	1S
8	P	S	1S	1S	2S	8	-	P	S	1S	1S
9	S	S	1S	2S	2S	9	P	P	S	1S	2S
10	S	S	1S	2S	2S	10	P	S	S	1S	2S

FIRER TANKS OR CS TANKS OR EQUIVALENT:

Range Band	Up to 4" and Mortars					Die score	Up to 10"				
Die score	DDI	DI	IC	SIO	MIO	Die score	DDI	DI	IC	SIO	MIO
0	-	-	-	P	1S	0	-	-	-	-	-
1	-	-	P	P	1S	1	-	-	-	-	P
2	-	P	P	P	1S	2	-	-	-	-	P
3	P	P	P	P	1S	3	-	-	-	-	P
4	P	P	P	1S	1S	4	P	P	P	P	P
5	P	P	S	1S	1S	5	P	P	P	P	1S
6	P	S	1S	1S	2S	6	P	P	P	P	1S
7	S	S	1S	1S	2S	7	P	P	S	S	1S
8	S	1S	1S	2S	3S	8	P	P	S	S	1S
9	1S	1S	2S	2S	3S	9	P	P	S	S	1S
10	1S	1S	2S	3S	3S	10	P	S	S	1S	2S

FIRER ARTILLERY WEAPONS:

Range Band	Field Artillery						Medium Artillery				
Die score	DDI	DI	IC	SIO	MIO	Die score	DDI	DI	IC	SIO	MIO
0	P	P	P	P	1S	0	P	P	P	S	1S
1	P	P	P	P	1S	1	P	P	P	1S	1S
2	P	P	P	P	1S	2	P	P	P	1S	1S
3	P	P	P	P	1S	3	P	P	P	1S	2S
4	P	P	P	S	2S	4	P	P	S	2S	2S
5	P	P	P	1S	2S	5	P	P	1S	2S	2S
6	P	P	S	1S	2S	6	P	S	1S	2S	2S
7	P	S	S	1S	2S	7	S	S	1S	2S	3S
8	S	S	1S	1S	2S	8	S	1S	1S	3S	4S
9	S	1S	1S	2S	3S	9	1S	1S	2S	3S	4S
10	S	1S	2S	2S	3S	10	1S	2S	2S	3S	5S

FACTORS AND MODIFIERS:

      Rates Of Fire: Heavy +2   Light -2

      [Only Arty/mort/MMG/PzGr etc can fire hvy bursts.]

      Other Factors: Firer pinned -1 (-3 if artillery)

              Per casualty over 2 s.p.   -1

              Speculative fire   -3

              Firing from moving vehicle   -2

      Air attacks: Count as medium artillery, +1 on die.

      Unobserved map fire: counts as speculative.

      Unmarked minefields are treated as medium artillery when first encountered.

      Double effect on non-tactical targets.

7. ARTILLERY BEATEN ZONES

Fire zones: Mortars   150m x 150m
               MMG platoon   100m x 100m
               4 Gun battery   100m x 300m
               6 Gun battery   150m x 300m
               8 Gun battery   200m x 300m
               Air strike (3-4 a/c)   500m x 500m
Safety zones: Guns etc   Approx 200m
               Aircraft   500m to 5000m depending upon date.

NB: Fire zones for artillery can vary shape provided area remains constant.

8. SMOKE

Tank smoke (from main armament) lasts one move (10 minutes), and is 2" in diameter.

Artillery smoke lasts one move and is 1" frontage per gun.

Mortar smoke lasts one move and is «" frontage per tube.

9. MOVEMENT (see para 29)

(In inches)

Unit Type	Tactical	Non-Tactical
Armoured or APCs	6	20
Fast armour or carriers	8	20
Slow armour	4	15
Armoured cars etc	8	30
Deployed infantry	2	6
Lorries on roads	6	30
Lorries off roads	2	n.a.

Restrictions:

Minefields   - maximum of 1" move for all units until cleared.
Open woods   - HALF speed for tracked, impassable for lorries.
                        - QUARTER speed for light armour or armoured cars.
Close woods   - QUARTER speed for tracked, impassable for wheeled vehicles.
Forest   - impassable for all vehicles, HALF speed for infantry.
Built-Up area - HALF speed for all troops (except pinned units).
Pinned units   - Veteran armour 2" max, veteran infantry ½" max, others no forward movement.
Suppressed units   - no forward movement. Armour and vehicles must attempt to withdraw at least   2".

