

FIRE AND MANEUVER V.4.1



**INFANTRY SKIRMISH COMBAT IN
WORLD WAR 2**

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Fire and Maneuver

The Second World War saw many new innovations to combat: new weapons from jets to atomic bombs, new tactics and doctrine, and innovations which replaced many old traditions. But through it all, the infantryman remained the one indispensable item on the battlefield. Even with all the invention and innovation, without the individual doughboy, war still could not be won.

Fire and Maneuver is a 1 to 1 scale game recreating the ground combat of the War. No mass tank battles, no ship to ship combat on the high seas, no dog fights at 20,000 feet. Just men clawing their way through no-mans land to get to the enemy. Each figure represents one soldier, one tank, one gun. The Scale is small, one inch = 2 yards. The combat is fierce, even hand to hand. Each tactical move turn lasts only six to thirty seconds, but those few seconds can mean the difference between life and death, victory or defeat.

The game scale works best with 20mm figures (1/72 scale), but will work equally well with 15mm or 25mm. The included scenarios utilize from squads to full platoons. Larger games could be played, but a surface larger than 5x8 feet would be needed. The average table size for play is 5x8 feet, about the size of a ping pong table, however a 4x8 table can be used.

Materials needed are:

Playing surface

Terrain (trees, hills, buildings, etc)

Figures (axis and allied troops)

Dice (2 six sided, 1 ten sided, 1 four sided)

Paper, pens, pencils

The maps and charts in this game may be reproduced; in fact you should make copies to preserve the originals.



Game Setup

Before each game, the sponsoring player sets up the scenario, or the parameters of the game. This will include setting up the game table with terrain. A 4x4 foot table works well for small engagements, a 4x8 is better for platoon size engagements, or if there is armor.

Terrain can include buildings, roads, fields, streams, hills...whatever you have available. Be sure to arrange the terrain based on a map, so that both sides can have a copy of one, especially if there is to be hidden movement.

Next, choose the sides. The easiest way is to pit historical units against one another, either based on actual battles, or something you've seen in the movies or have always wanted to do. Construct units based on historical equivalents. For example, a September 1944 France game could involve a squad of American GIs (12 men) versus a German Panzer Grenadier squad (9 men by this point in time). Select miniatures based on your squads, making sure you have weapons representative of the time (The Americans would have 10 riflemen, 1 BAR gunner, and one NCO with either a rifle or SMG).

When setting up your squads, another important parameter to decide right off, is the level of their experience and training. These will affect their performance during the game compared to their enemies. The basic levels in ascending order are:

Experience:

Green
Average
Veteran

Training:

Basic
Average
Elite

Green troops are fresh out of training, and have not yet "seen the elephant" (been under fire). Average troops have been around some, and Veterans have seen it all. Veterans generally perform better in combat, although Green troops tend to ignore times when they should be diving for cover.

Basic troops are poorly or minimally trained, and are usually from countries that did not spend much time preparing for war, or their methods were faulty. Average, well, they are the common troops from most of the larger combatants, especially after the war has been going on for a while. And Elites, these are your Paratroopers, Commandos, Panzer Grenadiers, and Storm Troopers. They usually kick butt wherever they go.

Next step, is to set the conditions of the Scenario. Who starts where, what the victory conditions are, terrain values, move hinderances, etc. Just make sure it is possible for either side to meet its victory condition, no matter how bad the odds are, if the player makes the right decisions for his troops.

Lastly, set up the table, assign the figures, and have fun!

Turn Sequence

Players alternate moving and attacking, with the opponents able to react somewhat to attackers moves and fire at moving units or those firing on them. After one side completes its actions, the other side does the same.

The phases for each player during the turn are described as follows:

Morale Phase

Suppressive Fire Phase

Move / Spot Phase

Defensive Fire Phase

Combat Phase

Morale

Base to pass – 8 or less on 2d6

Morale is taken every time a unit or individual comes under fire. Initially, a unit's morale will be sufficiently high that the chance of failing morale is nil.

Morale is rolled before each movement phase for each unit, or each related group of individuals that are within 3 inches of each other. Armor crews act as a single unit.

Modifiers from the Tables are tabulated onto the Base, and die rolls made. If the number rolled is higher than the final modified number, consult the results below. There are six modifiers that effect morale that are based on troop quality. Three of them, Basic, Advanced, and Elite, refer to the persons or units training. Did they get through basic and ship out for the front, or did they get more advanced training (Elite is generally paratroops, rangers, etc)? The other three are Green, Average, and Veteran. This refers to the actual time in the field learning on the job. Both Training and Grade are recorded for each unit/group of figures. It is possible to have Elite trained troops who are Green (the 101st Airborne in Normandy). When troops are assembled in a unit (max 3" spacing between figures) the group rolls as one unit, with results applying to all figures in the unit.

If morale roll is failed by 1, unit holds position, can only move to cover or retire, can fire under orders.

If morale roll is failed by 2, unit holds position, can only retire, can only fire in defense.

If morale roll is failed by 3, unit falls back to nearest COVER. No firing.

If morale roll is failed by 4 or more, unit breaks. Vehicle Crews bail out.

*Unit applies to lone individuals when separated by 6 inches or more from his squad.

Suppressing Fire

Before a unit moves out, either part of the unit or supporting units may fire on enemy positions to attempt to suppress them, making it easier for the attacking units to achieve their goals.

Suppressing Fire is accomplished by either full auto fire, explosives such as grenades or artillery, or massed semi-auto fire (more than 6 figures firing at once). Suppressing fire from one machine gunner or 6 riflemen is directed at a 5 inch square area around a specific position. Included in the

rules is a 5" square template that marks out the area being suppressed. Any figures inside that 5" square takes a morale check as a group. Modify the Morale Base of 8 with modifiers on the chart that apply. If the unit fails, it is considered to be suppressed. All movement is halved, and fire takes the Suppressed modifier. Suppressed units must activate before moving or firing.

Suppression lasts the entire turn. If the Suppression Fire continues the next turn, the suppression continues. If the fire lifts, the unit no longer has the negative modifiers and rolls to break the suppression.

Suppressed Unit Activation

Base to Activate – 8 or less on 2d6

Units that are suppressed must first pass an activation roll to perform any action for the turn in which they were suppressed. Use morale modifiers from modifier chart. Roll during Morale Phase. If roll fails, unit does not activate. It cannot move, initiate attacks, or defensive fires. If attacked, the unit immediately rolls for morale.

*Suppressed means any unit under full auto or grenade/mortar fire. Units or figures within 1" of a grenade blast, or 3" of an HE explosion are stunned. A unit must be free from auto/grenade fire for a full turn to remove the suppressed hit. Stuns last for 2 turns after HE fire stops.

As an Optional Rule, it is possible to assign leaders a Leader Rating that applies toward the Unit Morale Roll, instead of using the general one on the Modifier Tables. This way, you could have a particularly good officer with say, a +3 rating, or a particularly bad officer with a -3 rating. A good idea if you wish to use this option is to assign leader ratings to all officers, NCOs, and senior enlisted; anyone who may be taking command. Otherwise, just use the standard rating.

Command Radius

For a unit to maintain its cohesiveness, the individual figures must remain within a specific distance of each other. For instance, for a squad to act as a unit, each figure must be within 3 inches of another figure. A 12 man squad could be strung out as much as 45 inches, with each figure 3 inches away from the other. If the distance exceeds 3 inches, then the figure is out of command radius, and acts independently for purposes of morale.

Movement

Figures are normally moved during the Movement Phase. The only exception to this is for units that fail Morale. Moral based movement takes place during the Morale Phase.

The move distances below are total distances for the Turn. If a figure is fired on during his move (Defensive Fire), it stops where the shot is declared by the opposing player. The defensive fire results are determined as per the Defensive Fire section. If the shot misses, the moving player may elect to finish his move up to the remaining move distance, but may also change his move direction and posture. The figure may take cover, run back the way it came, whatever the player wishes to do to use up any remaining movement.

Distances and Modifiers

Scale: 1 inch = 2 yards

Man Crawling	2 inches per turn
Man on foot stalking	3 inches per turn
Man on foot walking	5 inches per turn
Man on foot running	10 inches per turn
Standing to prone	-1 inch from total move distance
Prone to standing	-3 inches from total move distance
Cross waist high obj.	-3 inches from total move distance
Cross head high obj.	-5 inches from total move distance
Climb 10 feet	-10 inches from total move distance
Rough terrain	-1/2 movement from total move distance
Wade thigh deep	-2 inches per turn from total move distance
Wade chest deep	-3 inches per turn from total move distance
Climb thru opening	-4 inches per turn from total move distance
Moving uphill/downhill	-1/4 / +1/4 total distance

Using the move chits

In order to speed the game along, yet allow for accurate recording of how a player wishes to move his troops, chits are used to indicate a figure's stature, or move speed. Which ever is needed is placed face up down to the figure or group of figures, with the appropriate posture/speed facing the figures. The chits are placed before the start of the turn, and do not change until the next turn. The chits are flipped at the beginning of the Movement Phase. Figures must correspond to the placement of their chits. Figures are moved during the Movement Phase based on the chits. If a group of figures are making the same move, one chit may be used for the group.

Below is a sample. The two figures on the left are considered to be crouched by the tree due to the position of the chit next to them. The three figures to the right are running per the chit next to them.



Spotting

Base to Spot – 8 or less on 2d6

Before a unit may be fired on it must first be spotted. Spotting takes place during the Move/Spot Phase. A unit may roll to spot either before or after it moves.

In order to be spotted, the target unit must be within an open line of sight with the spotting unit. Any opaque obstruction such as a building, hill, or heavy patch of woods/foilage, will block line of sight, and spotting is not possible. Use the appropriate modifier from the Modifier Table to modify the Base to Spot.

If, while moving, a figure moves into the line of sight (LOS) of an enemy figure, the enemy player may tell the attacker to stop, and fire on the attacking figure. The enemy player must first roll to spot, to make sure he sees the attacker. If successful, the enemy player may fire on the attacker.

Modify the basic Spot roll with modifiers on the Tables. A score of the final number or less is successful.

- Stunned figures can't spot (see Artillery and Explosives)
- Full Auto Fire more than one Turn in a row from same location is automatic spot.

Spotting Maximum Ranges

Daylight:

Non-moving object/troops			
standing	---	36 inches	
prone	---	18 inches	
in cover	---	6 inches	
Moving troops - standing			
	---	50 inches	
	prone	---	24 inches
Moving vehicle		---	72 inches

Night time:

Targets at night can ONLY be sighted if they are within these ranges. If they are beyond them, spotting is not possible. These ranges also apply to figures inside smoke.

Non-moving object/troops			
standing	---	10 inches	
prone	---	2 inches	
in cover	---	1 inch	
Moving troops - standing			
	---	20 inches	
	prone	---	10 inches
Moving vehicle		---	40 inches

Combat

Base to hit – 6 or less on 2d6

When engaging in combat, players must designate which figures are attacking which enemy figures before combat begins. If several troops are allotted to fire at one enemy, but the first shot kills him, all remaining fire is still directed at the original target...fire cannot be changed to another target.

To fire at a target, start with the Base to Hit. Modify the base die roll from Modifier Tables. A roll to hit is made for each shot fired. Some weapons fire only one shot at a time, while others fire bursts. Rate of Fire is listed on Weapons Chart. The chart lists maximum number of shots fired per turn. Full Auto Fire is listed in Number of bursts fired/number of targets that can be hit within a specific area.

To fire single shot or semi-auto at target, tally all modifiers and use them to modify the Base to Hit number. If the modified number or lower is rolled, the target is hit and is out of action. Semi-auto weapons have a rate of fire of 2, so you roll once for each shot.

To fire full auto (SMGs and MGs), use the full auto template to determine which figures fall within the 2 inch square fire zone.

Roll once for each round in the burst, indicated by the first number in the Rate of Fire on the Weapons Chart.

A typical Rate of Fire is 3/3. The number to the left of the slash is the number of dice rolls are made. The number on the right is the number of targets inside the 2 inch square that CAN be affected. As an example, firing an SMG with a 2/3 ROF, you would roll twice to hit. Let's assume you hit twice, and there are four potential targets inside the square. You would roll randomly to determine which two were hit. Note, it is possible that only one target will get both hits, the other 3 being unaffected.

Note on the Basic Weapons chart below, there is a rating for Penetration. This is the Cover Factor that can be penetrated by that weapon at Short, Medium, and Long range. In the section on Tank and HE fire is the Cover Factor chart, showing the number that the weapon's Penetration has to exceed to get through and hit the target on the other side.

For example, a rifleman firing at someone behind a brick wall with a bolt action rifle. The brick wall has a Cover Factor of 3. Looking at the Penetration Factors on the Weapons Chart, you'll see the Bolt Action Rifle can penetrate 4 at short range. So, the round penetrates the brick wall at short range, and you roll to hit the target behind the wall.



Basic Weapons

Weapon Type	R.O.F.*	Ranges – Short /Med /Long			Penetration		
Revolver	1	3	8	13	2	0	0
Auto Pistol	2	3	8	13	2	0	0
Submachine Gun	2 / 3	10	25	40	2	0	0
Bolt Action Rifle	1	25	80	150	4	2	1
Semi-Auto Rifle	2	25	80	150	4	2	1
Carbine	2	15	35	75	3	2	0
Light MG	2 / 3	30	100	180	4	2	1
Medium MG	3 / 3	50	150	250	4	3	2
Heavy MG	2 / 3	100	250	350	6	4	3
Hand Grenade	1	5 (2)	15 (5)	30	2	0	0
Rifle Grenade (min range 15")	1	25 (2)	50 (5)	75	2	0	0

Ranges are in inches.

