

INTRODUCTION TO THE PLAYTEST VERSION 27TH FEB 2010

These vehicle rules are a supplement to the Rate of Fire skirmish rules, they are not meant to be playable in their own right and you will need a copy of RoF to use them. Unless stated otherwise all the usual RoF rules apply but any new tables and charts in this supplement should replace those in the main rulebook.

This supplement is supplied as a free PDF because it is still in the play test stage. While the infantry skirmish rules have been tested the complete vehicle rules have not. With that in mind I would welcome any feedback, comments or suggestions.

Vehicles in any set of skirmish rules present their own set of unique problems. The weapon ranges, vehicle speed and size in comparison to the infantry figures and ground scale mean that any vehicle to vehicle combat effectively takes place at point blank range. With regard to movement a half track belting along at 30 mph can cover the whole length of the table in a very short space of time.

In practice vehicle crews can only fire at the targets that they know about, can see and are generally far more cautious when in close proximity to the enemy. This doesn't mean to say that your tanks can't fire at targets all the way across the table. It also doesn't mean that they cannot simply put their foot down and head off to the far table edge of the table at full speed.

What you will find in game terms is that no matter the range of the gun you can only fire at targets within your line of sight and the opportunity fire rules mean that no matter what your speed you will not be able to zoom past the enemy without becoming a target.

Each time the PDF is updated I will rename the file with the date and give a brief summary of the changes since the last version.

Notes on the 27th Feb version.

Chapter added for infantry AT weapons and basic tables inserted.

Split Fire and Damage chapters more evenly

Changed critical numbers to 11-12 for normal and 12 for aimed fire. Updated HVAP ammo

Added sub headings for special equipment and brief notes on ideas how these should work.

Added movement table.

Firing from vehicles simplified and updated

Spotting from buttoned vehicles simplified

General tidying of the order rules are presented and removed some contradictions.

Next update Mid march

Complete stats for US and German guns & vehicles

Flesh out Infantry AT rules

Examples for firing rules that are finalised

Points system for vehicles and guns

These rules are provided as a free playtest with a view to publishing them at some point in the future. While permission is granted to reproduce them for personal use only the exclusive copyright for this work remains with Mark Sims.

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1-VEHICLE STATISTICS

Name	Wgt	Size	Armour				MP F/M/S	MA	MG	Crew	Notes
			Front		Side & Rear						
			H	T	H	T					
PzKpfw V (D)	H	M	12	14	6	6	18/9/5	T75LL	C	T:C,G H:D,L,A	
SdKfz 7	L	L (HT)	U	U	U	U	18/9/5	-	-	16/L	
M4 Sherman	M	M	8	8	4	6	16/8/4	T75	B/C/A	T:C,G H:D,L,A	

There are obviously a large variety of vehicle types and each of these needs to be represented in as clear and simple a manner as possible. With that in mind each vehicle will have a stat line that shows what it can do – if something is not listed then it does not apply.

Movement. Broken down into fast, medium and slow movement as well as type – fully tracked, half tracked, wheeled and where applicable, amphibious.

Armour. Front and side/rear armour values for hull and turret. If a vehicle is open topped or has open back or sides this is also shown.

Weapons. The armament that the vehicle possesses as well as details of its fire arc, turreted etc. Special ammunition types such as canister, HVAP, HEAT, APDS, Smoke, HE are detailed on the weapons chart.

	0-24	24-36	36-48	48-60	60+	HE
75	7	6	4	3	3	2
75LL	11	11	10	8	7	2

The main weapon will be described by its calibre and length - from short to long. S/-L/LL

Machine guns are shown by their position on the vehicle. Bow, Coaxial or AA

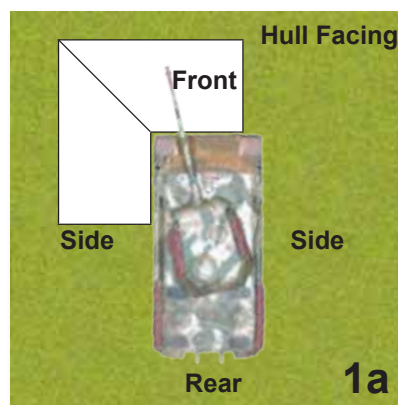
Crew. The number of crew that occupy the vehicle, their positions and tasks.

Size & Weight. Sizes are small, medium, large. Weight Light, medium, Heavy.

Special. Any extra notes that the vehicle may require such as smoke dischargers, carrying and towing capacity or other special rules such as hedgerow cutters for example.

FACING

Front (45 degrees either side of front) sides and rear (45 degrees either side of rear). For armour and firing arcs – certain weapons may have restricted arcs of fire. These will be given in the armaments section of the vehicle stats.



Turrets – the arc depends on the facing of the turret, it is obviously possible for a turreted AFV to have its hull facing in one direction and the turret facing in another.

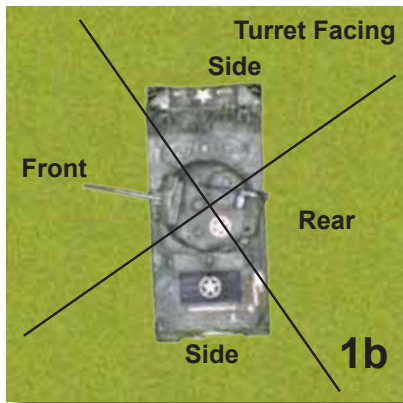
Diagram 1a shows the 45 degree arc for the front and the left hand side of the vehicle - the same applies to all of the other corners.

There is a card template at the back of this book with the game counters that should allow you to easily see if a vehicle is being fired upon from the front, rear or sides.

The facing of the turret will determine whether it is presenting its front or its side/rear armour to the enemy.

The 45 degree arc is calculated from the centre of

the turret as in diagram 1b.



There is a template at the back of the book that should allow you to easily calculate whether the turret is being fired upon in its front, rear or side aspect.

Simply place the the cross hairs over the centre point of the turret and align the single line with the barrel.

Name - Self explanatory!
Wgt - Vehicle weight, L=Light, M=Medium, H=Heavy
Size - Vehicle size, L=Large, M=Medium, S=Small
Armour Front H= Hull,T=Turret. Side & Rear H=Hull, T=Turret. Upper Hull applies where a vehicle has no turret.
Move F/M/S Fast/Medium/Slow speed in inches. Represented by the orders Cautious Advance, Move & Fire, At the Double.
MA - Main Armament
MG - B=Bow, C=Co Axial, A=Anti Aircraft
Crew - C=Commander, G=Gunner, L=Loader, D=Driver, A=Assistant (covers radio, assistant gunner, bow gunner etc) Location
H=Hull, T=Turret
Notes - Cargo capacity in men, towing capacity - L=Large, M=Medium, S=Small, special weapons, ammo or other notes.

2 - AT & ARTILLERY

Name	Caliber	Size	Crew	TT	Notes
M3A1 37mm AT Gun	37LL	S			
M1 57mm AT Gun	57L	M			
M5 3-in AT Gun	76L	M			

Like vehicles anti-tank, infantry gun and artillery pieces will have a number of statistics that determine what they can and cannot do.

Crew – The number of crew required to operate the gun at full effectiveness.

The crew for the weapon will determine whether it can be moved, how long it takes to set up and any firing modifiers. The full crew are required to fire the weapon at full effect – when there are less than the full compliment of crew the effectiveness of the weapon will decline.

Size – Small (small guns 37mm, 6 pdr, 75mm Infantry gun etc) Medium (75mm AT gun, 17 pdr, 25 pdr etc) and Large (88mm, 5.5" artillery etc).

The size of a gun determines whether it can be manhandled, how far and by how many crew. For towing purposes a vehicle will have a maximum weapon size that it can tow.

Special – Turntable, such as 88mm Flak, 2pdr, quad 20mm AA etc, fast or slow to deploy, gun shield

Weapon calibre and length are as per the vehicle description.

MOVING

Towing speed depends on the vehicle that is towing the gun – the towing vehicle may not go at fast speed, only medium or slow.

To set a gun up after being unlimbered or to take it down to attach to a towing vehicle takes time. Large guns take 3 turns, medium 2 turns and small 1 turn. This supposes that the crew is at full strength and they are acting under an At the Double order. Weapon notes may state that a gun takes a longer time than this to set up.

Guns of small size may be manhandled – the crew has an at the double order and they may move the gun up to 2" if they have full crew. Any gun that has less than its full compliment of crew may not be manhandled. If the gun is to be manhandled through rough going it is moved at 1" per turn with a full crew.

FIRING ARCS & TURNING

All guns have fire arcs – they are 45 degrees either side of straight ahead. To turn in place the gun must move according to one of the orders/sizes listed below – if it is large without Turntable (TT) then it may not be turned.

A gun may change face by any amount as part of the turning movement and it will be able to fire according to the order that it has recieved with all of the usual modifiers and in teh usual phases.

Change of Face orders

Small TT	Cautious Move
Small no TT	Move & Fire
Medium TT	Move & Fire
Medium no TT	At the Double
Large TT	At the Double
Large no TT	May not change facing.

AS TARGETS

The arc that the gun shield covers is 45 degrees either side of straight ahead – the same as the firing arc.

While the crew are affected by all small arms and HE as usual the gun itself may also be damaged by

HE fire.

To have a chance to be damaged by Direct HE fire it simply has to be part of the target group that is fired upon (the gun and crew count as the same element for this purpose).

If fired upon by indirect HE fire the gun must have its central mass inside the blast area.