10. DIGGING IN

Basic shell scrape takes one hour; +10 minutes if pinned; + 30 minutes if suppressed.
Deep trenches - 12 hours.
Dig in guns or vehicles - 8 hours.

11. CLOSE ASSAULT (see para 25)

Close assaults can only take place in the same move if the assaulting troops have moved less than half their move, otherwise the calculation of the close assault is carried over to the next move.

Score 1 point per strength point of infantry, 2 per tank, or 4 per close support tank.

Roll 1d10 per side, add leadership score. Add following:

Deeply dug in	+4	Unsupported tanks	-2
Dug in	+3	Surprised	-2
Attacking on the flank	+2	Outnumbered 2-1	-1
Pinned	-1	,, 3-1	-2
Suppressed	-3	,, 4-1	-3
Undeployed	-3	,, 5-1	-4
Specialist close assault troops	+2	Tiger tanks	+2

RESULTS TABLE
Take difference in resulting scores: Attacker score minus defender score.

SCORE	RESULT
5+	Position carried. Attacker pinned on position, defender surrenders. If defender deeply dug in then attackers take 1P for every defending unit
1-4	Position taken. Defender successfully withdraws 200 metres. Attacker takes 1P per defending unit. Defender takes 1P.
0	Confused fighting over trenches. Attacker takes 2P per defending unit. Defenders take 1P per attacking unit.
-1 to -4	Attacker halted at 100 metres and takes 1P per defending unit.
-5 to -8	Attacker halted at 100 metres and takes 2P per defending unit
-9 to-12	Attacker halted at 100 metres and takes 3P per defending unit.
Less than -12	Attacker breaks and runs non-tactical to nearest cover to rear. Takes 3 per defending unit, and is suppressed on arrival at nearest safe cover. If last move was a 'confused' close assault result then attacker surrenders.

12. MORALE   (see paras 20 and 22)

Throw 1d6, score as in the table or less to become demoralised.

Original strength in strength points	Remaining Strength Points					
	1	**2**	**3**	**4**	**5**	**6**
9+	6	5	4	3	2	1
7-8	5	4	3	2	1	-
6	5	4	2	1	-	-
5	4	3	1	-	-	-
4	4	2	1	-	-	-
3	3	1	-	-	-	-
2	2	-	-	-	-	-

Additions to the die score :   + Leadership score for unit
-1 if pinned   -2 if suppressed
+1 for veterans   -1 for green troops
Demoralised units may NOT: Reorganise   Fire   Advance
Communicate sensibly (for arty calls)   Locate targets.
In addition the demoralised unit's leadership is reduced to zero.

13. RALLYING (see paras 20, 22 and 23)

When a unit becomes pinned or suppressed it will remain so until rallied.
This is treated as follows:
Roll 1d6, add leadership score. If the result is greater than or equal to the units rally score, then the unit has rallied one level.
This will normally move the units status from suppressed to pinned, or from pinned to Ok.
If the result is double the required rally score then the unit can rally two levels.

If the original pinned or suppressed result was caused by an air attack or flame thrower unit, the -2 from all rallying rolls.
If the rallying unit is still under fire whilst trying to rally , -1 from die roll.

Typical rally scores :	Good troops	= 3
	Average troops	= 4
	Poor troops	= 5

14. TROOP QUALITY FACTORS

The following can be applied as necessary to the above fire tables:

	Target	Green	Average	Veteran
Firer:	Green	-	-1	-2
	Average	+1	-	-1
	Veteran	+2	+1	-

Veterans are always pinned by fire.
Green units may ignore pinned results if attacking (ie. moving forward to the objective).
Note that suppression is unaffected.

PART II EXPLANATIONS

15. METHOD OF PLAY

There are two distinct methods of play, depending upon your personal preference and the availability of an umpire.

A. The first method is primarily for those without umpires. Each bound is split, opposing players moving their forces alternately. In each players part of the move, the sequence of action at para 1 is followed. When measuring time expired for communications etc, count one side's moves only. This method does have serious shortcomings, in that one side has only a limited opportunity to react to the actions of the other. It is important therefore to bear in mind that all actions of both sides are in fact occurring simultaneously, and that the alternate move is merely a game convenience. In certain critical circumstances, a defender should be allowed to fire during an attacker's movement phase, where he might otherwise have unrealistically missed his opportunity to fire. It is up to the players to agree on the reasonableness of any particular action. If nothing else is achieved, the alternative move game is fast moving.