Grenades

Grenades do damage depending on distance target is from explosion. Numbers in parenthesis are ranges for blast radius. First, place a marker where you want the grenade to land. Then roll to hit the marker. If you hit, roll a hit die for each target in blast radius, short, and medium. Use only the to hit Modifiers with a **G** after them when throwing or launching a grenade, to determine if the grenade landed on target. Only one hit per target. When the grenade explodes, use hit modifiers marked with a **BL** on the chart toward the hit chance of figures within range being struck with fragments. Damage effects are +1 for short, 0 for medium, -1 for long. If Grenade toss misses target, roll scatter on this chart:

Weapon Type	Range	To	Target	Dice Used
	Short	Medium	Long	
Grenade	-2	0	+1	d4
Rifle Grenade	-1	0	+2	d6
Light Mortars	-1	0	+2	d6
Heavy Arty (75mm+)	-2	0	+3	d8

If you miss your target with a grenade, you must determine where it goes. After all, just because it misses, doesn't mean it won't explode! First, use the scatter hex and a d6 to determine which direction the round misses. Then, roll a die to determine how far in inches it travels in that direction. The number in the Short/Medium/Long column is the modifier in inches to the distance die for that range. The Dice Used is the die you roll. So, if your hand grenade misses, roll a d6 and compare the results to the direction numbers on the hex. Then, roll a d4 for distance, modifying the number rolled with the number in the Short/Medium/Long range columns based on the range the grenade was thrown.

Determine damage to exposed targets from this point. Roll for each figure in the blast radius, modifying the Base to Hit number with the modifiers marked **BL** on the modifier table.

- Anyone within short blast radius is stunned for one turn (no move/fire).
- Max Grenade Range for Prone is Short – Kneeling is Medium.
- Grenades are thrown in the fire phase, but detonate in the following move phase. This allows a player to try to dive for cover.
- Anyone in range of a grenade blast rolls for suppression.

Special Weapons Rules – due to their high rate of fire, the MG42 fires at a rate of 4 / 3.



FIRE AND MANEUVER MODIFIER TABLE

	Spotting	Combat	Morale		Spotting	Combat	Morale
Target Stalking / Tank @ 1/4 Speed	0	-1	0	Troops are Green	-1	-1 G	-1
Target Walking / Tank @ 1/2 Speed	+1	-1	0	Troops are Veteran	+1	+1 G	+1
Target Running / Tank @ Full Speed	+2	-2	0	Troops Training Basic	-1	-1 G	-1
Observer / Shooter Walking	-1	-1 G	0	Troops Training Elite	+1	+1 G	+1
Observer / Shooter Running	-3	-3 G	0	Grenade / Rifle Grenade at Small Target	0	-1 G	0
Observer / Troops in Cover or Tank Crew Buttoned	-1	0	0	Short Range (12" for spotting)	+1	+1 G BL	0
Target / Observer Prone	-2	-2 BL	+1	Medium Range	0	0 G BL	0
Target in the Open	+2	+1 G BL	-2	Long Range	0	-3 G BL	0
Target 3/4 Exposed	-1	-1 G BL	-1	Point Blank Range (under 3 inches)	0	+2	0
Target 1/2 Exposed	-2	-2 G BL	0	Target is Vehicle	+2	+2 G	0
Target 1/4 Exposed	-3	-3 G BL	+2	Night Firing	0	-2 G	0
Target Barely Exposed (bunker firing slit, peeking out window, etc)	-5	-5 G BL	+3	Subsequent Bursts of Full Auto (same phase)	0	-2	0
Target Firing	+5	0	0	Grenade Blast in Small Area (small room, foxhole, etc)	0	+1 BL	0
Each shot at same tgt from same position	0	+1 per turn	0	50% + Unit Intact	0	0	+1
Intervening Terrain	-2	-2 G	0	Less Than 50% Unit Intact	0	0	-2
Snap Firing	0	-2	0	NCO or Officer Present (see Op- Rule)	0	0	+1
Full Auto at Greater than Med-area)	0	-2	0	NCO or Officer Killed (within unit control area)	0	0	-2
Firer Using Scoped Weapon	0	+2	0	Under Grenade/Arty Fire	0	0	-2
Firer Covering Specific Area	0	+1	0	Armor Attacking/Supporting	0	0	-1
Aimed Fire	0	+2	0	Supporting Unit Within 10"	0	0	+1
Observer / Firer Suppressed	-3	-3 G	-2	No Friendlies within 25"	0	0	-2

G = These are the only modifiers to use for grenades, Rifle Grenades, and Mortar Fire
BL = These are the only modifiers to use for the effects of explosions (grenades, shells, etc)

High Explosives Attacks

When using High Explosive weapons like Mortars, Cannon, and Rocket Launchers to attack non-armor targets, use the combat tables as you would small arms. The HE Weapons table below gives ranges, blast radii, non-armor penetration factors, and damage modifiers. If the weapon hits its target, when modifying your chance to hit individual figures using the Modifier Tables, use only the combat factors that have a 'BL' after them.

Direct Cannon Fire Scatter

	Over 5-7	
Left 2-4		Right 8-10
	Under 11-12	

If a Direct Fire HE Attack misses, you must find where the shot went (scatter). Use the table to the left to determine scatter direction.

Once the scatter direction is determined, roll a 4 sided die at short range, 6 sided die at medium and long to determine how many yards off the hit is. Then consult the effect tables below to determine damage to troops in the area.

For vertical scatter (an Over or Under result), measure the height in inches to determine any hits on large structures. If the shot misses completely, it has no effect on troops.

Tank/Mortar/Artillery HE Effect

Effect from HE on troops is measured like grenade blasts. The blast radius table is consulted, and any figures inside the corresponding zone takes hits using the wound number. Mortar fire is read the same way, as is off board artillery. Penetration is for blast effect fragmentation only. Scatter for mortars and artillery is on page 5. First shot from mortars and artillery at a particular target is -1. Time needed to re-aim a mortar or direct fire gun is 1 turns for 50- 60mm, 2 turns for 75-105mm. Bazookas, Panzerfausts, and PIATs versus armor are covered in a later section.

Weapon Caliber	Range (Blast Radii)			Penetration*		
	Short	Medium	Long	Sht	Med	Lng
50-62mm	50 (2)	150 (5)	300	2	1	
75-82mm	150 (5)	250 (10)	400	3	2	1
88-90mm	200 (8)	400 (12)	500	4	3	2
105mm	300 (10)	500 (15)	700	6	4	3
Bzooka/ Pnzshrck	25 (2)	50 (5)	100	4	2	1
Pnzrfaust / PIAT	15 (2)	30 (5)	40	5	2	1

Non Armor Cover Factors

Earth	6**
Wood Fence / Wall	2
Brick Wall	3*
Stone Wall	4*
Concrete block wall	3
Reinforced Concrete	4*

*per foot thickness

** per two feet thickness

The factors to the left are protection factors for different building materials. If the weapon's penetration exceeds the factor, the round penetrates and can hit the soldier on the other side.

Melee

Base to hit – 6 on 2d6

When figures are in base to base contact in the Combat Phase, they are considered in melee. To determine the winner, modify the Base to Hit with the table below. If the hit number or less is rolled, the Attacker wins. If the hit number is exceeded, the Defender wins.

Whomever loses the Melee is considered hors de combat. No melee is possible unless at the same heights, and not through closed doors, windows, or hatches, any loopholes, or wall or fences higher than soldier's waist.

Melee Modifiers

- +2 / -2 Per additional Attacker or Defender
- +1 / -1 Crouching Attacker or Defender
- 2 / +2 Prone Attacker or Defender
- +3 Vs. rear of all defenders
- 3 / +3 Attacker/Defender stunned
- 1 / +1 Attacking up or down
- +1 / -1 Attacker/Defender has bayonet
- +1 / -1 Attacker/Defender Class lower



Land Mines

There are two basic types of mines; anti-tank, and anti-personnel.

Anti-Personnel are generally planted in “fields” covering areas of travel, creating a channel that enemy troops must pass through. These channels can be more easily covered by machine guns.

AP mines are listed by the density within the area they cover on the game board. Say, for example, a player is given a field 12 inches wide by 36 inches long, at a density of 2. A soldier walking through this field would have to roll a 2 on a d6 to step on a mine. He would roll for each turn that he is moving within the mine field. If a mine detonates, roll to hit on the Combat tables. Anyone within a 2" radius must roll for a hit as for a hand grenade.

Anti-Tank Mines

There are two basic types of Anti-Tank mines, Buried and Hand Placed.

The buried type, such as the German Teller Mine, were buried in fields along natural tank paths to immobilize armored vehicles. They will not be detonated by personnel walking over them. The procedure for these mines in the game is the same as AP mines. A "Field" is designated in a specific area according to the game scenario. This field designation includes the dimensions, location, and density of the field. As a vehicle moves into the field, the vehicle player rolls a six sided die. If the number matches the density number or less of the field, a mine is struck. For example, moving through a density 3 mine field, a player would have to roll a 3 or less to strike a mine.

A Buried AT Mine will always disable a tank. Once the tank is disabled, roll on the crew casualty, morale, and bail out tables using the same procedure as Anti-Tank guns. A lighter vehicle such as a jeep or truck would generally be destroyed. Use the same procedure for casualties and morale.

Another type of Anti-Tank Mine is the Hand Placed mine. This was your typical magnetic type, or the British "Sticky Bomb". These mines were hand delivered, requiring a soldier to get close enough to throw the mine, or actually place it on the tank. They utilized two types of charge, the High Explosive, and the High Explosive Anti Tank or shaped charge.

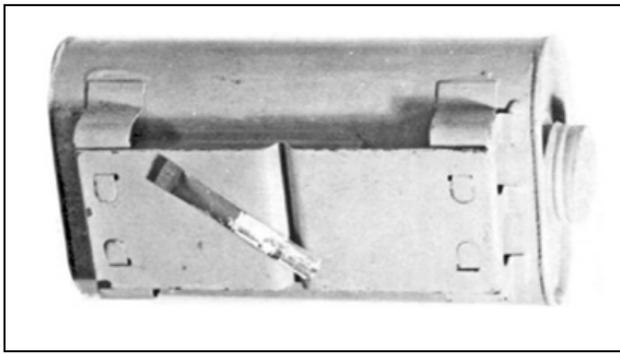
To hand place this type of mine, the figure will have to be able to get right next to the tank during one of the move phases. This will, of course, require that the tank be moving slow enough to do this, less than 10 miles per hour or 12 inches per turn. The figure need only be next to the vehicle for the duration of the single move phase to place the mine.

Once the mine is placed, it takes two move phases to detonate, allowing the soldier to leave the area. After two move phases, the mine explodes.

The HEAT mine explosion is treated the same as any other heat round, like a bazooka round. To determine the damage caused, treat the mine as a bazooka round on the Anti-Tank weapons table. Omitting the sections on hit location and angle, simply determine if the mine penetrates the armor thickness for the section it is placed upon, assuming a 90 degree angle hit.

The High Explosive mine explosion is generally non-penetrating. The damage it causes is by causing items inside the tank to be thrown about at a high speed due to the over-pressure. This will cause damage and injury to anyone in the way. Treat these types of explosions like a grenade or artillery round explosion for the crew inside, or the engine / mechanical systems. Roll for hit and then location for each crew member inside to see if they are affected.

To determine the effect on the vehicle, roll on the Penetration Effect table on page 13. Once the damage to crew and vehicle are determined, roll for morale and bail out as usual. These types of mines will not affect vehicles with more than 50mm of armor on the location attacked.



A British Hawkins anti-tank mine. This type utilized a high explosive charge.

Another way to deliver a Hand Delivered mine is to throw it. Several types, including the British "Sticky Bomb", were designed to be thrown at a vehicle, allowing the user to maintain a safe distance from the target. Some of them had time fuses, others detonated on impact. Some used shaped charges, some used high explosives.

The only difference in using these types of mine as opposed to the type you actually have to place on the vehicle, is now you have to hit a moving or non-moving vehicle. Treat this added factor as if you were throwing a grenade. Factor in all the modifiers, including the movement of

the target. If a hit is scored, determine the location on the hit location tables on pages 12 and 13. The effects are the same as the above type of mine.

Flame Throwers

One of the most feared weapons of World War Two was the flame thrower. A weapon of incredible destructive power, intended targets could almost be guaranteed of a horrible, inescapable death.

The problem with the weapons were their lack of range, limited number of shots, and vulnerability of the operator. Use of the weapon is as follows:

Range	Short	Medium	Long
	5 inches	15 inches	25 inches
	none	5-10 inches	3-15 inches

The flame thrower throws a burst of burning fuel one half inch wide, and can be sprayed two inch width per shot. Since this stream of fuel is not like a laser beam, traveling in a straight line, but rather arcs toward it's target, there is a "dead zone" between the target and shooter that may allow individuals to escape it's terrible effect. This dead zone is noted in the above range table. The dead zone for medium range is between 5 and 10 inches. So if a soldier is crouched or prone within that dead zone, he will not be hit by the stream. There is no dead zone for Short Range. Any figures in the spray zone is KIA.

The flame thrower has a maximum of six shots of fuel, which can be used either as six individual shots, several shots of different lengths that add up to six, or one long six shot burst. The area of coverage depends on how many shots are used per turn. For instance, firing a burst of three shot equivalent will cover an area 6 inches across. The depth covered by any shot is two inches. Any soldier falling within the killing zone of the flame thrower is dead...period. No to hit rolls, or hit effect rolls are needed. It is instant death. This includes personnel inside pill boxes, bunkers, houses, soft vehicles, and open armored vehicles.

Now for the bad news. Carrying around a flame thrower was just as dangerous for the operator as it was for his victims. Oftentimes when hit by rifle fire, the flame thrower would explode, killing the operator and anyone close by. To reflect this, follow these rules:

When the operator receives a torso shot from the front, a flame thrower will detonate on a roll of 6 on 1d6.

When the operator receives a shot from the side or rear, a flame thrower will detonate on a roll of 4-6 on 1d6.

If the unit detonates, the operator and anyone within three inches of him is dead. Period.