If the gun has no gun shield then the crew will be able to count it as light cover if it is between them and the firing troops. If the gun has a gun shield it provides medium cover to the crew that are protected by it. The direction the fire comes in from or the central point of the HE blast area will determine if the cover modifier applies as per the usual rules.

All guns will have the same chance to be destroyed no matter their size. A gun that is within the HE blast area of a shot that is on target will be hit automatically, simply roll to 'kill' the gun using all of the usual modifiers.

3-ORDERS & COUNTERS

Vehicles will use the same order counters as infantry elements, Cautious, Move and Fire, At the Double, fire. The respective orders – cautious, move & fire and at the double correspond to the vehicle slow, medium and fast speeds.

A vehicle will also need a counter to show whether the crew are buttoned up or exposed. A buttoned crew will have a harder time acquiring and hitting targets – especially infantry. An exposed crew will be vulnerable to small arms fire and are their vehicle is more easily damaged in Close Assault.

Unless marked with a 'buttoned' counter all vehicles on the table are assumed to be CE - commander or crew exposed.

A vehicle with no moving order counter on it is assumed to be stationary, otherwise it is still in motion and it will need to slow to a stop. You cannot go from stationary to fast in one phase.

There will be modifiers to the vehicles firing and spotting depending on the orders that it has been given. The chance to hit a vehicle will be modified according to the speed that it is going.

Vehicles may take various types of damage, crew may be affected by morale, the vehicle may become bogged down and so on – there are counters in appendix # that cover all of these situations.

Unless otherwise stated all morale effects are the same for vehicles and their crews as they are for infantry elements. If a vehicle cannot move for any reason and the crew are forced to carry out compulsory movement then they will abandon the vehicle.

4-MOVEMENT

VEHICLE SITUATION

Vehicles will be either moving or stationary as well as buttoned or open. Their default status is open and stationary – if they are moving or buttoned then the vehicle will need a counter to represent this.

When moving at slow speed or stationary they are easier to hit, when moving medium or fast they are harder to hit.

A stationary vehicle cannot go from a standing start to fast speed but it can go from fast to stationary in the same turn.

VEHICLE SIZE AND WEIGHT

The size and weight of a vehicle will have various effects on its chance to be seen and hit, the maximum amount of passengers it may carry, the chance of it bogging down in bad terrain and so on.

Vehicles will either be large, medium or small size and heavy, medium or light weight.

VEHICLES AND TERRAIN

Vehicles will move more slowly over and through certain types of terrain or they may have the speed that they can go restricted to either slow or medium.

Some terrain may stop a tank completely and some will have the chance to bog it down so that it may not move without being pushed or towed.

BOGGING DOWN

When passing through 'bogging' terrain such as marsh, deep mud, buildings, rubble etc or crossing certain linear obstacles the player must roll 2D6 for the vehicle as soon as it enters and for each movement order that it carries out while there is a chance of being bogged.

If the 2D6 die roll is equal to or greater than the target number above then there is a chance that the vehicle is bogged – it must immediately halt

movement this turn and will roll again next turn to see if it can continue moving. If it rolls a bogged result again then it is stuck for good unless towed or pushed – any other result means it may continue to move again.

Additional modifiers may be given according to the severity of the terrain – particularly bad weather conditions and so on – these should be worked out as part of the scenario specific guidelines.

Bogging Down Table (2D6) 10+

Partially Tracked	+1 to the target number
Tracked	+2 to the target number.
Fast Speed	-2 to the target number
Medium Speed	-1 to the target number

CHANGING FACING

A vehicle may only change facing if it is carrying out movement. To do this it takes a certain amount of movement off its allowance to change the facing of the vehicle. For each 45 degrees or part thereof it will lose 1" from its movement so to about face 180 degree would cost 4" of movement.

MINIMUM MOVEMENT

The order that a vehicle is carrying out will determine the distance that it may move as well as how far it must move. A vehicle must move at least as far as the next lowest speed.

Example

An M4 Sherman has speed 16/8/4. If given a Move & Fire order - medium speed - it may move upto 8" but it must move at least 4". If moving at fast speed it may move upto 16" but must move at least 8".

Terrain Table	Wheeled	Semi Tracked	Tracked	Notes
Wooden Fence	1/2 B	1/2	x1	
Hedge	No Entry	1/2 B	x1	
Stone Wall	No Entry	No Entry	1/2 B	
Bocage	No Entry	No Entry	No Entry	
Scrub/Brush/Cornfield	1/2	x1	x1	
Rocky Outcrops	1/2 B	1/2	x1	
Marsh/Swamp/Mud	1/2 B	1/2 B	1/2 B	
Wooden Building	No Entry	1/2 B	1/2	
Stone Building	No Entry	No Entry	1/2 B	
Rubble	1/2 B	1/2 B	1/2	
Road	x 1.5	x1	x1	
Woods	1/2 B	1/2 B	1/2	
Orchard	1/2	1/2	1/2	
Entrenchment	1/2 B	1/2 B	1/2	
Hasty Roadblock	No Entry	No Entry	1/2 B	
Dragons Teeth	No Entry	No Entry	No Entry	
AT Ditch	No Entry	No Entry	No Entry	

5-FIRING & HITTING

2D6 used to hit with the basic target number being 5+ to hit. This target number is modified according to table 5a below. The higher the target number the harder the target will be to hit.

Close range is up to 24" for any large gun, firing bands are then broken up into additional 12" segments. Infantry weapons and some special weapons may have their own range bracket modifiers.

Once the target has been hit roll location on 2D6 according to the target aspect (front/rear or side) and then calculate the firer AP at that range plus 1D6 bearing in mind the maximum penetration that gun can achieve.

Compare this total to that of the target armour at that point. If greater than the armour value at that location then one roll is made on the damage table.

There may be modifiers to the damage table for the type of weapon fired, the type of target or the amount by which the armour was exceeded.

When a player rolls to hit the target there is a chance that the shot will hit a critical area, one that is particularly weak or subject to excessive damage.

The chance of this happening depends on whether the shot is aimed or not. If there is no aimed shot (reduction in the hit chance to adjust the location roll) then the chance for a critical hit is an unmodified roll of 11-12 on 2D6. If the shot was aimed then only an unmodified roll of 12 will cause a critical hit.

Finally to count as a critical hit the roll must still actually hit the target and be greater than the target number required.

This means that if you need an 11 or 12 to actually hit then only a 12 will be a critical, you cannot cause a critical hit on a roll of 11 because this is not higher than the target number required. Likewise if you need a 12 to hit the target then it cannot be a critical because its impossible to roll higher than the target number. This simply means that every difficult shot does not result in a critical hit all the time.

5a Vehicle Fire (2D6, 5+ to hit)	
Target Speed Medium/Fast	+1/+2
Target Size Large/Medium	-2/-1
Firer is buttoned vehicle vs vehicle	+1
Firer is buttoned vehicle Vs personnel	+2
Each part of 12" away after first 24"	+1
Aimed fire for each 1 point shift on the location roll	+2
Green/Veteran	+1/-1
Each crew less than required to fire gun	+2
Firer is moving slow/medium	+1/+3

VEHICLE OP FIRE

This is the same system as for infantry and small arms fire. Vehicles may opportunity fire with direct HE or AP from their main weapon as well as any MG's that may be in arc.

COAXIAL MG

These may only be fired at the same target as the main turret weapon. If this is a target that the MG cannot affect then the fire is still deemed to happen but no rolls are required. If the main turret weapon is not being fired then the coaxial MG may be fired at targets in the same way as any other MG on the vehicle.

HITTING THE TARGET

AIMED FIRE

CRITICAL HITS

ELEVATION

If a vehicle is very close to a target which is at a higher elevation it may have trouble elevating its main armament to fire – for example a tank in a

narrow street may not be able to fire at targets next to it that are on the second floor.

For each level of elevation difference the vehicle needs to be 6" away from the target to be able to fire its main gun. For example when firing at troops on the ground floor of a building the vehicle can be as close as it likes but it must be at least 6" away to fire at those on the first floor and at least 12" away to fire at those on the second floor and so on.

CREW AND EXTRA WEAPONS

The crew may fire all of the integral weapons in a vehicle unless there have been crew casualties. A tank can fire all of its integral weapons but something like an AA gun mounted on the turret needs the commander to be exposed to fire. If he were firing the AA gun he would not be able to help fire the main gun – a crew member can only use one weapon at a time – the exception being Coaxial MG's.

HIT LOCATION

Once a hit has been achieved on a target the player will roll 2D6 to see which actual location has been hit. If that location is obscured, by the vehicle being hull down for example, then the shot has in fact hit the obstruction instead. The location roll may be modified if the firer has taken an aimed shot, for each 2 points that they reduce their hit chance by they may modify the location roll by 1 point up or down.

There are two columns for hit location depending on the aspect between the target and the firer. If the shot is from the front or rear then use the F/R column, otherwise use the side column. For vehicles that do not have a turret the upper hull replaces the turret location.

5b Target Location (2D6)		
	F/R	Side
Tracks/Wheels	2-3	2-4
Hull	4-8	5-8
Upper Hull/Turret	9-12	9-12
Per 2 points reduced hit chance, alter location roll by 1 point.		

6-DAMAGE

PENETRATE ARMOUR

Once the location has been determined the firing player will roll to see if they can penetrate the armour at that location. The starting value is the guns penetration factor at that range, this is added to a D6 die roll and the result compared. If the firer manages to exceed the armour then they may roll on the damage table. If the total does not exceed the armour then the hit has had no effect.