B. The second method requires the use of an active umpire for it to be really fast moving enough, although it will work without an umpire provided that the players are sufficiently non-competitive. In this case the sequence of action is carried out simultaneously for both sides. Interaction disputes are dealt with by the umpire(s). in this format, much greater emphasis is normally placed on proper orders, briefings, maps, communications and concealment.

In either case, it is important to conceal, preferably by marking on sketch maps, the location of forces that would not be in sight. This is where an umpire is essential, in that he can determine intervisibility.

Another excellent method of achieving game concealment, is to have one or more identical terrain models, separated by a screen, or in separate rooms. Each side has its own table, and the umpire places on only those enemy forces that have been located and reported. Obviously, this method requires duplicate forces and terrain. The method can be further extended to include extra tables for detached forces from the same side, in separate rooms, to enforce the real confusion and communication problems.
Clearly these more involved methods require more umpires and extensive facilities. As a guide, there should be at least one umpire per separate table or terrain model, up to an ideal of one umpire per player.

16. SCALES AND GROUND

Each move represents about 10 minutes of real time.

The ground scale for the terrain model should be 1:4000 (ie. 1" equals 100 metres).

Each model gun or tank or vehicle represents whatever is convenient, in fact models are optional. It is the area of the base which is important.

When designing terrain models, be especially careful to get the relative positions of terrain feature correct for the area. Reference to readily available 1:25000 O/S maps is a useful guide.
1:25000 scale maps of northern France are readily available, but if you have any difficulty obtaining them, I have found Stanfords of Long Acre, London WC1 have a very extensive stock, and can order most French sheets for you.

17. BASE SIZES

The following are guidelines on base sizes for units. It is clearly impracticable to rule on every conceivable type of unit to be found in the NW European theatre during 1944/45, but following are the main types, with guidance on how to draw up bases for larger or smaller units where appropriate.

Infantry Platoons : Mortar Platoons (6 tubes) : Engineer Platoons

40mm frontage x 20mm depth.

HQs for Infantry : A/Tk Sections (2-3 guns) : MMG Sections

20mm x 20mm

British Carrier Section   **20mm x 20mm**

APC Platoons : These are represented in two ways, mounted and dismounted. When dismounted they are on a standard infantry platoon base. When mounted, they are on a **base 15mm frontage x 20mm depth**.
When fighting dismounted, the vehicle base is replaced by the infantry base.

Lorries : (For troop transport, admin, logistics etc). Frontage as appropriate for the vehicle model, say 8-10mm, and a **depth of 4mm per real vehicle represented**. The number of vehicles represented in each strip depends upon the unit. Very large units may be split, for convenience.

Horse Transport : As for lorries, although there is probably a case for tighter columns of say, 3mm per vehicle.

Artillery : Batteries are rarely represented on the table, and in some cases can be greatly dispersed. As a guide, allow **10mm frontage per gun represented, with a depth as convenient (20-30mm).**

Armour : Square bases, **10mm on a side per vehicle in the unit**. Some of the larger units (5-6 vehicles) could be split into smaller bases, or perhaps not be square, provided the overall frontage remains roughly the same.

The bases represent the normal area occupied by the unit when deployed for action. In some circumstances, units would have to operate in denser formations, for example in bocage or towns. If you wish, duplicate units to represent this close order, down to a minimum of half the dimensions given above.

When organising your units, it is vitally important that you include the relevant tail units. Logistics are important in this game, and the presence of tail units has a battle-winning function.

18. ORGANISATION

A. INFANTRY. The basic sub-unit is the platoon. This is generally regarded as indivisible, the only exceptions being Carrier platoons, MMG platoons and anti-tank platoons. Platoons are grouped into companies, and companies into battalions, in accordance with the historical army order of battle (ORBAT).

MMG sections represent two weapons, and are similarly grouped.

Anti-tank sections represent 2-3 guns, and mortar platoons represent 6-8 tubes (12 tube batteries are therefore represented by two bases).

Each company HQ is assumed to be radio equipped, and occasionally each platoon. Runners, jeeps etc are assumed to be in use by all units, and these do not need to be represented, or even considered separately.

B. ARMOUR. The basic sub-unit for armour is the troop/platoon. These will be grouped into squadrons/companies in accordance with the appropriate army ORBAT.

C. ARTILLERY. The basic unit for artillery is the battery (normally of 6-8 guns), which in most armies would be grouped into regiments or battalions. Batteries could, on occasion, be dispersed over a wide area, and in this case, it is acceptable to base the battery in section (2-4 guns) units. This applies particularly to the common German practice in the face of superior Allied artillery and air power. Forward observation officers for the batteries and regiments are not represented separately, nor do they need to be. Their effect is simulated by designating particular lower HQs as having specific artillery units as being 'attached'. Hence the unit (normally a company) will act as if it were an FOO.