Armor Combat

Tanks and halftracks play a small role in Fire and Maneuver, mainly acting as support elements. Too many tanks on such a small battlefield would quickly bog down. So, the Armor Combat system is balanced for a few vehicles on the field at a time.

Armor Moves, Spots, and Fires in the same sequence as the infantry turns. Included in the rules are several typical vehicles from the various fronts. More vehicles will follow later.

Included in the Armor Profiles for each vehicle is the weapon type, the thickness of armor it can penetrate, and the vehicles armor thickness at the different locations. When engaging a vehicle, the steps to complete are:

1. **Roll to Hit** - modify the base with the appropriate values from the Armor Modifiers Table
2. **Roll Hit Location** - determine where on the vehicle the shot hit using the Location Table
3. **Check for Penetration** - First, does the guns penetration factor exceed the vehicles armor thickness? If no, the shot bounces off. If yes, roll for penetration.
4. **Roll for Penetration** - Modify the base to penetrate with values from the Penetration Table.
5. **Roll for Effect** - basic roll on the effect table with modifiers for location and weapon type.

Once the Effect is determined, check to see if the crew suffered casualties, rolling for each crew member using the standard combat hit system.

After Crew casualties are determined, if the vehicle is burning, you must determine if any survivors successfully bail out. Consult the bail out table.

Armor Base to Hit - 6 on 2d6

Modifiers: use in addition to basic combat charts

Vehicle size modifier: see vehicle charts

Hit Location

First, use the Angle Wheel to determine the angle of the shot. Roll for location. For 90 degree shots, use the columns for the appropriate vehicle; half track, tank, or assault gun. If the shot is from either the Rear/Side or Front/Side, roll a second die to determine whether the shot hits on the rear or front, or hits the side (either front or rear side).



The Angle Wheel

The Angle Wheel is used to determine the angle of the incoming shot. Place the wheel over the target vehicle, then trace the line back to the shooter. Read the angle on the wheel.

die roll	Half Track	Tank	Assault Gun	Rear/Side	Front/Side
1	track / tire	track	track	rear	front
2	track / tire	lower hull	lower hull	rear	front
3	lower hull	upper hull	lower hull	rear side	front side
4	lower hull	upper hull	upper hull	rear side	front side
5	upper hull	turret	upper hull	rear side	front side
6	upper hull	mantlet	mantlet	front side	rear side

Penetration

Once a round hits, it must penetrate. First, check the maximum penetration on the vehicle or gun chart, and compare it with the armor thickness on the vehicle chart for the area hit. If the weapon penetration exceeds the armor thickness, the shot **can** penetrate. Now roll to see if it does.

Base to Penetrate – 8 on 2d6

Modifiers:		Range – less than 100 yards	+1
		more than 100 yards	0
Angled shot – each 30 degrees	-1	Gun Penetration exceeds Armor	
Armor angles – each 30 degrees	-1*	thickness – each 25 percent	+1

Penetration Effect

If the round penetrates, roll on the table below to see the effect. Roll one die for effects, using the particular section hit. Check the weapon on the Vehicle Tables to determine any modifier. **Track hits always disable the vehicle.**

die roll	Lower Hull	Upper Hull	Turret	Gun Mantlet
2-4	tracks disabled	drive train disabled	turret disabled	turret disabled
5-6	tracks disabled	fuel / hydraulics fire	gun disabled	gun disabled
7-8	drive train disabled	turret / gun disabled	fuel / hydraulics fire	gun disabled
9	drive train disabled	turret / gun disabled	gun disabled	gun disabled
10-11	fuel / hydraulics fire	ammo fire / explosion	ammo fire / explosion	ammo fire / explosion
12	ammo fire / explosion	total brew up	total brew up	total brew up

Crew Effects

Use the standard combat chart and modifiers to determine if each man has been hit, just like any other explosive hit (grenade, mortar, etc). Remember to only use the modifiers followed by a BL.

Crew Morale

Roll for the vehicle as a unit using the standard morale rules. If the crew bails out, they may return to the vehicle later if it is not destroyed.

Whenever a vehicle is hit, the crew must check morale to see if they stay with the vehicle. Otherwise they must make their bailout roll to escape. There are no modifiers to this roll.

Bail Out Table

Hit Location	Unit Bailing Out		
	Tank Crew	Open Veh Crew	Transported Troops
Track	auto	auto	auto
Lower Hull	8	9	10
Upper Hull	6	7	8
Turret	4	5	6
Mantlet	5	6	6

Open vehicles include SPGs, Halftracks, and Tank Destroyers. Transported troops are either in trucks, or riding on the outside of a tank.

Anti-Tank Weapons vs. Armor

Gun Name	SA mle 34	SA mle 37	QF 2lb	PaK36	FlaK36	M1 / 6 pdr
Caliber	25mm	47mm	40mm	37mm	88mm	57mm
Country	France	France	Great Britain	Germany	Germany	GB / USA
In-Service	1934	1938	1939	1928	1933	1942
Ammunition	AP	AP	AP	AP & HE	AP & HE	AP & HE
Rate of Fire	1	1	1	2	2	2
Deploy Time	1 turn	1 turn	10 turns	1 turn	10 turns	5 turns
Re-aim Time	1 turn	2 turns	2 turns	2 turns	3 turns	2 turns
Traverse	68°	60°	360°	60°	360°	90°
Traverse Speed	90° / turn	60° / turn	90° / turn	90° / turn	45° / 2 turns	60° / turn
Penetration						
100m	35mm	57mm	54mm	35mm	98mm	69mm
500m	29mm	50mm	46mm	29mm	93mm	60mm



Gun Name	M3A1	M1A1 RL	PIAT	RpZb54	Pzrfaust 30K	Pzrfaust 60
Caliber	37mm	2.94"	4"	4.4"	3kg	6kg
Country	USA	USA	Great Britain	Germany	Germany	Germany
In-Service	1936	1942	1941	1943	1943	1944
Ammunition	HE & AP	HE & AP	HE,AP, SMK	HE & AP	AP	AP
Rate of Fire	2	1/2	1/2	1/2	1	1
Deploy Time	2 turns	1	1	1	1	1
Re-aim Time	2 turns	1	2	1	2	2
Traverse	90°	na	na	na	na	na
Traverse Speed	90° / turn	na	na	na	na	na
Penetration						
100m	53mm	100mm	100mm	150mm	150mm	200mm
500m	45mm	na	na	na	na	na

Vehicle Movement

The speed of a particular vehicle is listed on the vehicle chart. Speeds are measured in inches per turn, listed on the charts as the maximum off road and on road distance the vehicle can move in a 6 second turn. Vehicles can move up to this distance. Movements of vehicles are handled just like leg units. Vehicles accelerate at a rate of 25% of their move distance per turn.

Movement on muddy roads is considered off road.

The vehicles acceleration rate lists how fast a vehicle can accelerate in a turn. Acceleration must be noted on the order sheet just as firing, stopping, turret turn, or any other movement.

A vehicles turning ability is listed as the maximum amount of a circle the vehicle can turn in one 6 second turn. All vehicles must slow to no more than half speed in order to turn. Trying to turn at a faster speed will result in loss of control, and a possible crash.

Vehicles that move through rough terrain such as heavy woods, boulders, dragon's teeth, or crash through buildings, stand a chance of throwing a track. This will immobilize the vehicle. Vehicles may move no more than 2 inches when crashing through trees, walls, or buildings. More than this and the player must consult the track thrown table to see if he disables his vehicle.

Track Thrown

Whenever a vehicle goes through rough terrain faster than half speed, there is a chance of damaging the tracks or wheels. Consult the appropriate table for the vehicle involved. A roll of greater than or equal to the required number means the vehicle is disabled. It will not be able to be repaired during the game.

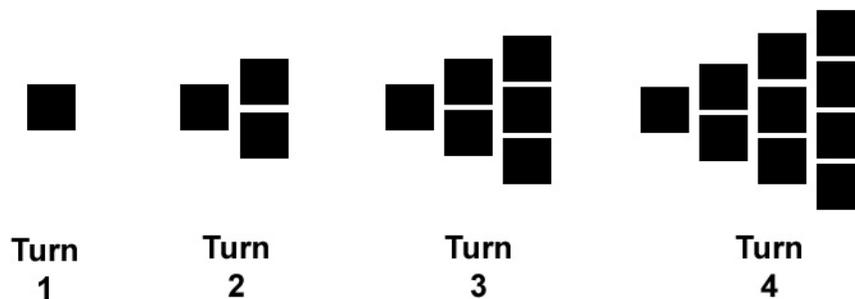
Terrain	Track Thrown	Tire Damaged
rough plowed field	12	12
rocky plain or rubble	12	11-12
tree stumps	11-12	9-12
fallen trees	9-12	8-12
ruins	8-12	6-12
solid wall or building	7-12	na

Add 1 to the die roll for each 5 inches above half speed.



Smoke

Smoke screens can be formed from grenades, mortars, tank guns, or artillery/cannons. The basic unit size of a smoke screen is 3 inches square. When a shell or grenade first bursts, it creates an area of smoke 3 inches square. As each turn passes the size of the cloud increases down wind. For example; the first turn there is a 3 inch cloud of smoke. At the beginning of the next turn the cloud grows to 3 inches at the base, 6 inches wide down wind, and 6 inches deep (forming a cone radiating out from the original point of bursting). The next turn the cloud is 9 inches across and 9 inches deep down wind (still 3 inches at the base). This continues until the cloud dissipates. A smoke cloud from a grenade up to a 60mm round lasts 4 turns. One from a larger shell lasts for five turns. See the illustration below.



Optional Rules

Ammo Capacity – This involves a lot of book keeping, but if you are up to the task, this will add some realism to the game. On the troop sheet, or armor card, record the ammunition capacity of the weapon involved (capacities can be found in the Weapon Data Charts). Each time the weapon is fired, subtract the amount of rounds fired. Once the magazine or box is empty, time must be taken to reload the weapon. The amount of time required is on the Weapon Data Charts.

Boxcars Can Kill You – this is a slightly different way to add some realism in the heat of battle. Basically, every time you roll a 12 on the to hit roll, something goes wrong with the weapon. It either jams, or you run empty, or you need a barrel change, or something. What happens is not specific, it doesn't really matter for purposes of the game. Suffice to say the weapon is down. How long it is down depends on a **1d6** roll. The affected player secretly rolls a die (be honest, now), and that number reflects how many turns the weapon is down. Now your opponent has to wonder, is it safe to attack, or will he be operational before I get there?

For grenades, mortars, cannon, the boxcars do not effect the original hit chance, the rounds still hit. Boxcars on these rounds signify duds.

Semi Auto Suppression – One of the advantages of semi automatic weapons is a high rate of fire. If that rate is concentrated on a single target, that target can be suppressed *if* enough rounds are thrown that way. If a player can concentrate at least six rounds within a 5 inch frontage (the same as full auto spraying fire), troops within that five inches will be suppressed the next turn. The chance to hit is reduced by 3, the same as spraying.

Grenade-Ball -- Hollywood has often shown troops grabbing live grenades that have landed near them, and hurling them back at the enemy. In spite of the film image, this actually did happen on occasion, but was a very dangerous proposition. But, consider the alternatives. If you wish to incorporate this rule, here's how it works...

First, the grenade must be spotted coming in to attempt: a grab, and must be within 1 inch of the figure attempting. There are two options available:

pick up a grenade - as fire phase action, roll 2d6

- 2-3 aimed throw at any target
- 4-5 un-aimed toss; roll dice for skew and distance
- 6-10 normal detonation, roll for hits as normal
- 11-12 explodes in your hands - kills grenade catcher and resolves normally

jump on grenade -

- 2-4 absorb entire blast - KIA, but no one else affected
- 5-6 roll 2 hits on jumper, increase range by one for to hit roll on for all other figures in range
- 7-10 normal detonation
- 11-12 jumper KIA, normal affect on other figures

Shotguns – Shotguns were popular primarily in the Pacific Theater, where they caused massive injury at close ranges, and were very effective at breaking contact in patrol ambushes. Most of the shotguns used were of the same pattern, even though there were several makers. They were typically of a "riot gun" pattern, pump action with 20 inch barrel. Sometimes they were equipped with a bayonet mount. They held 5 shells in the tubular magazine under the barrel. Shotguns in Fire and Maneuver are particularly deadly at point blank to medium range, where the multiple pellets of buckshot rounds dealt a massive blow. Shotguns were relatively rare on the battlefield, so don't equip entire squads with them.

Weapon Type	R.O.F.*	Ranges			Penetration		
		Short	Med	Long	Short	Med	Long
12 Ga. Pump shotgun	2	4	12	25	1	0	0

As the shot travels down range, the pellets spread out, increasing the chance of hitting more targets. Place the shotgun template along the line of fire. Targets within the template must roll to be hit.

At Point Blank Range, roll one hit roll against one target only. At Short Range, roll to hit up to two targets, at Medium and Long Range roll once to hit one target. This accounts for the spread of the buckshot as it travels downrange.

Japanese Morale - Japan's Bushido Code did not allow for surrender. To do so was the ultimate dishonor. In fact, until Okinawa in April of 1945, there were never significant numbers of prisoners taken on any of the islands invaded. It would not be uncommon to wipe out an entire garrison of thousands of IJA troops. By Okinawa, many Japanese soldiers began to see the futility of continuing the war, and a record 1200 (out of 110,000) surrendered.

To reflect this fanatical devotion to duty, use the following morale failure results:

Japanese troops subtract 2 from their die roll when rolling morale.

If morale roll is failed by 1, unit holds position, continuing to fire at opponents. No movement allowed.

If morale roll is failed by 2, unit rushes enemy position if within running distance. Otherwise he holds position. Fires normally.

If moral roll is failed by 3, unit charges nearest enemy, disregarding any cover or concealment. Does not stop to fire, but is intent on closing to bayonet range.

If morale roll is failed by 4 or more, unit commits suicide with grenade or rifle.