No matter what the actual die roll the final gun penetration value may not be greater than double its base penetration at that particular range.

Example

Example. At 40" a 37LL has a base penetration of 2. No matter what the D6 die roll the maximum result that can be obtained without a critical hit is 4.

CRITICAL HITS

If a to hit roll is 11 or 12 it means that the hit is a critical of some type. In this case the base penetration is doubled and this also means that the maximum penetration will be double.

Example

Example - taking the 37LL from the example above. It has a base penetration of 2 at 40", it fires and scores a critical hit. The base penetration is now doubled from 2 to 4, this means that with the D6 die roll the maximum result that can be obtained is 8.

MORALE AND AFV QUALITY

The vehicle will have the same morale and quality

as infantry – training class and morale number. Leaders may also be inside vehicles, they will only affect the vehicle they are in but will have morale mods and re-rolls as normal leaders.

Causes of morale tests on AFV as well as the effect on infantry within certain distance. Results of failure for vehicle morale. Effects of losing the tank commander.

SPECIAL AMMUNITION

CREW CASUALTIES

Crew survival rolls are by crew member and are 4+ on a D6 to survive. A destroyed vehicle may not be re-crewed, crew are armed with pistols. Casualties may also be taken in various positions due to damage rolls –crew losses in certain locations will affect what the vehicle is able to do.

BAILING OUT

Any penetrating hit will cause a morale test on the target vehicle. There are modifiers for losing crew. Crew that bail out of a vehicle will not re-man that vehicle, whatever hit them was sufficient for the crew to leave their vehicles and they will not re crew within the time frame that the scenario covers.

Crew that have abandoned a vehicle will always be suppressed, they may never go into good morale and so will not be able to close with a visible enemy. The vehicle crew should attempt to make it back to the rear though scenario specific rules may override this rule.

SMALL ARMS VS AFV

Small arms fire can kill exposed crew in an AFV or those that are in open topped vehicles but have no effect if the vehicle is buttoned up.

The small arms procedure uses the usual small arms to hit tables and rules - the cover that is applied to

6a Vehicle Damage (2D6)

Location	2D6	Effect
Turret	<=3	Morale check
	4-6	Turret crew roll to kill, morale check.
	7-9	Vehicle destroyed, turret crew killed. Hull crew roll to kill.
	10+	Brew. Burning wreck
Hull	<=3	Morale Check
	4-6	Hull crew roll to kill, morale check
	7-9	Vehicle destroyed, hull crew killed. Turret crew roll to kill.
	10+	Brew, burning wreck
Tracks/ Wheels	<=3	No effect
	4-6	Damaged – vehicle restricted to slow speed. Morale test
	7-9	Immobilized. Vehicle may not move – morale check.
	10+	Immobilized & damaged – hull crew roll to kill. Morale check

For every full 3 points greater than the target armour value +1 onto the 2D6 die roll.
Firing weapon is 40mm or smaller -1 to the die roll
Firing weapon is 88mm or larger +1 to the die roll

the target depends on the situation and the vehicle that is being fired at.

Small arms against a buttoned AFV. There is no chance to kill any of the crew, damage the vehicle or cause any kind of morale test. For larger calibre weapons such as .50cal HMG against vehicle you will use the usual AP rules.

Small arms against crew exposed (CE) AFV. The commander is generally the only member of the crew that will be exposed to small arms fire. He will count as being in hard cover.

Small arms vs open topped vehicle. The type of cover that the vehicle provides will depend on the direction that fire is coming from.

For open topped vehicles the crew are counted as being in hard cover unless the firer is at a higher level than they are - in which case the cover is counted as medium.

For open back or sides the crew will count as being in hard cover unless the fire is coming from the open direction - in which case they will count as being in medium cover.

The crew that are actually valid targets must be taken on a vehicle by vehicle basis, there are some that are obviously going to be visible and others that are not. For example the crew firing the gun of a Wirbelwind are exposed to small arms fire whereas the driver is not.

SMALL ARMS VS SOFT VEHICLES

This has the ability to kill crew, passengers or damage the vehicle itself. When firing at a soft vehicle the person firing simply shoots at the vehicle as a whole - the chance to kill passengers, crew or damage the vehicle depends on the actual dice rolled.

Soft vehicles count as being in the cover that they happen to occupy and are either damaged, wrecked or destroyed (burning) as a result of being shot at.

SA vs Soft Vehicles (D6)

1	Crew
2-3	Damaged
4	Destroyed
5-6	Passengers

There are no hit locations for soft vehicles, instead the number of small arms hits is calculated as usual but where they are actually applied is determined by a further die roll. This roll will also show whether the vehicle is damaged or destroyed by those hits. 2 damaged results destroy the vehicle, 2 destroyed results turn it into a burning wreck and all passengers and crew will have to roll for casualties.

The hits may not be carried from one location to the other. There are no 'to kill' rolls required when firing small arms at vehicles. Any hit will roll on the table above, if that result does not apply then the hit has no effect.

WRECKS & BURNING

Burning wrecks block LOS with smoke, and may not

be pushed.

Pushing wrecks out of the way takes a vehicle which is equal or heavier than the object it is pushing. Maximum speed of slow and the pushing vehicle will need to make a bog check each turn that it pushes – this rule allows tanks or large vehicles to push obstructions out of the way, off roads etc.

Passengers and crew on board a burning wreck must disembark immediately and may become casualties.

PASSENGER SURVIVAL

7-HE FIRE

There are two types of HE fire that can be directed against vehicles, direct HE and indirect HE. Just as with the infantry rules both are dealt with in a different way but use many of the game mechanics that are already in use.

DIRECT HE FIRE

Direct HE is where the firer is using HE to hit and destroy a vehicle. This may be because the weapon only fires HE ammunition or because it has a better chance to destroy the target vehicle - this is especially the case with soft vehicles.

Where a gun is firing HE at an AFV the procedure is exactly the same as for normal AP fire except that if a hit is scored the penetration value of the 'HE' column on the weapon stats is used rather than the AP value at a given range.

The HE armour penetration value will be the same no matter what the range is to the target.

Where HE is fired directly at a soft target and it hits the HE value is used to determine whether the vehicle is destroyed or not. The firing player rolls a D6, if the roll is less than or equal to the HE value the vehicle is destroyed otherwise it is simply damaged. If the roll is half or less the HE value then the vehicle is destroyed as a burning wreck.

INDIRECT HE FIRE

A vehicle that is in the blast area of HE fire can be hit just like the infantry figures that are within that blast area. For the sake of simplicity the same system is used. If a hit is scored the location is determined and if the armour is penetrated at that location damage will be caused.

The firing player will roll to see if any vehicle in the blast area has suffered a hit that may damage it. The vehicle will always count as being in the open no matter the cover that it occupies.

If a hit is scored then the firing player will always roll hit location using the side aspect of the vehicle

hit location table. The armour value of this side location is then noted and modified by the HE kill value (either -1 or -2) to give a final target number that needs to be exceeded for the HE fire to damage the vehicle. If the target number is exceeded then the firing player will get to roll on the damage table as per the usual armour penetration/damage rules.

Each hit does not necessarily mean a direct hit on the top of the target but represents nearby hits, splinter, blast damage. Even so the side armour value of the target is always used for indirect HE fire.

Any vehicle in the HE blast area that can do so must immediately button up whether it is hit or not.

Example

A PzIV F2 is within the blast area of an 81mm mortar barrage. The firing player rolls to hit and needs a result of 4+ on a D6 as there are no target modifiers and the vehicle counts as being in the open. The roll is a 6 and the Pz IV has been hit.

Rolling 2D6 on the hit location table using the 'side' column results in a 4 - track/wheels/lower superstructure. The armour value here is a 2, this is modified by -1 for the HE kill modifier of 81-100mm Indirect HE. The Allied player will need to roll greater than 1 to be able to roll on the vehicle damage table - he actually rolls a 5, 4 more than he needed.

Looking at the vehicle damage table the allied player now rolls 2D6 and modifies this by +1 for every three points that he exceeded the armour value by. The actual roll is a 7, modified to an 8. This immobilizes the PzIV and the crew will need to take a morale check immediately - if they fail they must bail out of the tank.

Had the hit location been the turret the armour would have been 4 so the allied player would need to roll greater than 3 on a D6 (armour 4 -1 for the HE kill value).

8-PASSENGERS & TOWING

PASSENGERS AS TARGETS

Passengers on or in a vehicle may not be singled out for targeting, if they want to be fired at the vehicle itself must be the target and both it and the passengers may be affected by the fire.

EMBARKING AND DISEMBARKING

Embarking and disembarking a vehicle takes half of the movement allowance of both the vehicle and the troops. The vehicle may not be moving at anything faster than slow speed.

PASSENGER CASUALTIES

If the vehicle itself is damaged or destroyed there is a chance that the passengers may become casualties – this is determined by the type of vehicle and the severity of the damage.

TOWING AND CARRYING CAPACITY

Capacity for carrying and towing is given on the notes section of the vehicle data tables. The carrying capacity is expressed as a number of troops that can be carried by the vehicle, this is also used for the transport of cargo and equipment. Each piece of equipment can be described as taking up the same amount of capacity as # number of troops. Loading and unloading cargo and the amount of space it takes up is generally only important in specific scenarios – basically how much Nazi gold can be taken from the bank.