It is a good idea to have a map for off-table artillery (ie. usually almost all the artillery resources in a scenario).

19. ORDERS AND COMMUNICATIONS

NOTE: The following rules on orders are restrictive, and easily ignored in practice. They are central to any realistic simulation of warfare in this period, and umpires and players should insist on proper preparation and communication at all times.

Each unit at company level and above will be given orders consistent with its objectives. These objectives will be defined in accordance with general orders either given by the umpire as part of the scenario, or generated in another, separate, planning game.

These higher orders represent Division or Corps operational directives. In the absence of an umpire or planning phase, the players can use an historical situation or arrive at some agreement between themselves on force levels and orders.

Company/squadron groups should not be split up, unless (in the case of armour for example), units are attached in support. As a guide, elements of a company/squadron should not move more than 400 metres from the next element in the same company/squadron. Units may only react to events or targets that they are directly aware of, or have been reasonably informed of by friendly units.

The umpire(s) should penalise players moving or ordering troops apparently by ESP.

Units may only engage targets or react to events if those targets or events have been located (see para 2).

Issuing orders and communicating information takes time.

The main timings are given in para 2. Direct support artillery fire is that from an artillery unit or units allocated specifically to the calling unit for the operation, and therefore under its command. This must be written into the initial fireplan. Registered targets are those which have known range and bearing, ie. fully ranged in once already.

Changing a battery position is a difficult and time consuming process, involving surveying the gun positions, taking accurate bearing of grid location, as well as dumping ammunition, and preparing vehicle routes to and from the position, together with laying telephone cables etc. If the battery is to be dug in, then the digging in time (para 8) is additional to the setting up time for the battery.

Orders for infantry and tanks:

To brief and issue orders for a battalion for one objective - one hour.

Issuing orders that do not require contact with the enemy, such as movement orders - 40 minutes per battalion.

Issuing orders to each battalion after the first, on the same objective - +30 minutes.

These are very general rules of thumb for timing plans and order issuing delays. There are many circumstances which will slow this down, such as coming under fire, or being in action at the time, or some special communication difficulties.

It was not only difficult, but virtually impossible for a unit to attack anything without having issued orders or had some form of briefing beforehand. For calculating smaller actions, or opportunity attacks, allow about 10 minutes per platoon involved.

Suppressed units cannot issue or receive orders.

If you wish to take account of troop quality, I suggest reducing order times by approx 20% for veterans, and increasing them by 30% for green troops. Timings should also be increased when cooperation is expected from units unfamiliar with each other.

Optional Rules For Head-Bangers (ie. Purists) No.1:
Communications in WW2 (as they are today) were not 100% effective all the time. To reflect this, roll 1d10 for each net (ie. the whole of communications within a level of command). For example; if the battalion net breaks down, this prevents contact between Battalion HQ and Coy HQs AND other Battalion HQs. If the company net breaks down, this prevents contact between the company and other companies in the same battalion, and between the company and its platoons. See para 6c for the die score required.

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20. TROOP QUALITY

The troop quality falls into three, easy to remember, categories:

A. VETERAN TROOPS. Units with a high proportion of experienced officers, NCOs and men. An example of this would be some of the ex-North African campaign troops, 7th Armoured Division for example. Veteran troops were very wary of being killed, since they have seen too much of it, and had lived to be veterans by keeping their heads down at the right moment! In summary, veterans are hard to kill, good at killing, but easy to pin down.

B. AVERAGE TROOPS. There is little to say about these. The rules make a number of assumptions on the general behaviour of troops in this theatre. Average troops are therefore, by

definition, those represented by the normal rules. Any troops you cannot be bother to classify remain average.

C. GREEN TROOPS. Troops who have, mostly, seen no previous action. An example might be some of the battalions of British 3rd Infantry Division, or many of the American units.
These are troops who have trained long and hard, and by 1944 feel somewhat left out of the fighting (if Allied), or have been psyched up on propaganda (some German units). I regard green troops as being easier to hit, because they have yet to learn the essential differences between exercises and battle, and are less cunning in their use of ground etc. They are also less effective with their weapons (a measure also of the quality of junior leadership in the siting of weapons). Green troops will, however, attack anything - because all the gung-ho ones have not been killed off yet!