Good Commander / Bad Commander – leader quality can often effect how well a unit does in combat. This rule should be used on a scenario by scenario basis, and is simple to use. If a unit (squad, platoon) has a good commander, that unit never has to test for actions while suppressed. This commander is so good, so inspiring, the men will follow him into hell. If the unit has a bad commander, he is so inept, so indecisive, that the unit must make a suppression action check **each turn** just to see if they even act.

Initiative -- occasionally you may find the need to find out who moves first in a given situation, especially if you are using map/hidden movement. You may have a situation where two groups round a corner and bump into each other. Who shoots first? Well, if one of the units is flanked, then the flanking unit reacts first. If it's a face to face encounter, then compare the Training/Experience ratings of each unit. The unit with the higher ratings goes first. I.E., a Veteran / Elite unit will win out over anything lower, such as a Green / Elite, or a Veteran / Basic unit. If both units happen to be identical, each player should roll a die, high die moves first.

Vehicles Boggging – as the Germans found out in Russia in winter 1941, driving through mud is not fun. It can not only ruin your day, but it can slow down, or even halt, an offensive. To reflect this, this rule allows for the chance of a vehicle to get stuck in the mud, a creek, or just through thick woods.

Each of these conditions is scenario driven, and when designing a scenario, be sure to put the types of terrain, along with the chances to bog, into the scenario. The procedure is simple; for up to every 4 inches of travel through boggy terrain, the vehicle must roll to bog. If the roll is failed, the vehicle becomes stuck and may not move at all. Attempts to free the vehicle may be made in the following turns, rolling to pass the bog chance for each 4 inches attempting to move. If a bog chance is failed three times, the vehicle is stuck fast and needs recovery to be extracted. The basic bog chance on 2d6 is as follows:

TERRAIN	CHANCE	MODIFIERS	ADD TO ROLL
thick mud	12	Lt Armor, thin tracks	+2
snow	12	Med/Hvy Armor, thin tracks	+3
heavy undergrowth	12	Lt Armor, wide tracks	+1
ford / stream bed	11-12	Med/Hvy Armor, wide tracks	+2
		wheeled softskin	+3
		half track	+2
		motorcycle	+3

Hidden/Map Movement – Something that can add to the realism of any game is the ability to hide troops from your opponent. To accomplish this, you generally need one of two things;

An opponent you can trust to not be “creative”

Or

A Referee for the game.

If you have access to either of these, you can utilize hidden / map movement for your game. All you will need is a copy of the scenario map for each player to mark the starting points of troops. This will help with line of sight as well, and the map can be used to mark hidden movement. To mark hidden movement, use a gridded sheet for the map, so the grids can help with transferring move distances to the map. Each turn players will mark hidden movement on the map, noting the final postures of troops at the end of the move. The map is then given to the Referee, who compares the moves and announces any points where spotting is possible. The players then roll for spotting. Units that are spotted are put on the table, otherwise units stay hidden. It’s possible for one player to spot his opponent, without being spotted himself. This can allow for some very interesting encounters.



Appendices

Weapons Charts

Weapon	Nationality	Type	Caliber	Ammo Cap	Available
M1903	USA	Bolt Action	.30	5	1907
M1903A1	USA	Bolt Action	.30	5	1921
M1903A3	USA	Bolt Action	.30	5	1942
M1903A4 (sniper)	USA	Bolt Action	.30	5	1942
M1 Garand	USA	Semi Auto	.30	8	1936
M1 Carbine	USA	Semi Auto	.30 (short)	15	1941
M1928A1 / M1A1	USA	Submachinegun	.45	20 / 30	1928 / 1942
M3	USA	Submachinegun	.45	30	1943
M50 Reising	USA	Submachinegun	.45	20	1941
B.A.R.	USA	Light MG	.30	20	1918
Johnson LMG	USA	Light MG	.30	30	1941
1919 Browning	USA	Medium MG	.30	250	1919
1917 Browning	USA	Medium MG	.30	250	1917
M2 Browning	USA	Heavy MG	.50	200	1921
Revolver, Colt/Smith	USA	Revolver	.38	6	1895
Revolver, Colt/Smith	USA	Revolver	.45	6	1917
Pistol, Colt	USA	Pistol	.45	7	1911
M1A1 Bazooka	USA	Rocket Launcher	2.94 inch	1	1943
M9 Bazooka	USA	Rocket Launcher	2.94 inch	1	1944
M2 Brandt	USA	Mortar	60mm	1	1941
K98	Germany	Bolt Action	8mm	5	1898
G3	Germany	Bolt Action	8mm	10	1943
MP44	Germany	Assaut Rifle	7.62mm	30	1944
FG42	Germany	Semi Auto	7.62	20	1941
MP40	Germany	Submachinegun	9mm	32	1940
MG34	Germany	Light MG	7.62mm	250	1938
MG42	Germany	Medium MG Spec	8mm	250	1942
P08 Luger	Germany	Pistol	9mm	8	1908
P38	Germany	Pistol	9mm	8	1938
Panzershreck	Germany	Rocket Launcher	3.5 inch	1	1944
Panzerfaust	Germany	Rocket Launcher	4.5 inch	1	1943
SMLE	England	Bolt Action	.303	10	1895
P14 Enfield	England	Bolt Action	.303	5	1914
Bren Gun	England	Light MG	.303	30	1936
Sten Gun	England	Submachinegun	9mm	32	1941
Lewis Gun	England	Light MG	.303	75	1914
Vickers Gun	England	Medium MG	.303	250	1898
Webly	England	Revolver	.38	6	1898
Browning Hi Power	England	Pistol	9mm	13	1935
PIAT	England	Rocket Launcher	3.5	1	1942

Weapon	Nationality	Type	Caliber	Ammo Cap	Available
Type 38	Japan	Bolt Action		5	1906
Type 44	Japan	Bolt Action		5	1911
Type 99	Japan	Bolt Action		5	1939
Type 11	Japan	Light MG	6.5mm	30	1922
Type 96	Japan	Light MG	6.5mm	30	1936
Type 99	Japan	Light MG	7.7mm	30	1939
Type 92	Japan	Medium MG spec	7.7mm	30	1932
Taisho 14 Nambu	Japan	Pistol	8mm	8	1930
Type 26	Japan	Revolver	8mm	6	1896
Type 100	Japan	Submachinegun	8mm	30	1940
Moisin Nagant 91	Russian	Bolt Action	7.62mm	5	1891
Moisin Nagant M44	Russian	Bolt Action	7.62mm	5	1944
Tokarev SVT40	Russian	Semi Auto	7.62mm	10	1940
Ppsh41	Russian	Submachinegun	7.62mm	35 / 71	1941
PPS43	Russian	Submachinegun	7.62mm	35	1943
Pulemyot DPM	Russian	Light MG	7.62mm	47	1928
Pulemyot Maxima	Russian	Medium MG	7.62mm	250	1910
SG43	Russian	Medium MG	7.62mm	250	1943
Nagant	Russian	Revolver	7.62mm	7	1895
Tokarev TT33	Russian	Pistol	7.62mm	8	1933



Explanation of Modifiers

Target Stalking / Tank @ 1/4 Speed Target Walking / Tank @ 1/2 Speed Target Running / Tank @ Full Speed	Used for Shooting at a target, or trying to spot one. The faster a figure moves, the harder it is to hit, and easier it is to spot
Observer / Shooter Walking Observer / Shooter Running	Also used for spotting or shooting, these apply to the spotter/shooter. These two apply to grenades, mortars, and rifle grenades, as well as small arms and spotting.
Observer / Troops in Cover or Tank Crew Buttoned	For spotting use only, cover is anything big enough to hide behind that will deflect bullets.

<p>Target / Observer Prone Target in the Open Target 3/4 Exposed Target 1/2 Exposed Target 1/4 Exposed Target Barely Exposed Target is Vehicle</p>	<p>These take into account position and terrain features. Used for spot/fire/morale, they also apply to hitting with grenades, and blast damage. Target / Observer prone applies to both if both are prone. Barely exposed takes into account troops inside pill boxes, vehicles, and other structures where they would be looking through eye slits or embrasures.</p>
<p>Intervening Terrain</p>	<p>Intervening Terrain applies for each item of terrain in the way, i.e. clumps of bushes, stands of trees, walls or buildings, or rises.</p>
<p>Troops are Green . Average, Veteran Troops Training is Basic, Advanced, Elite</p>	<p>Troop morale ratings. There are two types, training and experience. Green, Average, and Veteran applies to experience. Basic, Advanced, Elite to training.</p>
<p>Grenade / Rifle Grenade at Small Target</p>	<p>A small target for Grenades would be a window, foxhole, etc.</p>
<p>Short Range (12" for spotting) Medium Range Long Range. Point Blank Range (under 3 inches)</p>	<p>Short range for spotting is a set 12". No other ranges apply to spotting only. Ranges are listed on the basic weapons charts.</p>
<p>Night Firing Target Firing</p>	<p>Night Firing...shooting in the dark! Target Firing is for spotting only, when someone shoots, they are easier to spot.</p>
<p>Firer Covering Specific Area</p>	<p>Covering a specific area is just that, a specified spot, not general area. A specific area is measured as a wedge 20 degrees wide spreading out from the front of a figure. It includes all areas inside that wedge unless LOS is interrupted.</p>
<p>Snap Firing</p>	<p>Snap firing is when a figure fires at a moving enemy.</p>
<p>Aimed Fire</p>	<p>Aimed fire is when time is taken to aim. Only one shot every other turn allowed if aiming. If a figure is aiming, place a Reticule Chit on the figure until it fires.</p>
<p>Subsequent Bursts of Full Auto</p>	<p>Full auto fire is less accurate if it continues on the same target over two or more turns in a row.</p>

Full auto fire is less accurate if it continues on the same target over two or more turns in a	Full auto at ranges greater than medium is also less accurate.
Each shot from same position	Shooting from the Same Position at the Same Target adds to accuracy. Target and shooter must not change positions, and there must not be turns in between shots.
Firer Using Scoped Weapon	Specialized troops with sniper rifles could be very accurate
Grenade Blast in Small Area	Grenade Blast in Small Area, like a room or foxhole, will do more damage. This applies to any explosion
50% + Unit Intact Less Than 50% Unit Intact	If a unit is half intact or more, or falls below half strength, this will affect their morale.
NCO or Officer Present NCO or Officer Killed	If the unit leader, whether an officer or NCO, is with the unit, the unit morale will benefit. If the unit leader, whether an officer or NCO, is with the unit, or is killed or downed by fire, the unit morale will suffer.
Under Grenade/Arty Fire Observer / Firer Suppressed	Explosives within hitting range will suffer negative effects. Also, units or troops suppressed by small arms or explosives will suffer.
Armor Attacking/Supporting	Having armor with you, or against you, will contribute to morale, either in a good way or a bad. Counts for each unit within 10".
Supporting Unit within 10" /No Friendlies within 25"	Having supporting units will also help. If are no supporting units within 25", morale will suffer.

Examples of Play:

Morale.

Morale is the first phase of a turn. It must be consulted whenever a casualty is taken, a unit or individual is fired on by small arms, machine guns, grenades, or mortars, or when the unit commander is killed.

The procedure is simple. If a group of soldiers is together as a unit, i.e. each figure is within 3" of another, morale is taken for the entire unit. If a figure or two is out of contact, i.e. greater than 3" away, only those figures are affected. The base chance to pass morale is 8 on 2d6. Modifiers are added or subtracted from the Modifier Tables. When the dice

are rolled, if the roll is higher than the modified number, morale has failed. What the unit or soldier does from this point depends on how bad the failure was. The morale section explains the effects of failure.

If a unit fails morale by less than 4, they can rally the next Morale Phase by successfully rolling the morale roll. An officer or NCO is not needed in this case.

If a unit fails by 4 or more, the unit breaks, and only an officer or NCO with the unit can rally them. The officer or NCO can join the unit as it breaks, or be part of the unit. The unit will continue to run away at 10" per turn until it rallies, or leaves the board. If it exits the board, it is out of play for the game.

Let's see how it looks:

A group of four Italians has just been fired on, with the Sgt and one other man killed. The remaining two hit the dirt. The modifiers used would be:

- Target Prone +1
- Target 1/2 Exposed +-0 (luckily, they each dove behind a tree, covering ½ their body)
- Troops are Green -1
- Troops Training Basic -1
- 50%+ Unit Intact +1
- NCO or Officer Killed -2
- No Friendlies within 25" -2

Total Modifiers for the Italians Morale: -4

The Italians would have to roll the base 8 minus the modifier 4, or a 4 or less, to pass Morale. If they roll more, they fail and consult the failure results based on how badly they fail the roll.

Movement.

Fire and Maneuver 4 uses alternating movement, each side taking it's actions, then the next side. Each turn is broken up into five phases; first is morale. After Morale is the Suppressive Fire Phase, where the moving player can first select troops to lay down fire to try to suppress the enemy so they may not fire at moving troops.

Next is the move/spot phase, where movement takes place, and attempts are made to spot the enemy. You either spot then move, or move then spot. If you try to spot after movement, modifiers can apply.

Next is the Defensive Fire phase (which coincides with the Move/Spot Phase), where defending units may fire at attackers who move into their field of fire, even if this happens in the middle of the movement. Units that have been suppressed fire at a reduced effectiveness, or not at all.

The Combat Phase is next, where all combat by the attacker is resolved.

Let's concentrate on the movement phases.

First, the Move/Spot phase; a squad of American Paratroopers is moving together through a wood, looking out for Germans. Since the squad is together, all within 6" of

each other, they move as a unit rather than individuals (although it's not necessary to move all of them at once). So, the American player has pre-marked his move intentions by placing chits face down to mark postures and move speeds. At the beginning of the turn, the chits are flipped to reveal movement/posture. In this case all the men are up and moving at a stalk (a slow, low, cautious walk, looking out for trouble). The GI's are moved 3 inches, the stalking move rate.