Towing vehicles may never go at fast speed, it takes a number of turns to hitch or unhitch towed weapons, this is dealt with in the infantry/AT gun section. To be able to tow something the vehicle may not be more than one size smaller than the object it is towing. A small vehicle may not tow a large field artillery piece for example. As well as the

gun itself there is also the ammunition, crew and assorted equipment to take into account – this has to be able to fit somewhere too!

FIRING FROM A VEHICLE

Passengers may fire from a moving or stationary vehicle. The amount of troops that can actually fire will be determined by the carrying capacity of the vehicle as well as its use - a combat vehicle (Hanomag, M3 Halftrack etc) or a transport vehicle (Small, medium, large truck).

As a guide no more than half of the total carrying capacity may fire from a combat vehicle and no more than a quarter from a transport vehicle.

Example

An M3 Halftrack has a capacity of 12 passengers, as it is a combat vehicle a maximum of 6 troops may fire while occupying the vehicle whether it is moving or stationary.

The passengers will fire according to the orders that the vehicle has been given - in the fire phase, the moving fire phase or not at all and will use all of the appropriate movement modifiers.

MORALE TESTS FOR PASSENGERS

Passengers can be forced to take a morale test because of damage to their transporting vehicle, because they have themselves taken casualties or as part of force morale. If the morale test is taken because of enemy fire a result of suppressed will mean that the troops bail from the vehicle. If it is taken as a result of force morale then they may remain in the vehicle or bail at the players choice. If they remain with the vehicle it is also constrained by the rules about not moving closer to the enemy while suppressed, even if its own morale is good.

9-SPECIAL WEAPONS & EQUIPMENT

FLAMETHROWERS

Always hit – roll to kill depending on vehicle type, nothing to do with armour.

Flamethrower Vs Vehicles	
2d6 roll	Burning Wreck
Buttoned AFV	6+
CE AFV	5+
Open topped	4+
Soft Skinned	3+
Large Vehicle +1, Small -1	

If the vehicle is not destroyed it must still take a morale test as per the usual flamethrower rules.

AUTO CANNONS

These are 40mm, quad AA, Bofors, and include 50 cal HMG as well. They will have a number of attack dice and kill mods vs infantry – as per other special weapons rules. For vehicle combat they will have AP value. Close range 24”, max range 60”

Vs vehicles – use the SA rules or the AP/AT rules as appropriate when firing at soft vehicles or AFV's.

When firing an auto cannon at an AFV the usual procedure is used - roll to hit, roll for location and then armour penetration and damage as appropriate.

Autocannon Table Small arms		
Weapon	Attack Dice	To Kill mod
50 cal	5	-1
double 50 cal	7	-1
Quad 50 Cal	9	-1
Double Vickers	7	-
40mm	5	-2
Quad 40mm	7	-2

HVAP AMMUNITION

Certain nationalities had improved ammunition available in limited quantities after specific dates. These rounds were usually limited because they were specialised, more difficult to make and often used raw materials that were not so readily available.

Any weapon that has HVAP - High Velocity Armour Piercing - ammunition available will be able to roll 2D6 when rolling for penetration.

The maximum amount that can be obtained by a hit from HVAP ammo is 3 times the penetration factor rather than double as with normal ammo. If HVAP criticals then the usual rules apply in that the base penetration amount is doubled, the HVAP still allows 3 times the penetration so its effective maximum is 6 times the basic penetration factor.

HVAP is limited by scenario year, nationality, weapon and even if available a vehicle will not be able to fire more than 3 rounds of HVAP.

HOLLOW CHARGE AMMUNITION

Certain weapons had special hollow charge (HC) ammunition available in limited quantities. When HC ammo is used the armour penetration does not reduce with range, instead the gun will roll 2D6 plus the HE penetration value of the gun. There is no upper limit for the HC penetration, it is simply the HE plus the 2D6 die roll.

Example

A 105mm howitzer using Hollow Charge ammo would roll 4+2D6 for armour penetration at all ranges with a maximum penetration of 16 normal or 20 critical. A 37mm gun would roll 0+2D6 with a maximum of 12 penetration with no additional effect for critical hits.

ANTI TANK MINES

The current minefield rules apply to anti tank as well as anti personell mines unless stated otherwise.

A minefield must be declared as AP/AT or just AP. It costs more points to have a mixed minefield.

AP attack against the weakest armour of the target or the tracks/wheels - damage as for HC roll 'x'+2d6.

FLAILS & MINE ROLLERS

Only slow speed, not affected by minefield, clear path through mines.

SMOKE DISCHARGERS

Smoke counters placed within 2" of vehicle - limited uses.

CANNISTER AMMUNITION

Specific weapons only - use upto 24" as HMG, limited ammo

CULLIN HEDGEROW

Pass through hedges, bocage, slow speed only, make path, no bog roll.

DOZER TANKS

Push wrecks, destory obstacles, walls, fences, hedges, hasty road blocks, slow speed, no bog roll.

AMPHIBIOUS MOVEMENT

Slow speed only may cross water obstacles. 2D6
12 malfunction?

PETARD MORTAR

As demo charge, large Sturmtyger, Churchill AVRE

10 - INFANTRY AT WEAPONS

Small Arms AP

Weapon	Close Range/ Penetration	Long Range/ Penetration
.50 cal HMG	24"/1	60"/1
Flamethrower	6"	NA
Anti-Tank Rifle	24"/2	48"/2

HE Weapons Table

Weapon	Close Range	Long Range	HEAP
Panzerfaust 30K	6"	NA	2D6
Panzerfaust 30	6"	NA	2+2D6
Panzerfaust 60	6"	9"	2+2D6
Panzerfaust 100	6"	12"	2+2D6
Panzerfaust 150	6"	15"	2+2D6
Bazooka	6"	18"	2+1D6
Panzerschrek	6"	18"	2+1D6
PIAT	6"	15"	2+1D6

Flamethrower Vs Vehicles

2d6 roll	Burning Wreck
Buttoned AFV	6+
CE AFV	5+
Open topped	4+
Soft Skinned	3+
Large Vehicle +1, Small -1	

Assaulting Vehicles table (D6)

buttoned tanks	7+ (6 followed by 4-6)
crew exposed tank,	6+
open topped vehicle	5+
soft vehicle	4+
Molotov cocktails	-1 to target number for open topped and soft vehicles only
AT mines	-1 to the target number for all except soft vehicles
Sticky bombs & Magnetic mines	-1 to all except soft vehicles

11-CA & OVERRUNS

Close assaulting a vehicle is carried out in the same phase as normal infantry to infantry CA and follows the same procedure except as described below.

For infantry to be able to Close Assault and AFV they will need to roll and pass a morale test. If they fail they simply do not move into CA. If they do pass the test then the assaulting element may be moved up to 4" as it would with any normal CA action. To be able to count as close assaulting a figure must be able to get within 1" of the target vehicle.

There is no morale test required to CA soft vehicles. The chance to damage vehicle is based on a D6 roll per figure which may be modified for any specific anti tank weapons such as magnetic mines and so on. The CA figures have a target number that they need to roll equal to or greater just like normal CA with personnel

The vehicle gets to roll 1D6 for each of its weapons that can be used against the attacking infantry – so long as it has the arc of fire. It does not matter what type of weapon this is – it would gain 1D6 for its main armament, a hull mounted MG or a coaxial MG. The vehicle rolls its CA die before the assaulting infantry – it is possible that the vehicle can destroy the personnel who will then not get to roll to attack the vehicle.

As per the usual vehicle damage rules each attack that succeeds will then 2D6 to see the location hit. The armour at this location is always deemed to be penetrated and the attacker then goes straight onto the damage roll as per the usual vehicle damage rules.

If the vehicle is not destroyed then the attackers retire 4" away from the vehicle back to their starting positions.

OVERRUNS WITH VEHICLES

A vehicle may carry out an overrun attack at the end of the turn during the close assault phase. Like a normal CA the vehicle must be within 4" of the target of the attack but it must actually be moving,

not stationary, to be able to declare this.

The vehicle is moved during the CA phase and the target will be able to fight back as normal, the usual rules apply to close assaulting a vehicle so if the target wants to react or other troops want to join in this CA then they must pass a moral test to do so.

As usual the vehicle will get to fire and attack first, any troops that remain can then fight back.

Assaulting Vehicles table (D6)

buttoned tanks	7+ (6 followed by 4-6)
crew exposed tank,	6+
open topped vehicle	5+
soft vehicle	4+
Molotov cocktails	-1 to target number for open topped and soft vehicles only
AT mines	-1 to the target number for all except soft vehicles
Sticky bombs & Magnetic mines	-1 to all except soft vehicles

12-SPOTTING

To spot a vehicle simply add the modifiers below to the spotting table – this applies to all spotting attempts and the rules are the same as currently.

Vehicles will auto spot in the same manner as infantry, this means that any enemy that is spotted is a valid target.

There is one exception to the above rule. Vehicles have to roll to spot stationary infantry in cover before they can fire upon them if the vehicle is buttoned and has no supporting infantry within 1". The spotting attempt uses all of the usual rules for range, movement and so on. One spotting roll is made per vehicle, not per target. This may mean that some elements are spotted while others are not, the vehicle does not need to declare its targets until after it has rolled the spotting check.

Autospot within 4" still applies no matter that status of the target or the vehicle.