See para 14 for factors.

You will see from the factors that it is the relative skill of the protagonists that counts; that is veterans can gain a greater advantage over green troops than they can over average, and green troops have difficulty getting at veterans.

21. PINNED & SUPPRESSED ARMOUR

This represents the confusion, dismay and disorientation that seems to have occurred when tank units, particularly in Normandy, came under fire. Even the crew of a single tank can suffer very badly from the 'What In Hell Is Happening' syndrome. So, in the rules, the P and S results represent general degradation of the units effectiveness, without there necessarily having been casualties inflicted.
As in other cases, tank units must rally from pinned or suppressed results.

22. MORALE

There is no turn by turn morale throw in the normal form, since the immediate reaction of troops to fire is represented by the pinned/suppressed result. There is, however, a general morale test of the units will to fight on. The test (para 12) is to determine whether the unit is demoralised and takes no further actions. It is an arbitrary, all or nothing, cut-off point.
Some definitions:

Armoured units which become demoralised are counted as permanently suppressed. Once they have withdrawn to safety, the umpire will decide how long it will take the unit to recover. In the absence of an umpire the unit will take 1d6 x 3 hours to recover.

Infantry units demoralised will break and run (non-tactically) for secure cover to the rear. If the enemy are within 200 metres, or retreat is impossible, then they will surrender, or wait to be captured.

Clearly, the test only need be taken by units that have already been badly battered already, after some fairly heavy fighting.

22. LEADERSHIP

There has already been some reference to the concept of leadership. It is clear from a brief study of actions in this period that the qualities of leadership could often distinguish between success and failure in battle. Whilst the player himself is demonstrating, in a very limited way, a few of the qualities of leadership this is not the whole story. Within any unit there are many junior leaders upon whom the player is implicitly relying. Leadership score is used to modify a number of results, in particular morale and close assaults.

If the scenario or umpire has not pre-allocated this score then use the following table for each company and for each battalion commander (and higher). Roll 1d6:

Score	Leadership
1-2	0
3-4	+1
5	+2
6	+3

The factor is used in the rules in the following circumstances:

      i.   In rallying from pinned or suppressed.
     ii. As a factor in close assaults.
    iii. When testing for demoralisation.

The battalion commander can personally intervene in the above process, provided the player is prepared to take the risk. If the r"le is not played by a player, then roll the commanders leadership or less on 1d6 for him to intervene. The battalion commander is NOT the same thing as his HQ, which is a unit in its own right, and the Battalion commander should be separately represented, either with a suitable counter, or separately on a map. If he comes under fire then roll 1d6, score 1 to become a casualty. When a new commander is appointed, dice for his quality as above.

24. EXPLAINING THE ARMOUR BATTLE TABLE

The table looks a little complicated, but is in fact easy to use.

First look for the firing weapon category, and the range band on the top half of the table. Refer down the appropriate column to the lower half of the table. Check the die score (plus additions) for the result.

Some Definitions:

Light Inf. AT = Infantry platoons with AT rifles or AT grenades only, ie. poorly equipped for the anti-tank role, such as volksturm or partisans.

Infantry AT = Infantry platoons with effective AT weapons such as the PIAT, Panzerfaust or Panzerschreckt.

Heavy Inf AT = Infantry platoons specialising in the ATk role, with exceptional numbers of effective AT weapons.

Medium AT gun and Tank Gun   = 6pdr, 75mm, 57mm, 77mm etc. The standard anti-tank guns capable of knocking out most vehicle types.

Heavy AT gun and Heavy Tk gun = 88mm, 3.7" AA, 17pdr etc. Heavy weapons capable of knocking out virtually all vehicle types.

Light Tk gun = 2pdr, 37mm, 50mm etc. Obsolete or largely ineffective weapons usually found on light armoured vehicles. Not often found in the ATk role.

Indirect fire   = Self-explanatory; use the range bands indicated for the different types of indirect fire weapon: AIR = air-strike; Medium Arty = Medium artillery or mines; FIELD = Field artillery or heavy mortars; MORTAR = Medium mortars.

Within the results table; A number = the number of vehicles KO'd in target unit;
              P = target pinned   S = target suppressed

Medium Armour	= PzKw IV, Panthers, Shermans, Cromwells, Comets.
Light Armour	= PzKw III, Honeys, Armoured cars, halftracks.
Heavy Armour	= Churchill, Pershing, Tigers, some JgPzs.

The definitions of tanks are very broad and this will no doubt continue to offend the dedicated technologist, but the above generalisations are essential to maintain a sensible and historical balance to the rules.