Meanwhile, there are two German sniper teams watching them. The A team is well concealed, and the German player has marked them to stay put. But the B team is in a bad spot, and has no LOS to the Americans.

The German A Team tries to spot the Americans. Clear lines of sight are checked, and the modifier chart is consulted for all that apply. These will be added to the base of 8. As the Americans are stalking, their chances of spotting are lowered, whereas the chance of being spotted are higher, despite some intervening terrain.

The modifiers for the Germans to spot are:

- Observer Not Moving+-0
- Target Stalking +-0
- Target in the Open +1*
- Intervening Terrain -2 (in this case there are trees and shrubs in between the groups)
- Troops are Veteran +1**
- Troops Training Elite +1**
- Long Range +-0
- The total modifier result is : +1

The Germans would have to roll the base 8 plus the modifiers 1, or an 9 or less, to spot the Americans Stalking.

The dice are rolled, and the Germans spot the stalking Americans, now halfway through their move.

The Germans who spotted them opens fire during the Defensive Fire Phase, choosing as a Target the Squad Leader. He misses, but now the Americans have a better chance of spotting them as the Target Firing (+5) modifier is added to their tally.

If a figures movement takes it only briefly into the enemy's Line of Sight, the enemy player may elect to try to spot them, and take a snap shot at them on the move. An example of this is shown later on page .

A note on hidden movement. Whether or not you have a referee, keeping track of the location of static units, or of the movement of hidden units, is a good practice. Detailed move maps will prevent arguments as to whether troops are in a particular spot.

*Target in the Open means a target that is not behind or in a terrain feature that would shield them. Some examples of NOT in the open include: behind a wall, in a building or vehicle, behind a thick tree, etc.

**Troops are Veteran, Troops are Elite - this is the combination of Morale and Training grades that are determined by the Game master when putting the scenario together. The meaning of the various grades is explained in the section on Morale.

Defensive Fire. But the B team has a clear shot at the oncoming American squad. While the NCO is moving, the sniper fires on him, rolling to hit. The sniper selects when he wishes to fire at the figure as it moves along its movement track.

Since the entire American squad was moving, with none left behind to provide cover, no Americans may fire at the Germans as they move. An exception to this is the Snap Fire Optional Rule. With this rule, any of the Americans who have not moved, who want to take a quick shot at the running Germans may cease all movement and fire using the Snap Fire modifier along with any others that apply. Figures that fire may not move any further.

A note on hidden movement. Whether or not you have a referee, keeping track of the location of static units, or of the movement of hidden units, is a good practice. Detailed move maps will prevent arguments as to whether troops are in a particular spot

Combat Phase. After the move phases is the Combat phase. All firing is simultaneous, so if a figure is hit, it gets to complete its fire unless there is no target for it to shoot at. To fire, each player selects a target, making sure it falls within the line of sight, and is not blocked. Check the range, then consult the modifier table. Add/Subtract all modifiers from the base chance to hit. Roll the dice...less than or equal to the modified chance to hit scores a hit on the target. Over that is a miss.

Some Examples of Firing:



Covering Fire - This MG team has been assigned to cover the front of the house at the bottom of the hill. They can cover an area up to 12" across, basically the entire front of the house.



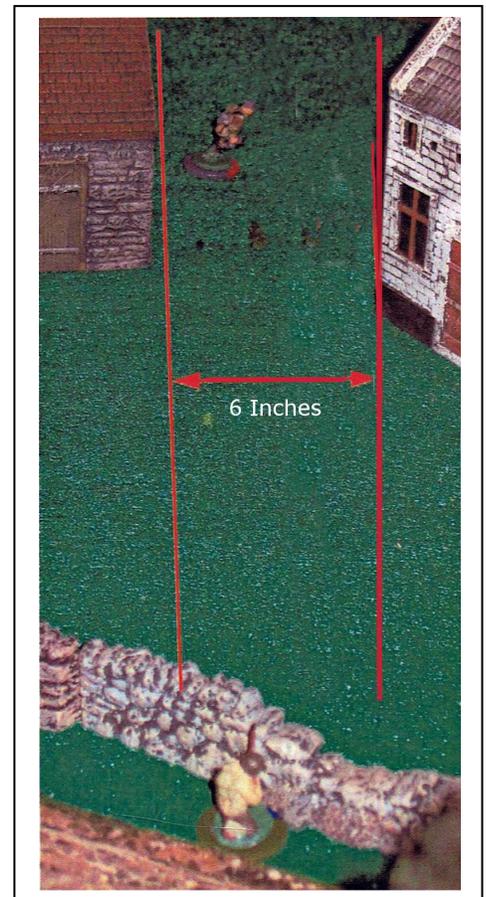
Intervening Terrain - The GI attempting to fire at the running German has several objects in the way; two trees and a wall. These all count as intervening terrain, and subtract the modifier once from the hit chance.

Defensive Fire / Snap Fire

This GI is covering the small area in between the buildings, a strip 6" across, more than half the length of a run move. As the German runs across this area during his move phase, the GI will get a chance to first spot, then fire at the running soldier.

If the GI does not spot the runner, he cannot fire. If he does, the Snap Fire modifier is applied to his chance to hit. This will reflect the short period of time the German is actually in view.

The Defending player may **ONLY** fire at attackers that have moved or fired this turn.



Kill Zone - use this template for any Full Auto Weapon.

When Firing Full Auto at specific targets, machine guns and submachine guns, use the 2" square Kill Zone template to determine which figures can be hit by the fire. In this example, two figures are within the zone (even partially counts), and are eligible to be hit.

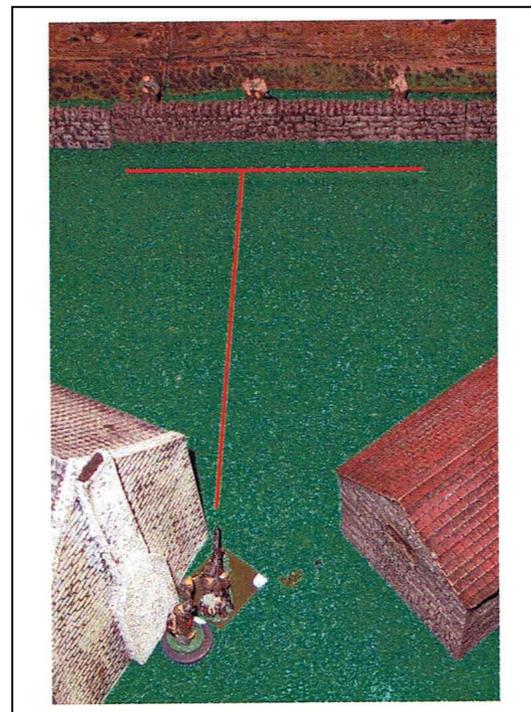
So, with a medium MG, ROF of 3/3, you'd roll three times for the hit number. Let's say you need a 5 after all modifiers have been added/subtracted, and you roll 5 or less twice out of three tries. You would then roll randomly to see which of the two figs gets hit (you could roll odds/evens twice), and each one gets a hit result.



When Spraying Full Auto fire at an area to suppress troops, you would use the larger template to see which figures fall in this Suppression Zone (it may be possible to kill in the suppression zone, figure the to hit number as normal, subtracting the Spraying Fire modifier).

This Image shows how Spray Fire affects more than one target. The GIs behind the wall are all within a 5" line, and are all subject to suppression from the MG42.

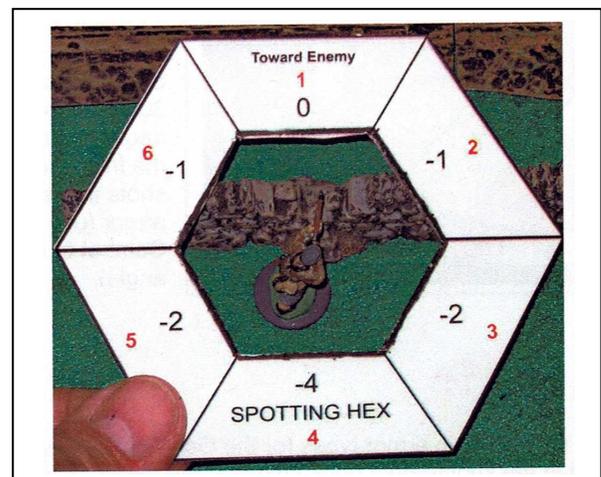
The Suppression Zone is also 5" deep, so figures forward and/or behind the wall are targeted.



Spotting and Scatter Hex - The Spotting / Scatter hex has two uses; to determine the modifier for spotting, and to see which direction a missed grenade, mortar, or other fired or thrown weapon lands.

The red numbers are used for Scatter. Place the hex over the target area, front toward enemy. Roll a 1d6 to determine which hex side the object falls toward. Then consult the scatter distance table to see how far it falls.

The black numbers are spotting modifiers. Place the hex over the figure that needs to spot. The

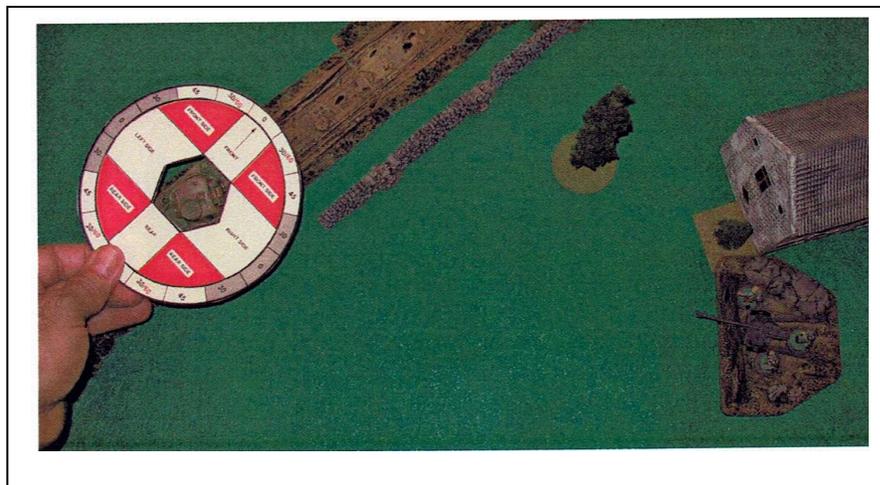


modifiers are applied to the chance to spot in reference to the location of the target. In other words, if the spotter was trying to spot a target that was behind him and left, a 2 would be subtracted from the spot chance. This takes into account trying to spot a target that is behind you, or otherwise out of your immediate field of view. So if you were facing one direction, and someone was trying to sneak up behind you, you'd use the spotting hex modifiers to see if you actually spot him.

The Armor Combat Angle Wheel - This template shows at what angle a shot is fired at a tank. To use, simply place the template over the vehicle, oriented to the front. Trace the line from the attacking gun to the vehicle to determine the angle at which the shell strikes the tank.

The attacking shell passes through the 30 degree mark on the wheel.

In armor combat, you modify the penetration roll for each 15 degrees of angle the shot comes from. Shots passing through the 30/60 degree angle use 30 degrees for shots that strike the front, and 60 degrees for shots that strike the side armor (use the table in Armor Combat to determine the angle).



Scenarios

Two pre-written scenarios are included with these rules, to help you get started. They will give you an idea of how the game flows, and how to set up scenarios of your own. If you are an experienced gamer, or have played Squad Leader or Armor, or any similar combat game, you will already have a good idea how to set up your own scenarios.

The maps may be used to aid set up, and to mark out hidden movement. Therefore it's a good idea to supply each side with a copy.

Scenario 1: "American Patrol"

Referee Suggestion: This scenario plays best if there is either a referee, or if whoever reads it first plays the Germans. At either rate, it is important that the American player does not know the game particulars. All the Americans need to know is in their briefing, anything more they will find out on their own.

The basis of the scenario is that an American squad has been sent into a mostly intact town to scout for any enemy activity. Unknown to them, the Germans have pulled out, with the exception of two snipers.

The Germans begin the game in any position on the map they wish. They can set up anywhere, either together or apart. The Germans may move as often as they wish during the game, limited only by the rules. The Germans may take advantage of all firing modifiers relating to scoped shooting by expert shooters. Additionally, as they are trained in camouflage beyond that of the normal soldier, there is an additional minus 3 to spot a sniper. The German objective is to kill the Americans before any word can get back about the German troops pulling out.

The Americans come on at their end of the board, beginning at the road leading into town. They may select whatever initial setup they desire. From there they may disperse however they wish. Their objective is to locate and eliminate any snipers, and survive to relay the condition of the town back to HQ. In addition to small arms, the Americans are each armed with one fragmentation grenade, and the SL and ASL each have a smoke grenade.