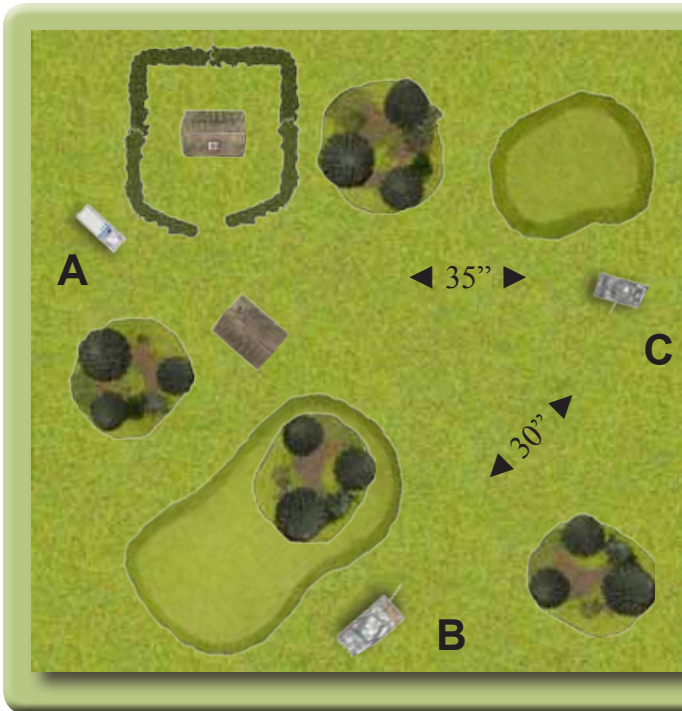
Don't forget that all infantry targets in the open, all infantry or guns that have moved or fired and all vehicles are already spotted if they are on the table – it is only infantry targets that are stationary in cover that need to be spotted by buttoned and unsupported tanks. Hopefully this will mean that the spotting rules do not bog the game down and there will be a minimum of counters and record keeping.

Open topped and soft skinned vehicles are never counted as being buttoned.

Spotting from a vehicle makes difference if it is open or buttoned as well as if supported by infantry within 1" of the vehicle.

Vehicle Spotting Table	
Spotting from buttoned and unsupported vehicle	+2
Spotting Small vehicle/gun	-1
Spotting Medium Vehicle/gun	-2
Spotting large vehicle/gun	-3
Spotting from a vehicle moving at medium speed	+1
Spotting from a vehicle moving at fast speed	+3

A- EXTENDED EXAMPLE



In the situation to the left the Sdkfz7 Halftrack (A) has just carried out a cautious move at slow speed, the Panther (B) is moving and firing at medium speed and it is buttoned up, the Sherman (C) is stationary with commander exposed. The image shows them in their positions after all movement has been carried out.

All vehicles have Regular crews and everything has been spotted already, both players know where each others' vehicles are.

The Sdkfz7 has 2 crew and is carrying a rifle section of 5 men including one leader.

Name	Wgt	Size	Armour				MP F/M/S	MA	MG	Crew	Notes
			Front		Side & Rear						
			H	T	H	T					
PzKpfw V (D)	H	M	12	14	6	6	18/9/5	T75LL	C	T:C,G H:D,L,A	
SdKfz 7	L	L (HT)	U	U	U	U	18/9/5	-	-		16/L
M4 Sherman	M	M	8	8	4	6	16/8/4	T75	B/C/A	T:C,G H:D,L,A	

During the stationary fire phase the US Sherman (C) declares that it is going to fire its main gun and its coaxial MG at the Panther (B) and its bow MG at the half track (A).

Dealing with the MG fire first - the bow MG is classed as a LMG so it will have 3 attack dice and be firing at long range. The modifiers are +1 for long range fire, -1 for stationary fire vs movement in the open and a further -1 for small arms fire against a vehicle. The vehicle is in the open and the starting basic to hit number is therefore 4+ which is then modified to 3+. The US player rolls 3 dice and gets 2,5,6 for 2 hits. There is no 'to kill' roll needed, these hits are now simply rolled for on the Small Arms vs Soft Vehicles table.

The two D6 are rolled and the results are 2 and 5. One hit has been allocated against the vehicle

SA vs Soft Vehicles (D6)	
1	Crew
2-3	Damaged
4	Destroyed
5-6	Passengers

which has damaged it, the other against one of the passengers. As per usual the owner of the element gets to decide which figure is removed as a casualty except that there is a leader casualty roll as one of the rifle squad is a leader.

The crew of the vehicle and all the passengers will have to take a morale test during the morale phase at the end of the turn. This is because the vehicle has taken damage and the squad has lost a figure.

Moving onto the fire against the Panther the US player measures the range - which is 30" and calculates his chance to hit. The basic starting to hit number is 5+ on 2D6, this is modified by the target moving at medium speed +1, the target is medium sized -1 and the fire is at greater than 24" but less than 36" +1. This gives a modified target number of 6+ to hit. The 2D6 result is an 8 so the Panther has been hit.

The US player now rolls to see what location has been hit - As the fire is coming in from the front the player uses the F/R target aspect and rolls a 7, this results in a hit on the hull front.

Target Location (2D6)		
	F/R	Side
Tracks/Wheels	2-3	2-4
Hull	4-8	5-8
Upper Hull/Turret	9-12	9-12
Per 2 points reduced hit chance, alter location roll by 1 point.		

	0-24	24-36	36-48	48-60	60+	HE
75	7	6	4	3	3	2
75LL	11	11	10	8	7	2

Both players can now compare the targets armour with the firing guns penetration factor. The front hull of a Panther has armour of 12 while the penetration factor of a 75mm gun at 24-36 inches is a 6. The US player needs to exceed the armour value to cause damage - in this case it means he would need to have rolled a critical hit or a location that had less armour - namely the tracks/wheels/lower superstructure.

This brings the stationery fire phase to an end and it is now the moving phase. The Panther declares that it is firing its main armament and also the Coaxial MG at the Sherman. The basic hit number is 5+ on 2D6, this is modified by the firing vehicle moving at medium speed +3, the target is medium sized -1, the target is 30" away +1 and the tank is buttoned +1 for a final modified target number of 9+ to hit. Unfortunately for the US player the Panther rolls a 10 and hits.

From the position occupied by the two vehicles the fire at the Sherman is at its side - the German player uses the Side column of the to hit table and rolls a 10 - this is a hit on the turret. As the Sherman just

fired at the Panther and looking at the position of the models it is clear that the hit on the turret would actually be against its frontal armour rather than its side.

The two players now compare the frontal turret armour of the Sherman (8) with the penetration factor of a 75LL at 24-36 inches (11). The German player cannot fail to damage the Sherman but a roll is made anyway as the amount by which the armour is exceeded can affect the damage caused. To add insult to injury the German player rolls a 6, this is added to 11 for 17 - this is 9 more than the 8 armour of the Sherman so will result in a +3 modifier to the damage roll.

The German player rolls 2D6 and gets a result of 5 - this is modified by +3 because of the amount it exceeded the targets armour value. The final result of 8 means that the Sherman has been destroyed, the turret crew have been killed - actually they are casualties, whether this is killed, wounded, shocked, concussed or whatever they are effectively out of the battle.

Location	2D6	Effect
Turret	<=3	Morale check
	4-6	Turret crew roll to kill, morale check.
	7-9	Vehicle destroyed, turret crew killed. Hull crew roll to kill.
	10+	Brew

The 3 hull crew will also need to roll to see if they can bail out unscathed, each needs a result of 4+ on a D6 and the individuals are rolled for separately. The Driver and Loader managed to bail but the Assistant failed. Unfortunately for these 2 crew the Panther MG can shoot at them as they bail out. Rolling 3 attack dice at a target in medium cover at long range the shots all miss. 2 crew are placed next to the Sherman, they are immediately suppressed.

At the end of the turn the SdKfz7, the passengers in it and the two remaining Sherman crew will have to take a morale test.

Change of Face orders

Small TT	Cautious Move
Small no TT	Move & Fire
Medium TT	Move & Fire
Medium no TT	At the Double
Large TT	At the Double
Large no TT	May not change facing.

Vehicle Fire table

Target Speed Medium/Fast	+1/+2
Target Size Large/Medium	-2/-1
Firer is buttoned vehicle vs vehicle	+1
Firer is buttoned vehicle Vs personnel	+2
Each part of 12" away after first 24"	+1
Aimed fire for each 1 point shift on the location roll	+2
Green/Veteran	+1/-1
Each crew less than required to fire gun	+2
Firer is moving slow/medium	+1/+3

SA vs Soft Vehicles (D6)

1	Crew
2-3	Damaged
4	Destroyed
5-6	Passengers

Flamethrower Vs Vehicles

2d6 roll	Brewed
Buttoned AFV	6+
CE AFV	5+
Open topped	4+
Soft Skinned	3+
Large Vehicle +1, Small -1	

Autocannon Table Small arms

Weapon	Attack Dice	To Kill mod
50 cal	5	-1
double 50 cal	7	-1
Quad 50 Cal	9	-1
Double Vickers	7	-
40mm	5	-2
Quad 40mm	7	-2

Bogging Down Table (2D6) 10+

Partially Tracked	+1 to the target number
Tracked	+2 to the target number.
Fast Speed	-2 to the target number
Medium Speed	-1 to the target number

Target Location (2D6)

	F/R	Side
Tracks/Wheels	2-3	2-4
Hull	4-8	5-8
Upper Hull/Turret	9-12	9-12
Per 2 points reduced hit chance, alter location roll by 1 point.		