25. EXPLAINING THE CLOSE ASSAULT

The close assault rule (para 11) assumes that the purpose of most attacks is to eject dug-in infantry from a defensive position. In this theatre, it is achieved by an infantry assault, supported closely by tanks or assault guns, and prepared by lavish artillery bombardment (if Allied), or not so lavish (if German).

The exact area and strength of a defensive position is not always easy to define, so when the attack is adjudicated, the umpire (or the players by agreement) should determine how many defenders are involved in a single attack. This could be a single MMG section, or a whole company, as circumstances dictate - but normally it is based on single platoons plus their supporting weapons (if any).

EXAMPLE:
A single German infantry platoon (6 strength points) dug in on the edge of a wood, supported by an MMG section (4 strength points). It has a leadership of +1.

This is attacked by two rifle platoons (8 s.p. each) and a Sherman tank troop (4 tanks), after a 30 minute bombardment from 25pdr battery. They have a leadership of +2.

The bombardment suppressed both the MMG and the infantry platoon.

Total German strength = 6 + 4 = 10
Total British strength = 8 + 8 + (4x2) = 24

Each side rolls 1d10:

Factors:	German roll = 5 German		British roll = 4 British	
	Dug in	+3	Leadership	+2
	Suppressed	-3	Die roll	+4
	Outnumbered 2-1	-1		
	Leadership	+1		
	Die roll	+5		
	-------------------------		-------------------------	
	Total	5	Total	6

Result: Attack minus defender: 6 - 5 = 1
Position Taken, the defender withdraws 200 metres into the wood, and loses 1 s.p. per unit, and is pinned at the end of the move. Of the attackers, each infantry platoon takes 1 casualty, and the whole force is pinned on the objective. It will need to rally to continue the attack. Note: the tanks could just as easily have taken a casualty instead of the infantry, you can dice for where the casualties fall, or the umpire will make a judgement.

Some Definitions:

Close Support Tank = Any SP artillery used in the Close Support role, or 95mm Howitzer-armed Close Support tanks, or the equivalent.

Unsupported Tanks = Tanks close assaulting with no infantry with them. This was, at the time, regarded as risky, and highly unpopular with tank crews.

Undeployed = APC mounted troops attempting to 'shoot their way in' to a position, or other troops caught in a non-tactical position. This might be applied to bunched troops.

Specialist Close Assault Troops = Assault engineers, troops with flamethrowers etc.

26. EXPLAINING INFANTRY & ARTILLERY EFFECTS TABLES

The weapons have been grouped into very broad bands. The tables themselves are self-explanatory:

Within the results table; A number = the number of s.p. lost in target unit;
              P = target pinned   S = target suppressed

Roll 1d10 per unit firing.

FIRER WITH INFANTRY TYPE WEAPONS.

For mortars use the 'Up to 4" ' range block. This refers to medium mortars, ie. 3" or 81mm or the equivalent. Larger mortars are classed as field artillery.

FIRER TANKS OR CS TANK OR EQUIV.

The overall effect of close range guns on infantry type targets is much the same whatever the calibre. There is, however, a good case for a distinction between specialised CS tanks and ordinary

gun tanks. This is covered in the close assault rules, where I believe the effect is more marked.
Should you wish to simulate the difference, then give CS tank units +1 on the die roll.

FIRER ARTILLERY WEAPONS.

Field artillery is a self-explanatory term, covering weapons such as 105mm, 25pdr, 150mm IG (the
small ones), and 4.2" or 120mm mortars.
Medium Artillery is defined, for the purposes of these rules, as anything larger than field artillery. I
have found few references to any additional effect of the super heavy units, any in any case their
lower rates of fire probably offset any advantages of weight of shell, so it is probably sufficient to
include them in the medium class.

FACTORS AND MODIFIERS.

Rates of Fire. This can be applied to any unit. There are three rates, and it is probably most
important as in indication of some of the differences in infantry weapon mixes.

Heavy. Only available to those units capable of putting out a higher rates of fire, that is Panzer
Grenadiers, MMGs, Bren platoons etc. This can include field artillery or mortars for one move in
any hour. It consumes three ammo points per turn to use a heavy rate of fire.

Normal Rate of fire. This is the standard fire table, and consumes two ammo points per turn.

Light. All units may use this rate of fire to conserve ammo etc. Some poorly equipped infantry
units will only be able to use this option. It consumes 1 ammo point per turn.