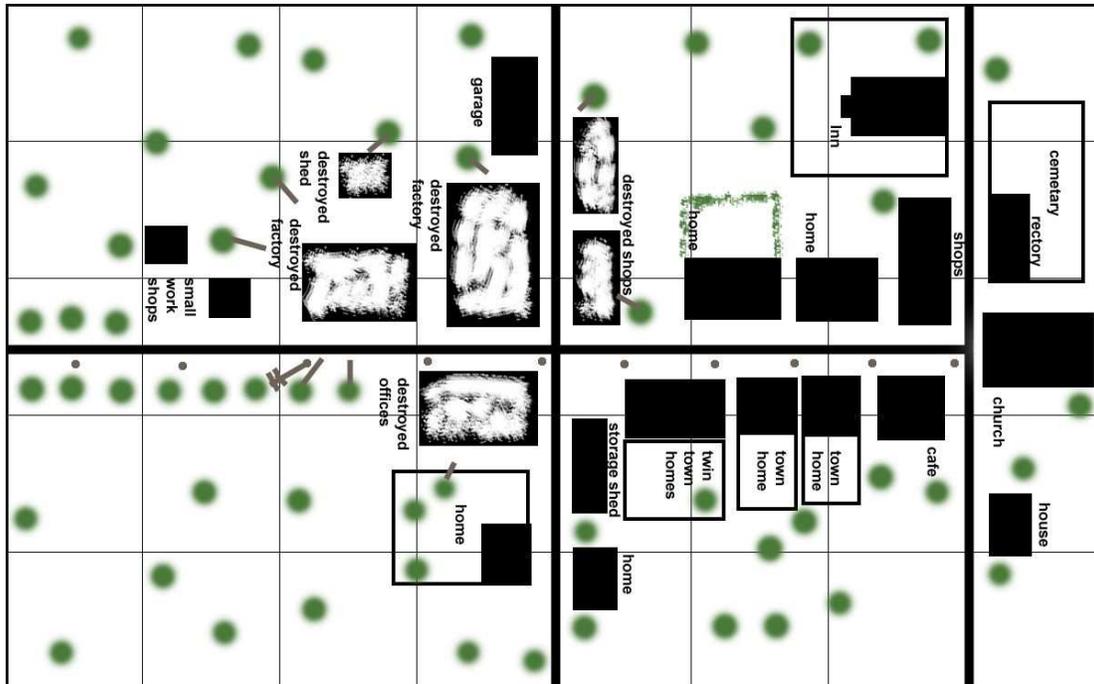
German Troops:

	1	2
Position	Sniper	Sniper
Weapon 1	BA RFL	BA RFL
Weapon 2	Grenade	Grenade

American Troops:

	1	2	3	4	5	6
Position	SqdLdr	BAR	Asst Gunr	Rifleman	Rifleman	Rifleman
Weapon 1	SMG	LMG	SA RFL	SA RFL	SA RFL	SA RFL
Weapon 2	Grenade	Grenade	Grenade	Grenade	Grenade	Grenade
	7	8	9	10	11	12
Position	Rifleman	Rifleman	Rifleman	Rifleman	Rifleman	Rifleman
Weapon 1	SA RFL	SA RFL	SA RFL	SA RFL	SA RFL	SA RFL
Weapon 2	Grenade	Grenade	Grenade	Grenade	Grenade	GrenLnchr

Map:



Scenario 2: Panzerknackers "Horror in the Hedgerows"

After the Allied landings in Normandy in 1944, a major flaw in the photo reconnaissance was found, a flaw that would seriously jeopardize the Allied campaign.

Recon photos taken from a great height looking straight down, would not accurately show the height of objects. What looked like squared off fields surrounded by low walls or hedges, proved to be fields cordoned off by ancient hedges as much as 15 feet tall or more. These thick hedges had been growing into mounds surrounding the fields, and by 1944 they were so thick they could actually stop a tank! And when a tank could break through, it would rise over the mound, exposing its vulnerable bottom armor. The Americans lost large numbers of tanks and crews trying to break through the hedgerow country. It wasn't until a field expedient invention by a maintenance sergeant named Cullins that the tanks were allowed to easily breach the hedges and mounds, without having to climb over the top and be vulnerable.

Unfortunately, Sgt. Cullins' invention is not yet available, and there is a trapped company of American infantry needing armored support. The Americans must get a pair of Shermans through the hedgerows to help relieve the trapped company.

Basics: The Americans must get at least one tank off the board on the far roadway exit. The Germans must stop them.

Terrain: Most areas of the hedgerows can be penetrated by the Shermans, but will leave them vulnerable, and may bog down or disable the tank (roll for rough terrain traversing). It will take a tank three full turns to plow through a hedge.

Time: Total game time is 20 turns. One tank must be off board using the road to win.

Setup: The Germans must setup two feet from the West side of the table (American side), and one foot from the East side. The Americans may enter anywhere along the West edge of the table.

The Americans

The American forces consist of two squads of infantry reinforced by a machine gun from the weapons squad. Each squad has a handi-talkie, and may communicate across the board (the MG team does not have one). The handi-talkie may communicate with the tanks. The infantry is also equipped with two bangalore torpedo sections, capable of blowing a 1" hole in the hedges and mound. This will allow the tanks free movement through the hedge. One American squad is Veteran / Average, the other is Green / Basic in morale.

There are two M4A3 Shermans with 75mm guns assigned to the mission. Each tank has a full load of AP and HE ammo. The tanks do not have to enter the board on turn one. They may be called in at any time, but must exit in 20 turns.

American First Squad

	1	2	3	4	5	6
Position	SqdLdr	BAR	Asst Gunr	Rifleman	Rifleman	Rifleman
Weapon 1	SMG	LMG	SA RFL	SA RFL	SA RFL	SA RFL
Weapon 2	Grenade	Grenade	Grenade	Grenade	Grenade	Grenade
	7	8	9	10	11	12
Position	Rifleman	Rifleman	Rifleman	Rifleman	Rifleman	Rifleman
Weapon 1	SA RFL	SA RFL	SA RFL	SA RFL	SA RFL	SA RFL
Weapon 2	Grenade	Grenade	Grenade	Grenade	Grenade	GrenLnchr

American Second Squad:

	1	2	3	4	5	6
Position	SqdLdr	BAR	Asst Gunr	Rifleman	Rifleman	Rifleman
Weapon 1	SMG	LMG	SA RFL	SA RFL	SA RFL	SA RFL
Weapon 2	Grenade	Grenade	Grenade	Grenade	Grenade	Grenade
	7	8	9	10	11	12
Position	Rifleman	Rifleman	Rifleman	Rifleman	Rifleman	Rifleman
Weapon 1	SA RFL	SA RFL	SA RFL	SA RFL	SA RFL	SA RFL
Weapon 2	Grenade	Grenade	Grenade	Grenade	Grenade	GrenLnchr

American Weapons Team

	1	2
Position	MachGunr	Asst Gunr
Weapon 1	LMG	SA RFL
Weapon 2	SA Pistol	

The Germans

The Germans have one squad of Panzer Grenadiers, supported by an additional MG 42 team. In addition, the squad has 4 Panzerfausts, and may distribute them to any figures. All Germans are Veteran / Basic morale.

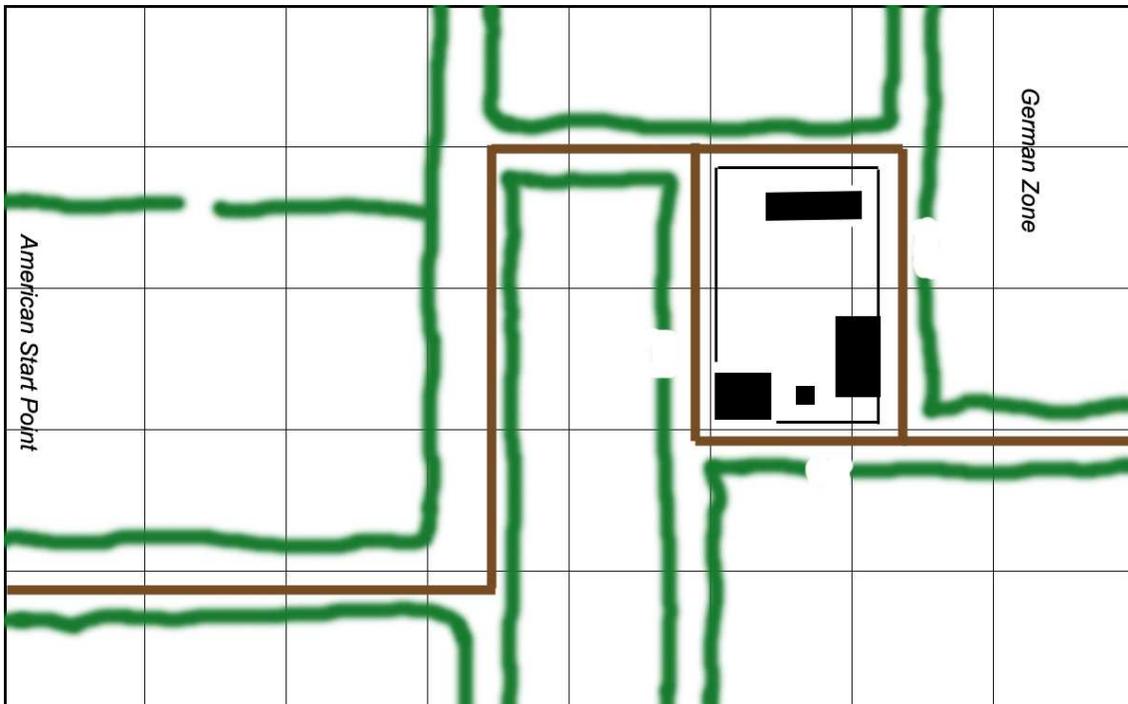
German PanzerGrenadier Squad

	1	2	3	4	5
Position	SqdLdr	MachGunnr	Asst Gunnr	Soldat	Soldat
Weapon 1	SMG	LMG	BA RFL	SMG	BA RFL
Weapon 2	Grenade	SA Pistol		Grenade	Grenade
	6	7	8	9	
Position	Soldat	Soldat	Soldat	Asst SqdLdr	
Weapon 1	BA RFL	BA RFL	SA RFL	SA RFL	
Weapon 2	Grenade	Grenade	Grenade	Grenade	

German Machine Gun Team

	1	2	3
Position	MachGunnr	Asst Gunnr	Asst Gunnr
Weapon 1	LMG	BA RFL	BA RFL
Weapon 2	SA Pistol		

Map:



Armor Sheets

These are stat sheets for the basic armor types for the Germans and Americans, ca.1944-45. They are included in the supplement book shipped with these rules. More sheets will be added in future updates.

If you wish to create your own vehicle sheets, all of the data used comes from various sources, both in print and online. There is a blank stat sheet at the back of the charts, that you can use to create your own tanks.



Nationality	GERMANY	Designation	PzkwfVI E Tiger I	Class	Heavy Tank
Used	July 1942 on	Crew	5	Radio	yes
Primary Armament	88mm KwK 36 L/56	Ammunition Carried	92	Turret Traverse	manual 360 degrees
Penetration	Pgr39/ - 120mm Pgr40 - 171mm	Damage Bonus	+4	Traverse Speed	60 degrees per turn
Secondary Armament	(2) MG34 (coax, bow)	Ammunition Carried	4800	Main Gun ROF	1 round per turn
Penetration	12mm	Damage Bonus	-3	Silhouette Modifier	0
Max Speed in Inches	16 inches on road 9 inches off road	Acceleration per turn	5 inches on road 2 inches off road	Turning Speed	90 degrees @ half speed or less
Vertical Obstacle	1.5 feet	Fording Depth	6 feet	Trench Crossing	10 feet
Vehicle Weight		Track Width		Ground Pressure	
		Armor Thickness	In Millimeters		
	Front	Side	Rear	Top/Bottom	
Lower Hull	100mm@66	60mm@90	80mm@82	25mm@0	
Upper Hull	100mm@80	80mm@90	na	25mm@0	
Turret	100mm@82	80mm@90	80mm@90	25mm@0	
Mantlet	110mm@90				



Nationality	Germany	Designation	Pzkw IV H	Class	Medium Tank
Used	April 1943 on	Crew	5	Radio	yes
Primary Armament	75mm KwK 40 L/48	Ammunition Carried	87	Turret Traverse	360 degrees
Penetration	Pgr39 - 106mm Pgr40 - 143mm	Damage Bonus	+2	Traverse Speed	180 degrees per turn
Secondary Armament	(2) MG34 (coax, bow)	Ammunition Carried	3150	Main Gun ROF	1 round per turn
Penetration	12mm	Damage Bonus	-3	Silhouette Modifier	0
Max Speed in Inches	35 inches on road 14 inches off road	Acceleration per turn	10 inches on road 5 inches off road	Turning Speed	180 degrees @ half speed or less
Vertical Obstacle	1.5 feet	Fording Depth	4 feet	Trench Crossing	8 feet
Vehicle Weight	57,000 lbs	Track Width	16 inches	Ground Pressure	13 psi
		Armor Thickness	In Millimeters	@ degrees	
	Front	Side	Rear	Top/Bottom	
Lower Hull	80mm @ 14	30mm @ 0	20mm @ 8	10mm @ 90	
Upper Hull	80mm @ 10	30mm @ 0	20mm @ 11	12mm @ 90	
Turret	50mm @ 10	30mm @ 26	30mm @ 15	15mm @ 90	
Mantlet	50mm @ 30				



Nationality	Germany	Designation	PzKpfwV D Panther	Class	Medium Tank
Used	Jan 1943 on	Crew	5	Radio	Yes
Primary Armament	75mm KwK 42 L/70	Ammunition Carried	79	Turret Traverse	hydraulic 360 degrees
Penetration	Pgr39/42 - 138mm Pgr40/42 - 194mm	Damage Bonus	+3	Traverse Speed	60 degrees per turn
Secondary Armament	(2) MG34 (coax, bow)	Ammunition Carried	3150	Main Gun ROF	1 round per turn
Penetration	12mm	Damage Bonus	-3	Silhouette Modifier	0
Max Speed in Inches	44 inches on road 26 inches off road	Acceleration per turn	5 inches on road 2 inches off road	Turning Speed	90 degrees @ half speed or less
Vertical Obstacle	1.5 feet	Fording Depth	4 feet	Trench Crossing	10 feet
Vehicle Weight	98,800 lbs	Track Width	26 inches	Ground Pressure	13 psi
		Armor Thickness	In Millimeters	@ degrees	
	Front	Side	Rear	Top/Bottom	
Lower Hull	60mm @ 55	40mm @ 90	40mm @ 30	30mm @ 90	
Upper Hull	80mm @ 55	40mm @ 40	40mm @ 30	16mm @ 90	
Turret	100mm @ 12	45mm @ 25	45mm @ 25	16mm @ 0	
Mantlet	100mm @ 45				