Vehicle damage table

Location	2D6	Effect
Turret	<=3	Morale check
	4-6	Turret crew roll to kill, morale check.
	7-9	Vehicle destroyed, turret crew killed. Hull crew roll to kill.
	10+	Brew. Burning wreck
Hull	<=3	Morale Check
	4-6	Hull crew roll to kill, morale check
	7-9	Vehicle destroyed, hull crew killed. Turret crew roll to kill.
	10+	Brew, burning wreck
Tracks/Wheels	<=3	No effect
	4-6	Damaged – vehicle restricted to slow speed. Morale test
	7-9	Immobilized. Vehicle may not move – morale check.
	10+	Immobilized & damaged – hull crew roll to kill. Morale check
For every full 3 points greater than the target armour value +1 onto the 2D6 die roll. Firing weapon is 40mm or smaller -1 to the die roll Firing weapon is 88mm or larger +1 to the die roll		

WEAPON STATS

	0-24	24-36	36-48	48-60	60+	HE	HVAP	HC
.50 Cal	2	1	1	1	NA	NA		
15	3	2	1	1	NA	NA		
20L	2	1	1	1	1	1		
20LL	3	2	1	1	1	1		
25LL	3	2	1	1	1	1		
37S	3	2	1	1	1	1		
37	3	2	1	1	1	1		
37L	4	3	1	1	1	1		
37LL	4	3	2	1	1	1		
39	2	1	1	1	1	1		
40L	4	3	2	1	1	1		
42	2	1	1	1	1	1		
44	2	1	1	1	1	1		
45L	4	3	2	1	1	1		
45LL	5	4	2	1	1	1		
47S	3	2	1	1	1	1		
47	4	3	2	1	1	1		
47L	5	4	2	1	1	1		
50	5	4	2	1	1	1		
50L	6	5	3	2	1	1		
57	4	3	2	1	1	1		
57L	6	6	4	3	2	1		
57LL	7	6	5	4	3	1		
65S	5	4	2	1	1	1		
70S	4	4	2	1	1	1		
75S	5	5	3	2	2	2		
75	7	6	4	3	3	2		

	0-24	24-36	36-48	48-60	60+	HE	HVAP	HC
75L	9	8	7	6	4	2		
75LL	11	11	10	8	7	2		
76S	5	5	3	3	2	2		
76	6	6	4	3	2	2		
76L	7	6	5	3	2	2		
76LL	9	8	7	6	5	2		
77L	10	9	8	7	6	2		
84S	6	6	4	3	2	2		
85L	9	9	7	6	5	3		
88S	6	5	4	3	3	3		
88	7	6	5	3	3	3		
88L	10	10	9	7	6	3	+	
88LL	14	13	11	10	9	3		
90L	10	10	9	7	6	3		
100L	14	13	11	10	9	4		
105	7	7	5	4	3	4		
105L	11	10	9	8	7	4		
122L	13	12	11	10	9	4		
128L	17	16	14	12	10	4		
150	11	10	9	8	7	5		
150L	14	14	12	10	9	5		
152S	9	9	7	6	5	5		
152	11	10	9	8	7	5		
155	11	10	9	8	7	6		
155L	14	14	12	10	9	6		
170L	17	16	14	12	10	6		

HVAP Any weapon that has HVAP - High Velocity Armour Piercing - ammunition available will be able to roll 2D6 when rolling its initial amount for penetration. The player will be able to choose the highest die roll of the two and if this happens to be a 6 will re roll that single die again as per the usual rules.

HC Certain weapons had special hollow charge (HC) ammunition available in limited quantities. When HC ammo is used the armour penetration does not reduce with range, instead the gun will roll 2D6 plus double the HE penetration value of the gun.

Name - Self explanatory!

Wgt - Vehicle weight, L=Light, M=Medium, H=Heavy

Size - Vehicle size, L=Large, M=Medium, S=Small

Armour Front H=Hull, T=Turret. Side & Rear H=Hull, T=Turret. Upper Hull applies where a vehicle has no turret.

Move F/M/S Fast/Medium/Slow speed in inches. Represented by the orders Cautious Advance, Move & Fire, At the Double.

MA - Main Armament

MG - B=Bow, C=Co Axial, A=Anti Aircraft

Crew - C=Commander, G=Gunner, L=Loader, D=Driver, A=Assistant (covers radio, assistant gunner, bow gunner etc) Location H=Hull, T=Turret

Notes - Cargo capacity in men, towing capacity - L=Large, M=Medium, S=Small, special weapons, ammo or other notes.

GERMAN

Name	Wgt	Size	Armour				Track/ Wheel	Move F/M/S	MA	MG	Crew	Notes
			Front		Side & Rear							
			H	T	H	T						
PzKpfw IB	L	S	2	2	1	1	2	20/10/5	BMG	C	T:C H:D	
PzKpfw IIA	L	S	2	2	1	1	2	20/10/5	T20L	C	T:C H:D,A	
PzKpfw IIF	L	S	3	3	1	1	2	18/9/5	T20L	C	T:C H:D,A	
PzKpfw II(FI)	L	S	3	3	1	2	2	20/10/5	BFlame	C	T:C H:D,A	Flame 12" (3)
PzKpfw III L	L	S	3	3	2	2	2	20/10/5	T20L	C	T:C H:D,A	
PzKpfw IIID	M	M	2	2	1	2	2	15/10/5	T37L	B/C	T:C,G H:D,L,A	
PzKpfw IIIF	M	M	3	3	3	4	2	18/9/5	T37L	B/C	T:C,G H:D,L,A	
PzKpfw IIIG	M	M	3	4	3	4	2	16/8/4	T50	B/C	T:C,G H:D,L,A	
PzKpfw IIIH	M	M	6	4	3	4	2	16/8/4	T50	B/C	T:C,G H:D,L,A	
PzKpfw IIJ	M	M	6	6	3	4	2	16/8/4	T50L	B/C	T:C,G H:D,L,A	
PzKpfw IIIL/M	M	M	6	8	3	4	2	16/8/4	T50L	B/C/A	T:C,G H:D,L,A	
PzKpfw III Flame	M	M	8	8	3	4	2	15/10/5	TFlame	B/C/A	T:C,G H:D,L,A	Flame 12" (3)
PzKpfw IIIN	M	M	6	6	3	4	2	16/8/4	T75S	B/C/A	T:C,G H:D,L,A	
PzKpfw IVA	M	M	2	2	1	2	2	16/8/4	T75S	B/C	T:C,G H:D,L,A	
PzKpfw IVC	M	M	3	3	1	2	2	18/9/5	T75S	C	T:C,G H:D,L,A	
PzKpfw IVD	M	M	3	3	2	3	2	18/9/5	T75S	B/C	T:C,G H:D,L,A	
PzKpfw IVE/F1	M	M	6	6	3	3	2	18/9/5	T75S	B/C	T:C,G H:D,L,A	
PzKpfw IVF2/G(E)	M	M	6	6	3	4	2	18/9/5	T75L	B/C	T:C,G H:D,L,A	
PzKpfw IVG (L)	M	M	8	6	3	4	2	16/8/4	T75L	B/C/A	T:C,G H:D,L,A	
PzKpfw IVH/J	M	M	8	6	3	4	2	16/8/4	T75L	B/C/A	T:C,G H:D,L,A	
PzKpfw VD	H	M	12	14	6	6	3	18/9/5	T75LL	C	T:C,G H:D,L,A	
PzKpfw VA/G	H	M	12	14	6	6	3	18/9/5	T75LL	B/C/A	T:C,G H:D,L,A	
PzKpfw VIE	H	L	12	14	8	8	3	15/10/5	T88L	B/C	T:C,G,L H:D,A	
PzKpfw VIE (L)	H	L	12	14	8	8	3	15/10/5	T88L	B/C/A	T:C,G,L H:D,A	
PzKpfw VIB (Porsche)	H	L	20	16	8	11	3	15/10/5	T88LL	B/C/A	T:C,G H:D,L,A	
PzKpfw VIB (Henschel)	H	L	20	18	8	11	3	15/10/5	T88LL	B/C/A	T:C,G H:D,L,A	
Maus	H	L	26	26	18	18	3	12/6/3	T128L/T75	A	T: C,G,L H: D,L,A	
StuG IIIB	M	M	6	6	3	3	2	18/9/5	B75S	-	H: C,G,D,L	
StuG IIIG	M	M	8	8	3	3	2	16/8/4	B75L	A	H: C,G,D,L	
StuG IIIG (L)	M	M	8	8	3	3	2	16/8/4	B75L	C/A	H: C,G,D,L	
StuH 42	M	M	8	8	3	3	2	16/8/4	B105	A	H: C,G,D,L	
StuH 42 (L)	M	M	8	8	3	3	2	16/8/4	B105	C/A	H: C,G,D,L	
StuPz IV	M	M	11	14	3	4	2	15/10/5	B150S	-	H: C,G,D,L,A	