Speculative fire is any fire at unlocated targets ("brassing").

GENERAL DEFINITIONS.

Deeply Dug In   = Troops in bunkers, fortified cellars, pillboxes or other deep field defences
with strong overhead cover.
Dug In   = Troops in foxholes or mostly open trenches, or defending buildings. Also
troops in Kangaroo type APCs can be counted as dug in.
In cover/APC   = Troops occupying woods, close hedgerows (ie. bocage), forests, or in open
or light APCs such as carriers, Sdkfz 251, or M3 halftrack.
Stationary in open   = Troops making the best use possible of dead ground, small hedges, ditches
or other terrain features not specifically represented on the table top.
Moving in open   = Troops moving tactically across the open where necessary, using any
available cover, but necessarily presenting a more vulnerable target.

Troops may also move non-tactically (see para 9). Since they are moving faster, they are much
more vulnerable to fire. Any troops making a non-tactical move automatically DOUBLE all effects
on them.

27. STRENGTH POINTS

All units are composed of a number of strength points (s.p.).

For vehicle and armoured units, 1 s.p. represents one vehicle. For infantry it is 1 s.p. per 4-5 men approx. When an infantry unit loses all its strength points it has not, in fact, been wiped out to a man, but merely ceased to function as a unit. As a rough guide, one infantry strength point lost equates to one killed and two wounded.

Examples of unit strengths:

Infantry platoons	8 points	HQ Elements	4 points
Mortar platoons	1 per tube.	Artillery Batteries	2 per gun
Anti-tank sections	2 per gun	MMG Sections	2 per gun
Carrier platoons	4 sections each of 4 points.		

27. ARTILLERY RANGES

This is a guide to the main types in use. Note that when planning artillery fireplans, maximum range was taken as about 2/3 of the ranges given below.

British Weapons:

4.2" mortar	4,000m	3" mortar	2,600m
25pdr Gun/How.	12,400m	5.5" howitzer	16,600m
3.7" AA in fld role	14,600m	4.5" gun	20,000m
75mm pack how.	9,500m	7.2" howitzer	16,500m

U.S. Weapons:

155mm How.	14,800m	8" Howitzer	32,300m
105mm Fld M3	7,300m	105mm Howitzer	12,500m
81mm mortar M1	3,000m	75mm fld gun	8,900m

German Weapons:

15cm Inf How sIG33	4,800m	12cm mortar	6,100m
10.5cm Fld lFH43	16,500m	7.5cm Inf How IG18	3,500m
,, lFH18M	12,300m	,, IG37	5,200m
8.1cm Mortar	2,400m	8.8cm Flak as Fld	14,000m
7.5cm Mtn Gun GebG36	9,200m	10.5cm How GebG40	16,900m
7.62cm IK 290(r)	8,700m	Nebelwerfer	5,600 to 7,300m

General Weapons:	MMG/HMG indirect	2,000m
	Tank guns indirect	8,000m

29. MOVEMENT EXPLAINED

There is, in these rules, little attempt to reflect the minor technical differences between vehicles. Movement in these rules is perhaps more properly called 'rate of advance'. The distances allowed for movement already assume a great many minor obstacles, that would be impracticable to model on a normal wargame terrain model.

The practical distinction between non-tactical and tactical movement is self explanatory, as are the main unit types.

If it has not been defined already in the scenario, use the following table to determine the density of woods, rolling 1d6:

Score	Wood type
1-3	Open wood
4-5	Close wood
6	Forest

Obviously, the umpire can make different parts of the same wood of different densities, and there is no reason why players should be told the density of a wood without having conducted a terrain recce first.

Bocage, although not strictly woodland, does have some similar features. For movement purposes, you may like to define areas of bocage as the same as open woods.

30. AMMUNITION

This section of the rules is vitally important, and should not be discarded as being too difficult.

The following is a guideline of what a unit can hold under normal circumstances. This may be varied according to the scenario.

INFANTRY: In static, prepared position, 40 ammo units per company. In advance to contact, 20 per company.

MORTARS: 4 HE points, 1 illuminating and 1 smoke, if static or served by a vehicle. 2 HE, 1 illum and 1 smoke otherwise (per platoon).

ATk GUNS: If moved without vehicles, 4 units; otherwise 10 units per section.

TANKS: 8 normal shots, plus 1 smoke. HE/AP/MG ammo are all rolled into one to avoid really tedious record keeping. Of course, if you really want to have tedious record keeping......!

ARTILLERY: 10 HE, 1 smoke, 1 illuminating.