Nationality	Germany	Designation	Jagdtiger	Class	Heavy Assault Gun
Used	July 1944 on	Crew	6	Radio	no
Primary Armament	128mm Pak 44 L/55	Ammunition Carried	40	Turret Traverse	none - gun traverse 10 deg right/left
Penetration	Pgr39/ - 189mm Pgr40 -187mm	Damage Bonus	+5	Traverse Speed	na
Secondary Armament	(1) MG34 (bow)	Ammunition Carried	4800	Main Gun ROF	1 round every other turn
Penetration	12mm	Damage Bonus	-3	Silhouette Modifier	0
Max Speed in Inches	16 inches on road 9 inches off road	Acceleration per turn	5 inches on road 2 inches off road	Turning Speed	90 degrees @ half speed or less
Vertical Obstacle	1.5 feet	Fording Depth	6 feet	Trench Crossing	10 feet
Vehicle Weight	160,000 lbs	Track Width	32 inches	Ground Pressure	16 psi
		Armor Thickness	In Millimeters	@ degrees	
	Front	Side	Rear	Top/Bottom	
Lower Hull	150mm@40	80mm@90	80mm@60	40mm@0	
Upper Hull	250mm@75	80mm@65	na	40mm@0	
Turret	na	na	80mm@85	40mm@0	
Mantlet	100mm@90	na	na	na	



Nationality	GERMANY	Designation	JagdpanzerIV	Class	assault gun
Used	Jan 44 on	Crew	5	Radio	Yes
Primary Armament	75mm PaK 39 L/48	Ammunition Carried	87	Turret Traverse	na
Penetration	Pgr39 - 100mm Pgr40 - 143mm	Damage Bonus	+2	Traverse Speed	na
Secondary Armament	(2) MG34 (coax, bow)	Ammunition Carried	3150	Main Gun ROF	1
Penetration	12mm	Damage Bonus	-3	Silhouette Modifier	0
Max Speed in Inches	35 inches on road 14 inches off road	Acceleration per turn	10 inches on road 5 inches off road	Turning Speed	180 degrees per turn
Vertical Obstacle	1.5 feet	Fording Depth	4 feet	Trench Crossing	8 feet
Vehicle Weight	53,000 lbs	Track Width	16 inches	Ground Pressure	12 psi
		Armor Thickness	In Millimeters	@ degrees	
	Front	Side	Rear	Top/Bottom	
Lower Hull	50mm @ 55	30mm @ 0	20mm @ 9	10mm @ 90	
Upper Hull	60mm @ 50	30mm @ 30	20mm @ 35	20mm @ 90	
Turret	na	na	na	na	
Mantlet	80mm @ 45				



Nationality	GERMANY	Designation	Jagdpanzer 38 Hetzer	Class	tank destroyer
Used	April 1944 on	Crew	4	Radio	yes
Primary Armament	75mm PaK39 L/48	Ammunition Carried	41	Turret Traverse	none - gun traverses 5 degrees left, 11 rt
Penetration	Pgr39 - 100mm Pgr40 - 135mm	Damage Bonus	+1	Traverse Speed	na
Secondary Armament	(2) MG34 (coax, bow)	Ammunition Carried	4800	Main Gun ROF	2 rounds per turn
Penetration	12mm	Damage Bonus	-3	Silhouette Modifier	0
Max Speed in Inches	27 inches on road 16 inches off road	Acceleration per turn	10 inches on road 5 inches off road	Turning Speed	180 degrees per turn
Vertical Obstacle	2 feet	Fording Depth	3 feet	Trench Crossing	8 feet
Vehicle Weight	32,000 lbs	Track Width	14 inches	Ground Pressure	11 psi
		Armor Thickness	In Millimeters	@ degrees	
	Front	Side	Rear	Top/Bottom	
Lower Hull	60mm@50	20mm @ 15	20mm @ 25	10mm @ 90	
Upper Hull	60mm@30	20mm @ 40	8mm @ 70	8mm @ 90	
Turret	na	na	na	na	
Mantlet	60mm @ 45				



Nationality	Germany	Designation	SdKfz251/1	Class	half track
Used	1939-1945	Crew	2 + 10 troops	Radio	yes
Primary Armament	7.92mm MG x 2	Ammunition Carried	2010 rds	Turret Traverse	front and rear firing
Penetration	8mm	Damage Bonus	0	Traverse Speed	na
Secondary Armament		Ammunition Carried		Main Gun ROF	
Penetration		Damage Bonus		Silhouette Modifier	0
Max Speed in Inches	46 inches on road 26 inches off road	Acceleration per turn	8 inches on road 5 inches off road	Turning Speed	180 degrees per turn
Vertical Obstacle	2 feet	Fording Depth	2 feet	Trench Crossing	6 feet
Vehicle Weight	16,700 lbs	Track Width		Ground Pressure	
		Armor Thickness	In Millimeters	@ degrees	
	Front	Side	Rear	Top/Bottom	
Lower Hull	10mm @ 10	8mm @ 35	8mm @ 30	6mm @ 0	
Upper Hull	14.5mm @ 21	8mm @ 35	8mm @ 45		
Turret	na	na	na		
Mantle	na	na	na		



American Armor:

Nationality	USA	Designation	M3A1 Stuart	Class	Light Tank
Used	1942 on	Crew	4	Radio	Yes
Primary Armament	M6 37mm gun	Ammunition Carried	106	Turret Traverse	360 degrees
Penetration	AP - 31mm APC - 76mm	Damage Bonus	-1	Traverse Speed	180 degrees per turn
Secondary Armament	(3) .30 cal MG (AA turret, Coax, bow)	Ammunition Carried	7220	Main Gun ROF	2
Penetration	12mm	Damage Bonus	0	Silhouette Modifier	-1
Max Speed in Inches	36 inches on road 15 inches off road	Acceleration per turn	12 inches on road 6 inches off road	Turning Speed	270 degrees per turn
Vertical Obstacle	2 feet	Fording Depth	3 feet	Trench Crossing	6 feet
Vehicle Weight	28,500 lbs	Track Width	12 inches	Ground Pressure	10 psi
		Armor Thickness	In Millimeters	@ degrees	
	Front	Side	Rear	Top/Bottom	
Lower Hull	44mm @ 23	25mm @ 0	25mm @ 20	13mm @ 0	
Upper Hull	38mm @ 17	25mm @ 0	25mm @ 0	13mm @ 0	
Turret	38mm @ 10	31mm @ 0	31mm @ 0	13mm @ 90	
Mantlet	51mm @ 14				



Nationality	USA	Designation	M5A1 Stuart	Class	Light Tank
Used	1942 on	Crew	4	Radio	Yes
Primary Armament	M6 37mm gun	Ammunition Carried	147	Turret Traverse	360 degrees
Penetration	AP - 31mm APC - 76mm	Damage Bonus	-1	Traverse Speed	180 degrees per turn
Secondary Armament	(3) .30 cal MG (AA turret, coax, bow)	Ammunition Carried	6750	Main Gun ROF	2 rounds per turn
Penetration	12mm	Damage Bonus	-3	Silhouette Modifier	-1
Max Speed in Inches	52 inches on road 15 inches off road	Acceleration per turn	12 inches on road 6 inches off road	Turning Speed	270 degrees per turn
Vertical Obstacle	2	Fording Depth	3	Trench Crossing	6
Vehicle Weight	33,500 lbs	Track Width	12 inches	Ground Pressure	12 psi
		Armor Thickness	In Millimeters	@ degrees	
	Front	Side	Rear	Top/Bottom	
Lower Hull	64mm @ 23	25mm @ 0	25mm @ 17	13mm @ 90	
Upper Hull	29mm @ 48	25mm @ 0	25mm @ 0	13mm @ 90	
Turret	45mm @ 10	32mm @ 0	32mm @ 0	13mm @ 90	
Mantlet	51mm @ 14				



Nationality	USA	Designation	M24 Chaffee	Class	Light Tank
Used	4/44 - 8/45	Crew	4	Radio	yes
Primary Armament	M6 75mm	Ammunition Carried	48	Turret Traverse	hydraulic 360 degrees
Penetration	89mm early 96mm late	Damage Bonus	0	Traverse Speed	120 degrees per turn
Secondary Armament	M2 .50 turret top (2) .30 hull / coax	Ammunition Carried	440 3750	Main Gun ROF	1 round per turn
Penetration	25mm	Damage Bonus	-2	Silhouette Modifier	-1
Max Speed in Inches	52 inches on road 22 inches off road	Acceleration per turn	10 inches on road 5 inches off road	Turning Speed	180 degrees per turn
Vertical Obstacle	3 feet	Fording Depth	3 feet	Trench Crossing	8 feet
Vehicle Weight	40,500 lbs	Track Width	16 inches	Ground Pressure	11 psi
		Armor Thickness	In Millimeters	@ degrees	
	Front	Side	Rear	Top/Bottom	
Lower Hull	25mm@45	25mm@88	19mm@48	13/10mm@0	
Upper Hull	25mm@30	na	19mm@90	13mm@0	
Turret	38mm@30-90	25mm@65	25mm@90	25mm@11	
Mantlet	38mm@60				



Nationality	USA	Designation	M4A3 Sherman	Class	Medium Tank
Used	1942 on	Crew	5	Radio	Yes
Primary Armament	M3 75mm gun, low velocity	Ammunition Carried	97 rounds	Turret Traverse	360 degrees
Penetration	APC - 101mm HVAP-127mm	Damage Bonus	0	Traverse Speed	180 degrees per turn
Secondary Armament	(2).30 MG coax, bow (1) .50 AA	Ammunition Carried	4750 300	Main Gun ROF	1 rounds per turn
Penetration	25mm	Damage Bonus	-2	Silhouette Modifier	plus 1
Max Speed in Inches	38 inches on road 15 inches off road	Acceleration per turn	10 inches on road 5 onches off road	Turning Speed	180 degrees per turn
Vertical Obstacle	2 feet	Fording Depth	3 feet	Trench Crossing	8 feet
Vehicle Weight	67,000 lbs	Track Width	17 inches	Ground Pressure	14 psi
		Armor Thickness	In Millimeters	@ degrees	
	Front	Side	Rear	Top/Bottom	
Lower Hull	51mm @ 56	38mm @ 0	38mm @ 22	25mm @ 90	
Upper Hull	51mm @ 56	38mm @ 0	38mm @ 10	19mm @ 90	
Turret	76mm @ 30	51mm @ 5	51mm @ 0	25mm @ 90	
Mantlet	89mm @ 0				



Nationality	USA	Designation	M4A3E8 Sherman	Class	Medium Tank
Used	August 1944 on	Crew	5	Radio	Yes
Primary Armament	76mm M1A1, A1C or A2	Ammunition Carried	71	Turret Traverse	360 degrees
Penetration	127mm early 208mm late	Damage Bonus	plus 1	Traverse Speed	180 degrees per turn
Secondary Armament	.50 AA mount (2) .30 hull/coax	Ammunition Carried	600 rounds 6250 rounds	Main Gun ROF	1 round per turn
Penetration	12mm (.50 cal)	Damage Bonus	0	Silhouette Modifier	plus 1
Max Speed in Inches	38 on road 15 off road	Acceleration per turn	10 on road 5 off road	Turning Speed	180 degrees per turn
Vertical Obstacle	2 feet	Fording Depth	3 feet	Trench Crossing	8 feet
Vehicle Weight	74,200 lbs	Track Width	23inches	Ground Pressure	11 psi
		Armor Thickness	In Millimeters	@ degrees	
	Front	Side	Rear	Top/Bottom	
Lower Hull	108mm @ 56	38mm @ 0	38mm @ 22	25mm @ 90	
Upper Hull	64mm @ 47	38mm @ 0	38mm @ 22	19mm @ 90	
Turret	64mm @ 45	64mm @ 13	64mm @ 0	25mm @ 90	
Mantlet	89mm @ 0				



Nationality	USA	Designation	M10	Class	Tank Destroyer
Used	9/42 on	Crew	5	Radio	Yes
Primary Armament	3 inch gun M7	Ammunition Carried	54	Turret Traverse	manual 360 degrees
Penetration	155mm (early) 208mm (late rare)	Damage Bonus	plus 1	Traverse Speed	90 degrees per turn
Secondary Armament	.50 cal AA mount	Ammunition Carried	500	Main Gun ROF	1 per turn
Penetration	12mm	Damage Bonus	-2	Silhouette Modifier	plus 1
Max Speed in Inches	17 inches on road 10 inches off road	Acceleration per turn	10 inches on road 5 inches off road	Turning Speed	180 degrees per turn
Vertical Obstacle	2 feet	Fording Depth	3 feet	Trench Crossing	8 feet
Vehicle Weight	66,000 ilb	Track Width	16 inches	Ground Pressure	12 psi
		Armor Thickness	In Millimeters	@ degrees	
	Front	Side	Rear	Top/Bottom	
Lower Hull	51mm@60	25mm@90	25mm@90	13mm@0	
Upper Hull	38mm@55	19mm@52	19mm@52	15mm@0	
Turret	na	25mm@75	25mm@90	open	
Mantlet	57mm@45				



Nationality	USA	Designation	M18 Hellcat	Class	Tank Destroyer
Used	7/43 on	Crew	5	Radio	Yes
Primary Armament	76mm M1A1	Ammunition Carried	45	Turret Traverse	360 degrees hydraulic
Penetration	155mm (early) 208mm (late rare)	Damage Bonus	plus 1	Traverse Speed	270 degrees per turn
Secondary Armament	.50 cal AA mount	Ammunition Carried	800	Main Gun ROF	2 per turn
Penetration	12mm	Damage Bonus	-2	Silhouette Modifier	-1
Max Speed in Inches	73 inches on road 30 inches off road	Acceleration per turn	15 inches on road 8 inches off road	Turning Speed	360 degrees per turn
Vertical Obstacle	3 feet	Fording Depth	5 feet	Trench Crossing	6 feet
Vehicle Weight	40,000 lbs	Track Width	14 inches	Ground Pressure	12 psi
		Armor Thickness	In Millimeters	@ degrees	
	Front	Side	Rear	Top/Bottom	
Lower Hull	13mm@50	13mm@90	13mm@55	5mm@0	
Upper Hull	13mm@35	13mm@67	13mm@77	8mm@0	
Turret	25mm@67	13mm@70	13mm@81	open	
Mantlet	19mm@60	na	na	na	