StuPz IV (L)	M	M	11	14	3	4	2	15/10/5	B150S	B/A	H: C,G,D,L,A	
Sturmiger	H	L	12	12	8	8	3	15/10/5	B380S	B		
PzJg Tiger	H	L	16	16	8	11	3	12/6/3	B88LL	-	H: C,G,D,L,L,A	
PzJg Tiger (L)	H	L	16	16	8	11	3	12/6/3	B88LL	B	H: C,G,D,L,L,A	
PzJg I	L	S	2	2	1	1	2	16/8/4	B47L	-	H: C,G,D	(o)
Marder I	L	M	2	2	1	1	2	16/8/4	B75L	-	H: C,G,D,L	(o)
Marder II	L	M	3	2	1	1	2	16/8/4	B75L	A	H: C,G,D,L	(o)
PzJg III/IV	M	M	3	2	2	1	2	16/8/4	B88LL	A	H: C,G,D,L	(o)
JgdPz IV	M	M	11	11	3	4	2	16/8/4	B75L	B	H: C,G,D,L	
JgdPz IV(L)	M	M	12	12	3	4	2	15/10/5	B75L	B	H: C,G,D,L	
JgdPz IV/70	M	M	12	12	3	4	2	15/10/5	B75LL	B	H: C,G,D,L	
JgdPz V	H	M	14	14	6	6	3	18/9/5	B88LL	B	H: C,G,D,L,A	
JgdPz VI	H	L	20	20	8	11	3	15/10/5	B128L	B	H: C,G,D,L,A	
sIG IB	L	S	2	2	1	1	2	15/10/5	B150S	-	H: C,G,D,L	(o)
sIG II	L	S	3	2	1	2	2	16/8/4	B150S	-	H: C,G,D,L	(o)
37 FlaK/Pz IV	M	M	6	4	3	3	2	16/8/4	T37L	-		(o)
Moebelwagen	M	M	6	6	3	3	2	12/6/3	T37L	-		(o)
FlaKPz IV/20	M	M	4	3	3	2	2	18/9/5	T20L	B		(o)
FlakPz IV/37	M	M	6	4	3	3	2	16/8/4	T37L	B		(o)
PzKpfw 35(t)	L	M	3	3	1	1	2	18/9/5	T37	B/C		
PzKpfw 38(t) A	L	M	3	3	1	1	2	18/9/5	T37L	B/C		
PzKpfw 38(t) E	L	M	4	4	2	3	2	18/9/5	T37L	B/C		
StuG 75/18(i)	M	M	3	4	3	3	2	16/8/4	B75S	A		
StuG 75/34(i)	M	M	3	4	3	3	2	16/8/4	B75	A		
StuG 105/25(i)	M	M	8	8	3	4	2	16/8/4	B105	A		
StuG 75/46(i)	M	M	8	11	4	6	2	16/8/4	B75L	A		
PzJg 35R(f)	M	M	4	3	2	1	2	12/6/3	B47L	-		(o)
Marder III(t)H	L	M	4	3	1	1	2	18/9/5	B75L	B		(o)
Marder III(t)M	L	M	2	1	1	0	2	18/9/5	B75L	-		(o)
JgdPz 38(t)	M	M	12	12	3	3	2	16/8/4	B75L	A	H: C,G,D,L	
JgdPz 38(t)(Fl)	M	M	12	12	3	3	2	16/8/4	BFlame	A	H: C,G,D,L	Flame 12" (3)
sIG 38(t)M	L	M	2	1	1	0	2	18/9/5	B150S	-		(o)
FlaKPz 38(t)	L	M	2	1	1	0	2	18/9/5	T20L	-		(o)

Name	Wgt	Size	Armour					Track/ Wheel	MP F/M/S	MA	MG	Crew	Notes
			Front		Side & Rear								
			H	T	H	T							
SPW 250/1	L	S (HT)	1	1	1	1	1	20/10/5	AAMG	A		(o) 7/M	
SPW 250/sMG	L	S (HT)	1	1	1	1	1	20/10/5	CMG	C/A		(o) 4/-	
SPW 250/8	L	S (HT)	1	1	1	1	1	20/10/5	B75S	C		(o)	
SPW 250/9	L	S (HT)	1	1	1	1	1	20/10/5	T20L	C		(o)	
SPW 250/10	L	S (HT)	1	1	1	1	1	20/10/5	B37L	A		(o)	
SPW 251/1	L	M (HT)	1	1	1	1	1	18/9/5	AAMG	A		(o) 12/M	
SPW 251/sMG	L	M (HT)	1	1	1	1	1	18/9/5	CMG	C/A		(o) 6/-	
SPW 251/9	L	M (HT)	1	1	1	1	1	18/9/5	B75S	C		(o)	
SPW 251/10	L	M (HT)	1	1	1	1	1	18/9/5	B37L	A		(o) 10/M	
SPW 251/16	L	M (HT)	1	1	1	1	1	18/9/5	SF24	A		(o)	
SPW 251/21	L	M (HT)	1	1	1	1	1	18/9/5	T20L	-		(o)	
SPW 251/22	L	M (HT)	1	1	1	1	1	18/9/5	B75L	A		(o)	
Kfz 13	L	S (W)	1	1	1	1	1	24/12/6	AAMG	A		(o)	
PSW 221	L	S (W)	1	1	1	1	1	28/14/7	CMG	C		(o)	
PSW 222	L	S (W)	1	1	1	1	1	28/14/7	T20L	C		(o)	

PSW 222 (L)	L	S (W)	2	1	1	1	1	28/14/7	T20L	C		(o)
PSW 231(6 rad)	L	M (W)	1	1	1	1	1	24/12/6	T20L	C/A		
PSW 231(8 rad)	L	M (W)	2	1	1	1	1	28/14/7	T20L	C		
PSW 232(8 rad)	L	M (W)	3	3	1	1	1	28/14/7	T20L	C		
PSW 233	L	M (W)	3	2	1	1	1	28/14/7	B75S	-		(o)
PSW 234/1	L	M (W)	4	4	1	1	1	28/14/7	T20L	C		(o)
PSW 234/2	L	M (W)	4	4	1	1	1	28/14/7	T50L	C		
PSW 234/3	L	M (W)	4	3	1	1	1	28/14/7	B75S	C		(o)
PSW 234/4	L	M (W)	4	3	1	1	1	28/14/7	B75L	-		(o)
SdKfz 10/4	L	M (HT)	U	U	U	U	U	16/8/4	T20L	-		
SdKfz 6/2	L	M (HT)	U	U	U	U	U	16/8/4	T37L	-		
SdKfz 7/1	L	L (HT)	U	U	U	U	U	16/8/4	T20L	-		
Kfz 4	L	M (W)	U	U	U	U	U	25/13/7	AAMG	A		
2cm FlaK LKW	L	M (W)	U	U	U	U	U	24/12/6	T20L	-		
3.7cm FlaK LKW	L	M (W)	U	U	U	U	U	24/12/6	T37L	-		
Kfz 1	L	M (W)	U	U	U	U	U	28/14/7	AAMG	A		8/M
Kfz 1/20	L	M (W)	U	U	U	U	U	28/14/7		-		8/M
Opel 6700	L	M (W)	U	U	U	U	U	25/13/7		-		20/L
Buessing-NAG	L	M (W)	U	U	U	U	U	24/12/6		-		24/L
SdKfz 7	L	L (HT)	U	U	U	U	U	18/9/5		-		16/L
SdKfz 11	L	L (HT)	U	U	U	U	U	18/9/5		-		14/L

Name	Caliber	Size	Crew	TT	Notes
2.8cm sPzB 41	28LL	S			
3.7cm PaK 35/36	37L	S			
4.2cm lePaK 41	40LL	M			
5cm PaK 38	50L	M			
7.5cm PaK 97/38	75	M			
7.5cm PaK 40	75L	M			
7.62cm PaK 36r	76L	M			
8.8cm PaK 43	88LL	L			
8.8cm PaK 43/41	88LL	L			
12.8cm K 81/1	128L	L			
7.5cm leIG 18	75S	M			
15cm sIG 33	150S	M			
7.5cm LG 40 Recoiless	75*	M			
10.5cm LG 42 recoilless	105*	M			
7.5cm leFK 16nA Art	75	M			
10.5cm leFH 18 Art	105	L			
s 10cm K 18 Art	105L	L			
15cm sFH 18 Art	150	L			
15cm K 18 Art	150L	L			
17cm K 18 Art	170L	L			
2cm FlaK 30/36/38	20L	S			
2cm FlaKvierling 38	20L	M			
3.7cm FlaK 37	37L	M			
8.8cm FlaK 18 o. 36	88L	L			

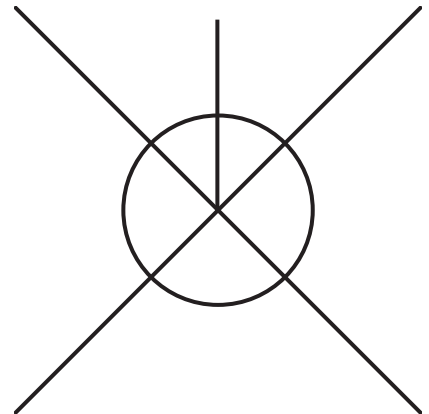
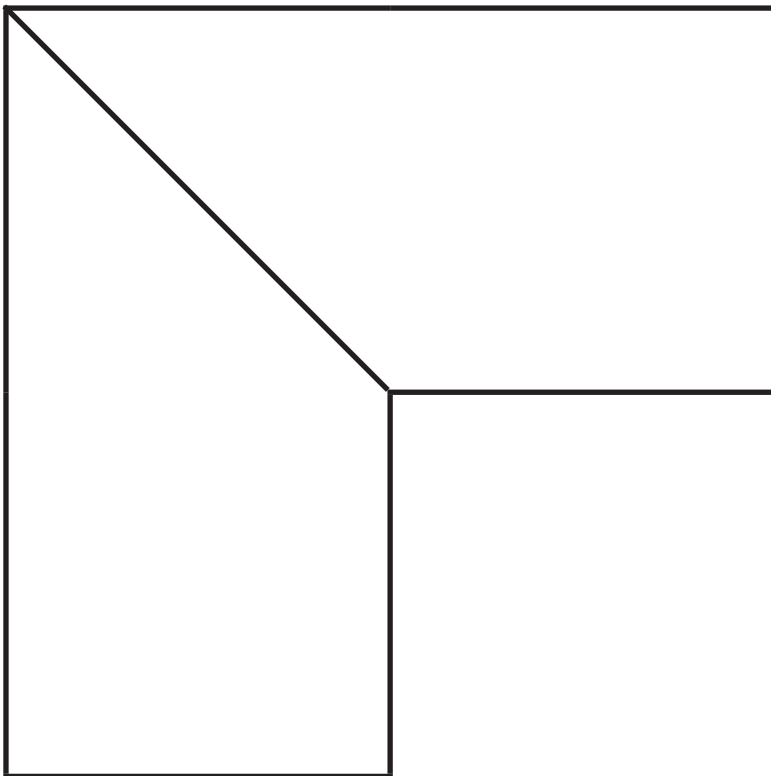
USA