When working out your own ammunition scales for scenarios, use an approximation of 10 real rounds per ammo point.

31. RESUPPLY

Bombing up takes 30 minutes for infantry type units, or 60 minutes for tank or artillery units. Units may not move or fire during this time. These might be reduced pre-rata if full resupply is not required.

Carrying capacities:
Bren Carrier, 15cwt truck, 4 wheel wagon or equivalent. can carry:
12 units of infantry ammo
        or
4 units of mortar/Atk/Tank/Arty ammo

2 wheel carts/trailers or jeeps carry half the above.

A carrying party of 12 men can carry 4 units of infantry ammo or 1 unit of heavier ammo.

When calculating resupply is is not usually worthwhile spending too long on calculating exact stock levels of dumps and numbers of vehicles used in transportation, unless you have a player covering the logistics (which is an interesting game in itself).
In general ammunition was held in:

> 1. The units
> 2. Unit transport
> 3. Higher levels

For simplicity, assign ammo to the units as described above, and then assume that at battalion level there would be a dump to hold a complete issue for each unit in the battalion. This could be topped up from brigade which would have similar dumps for its subordinate units. For Allied armies, it is generally safe to assume that here is sufficient transport to move this ammunition.

NOTE: Infantry ammo is not expended in close assaults. This is on the assumption that the main weapons used are grenades and SMGs (and, of course, the bayonet), which would tend not to be used at other times. Also, even when units have run out of ammo as far as the rules are concerned (ie. they have ceased participating in a firefight), the men would probably have retained sufficient ammo to carry out a last ditch action in defence.

32. ADDITIONAL RULES

a. MECHANICAL FAILURES: Roll 1d10 per squadron per move that the unit is in woods or rough terrain. Score 0 for 1 KO to breakdown, 1 for a 'P' on one subunit (representing temporary breakdown).

b. ENGINEERS: An engineer platoon with special digging equipment can dig a company-sized 'dug-in' position in 30 minutes, or a 'deeply dug in' position in 3 hours. They are considered a non-tactical target when working. Engineers may demolish a bridge after 40 minute preparation. Bridging troops may construct a Bailey bridge in 40 minutes, or 90 minutes under fire (not including periods pinned or suppressed).

c. P.O.W.s   When units surrender, the surrender will be accepted by most troops. Exceptions (ie. SS etc) must be specified in the scenario.   If a unit takes more than 50% strength losses in taking a single enemy position, then there is a 1/6 chance that the surrender will not be accepted and the defenders killed ("Too late chum!").   Guards must be provided for POWs at a ratio of one strength point detached for every 8 strength points captured (or part thereof).

33. BIBLIOGRAPHY

There are thousands of books on WWII, and NW Europe in particular. Unfortunately, some of the best material is to be found in regimental and divisional histories, most of which were published just after the war, and which are now virtually unobtainable except through very good libraries or specialist booksellers (at specialist bookseller's prices!). The few books I have listed below, are a personal selection of those useful for background reading.

ALLEN Col R.S.	Patton's Third US Army - Lucky Forward
ANGUS T.	Men at Arnhem
BARON A.	From the City, from the Plough *
BELFIELD E. and ESSAME H.	The Battle for Normandy
BELCHEM Maj Gen D.	Victory in Normandy
BIDWELL S.	Gunners at War
CROOKENDEN N.	Battle of the Bulge 1944
CROOKENDEN N.	Dropzone Normandy
ELLIS J.	The Sharp End of War
ELLIS C. and CHAMBERLAIN P.	German Army Handbook 1939-45
ELSTOP P.	Warriors for the Working Day *
FORTY G.	US Army Handbook 1939-45
HORROCKS Sir B.	Corps Commander
HOWARTH D.	Dawn of D-Day
JOHNSON and DUNPHIE	Brightly Shone the Dawn
KEEGAN J.	Six Armies in Normandy
KIPPENBURGER Maj Gen Sir H.	Infantry Brigadier
LUCAS J. and BARKER J.	The Killing Ground - The Battle of the Falaise Gap, August 1944
McKEE A.	The Race for the Rhine Bridges
McKEE A.	Caen - Anvil of Victory
McNISH R.	Iron Division - The History of the 3rd Division
MONTGOMERY OF ALAMEIN	Normandy to the Baltic
RYAN C.	The Longest Day
SANDERS J.	British Guards Armoured 1944-45
TURNER J.F.	Invasion '44

* Fiction, but drawn from personal experiences of the authors.