Nationality	USA	Designation	M36 Jackson	Class	tank destroyer
Used	4/44 on	Crew	5	Radio	yes
Primary Armament	90mm M3 gun	Ammunition Carried	47	Turret Traverse	hydraulic 360 degrees
Penetration	163mm (early) 270mm (late)	Damage Bonus	+2	Traverse Speed	180 degrees per turn
Secondary Armament	.50 cal AA mount	Ammunition Carried	800	Main Gun ROF	1 every other turn
Penetration	12mm	Damage Bonus	-2	Silhouette Modifier	+1
Max Speed in Inches	38 inches on road 27 inches off road	Acceleration per turn	10 inches on road 5 inches off road	Turning Speed	180 degrees per turn
Vertical Obstacle	2 feet	Horizontal Obstacle	3 feet	Trench Crossing	8 feet
Vehicle Weight	62,000 lbs	Track Width	16 inches	Ground Pressure	13 psi
		Armor Thickness	In Millimeters	@ degrees	
	Front	Side	Rear	Top/Bottom	
Lower Hull	108mm@90	25mm@90	19mm@65	13mm@0	
Upper Hull	38mm@35	19mm@52	19mm@65	15mm@0	
Turret	75mm @ 45	32mm@85	127mm@90	open	
Mantlet	76mm@45				



Nationality	USA	Designation	M3A1	Class	half track
Used	1943 on	Crew	3 plus 10 infantry	Radio	yes
Primary Armament	.50 cal MG	Ammunition Carried	700 rds	Main Gun ROF	na
Penetration	12mm	Damage Bonus	-3	Traverse Speed	180 degrees per turn in pintle
Secondary Armament		Ammunition Carried		Turret Traverse	
Penetration		Damage Bonus		Silhouette Modifier	+1
Max Speed in Inches	65 on road 40 off road	Acceleration per turn	15 on road 10 off road	Turning Speed	90 degrees per turn
Vertical Obstacle	1 foot	Fording Depth	2' 8"	Trench Crossing	na
Vehicle Weight	20,000 lbs	Track Width	12 inches	Ground Pressure	
		Armor Thickness	In Millimeters	@ degrees	
	Front	Side	Rear	Top/Bottom	
Lower Hull	6mm @ 26	6mm @ 0	6mm @ 0	6mm @ 90	
Upper Hull	6mm @ 83	6mm @ 0	6mm @ 0	open topped	
Turret					
Mantle					

An armored vehicle used to transport troops into battle, protected from small arms fire. Due to it's open top, it was paticularly vulnerable to overhead fire or grenades. The thin armor tended to allow bullets through one side, which then "rattled around a bit" inside.



Nationality	USA	Designation	M8 Greyhound	Class	armored car
Used	1942 on	Crew	4	Radio	yes
Primary Armament	37mm M6	Ammunition Carried	80	Turret Traverse	360 degrees
Penetration	48mm @ 500 yds	Damage Bonus	+1	Traverse Speed	90 degrees per turn
Secondary Armament	.30 cal MG coax .50 cal MG AA	Ammunition Carried	1500 400	Main Gun ROF	2 per turn
Penetration	4mm @ 0 deg 12mm @ 0 deg	Damage Bonus		Silhouette Modifier	-1
Max Speed in Inches	88 on road 44 off road	Acceleration per turn	20 inches on road 10 inches off road	Turning Speed	90 degrees per turn
Vertical Obstacle	1 foot	Fording Depth	2 feet	Trench Crossing	3 feet
Vehicle Weight		Track Width		Ground Pressure	
		Armor Thickness	In Millimeters		
	Front	Side	Rear	Top/Bottom	
Hull	19mm	9mm	9mm	6mm / 3mm	
Sup'structure	16mm	9mm	9mm	6mm	
Turret	19mm	19mm	19mm		
Mantle	25mm				

The M8 scout car series began as a tank destroyer, but was outclassed before it was even deployed. Their extreme speed made them natural reconnaissance vehicles. The M8 had a small open topped turret that was hand cranked. The M20 had no turret, but an open superstructure.



Nationality	Japan	Designation	Type 97 Chi-Ha	Class	Medium Tank
Used	1941 on	Crew	4	Radio	Yes
Primary Armament	47mm Gun	Ammunition Carried	100	Turret Traverse	360 degrees
Penetration	AP - 64mm	Damage Bonus	0	Traverse Speed	90 degrees per turn
Secondary Armament	2 x 7.7mm MG (bow, turret rear)	Ammunition Carried	2745	Main Gun ROF	2
Penetration	12mm	Damage Bonus	0	Silhouette Modifier	-1
Max Speed in Inches	17 inches on road 10 inches off road	Acceleration per turn	8 inches on road 5 inches off road	Turning Speed	180 degrees per turn
Vertical Obstacle	3 feet	Fording Depth	3 feet	Trench Crossing	6 feet
Vehicle Weight	15,000	Track Width	12 inches	Ground Pressure	9 psi
		Armor Thickness	In Millimeters	@ degrees	
	Front	Side	Rear	Top/Bottom	
Lower Hull	20mm@30	9mm@0	20mm@45	8mm@0	
Upper Hull	16mm@82	26mm@25		13mm @ 0	
Turret	33mm@0	26mm@11	26mm@11	19mm@0	
Mantlet					



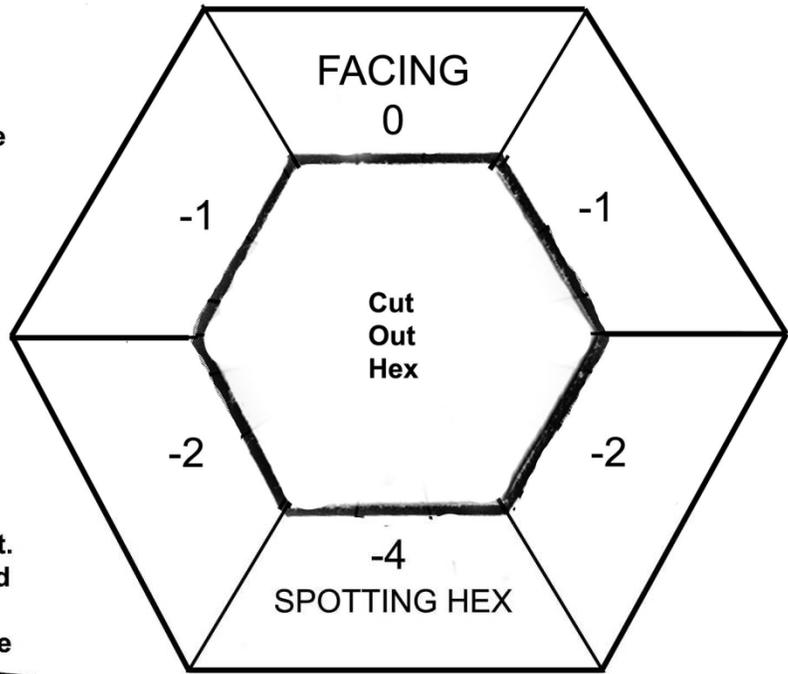
Nationality		Designation		Class	
Used		Crew		Radio	
Primary Armament		Ammunition Carried		Turret Traverse	
Penetration		Damage Bonus		Traverse Speed	
Secondary Armament		Ammunition Carried		Main Gun ROF	
Penetration		Damage Bonus		Silhouette Modifier	
Max Speed in Inches		Acceleration per turn		Turning Speed	
Vertical Obstacle		Fording Depth		Trench Crossing	
Vehicle Weight		Track Width		Ground Pressure	
		Armor Thickness	In Millimeters	@ degrees	
	Front	Side	Rear	Top/Bottom	
Lower Hull					
Upper Hull					
Turret					
Mantle					

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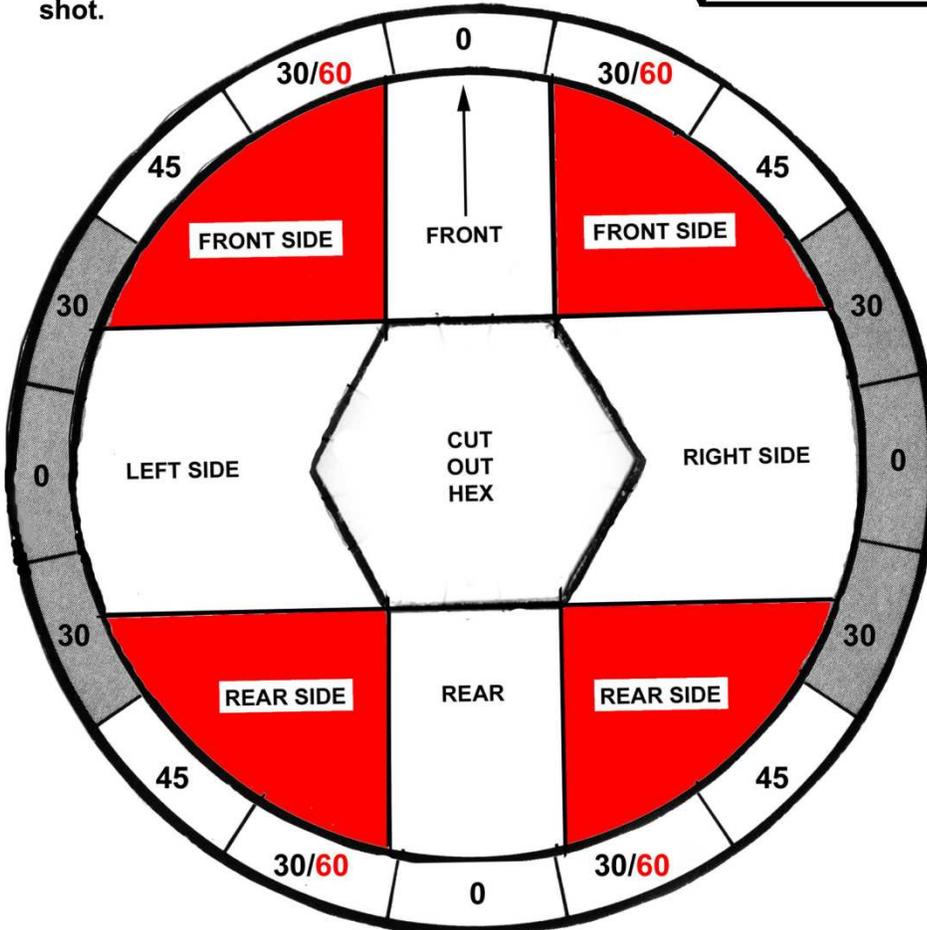
Move Chits

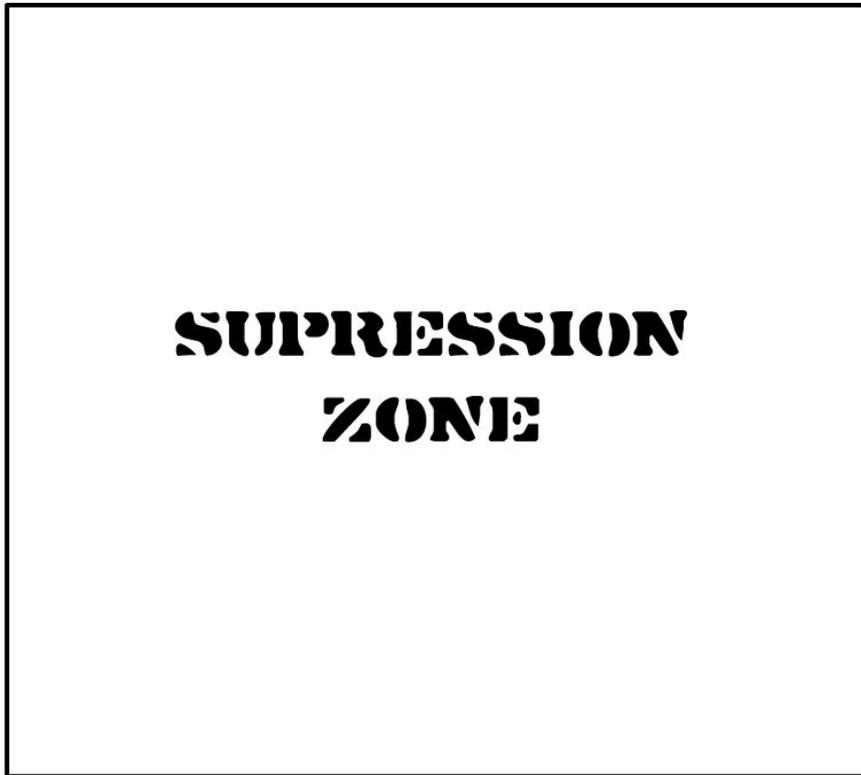
You can cut this page out, or copy it. It is recommended that you glue these onto card stock or poster board then cut them out to make them easier to use on the table.

The Spotting Hex:
 the spotting hex is for determining spotting modifiers for the various angles around the spotter. Place the hex with 0 at the figures front. The modifiers for the sides and back are applied to the chance to Spot.



The Angle Wheel:
 the angle wheel is for Armor Combat. Place the open hex over the tank and trace the shot from the shooting weapon to determine the angle of the shot.





Supression Zone - use this template when spray firing with machine guns. Any figure falling within the boundaries of the zone is considered suppressed. The Front Edge of the zone should be placed on the figure nearest to the machine gun, extending back through the enemy formation.

These templates can be printed on card stock, then the squares cut out for use in the game. An alternative would be to print them on transparency film to avoid the need for cutting.



Kill Zone - use this template for any Full Auto fire. Any figure inside this zone must roll for a hit as per the Full Auto Fire Rules. This may also be used for the Zone of Death template for HE artillery fire. Center the template over the point of impact. Any figure inside the zone is automatically dead (see HE Fire rules)



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