Name	Wgt	Size	Armour				Track/ Wheel	MP F/M/S	MA	MG	Crew	Notes
			Front		Side & Rear							
			H	T	H	T						
M2A4	L	S	3	3	3	3	2	20/10/5	T37LL	B/C/A		
M3 Stuart	L	S	4	4	3	4	2	20/10/5	T37LL	B/C/A		
M3A1 Stuart	L	S	4	4	3	4	2	20/10/5	T37LL	B/C/A		
M3A1 Satan	L	S	4	4	3	4	2	20/10/5	TF32	B/C	Flame	
M5A1 Stuart	L	S	6	6	3	4	2	20/10/5	T37LL	B/C/A		
M24 Chafee	M	M	6	6	3	4	2	20/10/5	T75	B/C/A		
M3 Lee/Grant	M	M	7	7	4	5	2	16/8/4	T37LL/B75	B/C/A		
M4 Sherman	M	M	8	8	4	6	2	16/8/4	T75	B/C/A		
M4A3E2	M	M	15	15	8	10	3	15/10/5	T75	B/C/A		
M4A3E2(L)	M	M	15	15	8	10	3	15/10/5	T76L	B/C/A		
M4A3E8	M	M	11	8	4	6	2	18/9/5	T76L	B/C/A		
M4A3(105)	M	M	8	8	4	6	2	16/8/4	T105	B/C/A		
M4 Tankdozer	M	M	8	8	4	6	2	15/10/5	T75	C/A	Dozer	
T1E3	H	M	8	8	4	6	2	12/6/3	T75	C/A	Mine Roller	
Sherman Crab	M	M	8	8	4	6	2	15/10/5	T75	C/A	Flail	
POA-CWS-H1	M	M	8	8	4	6	2	16/8/4	TF32	B/C/A	Flame	
M26 Pershing	M	M	16	11	8	8	2	15/10/5	T90L	B/C/A		
M10 GMC	M	M	8	8	3	3	2	18/9/5	T76L	A	(o)	
M18 GMC	M	M	3	3	1	1	2	20/10/5	T76L	A	(o)	
M36 GMC	M	M	8	8	3	3	2	18/9/5	T90L	A	(o)	
M8 HMC	L	M	6	4	3	3	2	20/10/5	T75S	A	(o)	
M7 HMC	M	M	3	2	1	1	2	16/8/4	B105	A	(o)	
M12 GMC	M	M	4	3	1	1	2	16/8/4	B155	-	(o)	
M4 DD	M	M (A)	8	8	4	6	2	16/8/4	T75	C/A		

Name	Wgt	Size	Armour				Track/ Wheel	MP F/M/S	MA	MG	Crew	Notes
			Front		Side & Rear							
			H	T	H	T						
M2	L	M (HT)	1	1	1	1	1	24/12/6	T.50 Cal	A	H: D	(o) 8/M
M3/M3A1	L	M (HT)	1	1	1	1	1	24/12/6	T.50 Cal	A	H: D	(o) 12/M
M3(MG)	L	M (HT)	1	1	1	1	1	24/12/6	T.50 Cal	A/LA/RA	H: D, 2G	(o) 8/M
M3 GMC	L	M (HT)	1	1	1	1	1	20/10/5	B75	A	H: D,G,L,C	(o)
T30 HMC	L	M (HT)	1	1	1	1	1	20/10/5	B75S	A	H: D,G,L,C	(o)
T19 HMC	L	M (HT)	1	1	1	1	1	18/9/5	B105	A	H: D,G,L,C	(o)
M15A1 MGMC	L	M (HT)	1	1	1	1	1	20/10/5	T37L/D.50	-		(o)
M16 MGMC	L	M (HT)	1	1	1	1	1	20/10/5	T Q.50 Cal	-		(o)
M3A1 Scout	L	S (W)	1	1	1	1	1	25/13/7	T.50 Cal	A		(o) 10/M
M20	L	S (W)	2	2	1	1	1	28/14/7	T.50 Cal	A		(o) 4
M8	L	S (W)	2	2	1	2	1	28/14/7	T37LL	C/A		(o)
DUKW	L	L (W)	U	U	U	U	U	25/13/7	T.50 Cal	A		24/L
1/4-Ton Jeep	L	S (W)	U	U	U	U	U	28/14/7	T.50 Cal	A		5/S
3/4-Ton	L	M (W)	U	U	U	U	U	28/14/7	-	-		10/M
1 1/2-Ton	L	M (W)	U	U	U	U	U	25/13/7	-	-		12/M
2 1/2-Ton	L	M (W)	U	U	U	U	U	25/13/7	-	-		16/L
7 1/2-Ton	M	L (W)	U	U	U	U	U	24/12/6	-	-		24/L

Name	Caliber	Size	Crew	TT	Notes
M3A1 37mm AT Gun	37LL	S			
M1 57mm AT Gun	57L	M			
M5 3-in AT Gun	76L	M			
T32 37mm Manpack Gun	37S	S			
M18 57mm Recoilless Rifle	57	S			
M20 75mm Recoilless Rifle	75	S			
M1A1 75mm Pack Howitzer	75S	M			
M1897A2 75mm Gun	75	M			
M2A1 105mm Howitzer	105	L			
M3 105mm Howitzer	105S	L			
M1 4.5-in Gun	114	L			
M1918 155mm Howitzer	155S	L			
M1 155mm Howitzer	155	L			
M1918M1 155mm Gun	155	L			
M1A1 155mm Gun	155L	L			
M1 8-in. Howitzer	203	L			
M51 Multiple .50-cal MG	12.7	M			
M1A2 37mm AA Gun	37L	M			
M1 40mm AA Gun	40L	M			
M3 3-in. AA Gun	76L	L			
M1A1 90mm AA Gun	90L	L			
M2 90mm AA Gun	90L	L			

Buttoned	Buttoned	Buttoned	Buttoned	Buttoned	Buttoned	Buttoned	Buttoned	Buttoned	Buttoned	Buttoned
BOG DOWN	BOG DOWN	BOG DOWN	BOG DOWN	BOG DOWN	BOG DOWN	BOG DOWN	BOG DOWN	BOG DOWN	BOG DOWN	BOG DOWN
Immobilized	Immobilized	Immobilized	Immobilized	Immobilized	Immobilized	Immobilized	Immobilized	FAST	FAST	FAST
WRECK	WRECK	WRECK	WRECK	WRECK	WRECK	WRECK	WRECK	MED	MED	MED
BURN WRECK	BURN WRECK	BURN WRECK	BURN WRECK	BURN WRECK	BURN WRECK	BURN WRECK	BURN WRECK	SLOW	SLOW	SLOW
CREW DRIVER	CREW LOADER	CREW CMDER	CREW ASSIST	CREW GUNNER	CREW ASSIST	CREW LOADER	CREW GUNNER	FAST	FAST	FAST
CREW DRIVER	CREW LOADER	CREW CMDER	CREW ASSIST	CREW GUNNER	CREW ASSIST	CREW LOADER	CREW GUNNER	MED	MED	MED
CREW DRIVER	CREW LOADER	CREW CMDER	CREW ASSIST	CREW GUNNER	CREW ASSIST	CREW LOADER	CREW GUNNER	SLOW	SLOW	SLOW



Buttoned	Buttoned	Buttoned	Buttoned	Buttoned	Buttoned	Buttoned	Buttoned	Buttoned	Buttoned	Buttoned
BOG DOWN	BOG DOWN	BOG DOWN	BOG DOWN	BOG DOWN	BOG DOWN	BOG DOWN	BOG DOWN	BOG DOWN	BOG DOWN	BOG DOWN
FAST	FAST	FAST	Immobilized	Immobilized	Immobilized	Immobilized	Immobilized	Immobilized	Immobilized	Immobilized
MED	MED	MED	WRECK	WRECK	WRECK	WRECK	WRECK	WRECK	WRECK	WRECK
SLOW	SLOW	SLOW	BURN WRECK	BURN WRECK	BURN WRECK	BURN WRECK	BURN WRECK	BURN WRECK	BURN WRECK	BURN WRECK
FAST	FAST	FAST	CREW GUNNER	CREW LOADER	CREW ASSIST	CREW GUNNER	CREW ASSIST	CREW CMDER	CREW LOADER	CREW DRIVER
MED	MED	MED	CREW GUNNER	CREW LOADER	CREW ASSIST	CREW GUNNER	CREW ASSIST	CREW CMDER	CREW LOADER	CREW DRIVER
SLOW	SLOW	SLOW	CREW GUNNER	CREW LOADER	CREW ASSIST	CREW GUNNER	CREW ASSIST	CREW CMDER	CREW LOADER	CREW DRIVER